Armchair travelling the innovation journey

Building a narrative repertoire of the experiences of innovation project leaders

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BUILDING A NARRATIVE REPERTOIRE OF THE EXPERIENCES OF INNOVATION PROJECT LEADERS

ARMCHAIR TRAVELLING THE INNOVATION JOURNEY
Building a narrative repertoire of the experiences of innovation project leaders

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ARMCHAIR TRAVELLING THE INNOVATION JOURNEY

Building a narrative repertoire of the experiences of innovation project leaders

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“And it ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things, because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new. This coolness arises partly from fear of the opponents, who have the laws on their side, and partly from the incredulity of men, who do not readily believe in new things until they have had a long experience of them.(...) It is necessary, therefore, if we desire to discuss this matter thoroughly, to inquire whether these innovators can rely on themselves or have to depend on others”

Niccolò Machiavelli (1532)

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SUMMARY

The title of this dissertation is *Armchair travelling the innovation journey*. 'Armchair travelling' is an expression for travelling to another place, in the comfort of one's own place. 'The innovation journey' is the metaphor Van de Ven and colleagues (1999) have used for travelling the uncharted river of innovation, the highly unpredictable and uncontrollable process of innovation. This research study began with a brief remark from an innovation project leader who sighed after a long and rough journey: 'had I known this ahead of time...'. From wondering 'what could he have known ahead of time?' the immediate question arose: how do such innovation journeys develop? How do other innovation project leaders lead the innovation journey? And could I find examples of studies about these experiences from an innovation project leader's perspective that could have helped the sighing innovation project leader to have known at least some of the challenges ahead of time? This dissertation is the result of that quest, as we do know relatively little how this process of the innovation project leader unfolds over time. The aim of this study is to increase our understanding of how innovation project leaders lead their innovation journeys over time, and to capture those experiences that could be a source for others to learn from and to be better prepared. This research project takes a process approach. Such an approach is different from a variance study. Process thinking takes into account how and why things – people, organizations, strategies, environments – change, act and evolve over time, expressed by Andrew Pettigrew (1992, p.10) as catching "reality in flight".

The innovation process is defined as 'the process of developing one or more new ideas to achieve desired outcomes by people who engage in relationships in changing contexts', and this research focusses on processes that aimed for radical innovations. The process to develop a radical innovation has been under study in different scholarly domains: New Product Development, Business and Management Studies, Organisation Studies, and Project Management. In these four different scholarly domains, the literatures provide innovation models for the course of the overall trajectory. Many of these are orderly models. Van de Ven and colleagues (1999) have demonstrated that stage-gate models do not resemble the messiness of reality. The underlying pattern the authors found in the different innovation journeys was a nonlinear cycle of divergent and convergent activities: an emerging process with shocks, setbacks, and shifting criteria. Leading the process of innovating contains not only the development of the innovation, but also managing the process and the context (Pettigrew, 1987). The aforementioned four different scholarly domains, each take a different perspective on the innovation journey and differ on various

aspects of the process which an innovation project leader has to deal with, although they all emphasise that the innovation project leader has to lead different processes at the same time. I unpacked four main articles, one from each scholarly domain, into aspects, and grouped these into four categories as four underlying processes of the innovation journey: the innovation project leader has to lead the innovation journey by *developing* the content, *stimulating* creativity, *guiding* group dynamics, and *managing* project constraints, as visualised in the conceptual framework in Figure 2.8. These four processes are intertwined. Buijs (2007) has indicated that these different processes could conflict with each other and ambiguity and tensions are part of the daily life of an innovation process.

Leading the four intertwined processes of the innovation journey combines rational and emotional and creative processes, and activities, such as sensemaking, decision making, and leading others within a situational context. Due to the unique character of the innovation journey, every radical innovation journey has its own pace, its own problems to be solved, and its own group dynamics, within its own constraints. The complexity of one journey could not be transferred to another with explicit tools, such as a checklist or a planning device. In some professional domains, the telling and sharing of stories about such journeys is standard procedure. Military pilots, for instance, debrief after their adventures. Pilots tell stories about their experiences, the kind of and-then-and-then-and-then-stories, which help them to make sense of what happened. It also helps the storytelling pilot to digest these experiences by reliving the events by telling. The colleagues in the audience want to hear these stories, as the events could also happen to them one day. “They want to gain from the vicarious experience”, Klein (1998) states. These vicarious experiences, these experiences of others, enable people to build patterns or expand the patterns they already have, and to use them to (re)act to future events (Klein, Snowden, & Chew, 2011). Pattern building out of these stories is an act of weaving the new with the old: interpreting new stories in relation to old experiences, that is, to old stories. A narrative repertoire could enable innovation project leaders to become aware, anticipate, decide and act upon unusual and unknown experiences and to be encouraged and inspired.

To investigate how the innovation project leader leads the innovation journey over time, I was looking for a variety of cases in terms of type of organisation, type of innovation, and type of professional domain. Three radical innovation journeys were studied: the development of the *BeerTender*, a home appliance for draught beer at home, developed by Heineken in cooperation with Krups; the development of a nursing home concept, a new way that people with severe dementia could live in a nursing home developed by nursing home *Hogewey*, which is part of the Vivium Care group; and the development of an immunotherapy for cancer, developed by *Newvac*. Since this immunotherapy is currently still under development the name Newvac is a pseudonym. The variety of the cases adds to the understanding of how innovation project leaders lead in various contexts, and broadens the narrative repertoire for the academic and practice audiences.

The chosen methodology is a ‘dual method’ multiple case study research: the combination of longitudinal, real time, data collection, combined with retrospective interviews. Data collection was partly real time, directly observing and collecting data as a participant observer in the cases studied. In each case also retrospective interviews were held with the innovation project leader on several occasions during the years of each study, respectively three, 16, and four years.

Part II, Into the Wild, contains the empirical chapters 5,6, and 7, that describe the innovation journeys of the innovation project leaders of BeerTender, Hogewey, and Newvac. For clarity and comparability each chapter follows the same structure. The case is introduced, including the core people involved and the data collection is specified. Each case contains a historical timeline of the development process, and the innovation is sketched within the context. Thereafter, the course of the innovation journey is described from the perspective of the innovation project leader. The innovation journey is unpacked into the motive for innovating, the preparation of the innovation project leader, and the four intertwined processes.

The innovation project leader of BeerTender experienced a complex content development process, with technological difficulties and with many participants in various sub-projects. He led this journey by initiating a process of regular meetings where all team members, who were each responsible for a part of the innovation project, came together. He named these meetings ‘the interface meeting’. He used the making and telling of stories as a tool to manage the creative process and solved issues in the content process along with guiding the group dynamics process. The innovation project leader and his team managed the tensions of the bumpy road by having joint activities, such as going to the pub together and having a good laugh from time to time.

The innovation project leader of Hogewey expected to develop a concept and train all personnel within a period of one or two years, yet she experienced a different course for the innovation journey. To develop the innovation fully, including the desired behaviour of professional caregivers towards each individual resident, took years of adjusting, steering, learning, and training to establish an organisation where personnel embodied the behaviour that fits the care philosophy. Due to this long period of adjusting, the innovation journey had ‘a long tail’, without which the innovation could not have been established. Guiding the group dynamics and reconciling the dilemmas was the most important process to support the content development process.

The innovation project leader of Newvac estimated that within a year or two after the start the clinical studies would be running. However, the innovation journey, so far, has been a process where, in loops and turns, the hold off of funding has set the continuity of the organisation at risk. For the innovation project leader and her team, remarkable points in this innovation journey are the delays in time due to the funding issues, and the splits in

activities and attention into the two different processes of funding on the one hand and developing clinical trials and production of the medicine on the other, which leads to what I demonstrated as the double helix of processes. The complexity of the content development process combined with the funding process and the awareness of patients' unmet needs add to the pressure the team experienced to pursue and try to speed up the process. The complexity of issues and the necessity to lead others out of their common response zone are higher than the innovation project leader had initially expected.

The findings show that the four underlying different processes (content developing process, creative process, group dynamics process, project constraints process) are intertwined. Although the leadership and the focus of the innovation project leaders revealed differences, the findings illustrate how the use of imagery and narrative constructs helped understanding problems and finding solutions, as well as helping others to understand the project, and to see it differently, outside their common response zone.

What makes the journey challenging to lead are: 1) the number of issues that emerge; 2) the differences in kinds of activities in the four intertwined processes, 3) the contradictions between issues and activities, with different dynamics: e.g. rational and emotional, long term and short term, converging and diverging, 4) the contradictions between people and priorities, with different dynamics, 5) all occurring at the same time, 6) and over a longer period of time, 7) and the psychological pressure that follows from this cocktail.

Chapter 9 presents a narrative repertoire with four different kind of narratives: three historical narratives about the innovation journeys in the three cases studied, three awareness narratives, that could increase recognition of possible events, and three solution narratives, that entail the occurrence of an event or pattern, and a solution that could be applicable for other innovation project leaders. A fourth kind of narrative is a process narrative that captures the overall complexity from the perspective of the innovation project leader.

Chapter 10 starts with a summary of the answers to the research question. This chapter then discusses the theoretical implications of this research and suggests directions for future research. Furthermore, the chapter suggests implications for the practice of innovation project leaders. This chapter ends with a reflection on the methodological choices, the research design and evaluative criteria of this research, and my role as researcher.

SAMENVATTING

De titel van dit proefschrift is Armchair travelling the innovation journey. Het Engelse begrip 'Armchair travelling', letterlijk vertaald als 'leunstoel reizen', is een uitdrukking voor reizen maken naar een andere plaats, zonder van je eigen comfortabele plaats af te komen. 'De innovatiereis' is de metafoor die Van de Ven en collega's (1999) hebben gebruikt voor het reizen door de 'uncharted river', de nog niet in kaart gebrachte rivier, het hoogst onvoorspelbare en onbeheersbare proces van innovatie. Deze onderzoekstudie begon met een korte opmerking van een innovatieprojectleider die verzuchtte na een lange en ruige reis: 'had ik dit van tevoren geweten ...'. Vanuit de vraag 'wat had hij van tevoren kunnen weten?' ontstond de directe vraag: hoe ontwikkelen dergelijke innovatieprocessen zich? Hoe leiden andere innovatieprojectleiders hun innovatiereis? En zou ik voorbeelden kunnen vinden van studies over deze ervaringen vanuit het perspectief van een innovatieprojectleider die de zuchtende projectleider geholpen hadden om op zijn minst enkele van die uitdagingen vooraf te hebben kunnen weten? Omdat we relatief weinig weten hoe dit innovatieproces zich in de loop van de tijd ontvouwt, begon hier de zoektocht. Dit proefschrift is het resultaat van die zoektocht. Het doel van deze studie is om ons inzicht te vergroten in hoe innovatieprojectleiders hun innovatieproces leiden door de tijd heen, en om die ervaringen vast te leggen in verhalen die een hulpbron kunnen zijn voor anderen om van te leren en om beter voorbereid te zijn. Dit onderzoek volgt een procesbenadering. Zo'n aanpak is anders dan een variantie-onderzoek. Proces-denken houdt rekening met hoe en waarom dingen - mensen, organisaties, strategieën, omgevingen - veranderen, handelen en evolueren in de loop van de tijd. Dit onderzoek probeert "de realiteit te vangen in zijn vlucht" zoals Andrew Pettigrew (1992) het noemde.

Het innovatieproces wordt gedefinieerd als 'het proces van het ontwikkelen van een of meer nieuwe ideeën om gewenste resultaten te bereiken, door mensen die relaties aangaan in veranderende contexten', en dit onderzoek richt zich op innovatieprocessen die gericht zijn op radicale vernieuwingen. Het proces om een radicale innovatie te ontwikkelen, is bestudeerd in verschillende wetenschappelijke domeinen: nieuwe productontwikkeling, bedrijfs- en managementstudies, organisatiewetenschappen en projectbeheer. In deze vier verschillende wetenschapsdomeinen biedt elk van de literatuurstromingen verschillende modellen voor het verloop van het totale traject. Veel van deze modellen zijn ordelijke modellen. Van de Ven en collega's (1999) hebben aangetoond dat stage-gate-modellen niet lijken op de rommeligheid van de realiteit. Het onderliggende patroon dat de auteurs vonden in de verschillende innovatietrajecten was

een niet-lineair verloop van divergente en convergente activiteiten: een zich ontvouwend proces met schokken, tegenvallers en verschuivende criteria. Het leiden van dit proces van innoveren omvat niet alleen de ontwikkeling van de innovatie, maar ook het begeleiden van het proces en van de context (Pettigrew, 1987). De bovengenoemde vier verschillende wetenschappelijke domeinen, elk met een ander perspectief op het innovatieproces, benoemen ieder verschillende aspecten waarmee een innovatieprojectleider te maken heeft, hoewel ze allemaal benadrukken dat de leider van het innovatieproject verschillende processen tegelijkertijd moet leiden. Op basis van vier hoofdartikelen uit deze wetenschapsdomeinen zijn de verschillende aspecten gegroepeerd. Dit resulteerde in vier onderliggende processen van het innovatieproces: de innovatietrajectleider moet leidinggeven aan het ontwikkelen van de inhoud, creativiteit stimuleren, groepsdynamiek in goede banen leiden, en de beperkingen en randvoorwaarden van het project beheren, zoals gevisualiseerd in het conceptuele raamwerk in figuur 2.8. Deze vier onderliggende processen zijn met elkaar verweven. Buijs (2007) heeft aangegeven dat deze verschillende processen tegenstrijdig kunnen zijn en dat ambiguïteit en spanningen deel uitmaken van het dagelijks leven van een innovatieproces.

Het leiden van de vier met elkaar verweven processen van het innovatieproces combineert rationele en emotionele/creatieve processen en activiteiten, zoals het onderzoeken en herkennen van problemen, het maken van keuzes, en het leiden van anderen, alles binnen een situationele context. Vanwege het unieke karakter van het innovatieproces heeft elke radicale innovatie-reis zijn eigen tempo, zijn eigen problemen die moeten worden opgelost, zijn eigen groepsdynamiek, en zijn eigen beperkingen. De complexiteit van één reis kan niet worden gebruikt door een ander innovatietraject op basis van expliciete hulpmiddelen, zoals een checklist of een plan. In sommige professionele domeinen is het vertellen en delen van verhalen een standaardprocedure. Gevechtsvliegers bijvoorbeeld, debriefen na hun avonturen. Piloten vertellen verhalen over hun ervaringen, het soort en-toen-en-toen-en-toen-verhalen, die hen helpen te begrijpen wat er is gebeurd. Het helpt de verteller-piloot ook om deze ervaringen te verteren door de gebeurtenissen opnieuw te vertellen. De collega's in het publiek willen deze verhalen horen, omdat de gebeurtenissen hen op een dag ook kunnen overkomen. "Ze willen profiteren van de plaatsvervangende ervaring", zegt Klein (1998). Deze "plaatsvervangende ervaringen", deze ervaringen van anderen, stellen mensen in staat om patronen te bouwen of de patronen die ze al hebben uit te breiden, en om ze te gebruiken om tijdens toekomstige gebeurtenissen (opnieuw) te handelen (Klein, Snowden, & Chew, 2011). Patroonopbouw uit deze verhalen is het verbinden, het weven van het nieuwe met het oude: het interpreteren van nieuwe verhalen in relatie tot oude ervaringen. Een repertoire met verhalen kan ervoor zorgen dat innovatieprojectleiders zich bewust worden van, kunnen anticiperen op, beslissen over en handelen naar onverwachte en onbekende gebeurtenissen, en dat ze moed houden om door te gaan en inspiratie vinden in die ervaringen van anderen.

Om te onderzoeken hoe de innovatieprojectleider het innovatieproces gedurende een bepaalde tijd leidt, heb ik gezocht naar een verscheidenheid aan cases in termen van type organisatie, type innovatie en type professioneel domein. Drie radicale innovatieprocessen zijn bestudeerd: de ontwikkeling van de BeerTender, een huishoudelijk apparaat voor tapbier thuis, ontwikkeld door Heineken in samenwerking met Krups; de ontwikkeling van een verpleeghuisconcept, een nieuwe manier waarop mensen met ernstige dementie in een verpleeghuis kunnen wonen, ontwikkeld door verpleeghuis Hogewey, onderdeel van Vivium Zorggroep; en de ontwikkeling van een immunotherapie voor kanker, ontwikkeld door Newvac. Omdat deze immunotherapie momenteel nog in ontwikkeling is, is de naam Newvac een pseudoniem. De verscheidenheid van de cases draagt bij aan het begrip van hoe innovatieprojectleiders in verschillende contexten het proces leiden en verruimt het repertoire van verhalen voor zowel de academische wereld als de praktijk. De gekozen methodologie is een 'duale methode' van onderzoek met meerdere casestudies. Het duale van de methode verwijst naar de combinatie van longitudinale, real-time, gegevensverzameling, met retrospectieve interviews. Het verzamelen van de real-time gegevens gebeurde door als observerende deelnemer aanwezig te zijn in de bestudeerde innovatieteams of organisaties. In elke casestudie vonden er retrospectieve interviews plaats met de innovatieleider, gedurende de looptijd van elke studie, respectievelijk drie, 16 en vier jaar.

Deel II, Into the Wild, bevat de empirische hoofdstukken 5, 6 en 7, die de innovatietrajecten van de innovatieprojectleiders van BeerTender, Hogewey en Newvac beschrijven. Voor de duidelijkheid en vergelijkbaarheid volgt elk hoofdstuk dezelfde structuur. De casus wordt geïntroduceerd, inclusief de belangrijkste betrokkenen en de gegevensverzameling wordt gespecificeerd. Elk geval bevat een historische tijdlijn van het ontwikkelingsproces en de innovatie is geschetst in de context. Daarna wordt het verloop van de innovatiereis beschreven vanuit het perspectief van de innovatieprojectleider. Hierbij worden beschreven het motief om te innoveren, de voorbereiding van de innovatieprojectleider, en de vier met elkaar verbonden processen.

De innovatieprojectleider van BeerTender heeft een complex proces doorlopen, met technologische problemen en met veel deelnemers die werkten aan verschillende deelprojecten. Hij leidde deze reis onder andere door het houden van regelmatige bijeenkomsten waarbij alle teamleden, die elk verantwoordelijk waren voor een deel van het innovatieproject, bij elkaar kwamen. Hij noemde deze bijeenkomsten 'de interface-bijeenkomst'. Hij gebruikte verhalen en metaforen als een hulpmiddel om het creatieve proces te stimuleren en inhoudelijke problemen op te lossen, in verbinding met het proces van groepsdynamiek. De innovatieprojectleider en zijn team hebben de spanningen op de hobbelige weg weten te beheersen door gezamenlijke activiteiten te ondernemen, zoals samen naar de kroeg gaan en af en toe eens goed lachen.
De innovatieprojectleider van Hogewey verwachtte een concept te ontwikkelen en alle personeel op te leiden binnen een periode van een of twee jaar, maar dat pakte anders

uit. Om de innovatie volledig te ontwikkelen, inclusief het gewenste gedrag van professionele zorgverleners naar elke individuele bewoner, duurde het vele jaren om aanpassingen door te voeren, te sturen, te leren en te trainen, en een bestendige organisatie te bouwen waarin personeel het gedrag belichaamde dat past bij de zorgfilosofie. Door deze lange ontwikkelperiode had het innovatieproces 'een lange staart', maar zonder die staart was de echte innovatie er niet gekomen. Het begeleiden van de groepsdynamica en het oplossen van de dilemma's was het belangrijkste proces ter ondersteuning van het inhoudelijke ontwikkelingsproces.

De innovatieprojectleider van Newvac schatte dat binnen een of twee jaar na de start de klinische onderzoeken zouden kunnen lopen. Tot dusverre echter is het een innovatieproces geweest waarbij het uitblijven van financiering de continuïteit van de organisatie op enig moment bijna in gevaar heeft gebracht. Voor de innovatieprojectleider en haar team zijn opmerkelijke punten in dit innovatieproces de vertragingen als gevolg van de financieringsproblemen en de splitsingen in activiteiten en aandacht voor de financieringsprocessen aan de ene kant en de ontwikkeling van klinische proeven en productie van het geneesmiddel aan de andere kant. Dit leidde tot wat ik 'de dubbele helix' van processen heb genoemd. De complexiteit van het ontwikkelingsproces van de inhoudelijke kant, in combinatie met het financieringsproces, en het besef van de onvervulde behoeften en het uitblijven van mogelijke medicatie voor deze patiënten, dragen bij aan de druk die het team ervaart, en de behoefte om het proces te proberen te versnellen. De complexiteit van problemen en de noodzaak om anderen uit hun 'gebaande pad', uit hun standaard reactiezone te halen, zijn groter dan de innovatieprojectleider aanvankelijk had verwacht.

De bevindingen uit dit onderzoek in de drie cases laten zien dat de vier onderliggende processen met elkaar verweven zijn (de ontwikkeling van de inhoud, het creatief proces, het proces van groepsdynamieken, en het beheren van projectrandvoorwaarden). De bevindingen illustreren hoe het gebruik van afbeeldingen en narratieve constructen, in elke case met eigen accenten, hielpen om problemen te begrijpen en oplossingen te vinden, en om anderen te helpen het project te begrijpen en het anders te zien, buiten de eigen 'common response zone' die deze anderen als standaard respons hadden.

Wat het proces uitdagend en moeilijk maakt om te leiden zijn: 1) het aantal problemen dat zich voordoet; 2) de verschillen in soorten activiteiten in de vier met elkaar verweven processen, 3) de tegenstrijdigheden tussen problemen en activiteiten, met verschillende dynamieken: rationeel en emotioneel, op lange termijn en op korte termijn, convergerend en divergerend, 4) de tegenstellingen tussen de prioriteiten van mensen en met verschillende dynamieken, 5) die problemen en tegenstrijdigheden die allemaal tegelijkertijd voorkomen, 6) en die over een langere periode aanhouden, 7) en de psychologische druk die volgt uit deze cocktail.

Hoofdstuk 9 presenteert een repertoire met vier verschillende soorten verhalen: drie historische verhalen over de innovatieprocessen in de drie onderzochte casussen, drie verhalen die de herkenning van mogelijke gebeurtenissen zouden kunnen vergroten (awareness narratives), en drie verhalen, die een mogelijke oplossing beschrijven voor een gebeurtenis, en die oplossing zou toepasbaar kunnen zijn voor andere innovatieprojectleiders (solution narratives). Een vierde soort verhaal is een 'procesverhaal' dat de algehele complexiteit weergeeft vanuit het perspectief van de innovatieprojectleider.

Hoofdstuk 10 begint met een samenvatting van de antwoorden op de onderzoeksvraag en -deelvragen. Dit hoofdstuk bespreekt vervolgens de theoretische implicaties van dit onderzoek en doet suggesties voor toekomstig onderzoek. Verder suggereert het hoofdstuk implicaties voor de praktijk van innovatieprojectleiders. Dit hoofdstuk eindigt met een reflectie op de methodologische keuzes, het onderzoeksontwerp en de evaluatieve criteria van dit onderzoek, en mijn rol als onderzoeker.

Part 1

PRE-VISIT PREPARATION

WHAT IS ALREADY KNOWN ABOUT THE INNOVATION JOURNEY?

PRELUDE

> *The climbers awoke just past midnight after hardly sleeping at all. They were excited and alert. They were among the nearly ten thousand climbers each year who attempt to reach the heavily glaciated summit of Mount Rainier in the northwestern United States. It is perhaps the world's most difficult climb that is accessible to novices, so long as they are accompanied by expert guides. (Govindarajan and Trimble, 2010, p. 1)*

Govindarajan and Trimble (2010) begin the introduction chapter of their book *The Other Side of Innovation* with this story of climbers aiming for the summit. The challenge for the climbers is not reaching the summit, but descending safely to the basecamp 'on the other side of the mountain'. The innovation summit, the authors note, is the moment when the organisation says 'yes!' to the innovative idea. By that time the climbers had already made a great effort. The image of a journey is not by chance, of course: innovating is an endeavour into unknown territory, challenging, full of unexpected incidents. In this dissertation I follow this metaphor of a journey: a journey to develop an innovation from an accepted idea into a new, functioning product, service, or process. This prelude describes the road I travelled to arrive at my research aim and the nature of this PhD project.

The initial idea for this study arose years ago from a series of personal observations that I made while working as a management consultant with innovation project leaders. Nearly all innovation project leaders who I worked with experienced a journey that was much tougher than they had expected at the outset. 'Had I known this ahead of time…' one of them sighed in despair. After all he had been through, I understood his response completely. But was it possible to know at the outset, I wondered? Could this innovation project leader possibly have known some of his challenges ahead of time? If he could have known, would he then not have been taken by surprise? Wouldn't the pressures then not have been too much?

The 'had I known this ahead of time…'-sigh puzzled me for a long time. Could innovation project leaders prepare for the challenges of the innovation ahead? As every radical innovation is unique, how could one prepare for such an endeavour? From whom could one learn (what)? And if one could be prepared, then how?

If one does not have the experience to be prepared for a certain situation or process, the experiences of others could possibly be of assistance. I began by exploring whether I could find analogical situations where one could learn by the experiences of somebody else in order to be prepared.
Govindarajan and Trimble indicate in their story that novice climbers should be

accompanied by expert guides. The expert guide could be comparable with a master in the master-apprentice relationship: a learning relationship that has been used since the crafts guilds in the Middle Ages. In the medieval guilds, the apprentice worked for one specific master, and the master transferred their expert knowledge to the apprentice day-by-day and bit-by-bit (Brockmöller, 2008). Although many of the issues were probably unknown territory for the apprentice, they were known by the expert. Moreover, during the period of apprenticeship the master would take on leadership, and the apprentice simply had to follow. This analogy does not best fit the situation of the innovation project. Another analogy might be the coach or guide. A sport coach guides the sportsperson(s), gives suggestions, and offers training for specific skills, yet the sportsperson(s) have to play the game or win the race. But also in many sports situations the coach has a significant decision-making power and leadership, while the innovation project leader has to trust to their own decision-making power. An innovation coach could be of help for an innovation project leader (Leavy, 2011). The advantage of an innovation coach is that the innovation project leader has a dedicated person for support. The disadvantage is that such an innovation expert can only 'serve' a limited number of people at the same time, and this service comes at a price.

The metaphor of a journey and being prepared drew me to the analogy of travel literature. Since the first use of the printing process, the Dutch have a rich history in travel literature, as Roeper and Wildeman (1996) have demonstrated in their book *Travelling on paper*. The authors review, for instance, a travel guide from 1884 that was meant to prepare the passengers for travelling on a steamboat to the Dutch Indies. The book described the emotional heaviness of the travellers when leaving Holland, provided a practical guidance in what to pack, sketched images of the life aboard ship and the first arrival in the Dutch Indies, advised about group interactions during the forty days at sea via fictional dialogues, and suggested how to deal with the irrevocable quarrels. The modern equivalent of this travel guide, the Lonely Planet series, are not only a success because the guides are full of useful information, but because the books also inspire people. Readers of these books are not only trying to find information on practicalities, but are also trying to grasp some of the softer information: what was it like to be there, how did it smell, how did the writer stand the heat, the dirt, the unexpected events. And not only do these armchair travellers see unknown territory through the eyes of others, they also see their own environment with new eyes (Stiegler, 2010).

Within the journey metaphor, I explored extreme sports. The leader of the K2 summit attempt or the skipper of the Volvo Ocean Race both have challenging assignments. Although a few waypoints are clear and concrete, how the wind will lead the boat, how this new northern edge of the mountain will be under the current conditions, how the team will behave, are all unknown at the outset. From their stories, it appears that the team leaders have prior knowledge. Before they became leaders, they had experience from earlier journeys, and they also prepared with the experiences of others.

Sometimes the knowledge about the experience of others appears 'between the lines'. Wilco van Rooijen is a Dutch mountaineer who wrote a book about his climbing adventure on the K2 and how he miraculously survived a crisis during his descent from the summit of K2. He describes how he is awake during one of the nights before his summit attempt. The preparations for the summit attempt have gone well. Extremely well. And now he, and the team all feel the summit attempt is coming soon. Sooner than they had expected upfront. He cannot sleep, lying in his tent in camp 4. He grabs a book. A book that he apparently took with him all the way up! It is *The Boys of Everest,* about the climber Chris Bonington and colleagues. The Bonington Boys became famous for their new approach to mountaineering, for their courage and stamina, but also for the risks they took and the losses they had to endure (van Rooijen, 2010, p 26). In this context it seems that *The Boys of Everest* served as a bedtime story, but it also meant that Van Rooijen was aware of the experiences of those other climbers.

In other cases, the decisions of project leaders show the influences of the experiences of others clearly in their story. An example is the following episode in the story of the Volvo Ocean Race (Chisnell, 2009). Leg 5 is the longest leg in the Volvo Ocean Race 2008-2009, departing from Qingdao in China, around Cape Horn, all the way to Rio the Janeiro. At a certain moment during leg 5, after the scoring gate north of Fiji, the boats have to decide about the next route to follow. Chisnell wrote the following story about this point of the race:

> *History dedicated a simple strategy at this point. The first boat into the Southern Ocean to meet the strong westerly winds blowing above an eastbound low-pressure system was usually the first boat to Cape Horn. But conditions were offering an alternative option, a northern route that would go above the centre of a large area of high pressure (and the light winds associated with that weather feature) forming to block the road south. Everyone had been watching the situation develop over a period of days, but history bore heavily on the shoulders of navigators and skippers who had seen such an option evaporate before. It bore little less heavy on the shoulders of Aksel Magdahl, the 29 year old navigator of the Ericsson 3. (...) Afterwards, Magdahl was adamant that he had made a rational, number-based decision, using the same computerised mathematical algorithm and virtual Volvo Open 70 that Badford used for the ensemble modelling prior to the start. The probable gains to the northern route made the choice self-evident. The weather forecast was relatively stable, and, most importantly, it only had to be accurate for the next three days. He wasn't relying on the forecast still being right within a week's time for his plan to work. Nevertheless, as anyone who has left the house in the morning in a shirt and needed an overcoat by lunchtime knows, weather forecast can be wrong over any time scale. Of course, there was history – all those Southern Ocean legs that had been won by boats going south. And all those people who had tried something different had failed ignominiously- a few of whom were taking part in this very race. (...) Whatever the path to*

the decision, once Ericsson 3 sailed through the gate and collected the points for second, they came on to the wind and tacked to go back to northeast, while everyone else sailed on to the south. (Chisnell, 2009, pp. 137)

Three days later "*it was clear that Ericsson 3 had pulled of a brilliant coup*" (Chisnell, 2009, p. 138) and had gained over a hundred miles on its competitors. This example illustrates how the navigator of the *Ericsson 3* knew the experiences of others in the same area during the same round the world race, and yet how he decided, against the odds, to take a different decision.

Although the goal of each journey and each challenge differs from another (other mountains, other waypoints in a sailing race), and the circumstances are different, too (other teams, other weather, other material conditions), both examples about climbing K2 and sailing the Volvo Ocean suggest that the project leaders were prepared for, and prepared by, the stories of experiences of others in the same kind of challenge. That mental state of 'being prepared', of what is to come, what is to be expected, seems to be present in these two examples.

And the examples given above are only two examples. Libraries and bookstores have shelves full of these kinds of stories. The genre is also called 'armchair travel literature': experiencing a different place through the eyes of the traveller and learning about how it was and how it went, without leaving one's comfortable armchair. I will use this analogy for travelling the innovation journey, armchair style, to experience how innovation project leaders are leading their teams on the unpredictable journey.

Preparing for such a journey to an unknown country is an endeavour comparable to preparing for an innovation journey. The innovation project leader does not know what the new land will look like, what kind of challenges he will have to face or what kind of unexpected events to expect. However, the analogy of learning aspects of this unknown territory through the experiences of others is explored in the following chapters.

CH 1 | INTRODUCTION

1.1 Introduction

The title of this dissertation is *Armchair travelling the innovation journey*. 'Armchair travelling' is an expression for travelling to another place, in the comfort of one's own place. One can do this by reading travel literature or a Lonely Planet guide, seeing a film or a documentary, or looking at pictures of that other place. Armchair travelling is being transported to a distant world, reading about distant countries and far away shores, and living the incidents and experiences of the protagonist, but also seeing one's own world with different eyes (Jørgenson, 2014; Stiegler, 2013). 'The innovation journey' is the metaphor Van de Ven and colleagues have used for travelling the uncharted river of innovation, the highly unpredictable and uncontrollable process of innovation (Van de Ven, Polley, Garud, & Venkataraman, 1999).

In the prelude, I have already outlined how this research study began with a brief remark from an innovation project leader who sighed after a long and rough journey: 'had I known this ahead of time…'. From wondering 'what could he have known ahead of time?' the immediate question arose: how do such innovation journeys develop? How do other innovation project leaders lead the innovation journey? And could I find examples of studies about these experiences from an innovation project leader's perspective that could have helped the sighing innovation project leader to have known at least some of the challenges ahead of time? This dissertation is the result of that quest.

In this introductory chapter I begin by defining the innovation journey, the innovation project leader who leads this journey, and the innovation as an outcome. Then, I cover learning from the experiences of others while comfortably sitting in one's armchair, and experiencing the unknown land as if one were there, by reading (or viewing) the stories of the ones who have already travelled the journey. It, therefore, follows that I introduce stories, the role of stories in organisations, and how people could benefit from stories of others' experiences. I will describe how these two concepts, innovation journey and armchair travelling, are connected in the aims of this study. I conclude this chapter by outlining an overview of the rest of this dissertation.

1.2 The innovation journey

Six people paddling a raft through white water rapids, indicating an expedition off the beaten track. The six smile. Their paddles show that coordinated action is not always that easy. We cannot see the world around them but can imagine the splashes of water and the rocks in the river. The ride will be rough from time to time, but exciting. That is the image Van de Ven and colleagues used for the cover of their book *The Innovation Journey* (Van de Ven, et al. 1999) about the Minnesota Innovation Research Program (MIRP). This journey is a metaphor for the innovation journey of a new product development (NPD) project. In the foreword William E. Coyne, former Senior Vice President R&D at 3M, writes:

> *I am also fascinated by their conceptual model for innovation- the journey along an uncharted river, led by individuals with ill-defined, conflicting or ambiguous goals, comprising both divergent and convergent behaviours. This description is thoroughly consistent with my experience as one who has pushed and pulled innovation through a large corporate bureaucracy, as a scientist and as a manager. (Van de Ven et al. 1999, p. viii)*

The MIRP defined the innovation journey as the process of "new *ideas* that are developed and implemented to achieve desired *outcomes* by *people* who engage in *transactions* (relationships) with others in changing institutional and organisational *contexts*." (italics in original) (Van de Ven, Angle, & Poole, 2000, p. 9) The present research follows this definition of the innovation process.

The definition offered by Van de Ven and colleagues could be seen from both the macro economical level as well as the micro level of the new product development (NPD) (Brown & Eisenhardt, 1995). At a macro level innovation takes a strategic perspective, and managing innovation leadership refers to the top executives of an organisation, who decide where which part of resources will be allocated. The strategic level is about *doing the right projects*. At a micro level, managing innovation takes the project level about *doing the project right* (Cooper, 1996). The same distinction could be made for the *innovation leader.* This job title is used in the literature for different people with different roles and responsibilities. Where Amabile and Khaire (2008) for instance, have discussed the innovation leader as the executive, responsible for the strategic choices and the innovation portfolio, Govindarajan and Trimble (2010) have used the term innovation leader for the one who is responsible for the innovation project (Govindarajan & Trimble, 2010, p. 21).

Since the word innovation was first coined as 'new combinations of existing resources' by Schumpeter almost 100 years ago (Fagerberg, 2006) innovation has acquired many different definitions (see, for instance, Bessant, Lamming, Noke, & Phillips, 2005; Bledow, Frese, Anderson, Erez, & Farr, 2009; Boer & During, 2001; Crossan & Apaydin, 2010;

Damanpour, 1991; Tidd & Bessant, 2013; Van de Ven et al.,1999; West & Altink, 1996). What the definitions of various authors have in common is the notion of 'a novelty' (a new idea, a new value added), 'a verb' (to take action: to develop, to produce, to implement, to adopt) and the 'introduction of this novelty to others' (the organisation, the market). Crossan and Apaydin (2010) have concluded their definition of innovation with "[i]t is both a process and an outcome" (p. 1155). To build upon the same metaphor of the innovation journey, the final destination, the landing of the raft, is the outcome. The uncharted river of the innovation journey should lead to a *radical* outcome, an outcome that is not only new to the organisation but also new to the world. This journey differs from an innovation process aiming for an incremental innovation, due to the high risk and high uncertainty that the process brings (Garcia & Calantone, 2002; O'Connor & Dermott, 2004).

The outcome, the noun, is only a part of the innovation process, as actions from people are required during a certain period of time to develop the outcome. A verb better covers this process, so it is appropriate to use the verb 'to innovate' or 'innovating' instead of the noun 'innovation' when addressing the innovation process, the process of the becoming of the innovation (Buijs, 2014; Langley, 2007; Lauche, 2010). The innovation journey is not only the safe landing of the raft. Seeing the journey backwards, from the point of the safe landing, the outcome could influence the reasoning about the process of events. Seeing the journey real-time, in the thick of things, without knowing if and how and when the raft will hit the destination, puts the focus more on the flowing and steering and happening, and thus on the process of becoming, of a constant change.

The innovation project leader is the one who leads the journey, and steers the raft on a day-to-day basis. When I refer to the managerial activities of the innovation project leader, I prefer to use the verb 'to lead' instead of 'to manage', as these two systems of action differ (Kotter, 2001). Where 'managing' is directive, controlling and problems solving by taking decisions, 'leading' differs in accepting an instability, setting direction and motivating and inspiring people (Ghoshal & Bartlett, 1997; Kotter, 2001; R.E. Quinn, 1988). Managing not only refers to the organisational connotation to direct and achieve a purpose. In our daily speech 'to manage' also means to succeed, to accomplish something (e.g. 'he managed to stay awake'). The verb 'to manage' is used in this dissertation with emphasis on its second connotation, referring to how a person succeeded in accomplishing something.

1.3 Being better prepared and learning from the experiences of others

Every innovation journey is unique, and probably every innovation project leader is aware that s/he is going to deliver a unique new outcome. The 'had I known this ahead of time…' question implies that the innovation project leader would have liked to know something about how the innovation process was likely to develop over time, which would have been

an indication for their own journey. Govindarajan and Trimble (2010) have argued that organisations could be better prepared to develop innovations, and question if we have learned enough from the successes and failures of other innovations. And Regina Herzlinger, who undertook extensive research in innovations in health care, has suggested that innovations fail because innovators are unprepared for the obstacles they have to face (IEEE Pulse Editorial Staff, 2014).
Being prepared is like the saying 'to be forewarned is to be forearmed', as Van de Ven and colleagues state in *The Innovation Journey* (Van de Ven et al., 1999, p. 21). This means so much as: if one knows about something before it happens, one can be prepared for it. The forewarning in the saying could, for instance, be effected by reading about the experiences of others.

Indigenous peoples, for instance, prepare their youngsters by having the more experienced elders share their stories from generation to generation. In many indigenous cultures the elders are respected for their wisdom. People often live together in extended families and the elders keep an eye on the younger children, and play an active part in the upbringing of the children. In a natural way, grandparents, aunts and uncles of the extended family teach their knowledge, manners and beliefs to the children, often in the form of myths and stories. Here, storytelling is a natural mode of indigenous teaching (Atleo, 2010; Hkam, 2011) and, like a verbal inuksuk[1], serves as a landmark for future generations. These stories of the indigenous elders are stories about actions, behaviour, problems encountered, sudden situations, and material artefacts that the protagonist had or did not have. These elements are all placed within a context and a time frame. Though this mixture of story elements, the lessons are easily remembered in context, used as a frame of reference, and retold to future generations. The lessons are kept as tacit knowledge 'in the back of one's mind'.

In various professional domains, practice stories are used to learn from vicariously and to prepare practitioners for complex situations, sensemaking, and decision-making. In nursing and doctor's' education, stories are often used in addition to clinical observation (Cox, 2001; Greenhalgh, 2001; Woodhouse, 2007). Students hear or read stories to increase their understanding of what could happen, and what decisions were made in that situation (Cox, 2001). They use their imagination to understand and make clinical judgements, and use stories for critical reflection (Greenhalgh, 2001). In professional areas where there is limited time to come to effective decisions, such as emergency rooms or fire-fighting incidents, professionals learn from stories to share tacit knowledge (Klein, Calderwood, & Clinton-Cirocco, 2010; McLennan, Holgate, Omodei, & Wearing 2006)

1 An inuksuk is a stone figure, built from piled stones. Inuksuit (plural) are part of the culture of the Inuit people in Canada. In the Arctic winter, with blowing snow, very little at ground level can be seen, and something on slightly raised ground acts as a marker to guide the traveller's way.

1.4 Innovation stories

Stories about innovation projects and more specific stories that depict the experiences of innovation project leaders seem scarce. I searched for ethnographic stories from inside a project, such as Orr's *Talking About Machines* (1996). As a participant observer, Orr studied the daily work of service technicians at Xerox from within. He travelled with them from machine to machine, joined their morning coffee breaks in the diner around the corner, and learned to understand their language. Based on these experiences, he narrated how the work got done. Orr described and depicted how the technicians constructed narrative descriptions about troubled machines. *Talking About Machines* became an influential book and one of the first organisational ethnographies.

I was looking for these kinds of rich descriptions of real life, which contained a story over a certain period of time (not one event). I wanted accounts that depicted the developing of an innovation, what really happened in the thick of things, where the actions and experiences of people, such as the innovation project leader or one or more team members were incorporated. It was not directly relevant to this research whether the innovation made it to the market, if the product was a success, or if the company or the customers were happy. Failures, near failures and successes could all be sources for vicarious learning.

I performed a literature search, using search engines such as Web of Science and Google Scholar, and broadened to the search engine of Amazon.com. I investigated the content pages and indexes of theory volumes and handbooks to check for relevant examples (Dodgson, Gann, & Philips, 2014; Fagerberg, Mowery, & Nelson, 2006; Gassmann & Schweitzer, 2014; Loch & Kavadias, 2008; Poole & Van de Ven, 2004; Tidd & Bessant, 2013; Trott, 2012). I searched for 'innovation stories', 'innovation project leader', 'stories', 'narratives', 'tales', names of innovations, and brands, in all kind of combinations.

I found a few different types of innovation stories. I found dozens of stories about innovation heroes such as Steve Jobs, Richard Branson and Mark Zuckerberg, or heroes who are referenced in name of the company they founded. These books tend to have a section or two that bears information about a specific event or episode in the innovation journey. To illustrate this with an example, the book *Amazon.com* (Spector, 2000) describes how money was a problem at the start, but after an infusion of capital was never a problem again. There are also a few paragraphs about building a team and building the brand. The real message of the book, however, is a hero-story, a tribute to one man who made the all American dream.

> *The Amazon.com story is a convergence of vision, intelligence, technology, money and timing, but none of those elements would have mattered without Jeff Bezos's engaging personality, which was sold to the public and the investment community through one of the*

greatest and cleverest public relations campaigns in modern business history. (Spector, 2000, p. 189)

I also found a variety of case-stories about innovation. Gassmann and Schweitzer (2014), for instance, have provided a kaleidoscope of 17 case studies all related to aspects of the fuzzy front end of NPD, although the innovation project leader or his or her actions are not discussed. I found stories about innovations in single companies, for instance, innovation at 3M (3M, 2002; Coyne, 2001; von Hippel, Thomke, & Sonnack, 1999; Jaruzelski, Holman, & Baker, 2009), General Electric (Immelt, Govindarajan & Trimble, 2009), Lego (Madsbjerg & Rasmussen, 2014; Rivkin, Thomke, & Beyersdorfer, 2012; Robertson & Breen, 2014), Mayo Clinics (Lee & Cosgrove, 2014; Salter, 2006) Nokia (Laamanen, 2016; Masalin, 2003), and Volvo Cars (Börjesson, Elmquist, & Hooge, 2014). I also found stories about one specific innovation project, such as Boeings Dreamliner (Shenhar, Holzman, Melamed, & Zhao, 2016) or the Volvo V70 (Harryson, Dudkowski, & Stern, 2008). These publications take one organisation or one product as the focal point and describe the innovation culture, the building of an innovation portfolio and strategic choices, the creativity needed for innovation, the role of customers, the role of top executives, the technological ingenuity, the patenting or the perseverance. None of these cases, however, describes the integral process of the innovation journey from within, or from the perspective of the innovation project leader nor from the innovation team.

In the book with the promising title *The Human Side of Technological Innovation*, edited by Ralph Katz (2004), I found two stories that came close to what I was searching for. The first story is 'The Java Saga', written by *Wall Street Journal*'s staff reporter David Bank (Bank, 2004, pp. 134). An earlier version of this story was published in *Wired*. The main character in Bank's Java story is the product, but a number of people also figure in his story. The other story that I found in *The Human Side of Technological Innovation* as an example of the experiences of the innovation project leader is 'How a Team at Digital Equipment Designed the "Alpha" Chip', written by Ralph Katz (pp. 121). Katz reconstructed the story of the design and birth of the product, giving insight into the events in the process and the emotions of the team.

The decision to cancel PRISM shocked everyone on the program, especially Cutler, Dobberpuhl and Witek, none of whom had been asked to attend the MIPS presentation or had even been involved in the committee's subsequent deliberations. As a result, they all refused to accept the committee's explanation and became somewhat hostile towards them. After several years of hard work and effort, the team simply felt betrayed by senior management outside the semi-conductor area. To give up their own technology and architecture and rely completely on a small outside company made no sense to them whatsoever. In the words of one designer, 'MIPS must have sold management a real bill of goods – it was all politics!' (Katz, 2004, p. 124)

Katz's story touches the experiences of the innovation project leader, such as how the team experienced the decision taken in the organisation. However, this story does not recall what the innovation project leader did, what his actions or decisions were to overcome the hostility in the organisation or how he managed to encourage his team to continue.

Despite the numerous literatures about the management of innovation projects, the literature on the experiences of innovation project leaders is scarce. The stories about innovation heroes leave the reader with the impression that it takes a genius to develop a breakthrough innovation. Both the stories of Katz and Bank are about what happened to the product in the organisation, and not specifically about *how* the innovation project leader led the innovation journey.

1.5 The research aim

We can conclude that innovation project leaders have the challenging job of steering their team through the white water rapids of the innovation journey towards the destination of delivering the outcome, the innovation. There is a vast body of literature on innovation and the management of innovation, yet the literature on innovation as process is scarce (Crossan & Apaydin, 2010). We know little about how this innovation process unfolds over time on the micro level of the innovation project leader and their team.

Although every innovation journey is unique, stories of other innovation project leaders could be a sources assisting to be better prepared, to be aware of what could be expected. We have little insights into how the innovation process unfolds over time at a micro level of one innovation project, nor do we have narratives that an innovation project leader could use to be better prepared.

The aim of this study is to increase our understanding of how innovation project leaders lead their innovation journeys over time, and to capture those experiences that could be a source for others to learn from and to be better prepared.

1.6 A process approach

The challenging job of the innovation project leader to pursue a radically new product is a complex process, and to add to the understanding of that process, the process has to be investigated as a whole, and the aspect of time has to be part of that investigation. This research project takes a process approach. Such an approach is different from a variance study, and the narrative mode of thinking differs from the logico-scientific mode of thinking.

Within organisation studies various authors have described process research thinking and methods (Langley, 1999, 2007; Pettigrew, 1990; Tsoukas & Chia, 2002; Van de Ven, 1992; Van de Ven & Poole, 2005). Process thinking takes into account how and why things – people, organisations, strategies, environments – change, act and evolve over time, perhaps expressed best by Andrew Pettigrew (1992, p.10) as catching "reality in flight" (Langley, 2007, p. 271). This reality can be approached by 'plunging itself deeply into the processes themselves, collecting fine- grained qualitative data - often, but not always, in real time - and attempting to extract theory from the ground up' (Langley, 1999, p. 691). Diving into the processes itself is a way to 'truly understand how and why events play out over time' (ibid).

This process research approach differs from the more common variance studies. Mohr (1982, pp. 37) has explained the difference between these two modes of research, as summarised in Table 1.1. In a variance study, the precursor X is necessary for the outcome Y, and deals with variables. In other terms: if X, then Y, and if not-X, then not-Y. A variance theory deals with efficient causes, where 'an efficient cause is a force that is conceived as acting on a unit of analysis (person, organization, and so on) to make it what it is in terms of the outcome variable (morale, effectiveness, and so on) or change it from what is was. It may be thought of a *push-type* causality' (italics in the original) (ibid, p.41). And time ordering among the contributing (independent) variables is immaterial to the outcome. In other words, the independent variables are considered 'from the viewpoint of the outcome, as though it all happened at once… it deals in snapshots rather than movies' (ibid, p. 43). Process theory, on the other hand, deals with events, rather than variables, according to Mohr (1982). A process theory deals with final cause, and not efficient cause. A final cause is an end point 'whose existence connotes the occurrence of prior events'(ibid, p. 59). Mohr (1982) has explained this with examples of the steps in natural processes that we know must have occurred: the adult is the final cause of the developmental process of an organism, and a new species the final cause of it precursor in Darwinian theory. And finally, in process theory, time ordering is critical for the outcome.

Table 1.1 Characteristics of variance theory and process theory

VARIANCE THEORY	PROCESS THEORY
The basis of explanation is causality.	The basis of explanation is probabilistic rearrangement.
1. The precursor (X) is a necessary and sufficient condition for the outcome (Y).	1. The precursor (X) is a necessary condition for the outcome (X)
2. A variance theory deals with variables	2. A process theory deals with discrete states and events.
3. A variance theory deals with efficient causes.	3. A process theory deals with a final cause
4. In variance theory, time ordering among the contributing (independent) variables is immaterial to the outcome.	4. In process theory, time ordering among the contributing events is generally critical for the outcome.

(Mohr, 1982, p. 38)

In section 4.4.1 the meaning of process and process research is described in greater depth. As theorising in a process approach will consist of narratives, stories that describe the sequences of events over time, it is also important to briefly touch upon the differences between narrative knowing and logico-scientific knowing (Langley & Tsoukas, 2010; Polkinghorne, 1988; Tsoukas & Hatch, 2001). Bruner (1986) has distinguished between two modes of knowing, two ways of ordering experience and of constructing reality: narrative knowing and logical knowing. These two modes of knowing do not exclude each other, but differ significantly in criteria and nature.

> *A good story and a well-informed argument are different natural kinds. Both can be used as means for convincing another. Yet what they convince of is fundamentally different: arguments convince one of their truth, stories of their lifelikeness. The one verifies by eventual appeal to procedures for establishing formal and empirical proff. The other establishes not truth but verisimilitude...The types of causality implied in the two modes are palpably different. The term then functions differently in the logical proposition "if x, then y" and in the narrative recit "The king died, and then the queen died." One leads to a search for universal truth conditions, the other for likely particular connections between two events – mortal grief, suicide, foul play. (italics in the original) (Bruner, 1986, pp. 11)*

The narrative form of knowing can establish the connection between experienced events over time (Langley & Tsoukas, 2010). The present research choses this narrative knowing mode, and adds to the understanding of the innovation journeys from the perspectives of

the innovation project leaders by telling the stories about the sequences of events that happened during their journey over the time of this study, and analysing the patterns in and between the investigated case studies.

To explain in less abstract terms the relevance of taking such a process approach and 'plunging' into the processes itself, the previously used metaphor of travelling can help. Suppose a team wants to travel by foot from The Netherlands to France, and, in order to be better prepared, we want to know how they experienced the journey and what they took with them. We could ask them what they will take in their backpacks. We could check what is still there when they arrive in France. Yet, in between many things happened. We would not know. We would not know what they packed or used after they left home, and what they lost or dismissed before arriving in France. We would not know what they used from nature during their travels, such as that the little piece of raw sheep wool, for instance, that they received from a farmer, which helped them to walk with blisters. And we would not know how the sheep wool changed their way of looking at the stuff they took with them. And, as we would not know, we could not ask afterwards, either. And after the journey comes to an end, the blisters are long forgotten, and will not be spoken about spontaneously.

1.7 The audience(s) of this dissertation

The aim of this research, which is to increase our understanding of how innovation project leaders lead their innovation journeys over time, indicates that the audience of this dissertation includes both scholars as well as practitioners. In the following chapters, it becomes clear that innovation processes are grounded in various scholarly communities, and therefore this dissertation covers literature or methodology that may be more familiar to one scholarly community than another. I may sometimes expand on elements that are of interest for some readers, but may seem redundant for others. The same applies for practitioners. The practitioners in the field of innovation will have different educational backgrounds and will probably work in a variety of professional domains.

1.8 The focus and boundaries of this research

Van de Ven and colleagues (1999) have discussed three different phases of the innovation journey (which I will discuss in greater depth in chapter 2). A beginning, where the new idea starts, and the stage is set for the innovation; a middle phase, where the development of the innovation takes places; and an end phase where the innovation either is implemented or the process stops. This is basically the phasing of a theatre play, of a story, with a beginning, middle, and end. Following this analogy, I sketch the boundaries of this research, below.

The *unit of analysis*, the protagonist of this research, is the *innovation project leader*. This research takes the (unilateral) perspective of that innovation project leader, to see the innovation journey through their eyes. As the term 'innovation manager' could be confusing and is in the literature, also used for senior management responsible for the strategic portfolio, I use the term 'innovation project leader' for the project leader responsible for one innovation project.

Literature about the innovation project leader contains contributions about characteristics of a successful innovation project leader, necessary competencies, and skills, and leadership activities. However, from the perspective of one innovation project leader these aspects are more or less a given. One has a certain character and is appointed as a project leader. These variables are not something the innovation project leader leads or steers. As this study is focused on how the innovation project leader leads the innovation journey, I only describe the innovation project leader's characteristics in general terms, where this is relevant for the understanding of the person in their context. The focus is on the activities of the innovation project leader.

The *scenery* is a *multiple organisational* setting; no lone wolfs with skunk works in a garage. The innovation project leader works first among equals in close cooperation with innovation team members, embedded in a *context* of an organisation, a network of participants and stakeholders, and a societal setting of laws, rules, and regulations.

The *desired outcome*s of the innovation journeys in this dissertation lead to a *radical* outcome, an outcome that is not only new to the organisations but also new to the world. During a radical innovation journey, the existing status quo is more challenged than a journey towards an incremental innovation. Moreover, in developing radical new ideas the innovating project has fewer examples of other organisations that have developed a similar idea into an innovation. The innovation project team has to find its way off the beaten track.

The *time frame* of this research is the phase of the innovation journey where the development of the innovation takes place. The focus is on the middle phase between idea and implementation, where the idea is roughly sketched and approved by the executive board, the innovation project leader is appointed, and the project has a project number and a budget code. These last two conditions seem trifling, but in many organisations the existence of these two simple conditions are vital for the birth of a project and the possibility to engage in any activity. This phase roughly ends by the time the outcome is brought to the market and the innovation project leader transfers their responsibilities to the line manager, or the decision is taken to terminate the project. I do not explore the first emergence of the initial ideas, the strategic choices for one or more of these ideas, nor do I investigate the adoption and diffusion of the innovation in the marketplace. The time frame also indicates that this research takes a process view on the

innovation journey, following the journey and investigating how the journey develops and changes *over a certain period of time*.

All innovation project leaders aim to successfully implement their innovations. That is part of the 'desired outcome' and the reward for steering the raft through the white water rapids. One could argue that it is not clear at the beginning of the research if the studied processes are innovation journeys. Van de Ven and colleagues (1999) have pointed out:

> *Innovation outcomes are conventionally considered to occur after development and implementation of the idea. Kimberley (1981) rightly points out that a positive bias pervades the study of innovation. Innovation is often viewed as a good thing because the new idea must be useful- profitable, constructive, or able to solve a problem. New ideas that are not perceived as useful are not normally called innovations; they are called 'mistakes'. Objectively, the usefulness of an idea can only be determined after the innovation process is completed and implemented. In this sense, it is not possible to determine whether work on new ideas will turn out to be 'innovations' or 'mistakes' until a summative evaluation occurs after the innovation journey is completed. (Van de Ven et al., 1999, p. 11)*

To study the innovation journey ex-ante, I define the innovation process as 'the process of developing one or more new ideas to achieve desired outcomes by people who engage in relationships in changing contexts', independently of the implementation and achievement of the outcomes.

1.9 The contribution of this research

With this research I aspire to make several contributions to the understanding of leadership during the innovation journey, both for the academic and the practitioners' communities. In particular, the relevance for academia addresses the processual course of the innovation journey, and how the innovation journey unfolds over time from the perspective of the innovation project leader. As most research is about innovation journeys from a macro or meso-level, this research adds to the understanding at the micro level and from the perspective of the innovation project leader. This research contributes to the understanding of the innovation journey by presenting the narratives of the integral innovation process during the developing of the innovation. It illustrates how the innovation journey consists of various processes that are intertwined and how this affects leadership behaviour and vice versa. The historical narrative of the innovation journeys and the provided narratives about specific episodes illustrate and contextualise the findings for other academics.

The illustration and contextualisation of the investigated innovation journeys are also relevant for the different levels of practice: society, organisation, and individual innovation

project leader. The contribution for an organisation as well as an individual innovation project leader is the understanding of the process as a whole, and how a complex innovation process differs from a standardised project management process. This research is of relevance for the discourse between top management and line management, the controller and the innovation project leader. The innovation project leader could be better prepared for the complexities of the journey and the intertwinedness of the different processes; they could be prepared for expected and unexpected events, by knowing how others manoeuvred past obstacles during their journeys.

This research provides narratives that will add to the understanding of both theory and practice (Van de Ven & Johnson, 2006). The narratives, or the narrative knowledge in this dissertation, will also contribute to bridging the gap between knowledge for academic and practice use. The presented narratives will add to the understanding of the innovation process for society. In particular, the cases concerning health care and cure (Hogewey and Newvac) demonstrate how innovations impact on society.

1.10 The structure of this dissertation

This dissertation is a monograph, a storyline that follows this research journey, from what is already known about the innovation journey and about a narrative repertoire, through capturing the experiences of innovation project leaders in the thick of things, and ending with an analyses and conclusions-sections.

This dissertation contains three parts. Part I, the Pre-visit Preparation, with chapters 1 to 4, sets out the boundaries of this research. This part describes what is already known from the literature, and outlines how the research questions are investigated methodologically. Part II, Into the Wild, contains the chapters 5,6, and 7, which provide the rendering of the empirical studies. Part III, Debrief, containing chapters 8, 9, and 10, looks back on the empirical journeys, compares and concludes.

Chapter 2 explores what is already known about how the innovation project leader leads the innovation journey, and what is already known about roadblocks and U-turns. I review the literature concerning innovation processes from Design Thinking, Project Management, Business and Management Studies and Organisational Studies, and suggest that the innovation process consists of four different processes, embedded in the specific context of the project. The four processes are content development, creativity, group dynamics, and managing project constraints. These four processes are intertwined. As aspects of these processes can be contradictory or conflicting this could lead to ambiguities and tensions. These ambiguities and tensions also arise from unexpected events in the context of the innovation journey. The innovation project leader has to lead these four processes simultaneously and deal with ambiguities and tensions at the same

time. From each of the four processes, the literature describes certain aspects that are covered when each process is unpacked. In this chapter, I present a conceptual framework of the four, intertwined processes. I conclude this literature review with a consideration of the first part of the research question that guides this research.

Chapter 3 develops an understanding of vicarious learning from a repertoire of narratives, and how people learn from the experiences of others. This chapter discusses the functions of a narrative repertoire for anticipatory thinking and analogic reasoning. This chapter concludes with the addition of the second part of the research question.

Chapter 4 describes the overall research methodology of this dissertation. It starts with the research question developed in chapters 2 and 3, and defines the sub-questions that will guide the research. As the aim of this research is to understand how innovation project leaders lead the innovation journey over time, a process approach is chosen. This chapter describes the research design and the choices made. The empirical research includes three case studies. I investigated each case longitudinally over a lengthy period of time (respectively four, 15 and four years), taking a process approach (Langley, 1999; Pentland, 1999; Van de Ven et al., 2000).

Chapters 5, 6, and 7 are the empirical chapters on the three cases studied. The three cases are all three about a radical innovation project. The innovation project leader in each of the three cases happened to stay through the whole period of study, so each of the three cases studied one innovation project leader. The cases cover three different domains (Fast Moving Consumer Goods (FMCG) and consumer durables, long term health care, and pharma), and vary also by the intrinsic reason for innovating (a consumer need, a necessity from a business perspective, and a technological feasibility). Chapter 5 tells the story of how the innovation project leader led the development of 'BeerTender', an appliance for fresh draught beer at home, developed by Heineken in cooperation with their hardware partner Krups (2000-2004). Chapter 6 explores how the innovation project leader led the development and implementation of the care concept for people with severe dementia in the nursing home 'Hogewey', part of the Vivium Care Group (2001-2016). Chapter 7 is about the development of an immunotherapy for people with a specific type of cancer by Newvac (2014-2017). Since this final product-service system is still under development, the name Newvac is a pseudonym. Chapter 8 presents a cross case comparison. I compare how the three innovation journeys unfolded over time, which aspects in each of the four processes the innovation project leaders had to deal with, and how the processes were intertwined. Then, I compare and discuss how the innovation project leaders led the intertwined processes of the innovation journey, and how they chose to intertwine. I zoom in on the use of narrative interventions and narrative constructs in leading the innovation journey, and zoom out by discussing experienced tensions and ambiguities and what made leading the innovation journey so difficult.

As the aim of this dissertation is to increase the understanding in order to be better prepared, presenting the insights about the innovation project leaders and their journey is not the whole story. In chapter 9 I will discuss the purposes of a narrative repertoire in the light of the insights about the innovation journey, and the design choices for writing the narratives. This chapter present 10 narratives, divided into historical awareness, solution, and process overview narratives, which together serve as a prototype for a narrative repertoire.

In chapter 10, I conclude by summarising the answers to the research sub-questions, which together provide an answer to the guiding research question. Then, the present research project is evaluated on the basis of the evaluative criteria that are compiled in chapter 4. Subsequently, the contribution of the present research for both theory and practice is discussed, and the limitations of this research are addressed. I will suggest successive steps for future research. I close with a reflection on the research undertaken.

CH 2 | LEADING THE INNOVATION JOURNEY

2.1 Introduction: the nature of innovating

In this chapter I review what is already known about the innovation journey, and, especially, the innovation journey for radical innovations, and what is known about how the innovation project leader leads this process.

To study how innovation project leaders lead the innovation journey, I defined this innovation process in chapter 1 as 'the process of developing one or more new ideas to achieve desired outcomes by people who engage in relationships in changing contexts'. 'New ideas' in this definition of the innovation journey raises the question: new to whom? New in relation to what? According to Van de Ven and colleagues (1999) this new idea "may be a recombination of old ideas, a scheme that challenges the present order, a formula or a unique approach that is perceived as new by the individuals involved" (p. 9). Therefore, 'new' knows graduations, from a small change to a breakthrough that disrupts a whole industry, or in other words from incremental to radically new (Christensen & Overdorf, 2000).

The innovation, whether this is a product, a service, or a product-service system, could be a change on one, various, or all aspects of the way the organisation defines its business: Product, Market, Technology (Abell, 1980) or the way it is Organised (Boer & During, 2001) (PMTO). Based on a literature study about technological innovations Garcia and Calantone (2002) have pointed out that radical innovations result in discontinuities on both macro level (the market, the world), as well as micro level (new to the firm or new to the firm's customers).

Fagerberg, Fosaas and Sapprasert (2012) have collected all references from 11 handbooks on innovation management and have provided a list of the top 20 contributors to the list of references. The authors have stated that 'innovation studies' is a widely used term. The authors have defined innovation studies as "the scholarly study of how innovation takes place and what the important explanatory factors and economic and social consequences are" (Fagerberg et al., 2012, p. 1132). This definition suggests a theoretical common ground for the study of the phenomenon 'innovation'. However, the innovation process at a micro

level, of one product or project, is studied within at least four different scholarly communities: Design Thinking Research, Project Management Research, Business and Management Studies, and Organisation Studies. The different scholarly communities each have a different background and body of knowledge that they build upon, and, therefore, the lens through which each community approaches the management of innovation is different. Of course, within each research community the views on innovation management and innovation processes have many nuances. Following the analogy of Mintzberg's 10 schools of thought on strategy formation (Mintzberg, Ahlstrand, & Lampel 1998) Bredillet, for instance, has discussed nine schools of project management in a series of editorial columns in the Project Management Journal (Bredillet, 2007[a, b, c, d]; 2008 [a, b, c]). The aim of the next section is to sketch out the broad lines of how these communities regard the management of innovation. Within these views in mind, I highlight the starting point for this PhD research project.

2.2 Different angles, different communities

Although the development of any new product is not synonymous with the development of a (radical) innovative product, NPD in this body of knowledge often refers to some form of novelty. Innovation management within Design Thinking research has its origin in design and industrial design engineering. Where business leaders are more oriented towards a reliable solution for a defined problem, designerly ways are human centred, and focused on the needs and goals of the end-users (Cross, 1982; Martin, 2007). Designers are 'user-centred', meaning that they design innovative solutions for users, for real people; individuals, with their needs and wishes, and behaviour and questions that could lead to unknown and unfulfilled needs and wishes. Much emphasis in NPD research is at the 'fuzzy front end' (Koen, Ajamian, Burkart, Clamen, Davidson, & D'Amore, 2001), the unstructured starting phase of NPD, and focused on creative ways to define and solve the problems at hand. By nature or nurture, designers are at ease with ill-defined problems and finding a viable solution for a problem, or for the problem behind the problem. The creative process of diverging and converging, and participation with various types of stakeholders early on in the process is also part of this research stream. When a developed product is ready for the next phase of production, the designed solution could be communicated visually to those who are going to manufacture the designed product (Cross, 1990).

The project management domain developed over the years after the Second World War (WW-II) into a field with standardised procedures, protocols, strict processes and measurable outputs. In this field, terminology such as planning, control, measures, and meeting predetermined criteria are common. Innovation projects are often described from the perspective of controlling the respective steps in the process. Limited research is undertaken on complex projects with uncontrollable processes (Lenfle & Loch, 2010). An

innovation project meets the definition of a project: “a temporary endeavour undertaken to create a unique product, service or result“ (PMI, 2013, p. 3). The Project Management Institute (PMI) gives the definition that managing such a project requires the application of knowledge, skills, tools, and techniques to project activities in order to meet the project criteria (PMI, 2013). Modern project management stems from the ‘Manhattan Project’, the code name for the development of the first atomic bomb (Lenfle, 2010, 2012). In this project, parallel alternatives were developed, and trial-and-error learning was used, as the pressure was high and the war situation required a swiftly solution. Lenfle and Loch (2010) note that project management today is far away from developing alternatives and trial-and-error learning, where control and following the structured path established at the outset is the norm, and the authors advocate revitalizing the roots of project management in strategic change and innovation projects. Radical innovation processes differ from this standardised and well-structured project approach (Leifer et al., 2000; Lenfle & Loch, 2010; Van de Ven et al., 1999).

Studies of organisations is a broad field of study with roots both in Business and Management Studies, as well as Social Sciences. Innovation is assessed from an organisational or inter-organisational perspective. The Business and Management Studies oriented organisation research stream has an economic focus. This body of knowledge contains research about innovation as a source for business growth. Within this stream topics such as strategy, business model innovation, and the marketing of innovations, are the subjects of research.

The Social Science approach to organisation studies is oriented towards individuals and groups of individuals and how they construct organisational structures, processes, and practices (Clegg & Bailey, 2008). In this field, Organisational Development and Organisational Change grew as a topic of study in the decades after WW-II. (Szabla, Pasmore, Barnes, & Gibson, 2017) I use the term ‘Organisation Studies’ to refer to this field of enquiry. Within Organisation studies a growing interest has emerged in innovation process studies, which began with the MIRP. This was an extensive research programme of 14 longitudinal studies, started in 1982, and carried out by 15 faculty members and 19 doctoral students from eight different academic departments and five schools in Minnesota (Van de Ven et al., 2000). The MIRP resulted in a number of papers that influenced the development of the field of Organisation Studies. Since organisations are built by and with people, or as Langley and Tsoukas (2017, p 3) have noted “emerge from the coherent and constrained interaction of several individuals”, process organisation studies research people in organisations and their interactions.

I draw on these four bodies of knowledge to build a conceptual framework of the process of the innovation project leader leading the innovation journey. First, I define the basic aspects of leading the innovation journey, followed by an in-depth exploration in the second part of this chapter.

2.3 Planning and progress of the process

According to the literature, how does the process of innovation evolve over time? The innovation process is often depicted as an orderly process with different process steps. Various authors have provided an overview of existing innovation process models. Trott (2008) has given an overview of the types of models and has described seven categories of innovation process models: departmental stage models (where different departments are responsible for one stage of the process); activity stage models (where activities are developed in parallel or in sequence); cross-functional team models; decision stage models; response models; and network models.

The project life cycle (PMI, 2013) is an example of an activity stage model (fig. 2.1). The Project Management Institute (PMI) defines these activities as processes. A process in this vocabulary is "a set of interrelated actions and activities performed to create a pre-specified product, service, or result. Each process is characterized by its inputs, the tools and techniques that can be applied, and the resulting outputs" (PMI, 2013, p. 3). Five different stages or process groups are identified by PMI: initiating process group, planning process group, executing process group, monitoring process group, and closing process group. These different process groups interact with each other, have overlapping activities, and the output of one process could be the input for another. Figure 2.1 shows the level of overlap at different moments in time.

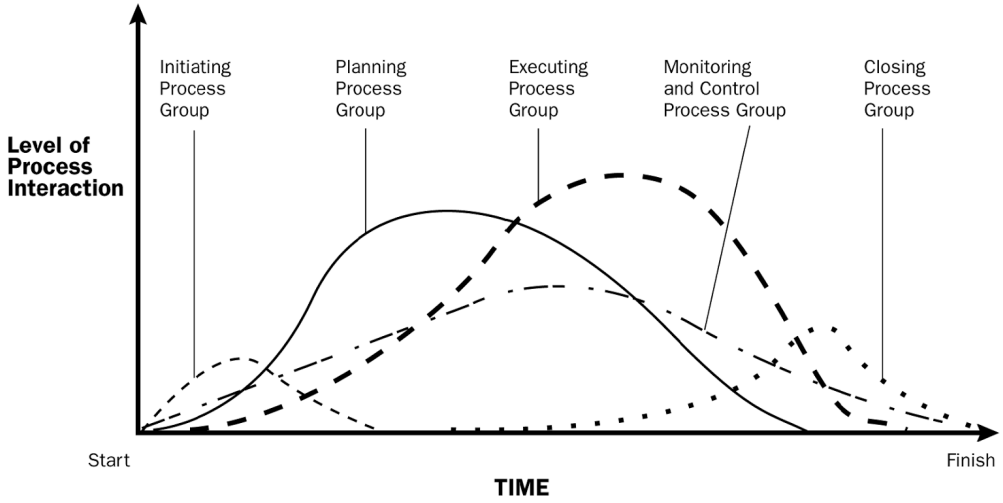


fig. 2.1 Process Groups Interact in a Phase or Project (PMI, 2013, p. 50)

The stage-gate model of Cooper, as shown in Figure 2.2 (Cooper, 1990) or the Delft Innovation Model, depicted in Figure 2.3 (Buijs, 2003, 2012; Buijs & Valkenburg, 2005) are combinations of activity stage and decision stage models. Cooper's stage-gate model evolved over the years (Cooper, 2011) from a linear sequential model into a linear model with iterative loops to collect feedback from users. Cooper's (1990, 2011) starting point is the discovery and following idea generation. After a business case is assessed positively (a go or kill decision at gate 3) the process continues with the actual development. After testing and validation, the product is launched (a go or kill decision in gate 5). The process ends with a post-launch review of the product and the process.

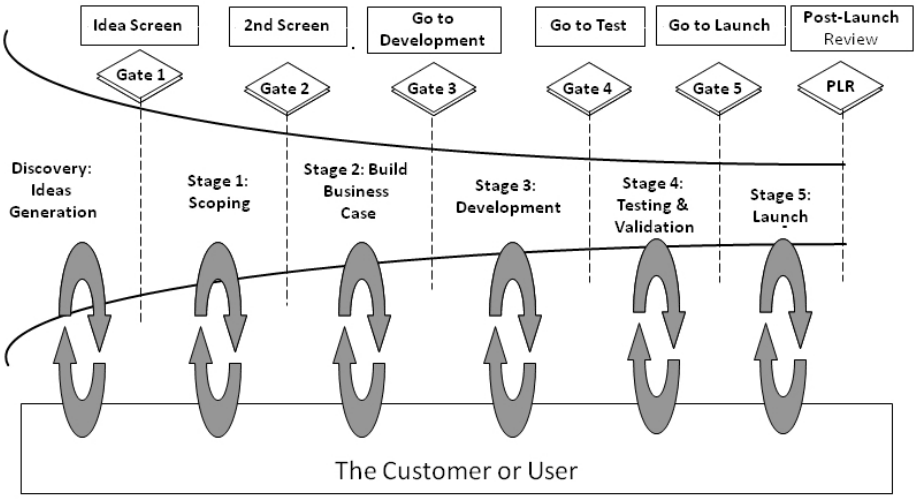


fig. 2.2 Five-stage Idea to Launch Process (Cooper, 2011, p. 20)

Where the Cooper stage-gate model of innovation is a linear sequential model (Cooper, 2011), the Delft Innovation Model (Buijs 2003, 2012; Buijs & Valkenburg, 2005) is a circular (perpetual) sequential model that describes the innovation process in five phases in time: strategy formulation, design brief, development, market introduction, and product use. Since this whole process is a circle, using the new product results in new needs and new options arise, and the process takes a new beginning. The circles are activities, the squares outcomes.

Buijs (2012) has suggested two essential gaps that are not shown in a stage gate model like the Delft Innovation Model. The first gap is the process of iteration. For instance, when an idea, a suggested problem formulation, or solution fails the evaluation, the process starts all over again. Buijs has emphasised that no innovation process exists without these iterative loops. The second gap Buijs has pointed out that is not shown in the model is the

interrelatedness of activities during the process: activities in stage 2 could influence activities in later stages, and even in earlier stages. From the innovation project leader's perspective this means that every step has consequences and could have implications for future and past decisions and the innovation project leader has to keep in mind past, present, and possible futures.

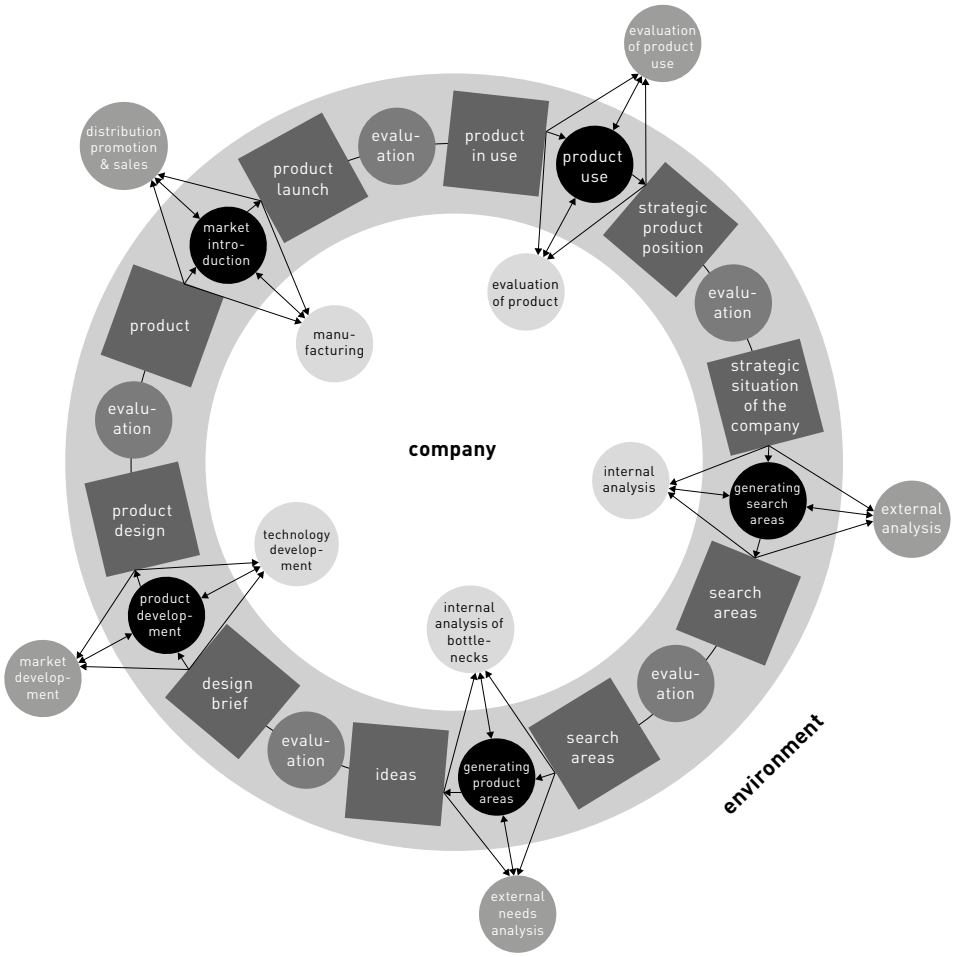


fig. 2.3 Delft Innovation Model (Buijs & Valkenburg, 2005)

The differences in focus of the models of Cooper (2011) and Buijs (2012) are indicated in how the authors label the stages. Where Cooper starts with a discovery, Buijs' model starts with a strategy formulation; and as Cooper considers the business case assessment as essential before development, Buijs' decision to develop is made after a 'design brief'.

Note that this is not a matter of different names but is illustrative of different perspectives. Cooper takes a project management oriented perspective, where Buijs takes a Design Thinking perspective. The gates in Cooper's model are clear decision points with kill or go decisions, where Buijs acknowledges the interrelatedness of the phases. Especially when the process is well on its way and a product is developed, it is unlikely that a decision in the later gates of Cooper's model would lead to an actual kill of the process. In practice the process would most likely take a step back and modify the product based on the arguments that led to the 'kill' decision. The difference between the graphic representation of both models is more than simply visual. Where Cooper's model is linear and stops after introduction, Buijs wants to emphasise the perpetual character of the product innovation process in a circular model. Products are used by users in a context and every intervention by a new product has consequences for new needs.

Van de Ven and colleagues (1999) have demonstrated that stage-gate models do not resemble the reality of the 'messiness' of a complex innovation process. In the MIRP-studies 14 innovation projects are investigated, and the authors describe the process from project and organisational perspectives. The researchers used a five concept framework to study how and why innovations developed over time from concept to implementation' (p. ix). The five concepts were (1) how new ideas were developed to achieve (2) outcomes by (3) people who engaged in (4) transactions with each other in changing organizational (5) contexts (p. 6) Van de Ven and colleagues (1999) observed that these orderly, rational, processes were not in fact how the reality emerged. The underlying pattern the authors found in the different innovation journeys of the MIRP was a nonlinear cycle of divergent and convergent activities as shown in Figure 2.4); an emerging process with shocks, setbacks, and shifting criteria.

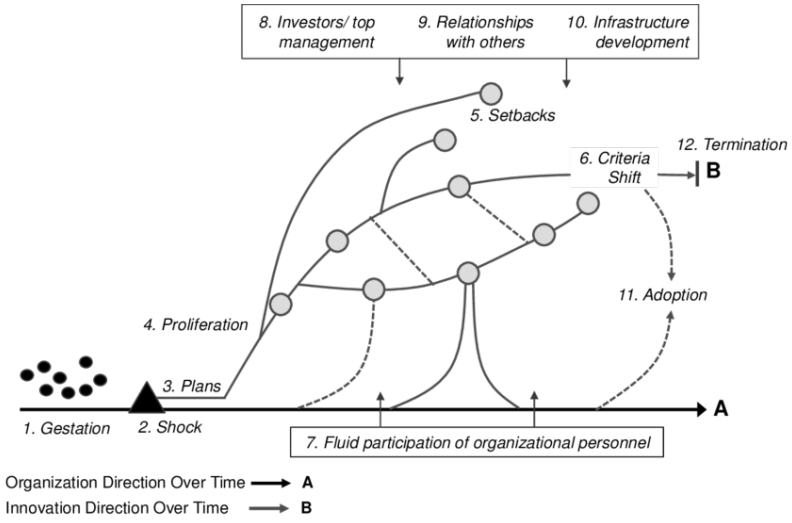


fig. 2.4 The Innovation Journey (Van de Ven et al., 1999)

Van de Ven and colleagues (1999) have named three phases: (I) the gestation or initiation period, in which activities and events occur that set the stage for launching efforts to develop an innovation (II) the developmental period in which concentrated efforts are undertaken to transform the innovative idea into a concrete reality; and (III) the implementation/termination period in which the innovation is adopted and institutionalised as an on-going programme, product, or business, or it is terminated and abandoned.

The observation of Van de Ven and colleagues (1999) concerning this less orderly reality concurs with the study of Griffin and colleagues about serial innovators (Griffin, Price, Vojak, & Hoffman, 2014; Vojak, Price, & Griffin, 2010).

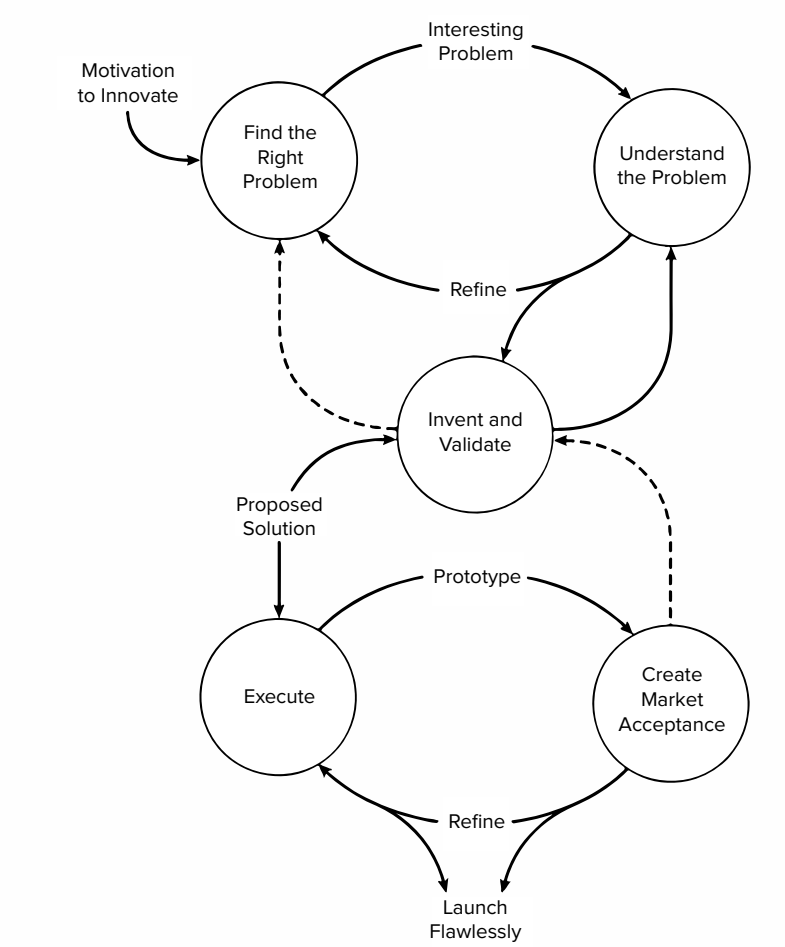


fig. 2.5 The hourglass model of how serial innovators innovate (Griffin et al., 2014, p. 1366)

Griffin and colleagues (2014) have identified 19 individuals who developed and commercialised multiple radical innovations for their organisations. They have interviewed these innovators retrospectively (Griffin et al. 2014). The results have indicated that, in contrast with most innovation models, the serial innovators did not follow a linear approach at all; the innovators learned that they sometimes had to take a step back, refine their understanding, reframe a problem, or even move to seeking a new problem when the initial problem could not be solved. Griffin and colleagues have developed a model for how these innovators approached the tasks of developing a radical innovation, which the authors name the hourglass model (fig. 2.5). The first phase is concerned with finding and understanding the problem; the middle phase is the conceptualising of the idea and validation by the market; the third phase is the execution and the preparation of the market, which should converge in a refined product that can be 'flawlessly launched'. The first phase could be seen as a divergent-convergent part of the model, or as two different, yet connected processes; the two aspects of the end phase seem to be two parallel and connected processes. However, the iterations between different aspects, and feedback and feed forward loops that are inherent to such a process, seem to be more important than different phasing.

Sanders and Stappers (2008) have offered a model for a process of designing a new product or service in cooperation with non-designers. The authors have used the sketch in Figure 2.6 as a representation of this design process. The first part in this design process is the fuzzy front end. This is the part in the process where many activities are performed to explore users and context. The authors have noted that the fuzzy front end is really fuzzy and chaotic. The fuzziness has even grown, because designers move towards, and create in cooperation with the people they design for, although these users are not directly trained in designing (fig. 2.6). Sanders and Stappers have noted that the fuzzy front end is followed by a 'traditional design process', which in the visual representation is sketched as a meandering process line that flattens towards the end of the process.

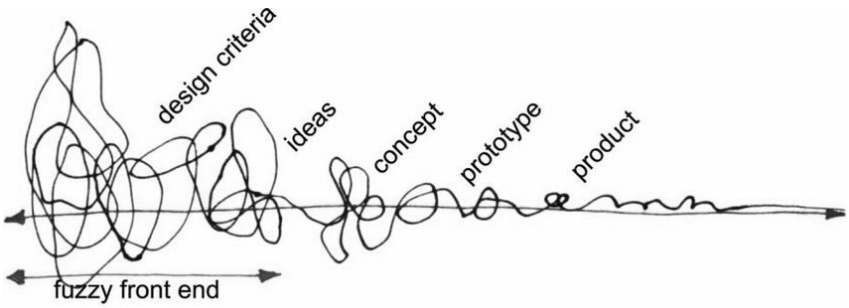


fig. 2.6 Design process (Sanders & Stappers, 2008, p. 6)

Although the presented models for the innovation process vary from orderly, circular, to fuzzy, the various authors have used a phasing of three to five phases for the innovation process, which could be considered as beginning, a middle phase, and an end: a beginning, where the new idea starts and the stage is set for the innovation; a middle phase, where the development of the innovation takes place; and an end phase where the innovation either is implemented or the process comes to a stop. The boundaries around and between the phases differ. Cooper (2011) has positioned the fuzzy front end outside the innovation process, where Buijs (2003, 2012) Griffin et al. (2014), and Sanders and Stappers (2008) have incorporated the fuzzy front end of innovating. However, these models all try to capture the reality of the innovation process by abstracting and reducing too much detail. “There is probably no one best way to modelling the product innovation process“, Buijs (2003, p. 93) indicates. Innovators behave in an iterative way, moving back and forth, and the different models in different levels of detail could serve as points of reference for reflection (Buijs, 2003).

2.4 Complex problems in a complex context

The process of radical innovation is a complex process. Organisational and societal problems differ from linear problems, which are definable, separable and which may have a discoverable solution. Complex organisational and societal problems are often ‘wicked’. Wicked problems, a term coined by Rittel and Weber (1973), are “a class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values and where the ramifications in the whole system are thoroughly confusing.“ (Rittel cited in Buchanan, 1992, p. 15). In these complex settings, conditions are dynamic, as the whole is greater than the sum of its parts, and conditions are continually changing; (minor) actions could ignite unexpected (disproportional) reactions and changed conditions in the system (Klein & Klinger, 1991: Snowden & Boone, 2007). With hindsight, a complex system could look quite orderly, but Snowden and Boone (2007) have emphasised that hindsight does not lead to foresight.

A complicated context can make the whole either complex or complicated (Glouberman & Zimmerman, 2002; Kurtz & Snowden, 2003). This distinction between the two words, complex and complicated, although they are sometimes used as synonyms, is crucial for the understanding of the innovation process (Glouberman & Zimmerman, 2002; Plsek, 2001; Sargut & McGrath, 2011; Urry, 2005). Glouberman and Zimmerman (2002) have explained the distinction between complicated and complex with the metaphor of three different concepts: a recipe, a man to the moon, and raising a child. A simple problem can be to cook a simple cake. Following a recipe may require an understanding of the terminology and techniques, but once understood, the end result is rather predictable. Therefore, the recipe is essential. Expertise is not necessary, although this can increase success rates or smoothen the process. A *complicated* problem, such as sending a man to

the moon -and bringing him back safely- requires high levels of expertise in a variety of fields. All components in themselves are known or knowable, definable and could be catalogued, as could the interactions between the components (Snowden, 2002). As rockets are similar in critical ways, the success of the first component increases the success of the following component. Formulae and protocols are critical and necessary. *Complex* problems are illustrated by the process of raising a child. Having experience of raising one child is no insurance for success with the next. Formulae and protocols have limited applicability. Sargut and McGrath (2011) have stated that three properties determine the complexity of an environment: the number of potentially interacting elements in the system, how connected those elements are, and the heterogeneity of the elements. The greater the number of elements, the interdependence, and the heterogeneity, the greater the complexity. (Sargut & McGrath, 2011). What began as a complicated problem, could become a complex problem, due to an unexpected event, as Snowden and Boone (2007) have illustrated with the example "Houston, we have a problem".

> *There is a scene in the film Apollo 13 when the astronauts encounter a crisis ('Houston, we have a problem') that moves the situation into a complex domain. A group of experts is put in a room with a mishmash of materials – bits of plastic and odds and ends that mirror the resources available to the astronauts in flight. Leaders tell the team: This is what you have; find a solution or the astronauts will die. None of those experts knew a priori what would work. Instead, they had to let a solution emerge from the materials at hand. And they succeeded. (Conditions of scarcity often produce more creative results than conditions of abundance.) (Snowden & Boone, 2007, p. 74)*

The development of the innovation is not a stand-alone process but is embedded in a larger system. In a complex system, many participants are involved in parts of the process in the domain; the knowledge is dispersed over these entities, and many actors have to participate to bring existing knowledge and possible alternatives together (Brown & Eisenhardt, 1997; Dougherty & Dunne, 2011; Garud, Gehman, & Kumaraswamy, 2011; Snowden & Boone, 2007). Garud and colleagues (2011) have used the metaphor of cooking a stew to explain the complexity of the process. The ingredients of the stew are not homogeneous and need to be adjusted or adapted to enable mixing the stew. And the stew is not made by one master chef directing his brigade to perform activities in the right order and the right timing, but by many chefs. Instead, the stew of ingredients is built up by many micro-level interactions of many people from which the mixing and cooking of the stew emerges. And as with all good stews, the end result is a mix that is more than the individual ingredients; the whole is more than the sum of the parts (Snowden & Boone, 2007). Due to this 'stew' of many actors, the dispersed knowledge, the diversified worldviews, the changing relationships, the actions, interactions and re-actions could be unknown or unpredictable (Dougherty & Dunne, 2011; Dunne & Dougherty, 2015; Leifer et al., 2000; Loch, Solt, & Bailey, 2008). The process of innovating is most likely to also have an unpredictable course and the metaphor used by Van de Ven and colleagues of journeying on an uncharted river encompasses this same image.

2.5 Content – context – process

The innovation project leader has to lead this complex process to deliver the innovation, the content. As with all transformations or changes in an organisation, Pettigrew (1987) has emphasised that formulating and delivering the content includes also managing both the process and the context. Pettigrew has visualised this in a simple triangle framework as shown in Figure 2.7.

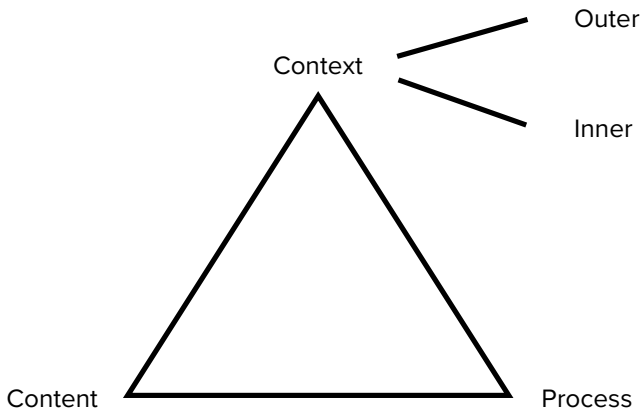


fig. 2.7 The Content-Context-Process framework (Pettigrew, 1987, p. 657)

The content is 'what' is developed. The process contains all actions, reactions, and interactions developed to deliver the content, and is 'how' the content is developed. According to Pettigrew, the context could be divided into the outer context, outside the firm, and the inner context inside the organisation. The context provides clues to 'why' the organisation innovates. Pettigrew has indicated that a change process, which also applies for an innovation process, is not a rational analytical process, but rather:

> *an iterative, multilevel process, with outcomes emerging not merely as a product of rational or boundedly rational debates, but also shaped by the interests and commitments of individual and groups, the forces of bureaucratic momentum, gross changes in the environment, and the manipulation of the structural context around decisions. (Pettigrew, 1987, p. 658).*

In order to develop an understanding of the endeavour of the innovation project leader in mixing a stew, or journeying the uncharted river, the process of innovating is further examined below, including what the different bodies of knowledge describe as the *aspects* of this innovation content-context-process.

2.6 Facets of innovating and a conceptual framework

Brown and Eisenhardt (1995) have investigated three streams of literature concerning the product development process: problem solving, knowledge, and decision making; planning and progress of the process; communication, competencies, and skills. Based on their literature study, the authors have concluded that the speed and effectiveness of the product development is driven by *knowledge* and the way this is available for problem solving, as well as *resources* available for the team. The fit of the new product with both organisational competencies and market needs requires a clear vision. The team composition of cross-functional teams and communication internally and with outsiders are pivotal for success (Brown & Eisenhardt, 1995).

Van de Ven and colleagues (1999) have described the innovation journey in terms of three processes: a learning process, a leadership process, and a process of managing relationships. The innovation journey can be seen as *a learning process* concerning which actions lead to which outcomes. This is both an 'unlearning' process —"the origination of true novelty should begin with profound ignorance"— and a process of learning by discovery. After all, "we cannot know whether we will like a new flavour of ice cream until we have tried it" (Van de Ven et al., 1999, p. 93) . When the innovation journey is described as *a leadership process*, Van de Ven and colleagues have found four distinct leadership roles: the institutional role that sets structure and settles disputes; the critic role, to challenge investments, goals, progress; the sponsor/mentor role that advocates and champions, coaches and advises; and the entrepreneur role, that manages the innovation unit. The third perspective that Van de Ven and colleagues have taken is *managing relationships*, specifically, the inter-organisational relationships. The authors have described how complex these relationships are in the progress of diverging and converging during the innovation journey. Although learning, leading, and managing relationships is all about people, the authors provide a rational description of the process. Or, as Amy Edmondson has reviewed the contribution of Van de Ven and colleagues: "The authors' treatment of organizational learning is abstract and relatively free of messy human behavior at the micro level - in conceptualizing organizational learning, they take their cue from James March, not Chris Argyris. Emotion, conflict, and interpersonal interaction are missing" (Edmondson, 2000, p. 886).

Buijs (2007) has distinguished four processes during the innovation journey that are different, parallel, competing, and conflicting processes, which all occur at the same time. The innovation project leader, Buijs has argued, has to combine these processes. Buijs has labelled these four processes as: the innovation process, the group process, the creative process, and the leadership process. Developing the outcome —the innovation— is Buijs' first process. The label '*innovation process*', is a rather confusing term as one part of the process carries the same label as the whole. Based on the Delft Innovation Model (Buijs & Valkenburg, 2005; fig. 2.3), Buijs has explained that in the reality of an innovation process,

the progress in time has more loops of iterations in and between the different stages. The second process Buijs has addressed is the *group process*. Buijs has emphasised the importance of team composition and the role of multidisciplinary team members as linking pins to their own disciplines in the organisation. And with the expanding innovation processes to multiorganisational projects, this process complexity increases, as external partners have their own objectives, history, management styles, and ideas about success and failure. Buijs has labelled the third process as the *creative process*, a non-linear cycling process of divergent and convergent phases to solve problems creatively. Buijs' fourth process is the *leadership process*, where the innovation project leader differentiates from team members:

> *If the team is feeling down, then the leader should be optimistic; if the team is overly enthusiastic, then the leader should be cool. If the team has fallen in love with an extremely funny idea, then the leader should point out which were the original objectives of the innovative task. If the team rejects all of the ideas and they focus too much on feasibility, then the leader should provoke them to dream and to let at least some of the wild ideas be considered. (Buijs, 2007, p. 208).*

The leader is constantly switching between two different leadership styles, both a generative mode of leadership and a focusing mode of leadership (Hohn, 1999).

Pons (2008) has examined aspects of an NPD process from a project management perspective, based on the Project Management Body of Knowledge (PMBOK) (PMI, 2013). Pons has described activities, divided into nine facets: the project management integration, and the underlying management of scope, of time, costs, quality, HR, communications, risk, and procurement. The author has stated that the structured project management approach is useful for managing an NPD-project, although there are some limitations. Pons has acknowledged the omission in the PMBOK of coping with the uncertainties of the NPD-project. In project management complex problems are decomposed in smaller subprojects, and as these sub-problems in NPD are not independent of each other, this could be one of the reasons the application of project management methods in NPD is sometimes difficult (Pons, 2008).

The aforementioned contributions, grounded in four different scholarly domains, each take a different perspective on the innovation journey and differ on various aspects of the process which an innovation project leader has to deal with, although they all emphasise that the innovation project leader has to lead different processes at the same time. I unpacked the four main articles into aspects, and grouped these into four categories as four underlying processes of the innovation journey (Table 2.1).

The contributions of Brown and Eisenhardt (1995), Van de Ven et al. (1999), and Buijs (2007) have all incorporated important aspects of leading the innovation journey that could

be grouped into three processes, that are embedded in a specific context:

- developing the innovative outcome incorporates a knowledge component that is necessary to enable development and the loops of learning,
- the non-linearity and the creativity of divergence-convergence cycles and loops,
- the dynamics of people in the core team and the dynamics and communication with all stakeholders close-by and at distance,

It should be noted that in these three contributions by Brown and Eisenhardt (1995), Van de Ven et al. (1999), and Buijs (2007), managing the project constraints is underexposed, while these constraints are emphasised in the Project Management literature (Pons, 2008). Literature also has demonstrated that managing project constraints such as scope and quality criteria, budget, and time, which is also referred to as the 'iron triangle' of project management (Ahern, 2013; Atkinson, 1999), is essential, yet difficult in complex projects (Flyvbjerg, Bruzelius & Rothengatter 2003; Flyvbjerg 2014; Giezen 2012; van Marrewijk, Clegg, Pitsis, & Veenswijk, 2008).

Table 2.1 brings these four core articles from the four scholarly domains together and summarises the main aspects.

The facets of the innovation process are labelled into four processes: the content development process, the creative process, the group dynamics process, and the project constraints process. The facets mentioned in each of the four core papers are grouped under one of these processes.

Table 2.1 Overview of aspects of innovation process from different scholarly domains

	CONTENT DEVELOPMENT process	CREATIVITY process	GROUP DYNAMICS process	PROJECT CONSTRAINTS process
Brown & Eisenhardt (1995); model of factors affecting success NPD based upon literature study journal: AMR	gain information from diverse viewpoints; problem solving strategies; planning or flexibility (depending level uncertainty); visioning;	improvisational thinking; iterating;	cross funct. teams; group processes, esp communication; seek senior support;	lobby for resources;

Van de Ven et al. (1999);14 longitudinal case studies in MIRP book: OUP	knowledge acquisition through searching and noticing;	learning by discovery; learning by testing;	balancing opposing leadership roles; managing relationships;	lobby for resources; protect project from competition for the scarce resources
Buijs (2007) 4 intertwined aspects of innovation process based upon lit. study journal: CIM	Delft Innovation Model with internal, external and content activities; stage decisions and evaluation;	creative problem solving; diverging; cluster and clean up; converging;	building multi discpl and multi personality team; via team build acceptance in org; forming, storming norming; generative vs focused leadership;	
Pons (2008) examines intersection of NPD and proj mgt literature (PMI's PMBOK) journal: PMJ	scope mgt; decision making at stage gates; quality mgt; risk mgt;		HR mgt: team composition; collaboration; confl resolution; comm. mgt defined as information flow to all stakeholders;	time mgt; cost mgt; procurement mgt of goods & services;

Assessing this table with Pettigrew's (1987) lens of content, context, and process, the context aspect is not specified. The context aspects, as Pettigrew has described, is the reason *why* the organisation is innovating. The four processes as described above, are embedded in this context.

Leading the innovation journey is the activity of steering this process, with all actions taken, or deliberately not taken, in the course of the process. This combines leading each of these four processes, as well as the process as a coherent and consistent whole, embedded in a specific context. The innovation project leader has to lead the innovation journey by *developing* the content, *stimulating* creativity, *guiding* group dynamics, and *managing* project constraints, as visualised in the conceptual framework in Figure 2.8. This conceptual framework gives an abstracted conceptualisation of the combined and intertwined processes the innovation project leader has to lead over time. I followed Jabareen (2009) and labelled this as a 'conceptual framework'. Jabareen (2009) defines a conceptual framework as "a network, or a 'plane', of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena" (p.51). The

author suggests as main features of a conceptual framework: the concepts that are brought together in the constructed conceptual framework each play an integral role of that construct; a conceptual framework does not provide a causal/analytical setting but an interpretive approach to social reality; the framework should provide understanding, by providing 'soft interpretations of intentions'; these conceptual frameworks are not deterministic, and therefore not intended nor enabling to predict an outcome.

To illustrate a process, something that is happening over time, in a static, two-dimensional model, is challenging. The innovation process could be imagined as a big rope, made out of four strands. This conceptual framework is the cross section of that rope. The four strands, (the four underlying processes) are twisted and bound together in one intertwined rope, like a marine rope. The strands are not necessarily equal in thickness compared to each other, nor has each strand a uniform thickness throughout the rope, but all strands are part of the rope all the time. The context in which the rope is operated, will influence how easily or not the rope can be followed or pulled in.

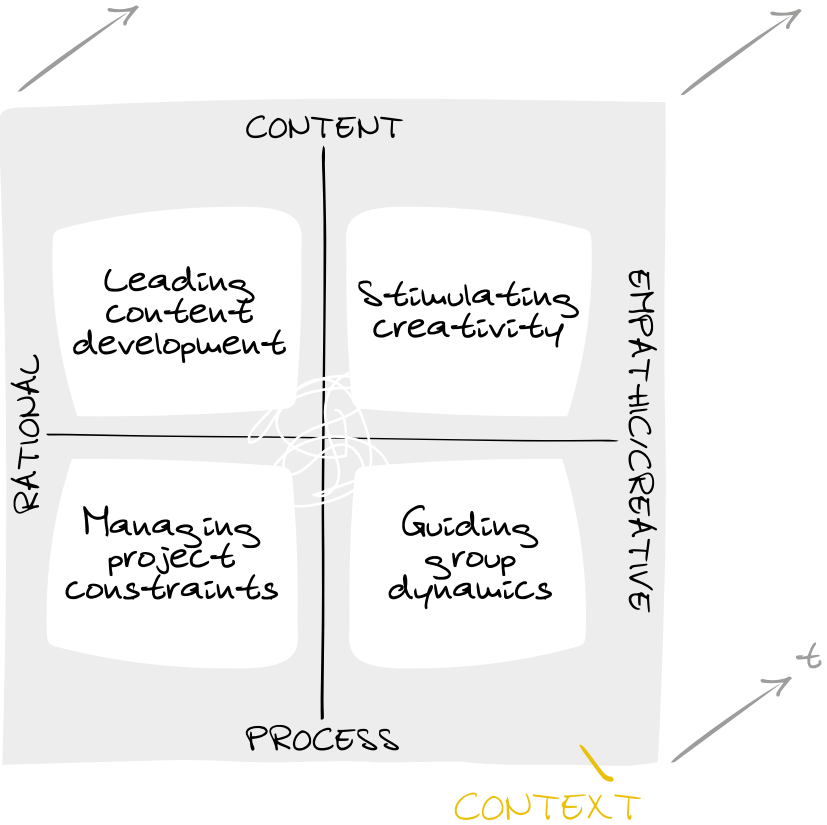


fig. 2.8 Conceptual framework

The vertical axis is labelled with a ‘content’ and a ‘process’ side. In developing the content and stimulating the creative process the innovation project leader has to deal with issues regarding the ‘what’ of the innovation, where guiding group dynamics and managing project constraints deals with the ‘how’ side of the innovation process.

The horizontal axis is labelled with a ‘rational’ and an ‘empathic/creative’ side. Developing content and managing project constraints are rational, analytical, logical processes: the ‘hard’ side of processes. Stimulating the creative process and guiding the group dynamics are the ‘soft’ side: non-rational, empathic and creative. It is not a coincidence that the rational processes are plotted left, and the empathic and creative processes are on the right side of this model. The left side of the human brain controls language, logic, and analytic thought, where the right side of the human brain, in general, specialises in emotional activities (MacNeilage, Rogers, & Vallortigara, 2009).
These four processes are embedded in a context (the substance that surrounds the four processes), and moving over time towards a point in the future. The aspect ‘time’ is essential to illustrate that each of these four processes, embedded in the context, are not a static set of aspect, and will develop and change over time.

2.7 Four processes unpacked

The conceptual framework (fig. 2.8) contains four interconnected processes, developing over time. In the literature concerning the innovation journey, none of these four processes are, in themselves, new. Many authors have published to add to the understanding of aspects of one of these four processes. In the next sections I will unpack each process and review the literature on each of these four processes in greater depth.

2.7.1 CONTENT DEVELOPING PROCESS

The problems that have to be solved can be ‘wicked’ (Rittel & Webber, 1973) or ill-defined. The activities cannot be articulated or derived from experience, and capabilities to understand, frame, and solve the wicked problems do not necessarily existent or can be defined (Lenfle & Loch, 2010).
Wicked problems that have to be solved, in a complex context, cannot be solved by expert knowledge. The necessary knowledge for an innovation project leader is not only explicit knowledge (Nonaka, 1991) but also tacit knowledge (Nonaka, 1994; Nonaka & von Krogh, 2009; Polanyi, 1966). Tacit knowledge is the knowledge that is difficult to articulate in words or visuals. “We know more than we can tell“ as Polanyi, the founding father of the concept of tacit knowledge stated (Polanyi, 1966, p. 4). Explicit knowledge, as in guidelines, blue prints, or best practices, does not provide answers to solve problems in a different context and with a different complexity (Snowden, 2002; Snowden & Boone, 2007). Since not only the problems and the context are complex, the knowledge in this

perspective is complex as well. Endres and colleagues have noted, based on Polanyi, that "complex knowledge involves subjective insights, intuitions, hunches, and know-how" (Endres, Endres, Chowdhury, & Alam 2007, p. 92). Davenport and Prusak have offered a useful definition for the kind of knowledge that an innovation project leader could use to be prepared: "Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information." (Davenport & Prusak, 1998, p. 5)

To develop the content, design thinkers will usually begin by trying to gain knowledge and understanding about the behaviours and wishes of users in their context; engineers in a technical innovation journey have a close look at the technological possibilities and constraints; and entrepreneurs will call for a business case (Abell, 1980; T. Brown, 2009; Buijs, 2012). In this perspective the Design Thinking model of IDEO's Tim Brown, as shown in fig. 2.7, and the terminology of desirability, feasibility, and viability, is more useful than the earlier mentioned Product, Market, Technology (Abell, 1980), since this terminology incorporates the questions: Who would like to have it? Could we make it? And could we make it work in terms of money and resources? These questions are also applicable for non-technological innovation journeys, such as services, or for innovations where the aim is not making substantial profits. The fact that Tim Brown (2009) has emphasised that these "*constraints should be resolved*" (p. 18) or better that these three elements should be "*in a harmonious balance*" (p. 18) ([italics in original] indicates a potential tension between the three aspects.

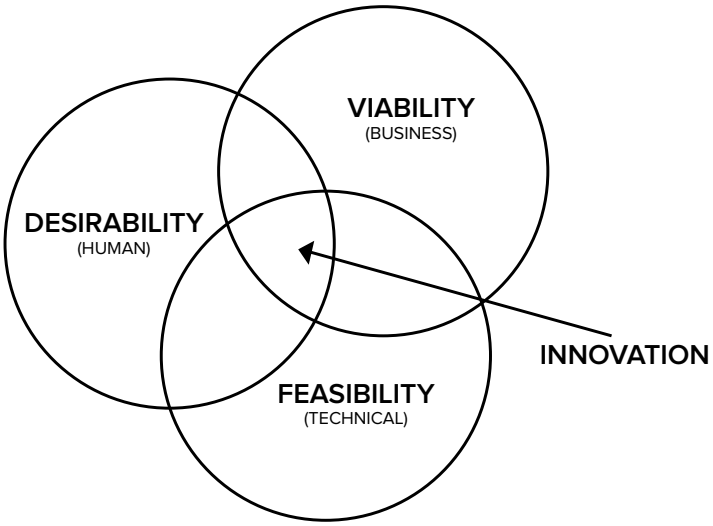


fig. 2.9 Design Thinking (IDEO, 2009)

The content problems arise and have to be solved within a certain context. Innovations are after all not stand-alone activities, as Rip (2012) has noted, but connected with and part of processes in organisations, technologies and society (T. Brown, 2009; Buijs, 2012; Rip, 2012). The context could provide other problems or constraints that have to be incorporated in the solving of the problem.

Some problems are not recognised as potential problems —the unknown unknowns— often abbreviated to 'unk unks'. This expression became famous in a speech by Secretary of Defence Rumsfeld, during a U.S. Department of Defence briefing in February 2002.

> *[T]here are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns -- the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones. (Rumsfeld, 2002)*

Where known unknowns are not always expressible or articulated, but accessible and potentially relevant, unk unks are not expressible, not articulated, nor accessible, but still potentially relevant. In innovation projects some of the unk unks are readily apparent (Loch & Kavadias, 2008; Ramasesh & Browning, 2014; Sommer & Loch, 2004; Sutcliff & Sawyer, 2013). The point is that, the innovation project leader has to deal with both known unknowns and unk unks, within the known knowns that unk unks could ruin a project.

2.7.2 THE CREATIVE PROCESS

Within the content development process and between the desirable, feasible, and viable aspects, there are a variety of problems that have to be solved. Or better: they have to be recognised, framed, defined, and solved. To solve problems creatively is a process of coming up with something novel and appropriate (Amabile, 1988; Amabile & Khaire, 2008). 'Creative Problem Solving' (CPS) is also 'a method, a system for approaching a problem in an imaginative way resulting in effective action' (Isaksen, Dorval, & Treffinger, 2011).

The stages of this method in the version proposed by Isaksen and colleagues (2011) are

- Understanding the Challenges
- Generating Ideas, and
- Preparing for Action

This is both a repetitive divergent and convergent process. In the stage of 'understanding the challenge', the question is what challenge is going to be worked on, and what data are going to be explored to understand that challenge (divergent) and to frame and select the problem (convergent). The 'generating ideas' stage is a following (divergent) stage. Once the most promising ideas are selected, the 'preparing for action' stage narrows down into developing solutions, and preparing for action.

Some authors have stressed the point of an in-between clustering and cleaning up step between divergent and convergent activities (Buijs, Smulders and Van der Meer 2009; Kaner, Lind, Toldi, Fisk, & Berger, 2011; Tassoul & Buijs, 2007) .Kaner and colleagues (2011) named this in-between step 'the groan zone', where group members have the uneasy task of integrating new and different ways of thinking with their own thinking, and decide about the next steps (Kaner et al., 2011).

Dynamics of Group Decision Making

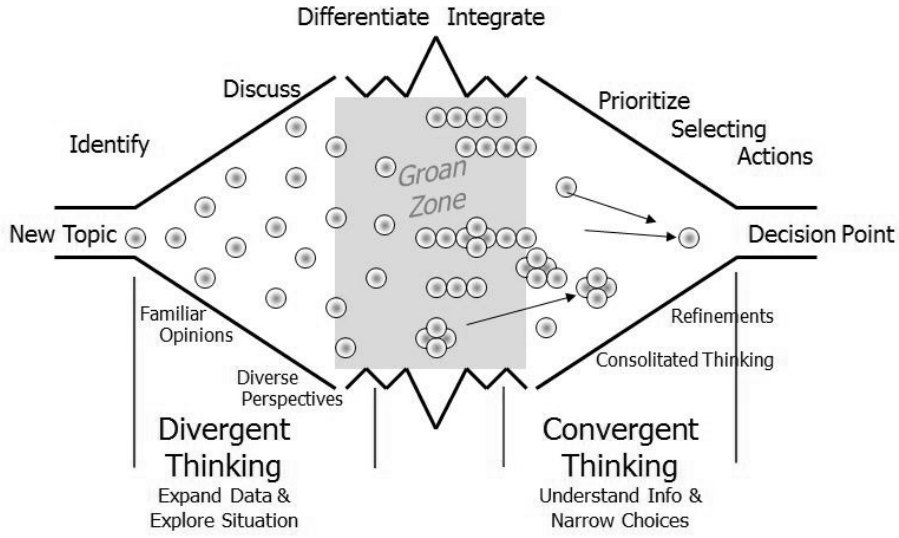


fig. 2.10 Divergent and convergent thinking (Kaner et al. 2011, p. 20)

As said, problems can be ill defined and 'wicked', and the innovation team has to make sense of these problems before they can be solved (Weick, Sutcliffe, & Obstfeld, 2005). New problems are likely to be connected with what is already known, with the mental models and the frames that already exist. Understanding and making shared sense of an ill-defined problem, also means that the innovation team has to reframe the problem at hand (Paton & Dorst, 2011).

To understand and formulate the wicked problems of the complex innovation process, and to guide the diverging and converging process towards possible solutions, the team needs be creative and find solutions off the beaten track (Grint, 2008; Kolko, 2010). Coming up with novel ideas takes time and effort to stay out of what Isaksen and colleagues label 'the common response zone' (Isaksen et al., 2011). The innovation project leader must both inspire the team to diverge and stimulate creativity to find solutions off the beaten track, as well as lead the team towards converging choices (Oliver, Heracleous, & Jacobs, 2014).

2.7.3 GUIDING THE GROUP DYNAMICS PROCESS

Group dynamics begin with the initiation of a team. Team composition and team structures are essential aspects of group dynamics in an innovation project (Barczak & Wilemon, 1988; Clark & Wheelwright, 1992; Edmondson & Nembhard, 2009; Somech & Drach-Zahavy, 2011). In most innovation projects communication has different layers. First, there is the layer of communication and dynamics within the core team, who are likely to be mostly people with different backgrounds and each of them responsible for a part of the innovation journey. At the start of the project this team is often nothing more than just a group of people, and there is work to be done for them to become a team (Katz, 2004; Katzenbach & Smith, 2005; Zeff & Higby, 2005).

The communication of the team with the sponsor, the Chief Executive Officer (CEO) or other directly involved superior is a process in itself. Close to the team, the group dynamics expand with those loosely connected with the core team, such as colleagues who help the team with a specific piece of expertise, external consultants, or external experts. The connection with the exploiting organisation also needs to be managed. When the project is too close to the exploiting organisation, the risk is real that the project can be killed; when too far away from the exploiting organisation, the risk exists that the project may break loose and lose the relevant connection and relevant knowledge to bring the innovation into exploitation. Fanning out to more distant groups, with whom dynamics still have to be managed, includes all kinds of stakeholders, from banks, Venture Capitalists (VCs) and accountants, to user advocacy, and the press (Eskerod, Huemann, & Ringhofer, 2015).

As a result, the innovation project involves a variety of interactions with different stakeholders (Kleinsmann, Buijs, & Valkenburg, 2010) and as these interactions are often between different ‘systems’ and have to cross boundaries, the authors have identified the place where these unrelated systems meet ‘interfaces’. I will adopt the term ‘interfaces’ from Kleinsmann and colleagues. The project leader needs to guide the group dynamics through all the complexities and ambiguities, and in all the different interfaces. In particular, when the stakes are high and the tension increases, the innovation project leader has an essential role mediating the group dynamics (Drach-Zahavy & Somech, 2001; Nijstad & De Dreu, 2002; Taylor & Greve, 2006). This requires different leadership roles: directive or supportive, stretching or disciplining, trusting or controlling, internally or externally oriented (Bartlett & Ghoshal, 1995; Ghoshal & Bartlett, 1997; R.E. Quinn, 1988; Van de Ven et al., 1999).

2.7.4 MANAGING THE PROJECT CONSTRAINTS PROCESS

In the innovation literature relatively little attention has been paid to project constraints such as scope and quality, time, and money, also called the ‘triple constraints’ or the ‘iron triangle’ (Atkinson, 1999). These are the constraints of the innovation journey, and the

innovation project leader has to deliver the innovation within the criteria of scope and quality (the innovation has to fit both the chosen scope and the necessary quality criteria), within the constraints of time (the process cannot go on forever), and costs (any innovation process has a certain budget). As these three constraints, scope and quality, time, and budget, are often discussed together in the project management literature, I consider these constraints together under 'project constraints'.

The scope of the innovation journey is the description of the project scope, with deliverables, acceptance criteria, and possible constraints (PMI, 2013). As an extensive description of the result is not possible at the beginning of the innovation journey, the scope should also include the reason why this innovation is needed and by whom it is needed. The strategic choice of the organisation and the value that should be added by the result of the innovation journey guides the considerations and choices the innovation project leader has to make. The scope is closely related to the expected quality criteria of the innovation to make it 'fit for purpose' or 'fit for intended use' (De Bièvre, 2010).

The management of costs or budgets seems rather straightforward, so straightforward that many of the handbooks on innovation do not mention these constraints (see e.g., Davila, Epstein, & Shelton, 2006; Trott, 2008) Managing this process of money is about managing the developing budget; the constraints for production costs and related market price are part of the scope. As no innovation project has an unlimited budget, the developing budget has to be monitored and managed. On the topic of budgets, a specific area of research is for the so-called 'valley of death' (Barr, Baker, Markham & Kingon, 2009; Hudson & Khazragui, 2013; Markham, Ward, Aiman Smith, & Kingon, 2010). The valley of death is the gap in a developing budget that could arise in the early stages of the innovation process, when resources are needed for developing and testing, while it is not yet clear if the innovation is desirable, feasible and viable. Within bigger companies the innovation project leader has to compete against other projects in the fight for resources; in start-ups, the innovation project leader has to find angels or venture capital to provide the financial backing (Auerswald & Branscomb, 2003; Markham et al., 2010).

Time is a special resource, or a special constraint, depending on one's perspective. Processes need time yet have to be finished at a certain time and have to be delivered. There is an objective clock time (chronos), and a subjective 'the time is right' (kairos) for instance driven by serendipitous events (Garud, Gehman, & Kumaraswamy, 2011; Orlikowski & Yates, 2002). Dougherty and colleagues have found in their research on a drug company that these two notions of time could be fertile soil for conflicts in organisations, as senior management measured clock times, while the researchers of a developing drug needed time for certain events to happen (Dougherty, Bertels, Chung, Dunne, & Kraemer, 2013).

2.8 Connections between the processes

Some authors have investigated the connection between group dynamics and the development of the content (Ayers, Dahlstrom, & Skinner 1997; Brereton, Cannon, Mabogunje, & Leifer 1997; Bucciarelli, 2002; Eris & Leifer 2003). Brereton and colleagues (1997) and Bucciarelli (2002) have investigated the interaction of team members and found that the group dynamics influence the process as well as the content development. Ayers and colleagues (1997) have presented a model that combines relational aspects of marketing and R&D and formal and informal managerial controls. The authors have suggested that a closer cooperation between R&D and marketing increases the chances for NPD, while a too close cooperation decreases the chances for success. In other words: people have to interact about the developments at hand, and at the same time challenge each other's thoughts and assumptions. Ayers and colleagues (1997) have stated that leaders should prevent participants from consensus building that is aimed at minimising conflict.

In the story of Alpha (Katz, 2004) that I mentioned in chapter 1, Katz recalls an incident where the various processes came together: technologically difficult problems in the product development, a sudden change in the time schedule, and how this pushed the team as a whole towards creative solutions. Katz recounts how the technical leader of the Alpha Chip design team kept his team going.

> *Dobberpuhl was also instrumental in keeping the group strongly committed to its aggressive goals. Generally speaking, when a group gets in trouble, there is a tendency for the members to want to change the nature of their commitments either by extending the schedule, enlarging the team, reducing the specified functionality, reducing features, accepting higher costs, etc. People would prefer to play it safe by saying 'I'll do my best' or 'I'll try harder' rather than voluntarily recommitting to achieve the difficult results. By not allowing this kind of slack alternatives, Dobberpuhl challenged the team to search for creative solutions to very difficult problems. When management suddenly discovered, for example, that the ALPHA chip and its associated new products would be needed as much as a year earlier than originally scheduled, Dobberpuhl knew that by simply working harder, the team could not possibly reduce its schedule by that much. He also realized that if ALPHA was going to remain a viable option in Digital's strategic plans for filling this 'revenue gap' then the schedule would have to be speeded up; otherwise, their efforts would once again run the risk of being cancelled in favor of some other alternative product strategy. By committing to the speeded up schedule, the team was forced to find and incorporate what turned out to be some very creative breakthrough modifications in the design of the microprocessor and in the way it was being developed. (Katz, 2004, p. 128)*

2.9 Leadership

2.9.1 INTERTWINING THE FOUR PROCESSES

In the explanation of the conceptual framwork (fig. 2.8) in section 2.6, I stated that the role of the innovation project leader is to deal with each of the four processes, and the combination of these four processes into a coherent and consistent process as a whole. I deliberately avoided the word 'managing' these four processes, as leadership differs significantly from management. Managing could be used as a synonym for 'dealing with', like 'managing the project constraints'. However, management as role or task has a different meaning. Leadership is change oriented, management is oriented on regularity and predictability (Kotter, 1996). The role of leadership in innovation is therefore not primarily on planning and controlling, but on directing and supporting. Tight controls kill innovation (Kanter, 2006). Innovation leadership should focus on sensemaking and visioning, giving direction, building trusting relationships, inspiring and supporting, and inventing new ways of doing things (Ancona, Malone, Orlikowski, & Senge, 2007; Ghoshal & Bartlett, 1997; Harborne & Johne, 2003; Kets de Vries, 1996; Kotter, 1996; Kanter, 2006; R.E. Quinn, 1988). Planning and control are still part of the tasks of leaders, although not in order to augment predictability, but rather as part of the wider notion of 'giving direction'.

The difficulties of intertwining and leading all these different processes with the uncertainties inherent to radical innovation are articulated in the example Eris and Leifer (2003) have studied. In their focal organisation, the role of the innovation project leader was taken by a 'Product Development Expert' that guided the teams. The focal organisation had formal procedures for NPD, and the Product Development Experts helped to interpret and contextualise these procedures for the specific situation at hand, as they all had former lived experience in earlier development projects.

2.9.2 AMBIGUITY AND TENSIONS

There are different processes, different people, different opinions, and in the case of radical innovation, no real analogical examples. Therefore, the innovation journey could lead to ambiguity, and to tensions between people with different perspectives or by different constraints or measures. Ambiguity, defined as "the existence of two or more interpretations to a single cue" (Sætre & Brun, 2012, p 1250025-2) is an inherent part of an innovation process.

Buijs (2007) has elaborated on the contradictory title of 'controlled chaos' (J.B. Quinn, 1985), which compares innovation to 'chaos with guidelines'. And, although I am not quite happy with Buijs' chosen label of 'controlled schizophrenic', it illustrates how the different processes can conflict with each other. However, according to Buijs, the differences or tensions cannot always be fixed:

> *Dealing with all of these multiple aspects of innovation at the same time and harmonizing the different perspectives, views and time horizons of the different team members and partner organisations calls for a very special kind of leadership. This leadership demands a great tolerance of ambiguity and paradoxes. It calls for choosing people over rules without losing track of the innovation journey. (Buijs, 2007, p. 209)*

In other words: according to Buijs (2007), ambiguity and tensions are part of the daily life of an innovation process. And Van de Ven and colleagues have stated that "the central problem in leading the innovation journey may be the management of paradox" (Van de Ven et al., 1999, p. 12). Over the last decades, the concepts of ambiguities, dilemmas, paradoxes, contradictions, conflicts, and tensions in organisations have received increasing attention (Andriopoulos & Lewis, 2010; Bledow et al., 2009; Denison, Hooijberg, & Quinn, 1995; Lewis, 2000; Putnam, Fairhurst, & Banghart, 2016; Smith & Lewis, 2011). While these concepts are not exactly the same, they all have in common opposing forces in common, the inevitable challenges in work, and related emotional responses. These tensions call for a behavioural flexibility and stamina. These tensions could occur in all of the four processes as well as between different processes and in relation to the context. Already mentioned are the tension that could be felt in bringing desirability, feasibility and viability into a harmonious balance (T. Brown, 2009), or the tension in the competing values of guiding the group dynamics (R.E. Quinn, 1988). It is also simple to imagine the tension between a diverging phase to tackle a problem and the pressure felt by constraints in time or budgets. Another often mentioned tension is between the exploring innovation team and the existing exploiting organisation (Bledow, Frese, & Mueller, 2011; Rosing, Rosenbusch, & Frese, 2010; Zacher & Rosing, 2015).

Sætre & Brun (2012) have indicated the need for balancing to handle ambiguity. And Buijs (2007) has illustrated the work of an innovation project leader with the analogy of the juggler: a juggler playing with a set of cones, and the cones are analogous for the four processes. However, as Buijs has phrased it, leading the innovation journey is not as simple as the act of the juggler. The cones here are not passive, as the four processes interact, and the juggler does not know that the cones he is juggling could unexpectedly change size, colour, or the way they normally move in the air.

2.10 Leading the innovation journey: conclusion and gap to fill

The innovation journey to develop a radical innovation is a process that is messier than linear stage-gate models indicate. Leading such an innovation process consists of leading four non-linear, iterative, and parallel processes: developing the content, stimulating the creative process, guiding the group dynamics, and managing the project constraints. The literature contains existing knowledge about concepts in each of the four processes. However, the challenge of the innovation project leader leading the innovation journey is

not only leading each of the four processes separately, but intertwining these four processes at the same time, and with continuing ambiguity, paradoxes and tensions. The contradictory tensions could be within one of the four processes as well as between the processes, which makes this innovation process a journey through white water rapids, as the cover of *The Innovation Journey* shows. And managing contradictory tensions is probably more difficult when balancing on a raft at serious speed through a small and wild stream of ice cold water. I follow the process model of Van de Ven and colleagues (1999) for the innovation journey, as this process model of the innovation process incorporates both content, process and context aspects, developing over time. The insights from the MIRP-studies, however, have paid little attention to the emotional side of such processes at a personal or interpersonal level (Edmonson, 2000).

We know little about the innovation process at a micro level: how this innovation process unfolds over time and how the innovation project leader intertwines these processes and stands, reconciles and endures the contradictory tensions. To stay within the metaphor of travelling: the process model of the innovation journey from Van de Ven and colleagues, could be seen as a map that covers a significant area of that journey. To further our understanding of travelling that road, we can zoom in with satellite images of the road, the surroundings, and the temporary roadblocks, and investigate footage of the team that is travelling.

Fagerberg and colleagues (2012), who have investigated all references to innovation in 11 handbooks make no differentiation between variance and process research on innovation. Poole and Van de Ven's *Handbook of Organizational Change and Innovation* (2004), is one of the 11 reviewed handbooks. This handbook is largely based upon the findings from the previously mentioned MIRP. Although Van de Ven and colleagues have published a subsequent number of papers about process studies as a research approach since 1989, none of the top 20 contributors identified by Fagerberg and colleagues, have investigated how innovation processes emerged over time.

Griffin and colleagues (2014), who have looked at the processes of serial innovators retrospectively, have indicated that longitudinal and real time following of the innovation processes would enhance our understanding. Also Van de Ven (2017) who, despite all his years of studying innovation journeys, has still indicated that we know relatively little about the innovation processes in different organisational settings, caused by the vast majority of variance studies. Van de Ven (2017) has suggested:

> *"To better understand the obstacles encountered and ways to maneuvre through them, we need more longitudinal process studies of how the innovation journey unfolds from concept to development and implementation." (Van de Ven, 2017, p. 42)*

This research project aims to fill this gap and zooming in at the micro-level of an innovation project, to add to the understanding of the way an innovation project leader manoeuvres through these obstacles and white water rapids over time.

The first part of the research question that will guide this research is:

> **How do innovation project leaders in different organisational settings lead the innovation journey over time?**

However, filling this gap would serve to fulfil only a part of the aim of this study, as the aim is twofold: to increase our understanding of how innovation project leaders lead their innovation journey over time, and also to capture those experiences that could be a source for others to learn from and to be better prepared.

In the next chapter I will explore what is already known about the experiences of others, as a resource to learn from and to be better prepared, and the role of narratives in this learning.

CH 3 | VICARIOUS LEARNING AND A NARRATIVE REPERTOIRE

3.1 Introduction

In the previous chapter, I described the innovation journey and the complexity, messiness, and uniqueness of that endeavour from the perspective of the innovation project leader. The aim of this study is also to capture the experiences of innovation project leaders that could be a source for others to learn from and to be better prepared. This chapter explores what is known about learning from other people's experiences in complex situations and describes the role of narratives in this learning process.

3.2 Experience and complex decision making

Leading the four intertwined processes of the innovation journey combines rational and emotional and creative processes, and activities, such as sensemaking, decision making, and leading others within a situational context. Due to the unique character of the innovation journey, every radical innovation journey has its own pace, its own problems to be solved, and its own group dynamics, within its own constraints. The complexity of one journey could not be transferred to another with explicit tools, such as a checklist or a planning device. Best practices are too explicit and directive. One could define dimensions and indicate more or less successful practices in each dimension (Kahn, Barczak, & Moss, 2006; Kahn, Barczak, Nicholas, Ledwith, & Perks, 2012). However, this does not capture how to lead the process as a whole, with intertwined underlying processes, and how to lead the process over time, nor how to lead in different situations and unexpected events than the described practice. The innovation project leader fulfils the role of the decision maker as "the manager is the man who decides among alternative choices. He must decide which choice he believes will lead to a certain desired objective or set of objectives" (Churchman, 1968, quoted in Mathisen & Krogstie, 2012, p. 107). This definition of manager-choice-desired objective suggests a straight forward process, which it is not a complex situation (Klein & Klinger, 1991; Langley, Mintzberg, Pitcher, Posada, & Saint-Macary, 1995; Qudrat-Ullah, Spector, & Davidsen, 2007). The decision making in a complex process, such as an innovation process, is, due to features such as ill-defined problems, shifting goals, non-linear interactions, and disproportional reactions, a challenging job.

Klein and colleagues have investigated how people in these complex, real life (natural) settings were making their decisions, often under time pressure, with high stakes, uncertainty, ambiguity, and missing data, and with multiple players involved (Klein & Klinger, 1991). The authors have named this process Naturalistic Decision Making (NDM). NDM differs from other models of decision making as NDM is not an input-output oriented model, but a process description of how experienced decision makers act in real life. Klein and colleagues began in 1985 with a study of experienced fire ground commanders. Experienced decision makers under time pressure, and confronted with high stake problems, did not analyse the situation and make a deliberate decision based on the outcome of that analysis. The experienced firefighters proved to rely on their expertise and experience, which allowed them to recognise a pattern similarity between the current situation and stored experiences. The authors have named their descriptive model Recognition-Primed Decision (RPD) model (Klein, Calderwood, & Clinton-Cirocco, 2010). As a consequence, Klein and colleagues have considered it counterproductive to train less experienced decision makers with formal models of decision making. Klein and colleagues have stressed the point that in order to aim for rapid decision making the novice should be provided with different scenarios and situations, that could enhance the ability to recognise patterns.

3.3 Vicarious experiences and pattern building

According to Bruner “most of our encounters with the world, are not direct encounters” (Bruner, 1986, p. 122), which means that we experience the world through what we call ‘second-hand experiences’. Learning from these second-hand experiences is also called ‘vicarious learning’ (Barzelay, 2007; Bresman, 2013; Conle, Li, & Tan, 2002; Levitt & March, 1988; Myers, 2015; Roberts, 2010).

This vicarious learning has different interpretations: learning by observing experienced others (Bandura, 1977), learning routines by hearing or reading about the experiences of others (Barzelay, 2007, Bresman, 2013; Myers, 2015), learning about one’s own experiences by sharing and reflecting on these experiences in relation to the experiences of others (Fox, 2003; Roberts, 2010), and learning about the experiences of others in complex situations, like learning in clinical decision making (Kim & Miner, 2007; Klein, 1998). Nurses and doctors have to make decisions in complex situations. They have to interpret a situation, with many known and unknown aspects, make sense of that situation and decide upon the next steps (Edelen & Bell, 2011).

Klein (1998) has recalled the story of the different aspects of the decision making of a paediatric nurse, who made a clinical decision, against the indications of the machinery, but based on her expertise. Her clinical decision saved the baby’s life.

> *Stories like this contain many different lessons, and are useful as a form of vicarious experience for the people who did not witness the incident. They also help to preserve values, by showing newcomers the kind of environment they are entering. For our purposes as researchers, these kinds of stories also help us understand situations and relationships. (Klein, 1998, p. 179)*

In some professional domains, the telling and sharing of these stories is standard procedure. Military pilots, for instance, debrief after their adventures. Pilots tell stories about their experiences, the kind of and-then-and-then-and-then-stories, which help them to make sense of what happened. It also helps the storytelling pilot to digest these experiences by reliving the events by telling. The colleagues in the audience want to hear these stories, as the events could also happen to them one day. "They want to gain from the vicarious experience", Klein states (Klein, 1998, p. 183). These vicarious experiences, these experiences of others, enable people to build patterns or expand the patterns they already have, and to use them to (re)act to future events (Klein, Snowden, & Chew, 2011). Pattern building out of these stories is an act of weaving the new with the old: interpreting new stories in relation to old experiences, that is, to old stories.

3.4 Narratives

For centuries narratives[2] have been used to transfer knowledge and prepare others for what is to come, in oral storytelling, or in writing. Schank and Abelson (1995) have argued in their seminal paper *Knowledge and Memory: The Real Story* that *all* human knowledge is based on stories. Koenig and Zorn (2002) have suggested that because a story provides facts, situation and characters, the listener can visualise the details and creates images of the setting for the characters in their imagination. Koenig and Zorn have suggested that this facilitates links between the story and other similar situations, and knowledge is transferred from one situation to another. Indigenous peoples, as previously mentioned, use oral stories to transfer their knowledge and prepare their young people of what could come. Medieval minstrels also travelled their country and told their moral tales.

Narratives can be defined as a representation of a sequence of events, structured with a beginning, middle, and end (Czarniawska, 1999, 2004; Denning, 2005; Gabriel, 2015; Ryan, 2007). The first written story is the Gilgamesh Epic from some 4.000 years ago. And even in the Gilgamesh Epic this same story structure was already in place (A.A. Brown, 1996; McKee, 1997). Several things distinguish a narrative from a non-narrative description

2 Although defining narrative and story is subject of debate, especially within the domain of narratology, this dissertation follows Denning (2005) and uses narrative and story as synonyms. The term narrative is more often used in scholarly articles than story. For a matter of speech, the use of the term story is indispensable; e.g. one seldom says: 'let me tell you a narrative'.

of events. Narrative presents actors dealing with a series of events that have an underlying pattern; it is told from a certain point of view and is presented in a coherent sequence (Fenton & Langley, 2011; Pentland, 1999). Polkinghorne (1995) has explained this with the very short story: “The king died; the prince cried”. Two events, that by combining them in a coherent sequence, give significance to each independent occurrence. Unlike a story, a description aspires to factual objectivity (‘the king died; the queen died’), while stories add meaning to the facts and, therefore, also aspire to an emotional effect (Gabriel, 2000), as in “the king died, and then the queen died of grief” (Forster, 1927, as cited in Velleman, 2003, p. 2). Telling stories is the art of weaving these components together: “a product of intimate knowledge,” as Gabriel (2000, p. 1) has called it.

3.5 Narratives in the context of organising and innovating

The interest in stories in organisations has grown over the past decades (Czarniawska, 2014; Denning, 2010; Gabriel, 2000). Narratives could be seen as a mode of knowing (Bruner, 1986; Polkinghorne, 1995; Schank & Abelson, 1995), as well as a mode of communicating (Czarniawska, 2004). Organisational narratives can provide bonding and identification, meaning, and reduce uncertainty (Denning, 2004); organisational stories can transfer all kinds of information and help people understand or take action (Denning, 2005, 2011; Schank, 1990; Swap, Leonard, Shields, & Abrahams, 2001). Stories can be a way to understand complex processes (Brown, Gabriel, & Gherardi, 2009; Browning & Boudès, 2005; Kurtz & Snowden, 2003). Stories can play a role in sensemaking (Czarniawska, 2005; Polkinghorne, 1988; Tsoukas & Hatch, 2001), in solving problems (Brown & Duguid, 1991), as well as in the decision making and guiding actions that follow (Havermans, Keegan, & Den Hartog, 2015). Stories can combine knowledge and translate it into ideas (Bartel & Garud, 2009), and they can play a role in the creative process by developing personas and scenarios (Madsen & Nielsen, 2010). Stories can help establish a space where ideas can flourish, and knowledge can be exchanged (Buckler & Zien, 1996), and in this way they can help build trust within an organisation (Denning, 2005). Stories can also be used to transfer knowledge and ideas to others outside the innovation project (Connell, Klein, & Meyer, 2004).

In the context of innovation, Buckler and Zien (1996) have reported on stories from participants in new product development (NPD) processes in various organisations. These narratives are about ‘what happened’, how innovative ideas were born and innovations started, and how these stories were used inside organisations to keep the innovative culture alive and to foster new innovations. In an in-depth study, Deuten and Rip (2000) have described how an innovation project leader used stories about earlier events to motivate and persuade team members and steer the project. The authors have stated that master stories can emerge from this ‘mosaic of stories’. Bartel and Garud (2009) point out that innovation narratives can overcome the challenges of interacting and communicating

with different parties. Innovation narratives, which portray events in a structured manner and offer a particular point of view on a situation through the use of a plot, can serve as boundary objects, helping to bridge the differences between people with different knowledge.

3.6 A repertoire

A repertoire is a list of music, dramas, operas, pieces, that a person or a group could perform or know. The 'could perform' suggests that a repertoire is bigger than the one used at a certain moment in time, and just some of the elements from the repertoire are chosen. A repertoire, as a set of possible options, is also used outside the performing arts. A repertoire could also indicate the set of tacit and explicit knowledge one has, build by experience in practice and by education. The more experienced one is in a specific field, the more comprehensive such a repertoire will be (Klein, 1998; van Aken & Romme, 2012). To solve problems in the professional field, van Aken (2004) has stated that professionals have a 'repertoire of design knowledge'. To solve a problem at hand, a professional usually makes a design of *how* to solve the problem (process design), a design of the action, the artefact or intervention he or she is going to make (object design), and the way this will be used (realisation design). In order to do so, the professional has a 'repertoire of design exemplars' (Schön, 1983) to refer to. An exemplar is not just any example; exemplars are representative examples of a solution (or a failure) or illustrative representations of an event. Exemplars are 'meaningful examples'. These exemplars are general prescriptions of what worked or did not work. These exemplars serve as a point of reference and have to be translated to the specific situation (van Aken, 2004; Barzelay, 2007). People build such a repertoire of exemplars based on their own former experiences, on observations, and through second-hand experiences (Bandura, 1965; Gioia & Manz, 1985).

The indigenous elders have 'a repertoire of culturally built knowledge' and use storytelling to transfer this culturally specific knowledge to younger generations, as Fernández-Llamazares and Cabeza (2017) have demonstrated. The authors have noted that culture is not a system that prescribes our actions. Culture is a repertoire, a 'toolkit' that actors use "to select differing pieces for constructing lines of action" (Swidler, 1986). Fernández-Llamazares and Cabeza (2017) have observed that the stories of indigenous elders are "made up of extremely complex, finely coded information on human subsistence and infused with dramatic elements that ensure their transmission, engaging the heart with the mind" (p. 2), and in doing so combining facts with values, and allowing creative imagination. So, by hearing the stories from the elders, the repertoire of culturally built knowledge is transferred.

In scholarly literature we also use a repertoire of stories that we easily tell and retell: Karl Weick's Mann Gulch disaster (Weick, 1993), Gary Klein's firefighters (Klein & Klinger, 1991;

Klein, 1997), Susan Leigh Star's allergy to onions (Star, 2007), or Langley's and colleagues' black stool (Langley et al., 1995), to name just a few. A repertoire of knowledge, exemplars, culturally built wisdom of the elders, scholarly stories, and a repertoire of vicarious experiences, all serve as a source for the user, a 'tool kit' as Swidler (1986) has noted.

3.7 Functions of a narrative repertoire for the innovation project leader

In chapter 2 I explored the role of innovation project leaders in intertwining and leading all the different processes of the innovation journey with the uncertainties inherent to radical innovation. Narratives about the experiences of others could be of use for innovation project leaders to become aware of the process and of the possibility of unexpected events, to anticipate and generate expectancies about the process and events, and to generate solutions and ignite actions.

3.7.1 BECOMING AWARE OF THE PROCESS AND OF UNEXPECTED EVENTS

The concept of NDM (Klein, 1998) is based on situations where experienced managers have to make a decision: because the house is on fire, the patient is dying, the enemy attacks. In this process of decision making the awareness of the situation around us is essential. Endsley (1995) has stressed that situation awareness starts with the perception of the situation. One needs to have an awareness to see what could be seen and absorb what could be learned (De Geus 1997; Jensen et al. 2007; Swap et al. 2001). Being unaware of events that could happen during the course of the innovation journey impacts on the speed and repertoire to decide and act (Klingebiel & De Meyere, 2013). Garud, Dunbar and Bartel (2011) have found how the NASA managers relied on their scientific knowledge and former experiences, and therefore were unable to make sense and respond to unusual experiences. "There is simply not enough time, awareness, or similar and available previous experiences to generate knowledge needed to respond appropriately to an unusual experience in real time." (Garud et al., 2011, p. 589). In the world of medical education narratives are used frequently (e.g. Cox, 2001; Hoffman, 1997; Koenig & Zorn, 2002; Nehls, 1995; Woodhouse, 2007). A study on the use of family experiences and illness narratives in medical education has found that the use of narratives help prepare novice medical professionals (Kumagai, 2008).

3.7.2 ANTICIPATING AND GENERATE EXPECTANCIES

A second function of the narrative repertoire is in 'anticipatory thinking', to be prepared and being able to anticipate of what is to come. Klein, Snowden and Chew (2011) have defined anticipatory thinking as the process of recognising and preparing for difficult challenges, many of which may not be clearly understood until they are encountered. It is

a form of future oriented sensemaking (Weick, Sutcliffe, & Obstfeld, 2005), and aimed at possible future events, and future courses of action (Hernes & Irgens, 2013). The awareness to anticipate is not merely a rational, conscious process, but involves creativity and imagination, and involves probing, building scenarios and imagining their consequences (Hernes & Irgens, 2013). Klein and colleagues (2011) have identified three different forms of anticipatory thinking: pattern matching, convergence and trajectory tracking. In pattern matching current events resemble events in the past. Convergence is anticipatory thinking that looks for the interdependencies of different events and what the implications are of bringing these events together. Trajectory matching is anticipatory thinking to come in advance of the trajectory of events, to prepare ourselves for how the events are unfolding or may unfold.

3.7.3 GENERATE SOLUTIONS AND IGNITE ACTIONS

Vicarious experiences are also used to generate solutions and solve problems. Gick and Holyoak (1980) have described how stories from one domain could be used to solve an analogous problem in a different domain. This analogical reasoning is "the ability to perceive and use relational similarity between two situations or events" (Gentner & Smith, 2012). In leading the innovation journey, the use of narratives as analogies could be used in different ways, that could be divided into *what* is innovated and *how* is innovated. The content of a solution in one domain, could inspire and inform the solution in the other domain. The use of analogies in the design for innovation and new product development is widely studied (Ball & Christensen, 2009; Dorst & Royakkers, 2006; Gassmann & Zeschky, 2008; Kalogerakis, Lüthje, & Herstatt, 2010). Narratives about the experiences of others could inform innovation project leaders to come up with new solutions. These stories could also convey information on how an innovation was developed, and how a problem was solved. These process insights from vicarious experiences could ignite action.

3.8 Conclusion

A narrative repertoire could enable innovation project leaders to become aware, anticipate, decide and act upon unusual and unknown experiences and to be encouraged and inspired.

In order to theorise from the empirical research and to help others to learn from the experiences of innovation project leaders and to be better prepared for what to expect during their own and unique innovation journey, it would be helpful to provide such a narrative repertoire about the experiences of others. Such a narrative repertoire, about the experiences and actions of other innovation project leaders, however, does not exist.

I expand the overall research question with the addition ‘in what ways could the experiences of innovation project leaders be built into a narrative repertoire’ which leads to the following research question and sub-questions:
The overall research question that will guides this research:

> **How do innovation project leaders in different organisational settings lead the innovation journey over time, and in what ways could their experiences be built into a narrative repertoire?**

CH4 | RESEARCH DESIGN

4.1 Introduction

This chapter describes the research design, the methods used, and the choices made. It is structured as follows. Section 4.2 describes the research question and resulting sub-questions. Section 4.3 describes the philosophy of science that underpins this process study. In section 4.4 the process research plan and the choices made in the research design are laid out. Here I will follow the structure of key issues Van de Ven (2007) has suggested as relevant for the design of a process study. Section 4.5 describes the choices made for the analysis and comparison of the data. Since narratives play a role throughout this dissertation, section 4.6 elaborates on the role of narratives in this research: in data collecting, in analyses, and as the output of this research. In the key issues Van de Ven (2007) has suggested, the author has not addressed evaluative criteria. This chapter outlines the evaluative criteria for this process study in section 4.7.

4.2 Research question and sub-questions

In section 1.5 I described the aim of this research study: to increase our understanding of how innovation project leaders lead their innovation journey over time, and to capture those experiences so that they could be a source for others to learn from and to be better prepared.

Based upon what is already known about the innovation journey, I introduced the first part of the research question in section 2.10. The research question was completed in section 3.5 and reads as follows:

> **How do innovation project leaders in different organisational settings lead the innovation journey over time, and in what ways could their experiences be built into a narrative repertoire?**

This research question is built on two different moments in time: first the actual events during the innovation journey, and then the building of a narrative repertoire afterwards. In reverse order, with the end goal in mind: to do the latter —building a narrative repertoire— we first need to have information on how innovation project leaders lead their team, along

with an understanding of difficulties and ambiguities, which need to be assessed within the perspective of their actual situation. It is, therefore, also necessary to have an understanding of what happens and how the journey unfolds. Subsequently, a narrative repertoire could be designed. This leads to the following three sub-questions:

- **How does the innovation journey unfold over time in different organisational settings, seen from the perspective of the innovation project leader?**
- **How does the innovation project leader lead the innovation journey, intertwines the four processes, and handles ambiguities and tensions?**
- **In what ways could the experiences of these innovation project leaders be built into a narrative repertoire?**

4.3 Philosophical stance

Guba and Lincoln (1994) have noted that a worldview, a paradigm, is a basic belief system that consists of three elements: an ontology (what is the form and nature of *reality*?), an epistemology (what is the nature of the relationship between the knower and *what could be known*? how do we know something?), and a methodology (how can we *find* such knowledge?). Tsoukas and Chia (2011) consider this third element as praxeology (how is knowledge related to practice?). The three elements ontology, epistemology and methodology/praxeology are inseparably connected.

I wholeheartedly agree with Bechara and Van de Ven (2007) when they state, “Many of us are practitioners —not philosophers— of science. We don’t think much about ontology and epistemology so that we can get on with the craft of doing research instead of talking about it.” (Bechara & Van de Ven, 2007, p. 36). However, since my voice is present throughout this dissertation, as researcher and as writer, I consider it essential to describe the worldview of that voice. This research builds upon a constructivist paradigm. The underlying ontology, also labelled as relativism, is subjective (Bechara & Van de Ven, 2007; Djuric, 2015, Guba & Lincoln, 1994). In my view, the reality of our social environment is not an objective given, but socially constructed. To understand this socially constructed reality, Schwant (1994, p 222) has argued, one must interpret it, which identifies my subjective epistemological view. As I am part of that world, it is difficult to step outside and view that world objectively, as Orlikowski & Baroudi (1991, p. 17) have suggested: “[r]e-telling the actors’ story is never fully possible as the interpretive schemes of the researcher always intervene, and hence the researcher in part creates the reality he is studying through the constructs used to view the world.”

4.4 Formulating the process research plan

The objective of this study is to increase our understanding of how innovation project leaders in different organisational settings lead their innovation journey *over time*. This research is designed as a process study, which I will explain in the following sections. Van de Ven (2007) has suggested in his book *Engaged Scholarship* a number of key issues and decisions for designing a process study (Van de Ven, 2007, p. 195). Table 4.1 hereafter gives an overview of these key issues. I will follow this enumeration to describe the choices made in the design of this research project.

Table 4.1 Key issues and decisions for process research in field studies

ISSUES	DECISIONS
Formulating the process research plan	
1. Meaning of process	A category of concepts or a developmental sequence?
2. Theories of process	Examine one or more models?
3. Reflexivity	Whose viewpoint is featured?
4. Mode of inquiry	Inductive, deductive or abductive?
5. Observational method	Real-time or historical observations?
6. Source of change	Age, cohort, or transient sources?
7. Sample diversity	Homogeneous or heterogeneous?
8. Sample size	Number of events and cases?
9. Process research designs	What data analysis methods to use?

(Van de Ven, 2007, p. 195)

4.4.1 MEANING OF PROCESS

The term 'process' is used in different ways: (1) a logic that explains a causal relationship between independent and dependent variables, (2) a category of concepts or variables that refers to actions of individuals or organisations, and (3) a sequence of events that describes how things change over time (Van de Ven, 1992). Variance studies aim to find answers to *what* the antecedents or consequences are of the issue under study, whereas process studies are concerned with *how* the issue develops and changes over time (Langley, Smallman, Tsoukas, & Van de Ven 2013; Van de Ven, 2007). To investigate these changes and developments in an innovation journey, *time* is a central element (as one

cannot observe change at a fixed moment in time). The second central element is *events*, something happening during this time, one or more actions or activities, and studying these sequences of events (Van de Ven, 1992), is as Pettigrew (1992, p. 10) has noted "to catch reality in flight".

To deepen the understanding of what happens *during* the innovation process, the incidents and the events during that process have to be followed and taken into account. Seeing these events from the perspective of the innovation project leader requires an understanding of his or her reality during that process. This PhD project assessed process according to the third definition by Van de Ven (1992): a sequence of events that describes how things develop and change over time.

Van de Ven and Poole (2005) have developed a typology of four approaches for studying organisational change (see table 4.2), depending on the ontological distinction between organisations as being presented as a social actor, a 'thing' (a noun), or as a process of organising (a verb). To study these changes, the authors have made a distinction between two epistemologies, two methods for studying change: variance methods and process narratives.

Table 4.2 Four approaches for studying organisational change

		ONTOLOGY an organisation is represented as being:	
EPISTEMOLOGY		a noun, a social actor, a real entity, a thing	a verb, a process of organising, emergent flux
	variance methods	Approach I	Approach IV
	process narratives	Approach II (a weak process view)	Approach III (a strong process view)

(Van de Ven & Poole, 2005)

This present research project takes a process approach. Within this epistemology, 'middle strong process view'. A partition into two ontologies seems to leave little room for a nuanced choice such as a 'middle strong view', and this needs a clarification. According to Thompson (2011), the debate between nouns and verbs, between entities and process, is one of the oldest philosophical discussions of mankind. Bakken and Hernes (2006) have

pointed out that organising could be both. The authors have cited Von Foerster's (1967) example of a pseudopod (fig. 4.1), a temporary extension of an amoeba, to demonstrate how something can be vast (entity) and fluid (process) in one. Von Foerster (1967) has indicated this as *names* for spatial abstracts and *verbs* for temporal abstracts. The amoeba propels itself from one state to a next in a fluent movement. The caption of the pseudopod is: "Schematic representation of a unicellular animal moving from one spot to another by extending a tubular pseudopod and pulling itself up through this extended capillary" (Von Foerster, 1967, p. 868).

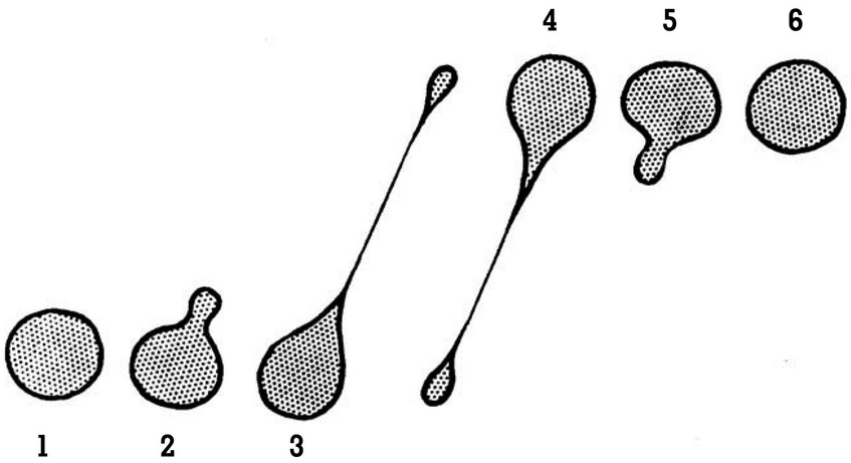


fig. 4.1 Pseudopod (Von Foerster, 1967, as cited in Bakken & Hernes, 2006)

I assess the organisation of an innovation project as a fluidity, a process of organising (a strong process view), and I see parts of organisations as entities, as stable social actors (which correlates with a softer or weak process view). To define my stance in this perspective, I name this a middle strong process view.

A process research project with a weak process view could be seen as a series of pictures, which together, are telling a sort of story. A strong process view is a movie, where the scenes are woven into a continuous story. To extend the metaphor of the pictures and the film, I would suggest the use the Ken Burns effect as metaphor for my middle strong process view: panning and zooming still pictures woven together into a film, named after the American documentary maker Ken Burns.

This definition of process underpinned the choices that I made in the three case studies that were investigated. With a strong process view it is important to follow and observe the emergence continuously, to capture the whole process, as if the camera is running all the time. With a middle-strong process view it is less essential to capture all footage.

Preferably, the research should capture moments of change as in the half-fluid state three or four of the pseudopod in Figure 4.1. The stable states of being, in between the states of becoming, give room to capture reality, and, if necessary, retrospectively to construct the missing pictures.

4.4.2 THEORIES OF PROCESS

Having a notion from the outset what kind of theory of process grounds the research can be helpful to understand and make sense of the empirical reality. Van de Ven (2007) has emphasised that it is not his intention to suggest that the process study should 'test' the chosen theory of process, but that such a clarification about the theory of process could be helpful to be prepared, as "chance favours the prepared mind" (Pasteur, 1854, quoted by Van de Ven, 2007, p. 35). Van de Ven and Poole (1995) have identified four process theories of organisational development and change, as shown in Figure 4.2.

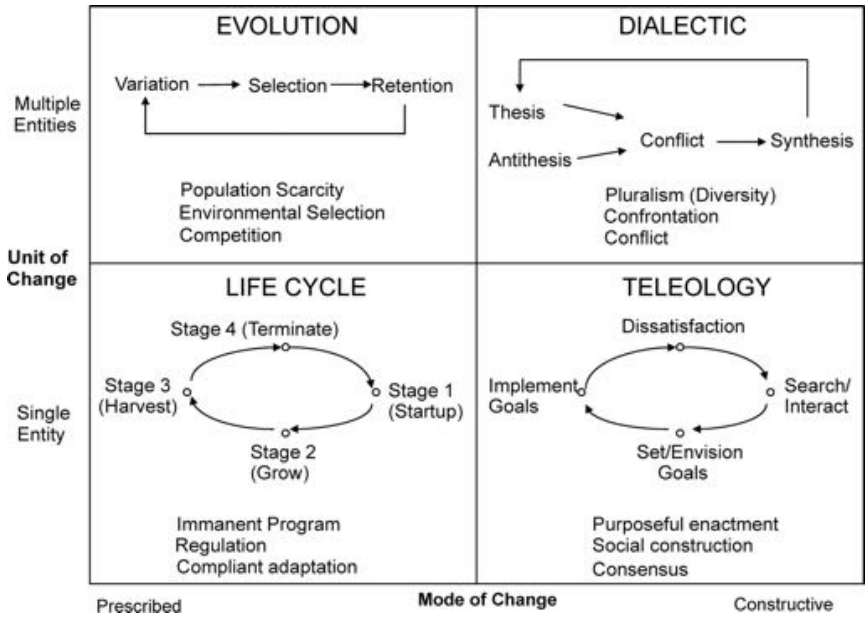


fig. 4.2 Process theories of organisational development and change (Van de Ven & Poole, 1995)

The model differentiates between single and multiple units of change. A single entity could be at any organisational level, from individual, team, group, organisation to communities of organisations. To operate as a single entity, a group needs to have sufficient consensus to be willing and able to act as a single entity. On the other axis of the four by four model, the differentiation is between a prescribed or a constructive mode of change. In a prescribed mode of change, the change happens in a pre-specified direction, where the units of

change adapt incrementally in a stable, predictable way. These processes follow the patterns that are prescribed by the earlier stages. As the change happens in an existing framework, the authors have followed Watzlawick, Weakland and Fish (1974) and have termed this *first-order* change. Constructive change, on the other hand, diverges from the existing framework, is unprecedented, and discontinuous with the past, and is called *second-order* change.

Within these two axes the model depicts four different models, or 'motors' of change.
A 'life cycle' model depicts a model with several stages that follow in a prefigured sequence. The dominant metaphor is 'organic growth'. The event progression one could expect is a consecutive and irreversible sequence of prescribed stages.
'*Evolution*' is the change model with natural selection among competitors, like Darwinian evolution, and the key metaphor is 'competitive survival'. The event progression to be expected is a recurrent, cumulative sequence of variation, selection and retention.
The motor of change in the '*dialectic*' theory of process is thesis and anti-thesis, collective action and conflict. The metaphor is opposition. The event progression is a discontinuous sequence of confrontation, conflict, and synthesis.
The fourth theory of process is the '*teleological* motor' of goal setting and social construction. Here the key image is purposeful cooperation. The event progression to be expected is a discontinuous sequence of goal setting, implementation and adaptation of means to reach a desired end state.

This research project investigates in the realm of radical innovation. It is to be expected that the changes are a discontinuous with the past, a break with the existing status quo in the industry or the market. The mode of change is expected to be constructive. Although the focus in this research project is the innovation project leader, the unit of change is at the level of the innovation team, the unit the innovation project leader leads towards a unified goal. It could therefore be expected that the motor of change is the teleological motor, although in times of opposing opinions or in cooperation with others outside the core group, the entities could possibly split to multiple, changing the motor of change to dialectic.

4.4.3 REFLEXIVITY

To study innovation processes Garud, Berends and Tuertscher (2018) have offered an overview of various options based on reviewing the literature. With regards to process studies, the authors have differentiated between *process as observed* by the researchers, and *process as experienced* by the actors in the field. In the first approach, process as observed, the objective is to find patterns in a sequence of events. In the second approach, process as experienced, the process is assessed as a human endeavour, where experiences "must be understood as relational-temporal complexes that are formed and re-formed through actors' attempts at generating meaning" (Garud et al., 2018, p. 238).

The research question in this dissertation focuses on the experiences of the innovation project leader, and this research project choses a *process as experienced* approach. This study presents a wide-angle lens on the innovation journey, choosing the perspective of the innovation project leader, who combines and intertwines the concepts that scholars described in earlier studies. From this wide-angle perspective this dissertation explores how the innovation project leader leads and intertwines the processes of the innovation journey.

4.4.4 MODE OF INQUIRY

The mode of inquiry is abductive. From the literature is known that the innovation journey knows many aspects (which I combined in a conceptual framework in section 2.6). The theory does not answer *how* these processes are intertwined, and how the innovation project leader leads such a process and handles ambiguities and tensions. This research started with the initial sigh of the innovation project leader 'had I known this ahead of time', after his rough innovation journey, for which I did not find an explanation in the literature. Abduction, Van de Ven (2007) has argued, refers to explaining surprising patterns that are observed, the may-be's and what-if's as Elkjaer and Simpson (2011) have pointed out:

> *Whereas deduction probes the boundaries of thought within a closed system, and induction structures evidence to support the formation of opinions, the abductive process involves the imaginative creation of explanatory hypotheses, generating alternative 'may-be's' in response to 'what if' inquiries. (Elkjaer & Simpson, 2011, p. 61)*

Since we know little about *how* the innovation journey unfolds over time from the perspective of the innovation project leader, and *how* the innovation project leader (re) acts in the four intertwined processes and deals with ambiguities and tensions, this research takes an abductive mode of inquiry, aiming at the creation of these alternative *may-be's*.

4.4.5 OBSERVATIONAL METHOD

The chosen methodology is a 'dual method' multiple case study research (Leonard-Barton, 1990). The dual method refers to the combination of longitudinal, real time, data collection, combined with retrospective interviews. Data were collected with ethnographic qualitative methods (Ybema, Yanow, Wels & Kamsteeg, 2009). Data collection was partly real time, directly observing and collecting data as a participant observer in the cases studied. In each case also retrospective interviews were held with the innovation project leader on several occasions during the years of each study. In these retrospective interviews the innovation project leader and the researcher discussed and reflected upon observations. Where applicable, the innovation project leader was asked for elucidation or further explanations. Besides observational field data in each case, archival documents were collected. In this section the used data collection methods are described in general. In

each of the case chapters 5, 6, and 7, the specific data collection is described in each case sections under the subtitle 'Collected data' (sections 5.2.2, 6.2.2, and 7.2.2).

Data collection in the field varied between three and 15 years. In each of the cases, I was present at various moments in time during the development process of the innovation. I collected data by being an active or passive participant observer. I was present during site visits, facilitated dialogues of the innovation project team, and had informal dialogues with core people in the organisations. I kept notes of these events. Since I was not a part of the teams I was with, I chose to label this research activity as that of an 'observer' rather than as a 'co-worker'. I did not 'live' in the organisations for a contiguous period of time. Each empirical case chapter describes more in depth when and where I collected the data, and how much time I spent within each organisation.

The core of the data collection in each case consisted of data from extensive, conversational, lightly structured, retrospective interviews with each innovation project leader. The interview structure comprised a list of topics I wanted to discuss with the innovation project leader, a specific list for each interview or series of interviews, which were grounded in the earlier events. By having these conversational interviews, the interviewees could retrospectively reflect upon the events, and interpret and validate my observations in the field. The interview topics were informed by my observations in the field. The tone of the interviews was informal and had the structure of an on-going dialogue, rather than a question-and-answer conversation. In each case I interviewed the innovation project leader on several occasions. All interviews were face-to-face. These interviews were all video or audio taped and comprised eight to 10 hours of interview data per case. During the interviews with the innovation project leader in the BeerTender case, and during one interview in the Hogewey case, I cooperated with a documentary filmmaker, who video-taped the interviews and served as a participant observer, and asked some additional questions at the end of the interviews. In the Hogewey case, I also paid a site visit with the supervisory team of this PhD project.

In addition to collecting data at various moments in time and with tangible data output, the innovation project leaders and I stayed in contact over the years and had informal conversations. Through these informal contacts we build and maintained a working relationship. Being in the field "typically involves more than flying in and out of the field for a brief, tourist-like visit" (Yanow, Ybema, & van Hulst, 2012). Visiting the innovation project leader's environment, meeting team members and chatting at the water cooler, as well as staying in contact with the innovation project leader through dropping a note or a short telephone call, helped me to build rapport with the interviewees. It also enhanced my understanding of the everyday life in their context, including the unwritten and unspoken 'rules of engagement' (Yanow et al. 2012). It provided me with a lived experience of my own. These informal contacts were the fabric in between explicit moments of data collection in the field.

The archival data collected in each case comprised internal memos, presentations, and articles in external media, such as newspapers and magazines, and served as background information. In one case, nursing home Hogewey, I used the archival data about the nursing home as a source to research how the external image about this innovation, the outcome, changed over time. In the presentation of each of the cases in the following chapters, I provide a detailed description of the data collected.

4.4.6 SOURCES OF CHANGE

Innovation is not only shaped by the intrinsic or extrinsic reason for change, but also by the moment in time. An innovation based on the internet protocol in 1992, is in that respect, not synchronously comparable with an innovation in 2018. Van de Ven (2007) has suggested taking into account three different 'sources of change' related to time: age (the temporal duration at the moment of measurement), cohort (common historical conditions that shape the change), and transient (temporary factors that influence the outcomes). In a homogeneous sample, possible transient factors could be identified, but, as Van de Ven has emphasised, does not control for cohort-effects. This homogeneous sample is more appropriate to investigate focused questions and hypotheses. In a heterogeneous sample effects of age, cohort, or transient factors could be identified as possible sources of change.

In this research project the design contains three parallel case studies, which is schematically depicted in Figure 4.3. The cases are studied 'diachronically', which means 'dealing with the different processes how they occurred and changed over a period of time.'
In terms of sources of change, this sample of three is heterogeneous.
In each case the four processes of the innovation journey are investigated. The indications of time are moments of relevant incidents in each case. These moments are not taken as evenly divided intervals in time, nor do the number of t's suggest the number of relevant incidents. To avoid the suggestion that the incidents at, for example, the first moment in time are comparable moments between the three cases, the moments in time are labelled 'a' to 'l'. The research on the innovation processes in the three case studies did not develop synchronously: the Hogewey project was already on its way when the research started, and the Newvac project could not be investigated during the whole development phase, as this development phase continues in real life while the research project had to come to an end.

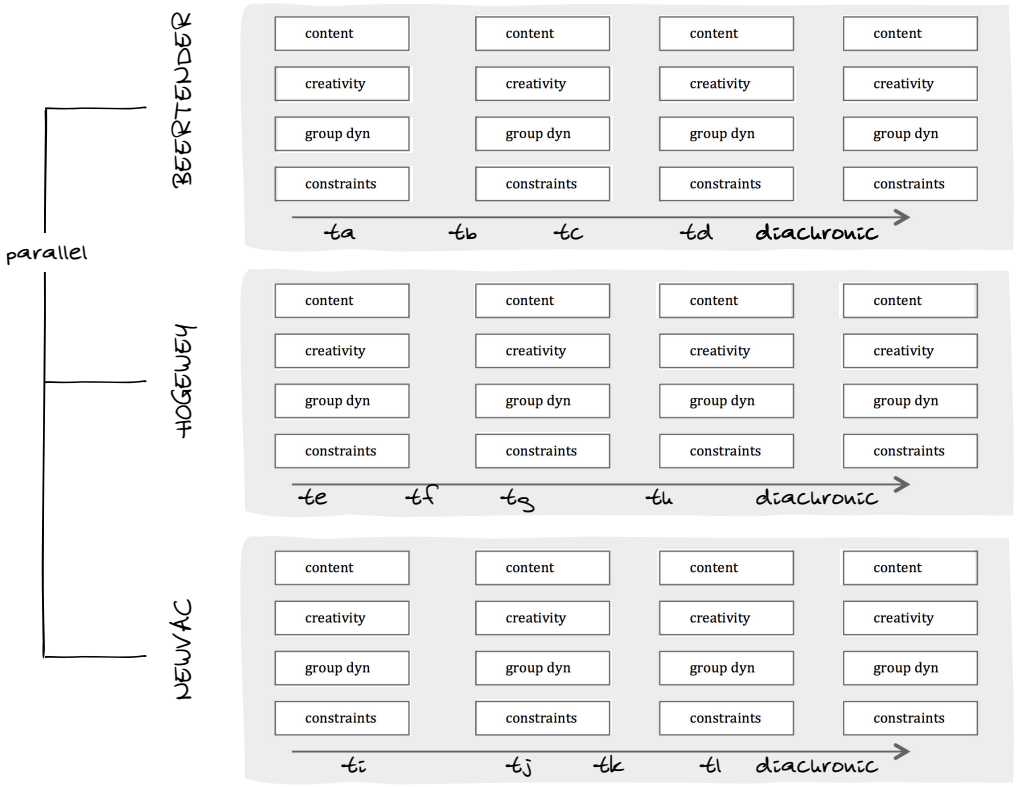


fig. 4.3 Parallel and diachronic sources of change

4.4.7 SAMPLE SIZE

The sample size of this process study consists of three case studies, with one innovation project leader in each case. To increase the understanding about how innovation project leaders lead the innovation journey and to build a repertoire of stories, a choice of only one single case study was deemed too limited. Presenting the stories from only one project could suggest that these stories depict a best practice, while that is not the message in such a complex environment, as discussed in chapter 2. A choice of two case studies carried the risk of seeing the process events as equal or unequal. I chose to conduct three case studies: more than one study and an uneven number of cases.

The multiple case study comprises three different cases: three different innovation journeys led by three different innovation project leaders in three different organisations: the development of the BeerTender, a home appliance for draught beer at home, developed by Heineken in cooperation with Krups; the development of a nursing home concept, a new way that people with severe dementia could live in a nursing home; the

concept is developed by nursing home Hogewey, which is part of the Vivium Care group; and the development of an immunotherapy for cancer, developed by Newvac. Since this immunotherapy is currently still under development the name Newvac is a pseudonym.

4.4.8 SAMPLE DIVERSITY

The first criteria to select cases were that the selected innovation journeys should be aiming for a *radical* innovation in a complex environment. The cases also had to be *accessible* for me as a researcher, where the organisation would be willing to have me walk around in their organisation, share their knowledge with me and allow me to conduct interviews.

In order to build a repertoire of stories, the sample of three cases had to be heterogeneous and have variety. The variety of cases adds to the understanding of how innovation project leaders lead in various contexts, and broaden the repertoire for the academic and practice audiences. I was looking for a variety of cases in terms of type of organisation, type of innovation, and type of professional domain.

I followed the same logic as for the choice of the sample size: variety would prevent the experiences of the innovation project leaders and the repertoire of stories from being too unilateral, or equal or unequal. This choice for variety was supported by the choices for the variety of innovation projects that were investigated by MIRP (Van de Ven & Associates, 1984; Van de Ven et al., 2000), although I was aware of the difference in research manpower between the original MIRP (over 40 people researching 14 innovation journeys) and my PhD project (one person investigating three innovation journeys).

The chosen cases are in different domains, with different end users. BeerTender is a home appliance (durables) in combination with beer (fast moving consumer goods), aiming at the consumer market. Hogewey is in the 'business' of long-term care, also aiming at consumers. Newvac's domain is biotechnology and, although the people to be treated with the therapy are consumers (patients), the users are oncologists.

A nursing home and an immunotherapy could be interpreted as products within the same domain of 'health care': the patients in both cases have a life threatening disease, both organisations cooperate with health care professionals, both have to follow rules and regulations of health care authorities, and both have to negotiate with health insurance companies. However, the fields of Hogewey and Newvac also show great differences. A nursing home for people with severe dementia is a living facility, where people stay long term, and the health component is aiming at care. Immunotherapy on the other side, is aiming at treatment and preferably cure of the patient in a short period of time. If necessary the patient has to stay in hospital for a short while, but will never 'live' there.

The variety of cases also affects the variety of type of product. BeerTender is a product innovation, a combination of two innovative products: the appliance and the beer in a keg. It is a so-called 'installed base' product innovation. One cannot consume the beer without the appliance, but once installed, one can buy the beer product like any other food product. Nursing home Hogewey developed a service innovation. The immunotherapy from Newvac is a product-service system: the therapy is so called 'autologous', meaning that 'material' taken from the patient is processed in a laboratory (a service) treated with a certain medicine (a product), and is then brought back into the patient's body (another service).

The education and professional backgrounds of the innovation project leaders mirror these starting points of the innovation journeys, with respective education and experience in business, human behaviour and technology. The three innovation project leaders were mixed in gender: a man and two women and had different former work experiences. Two of the three had a broad management experience; two of the three had a long-standing relationship with the organisation. All three were experienced in their fields of expertise, with over 15 years of work experience. For all three it was their first innovation project. In all three cases the innovation project leader happened to stay in the organisation for the whole period of my research, even in the case of Hogewey, where I studied the journey over 15 years.

The organisations behind the innovation processes differed too: Heineken is a global, mature, financially sound 'blue chip' company; nursing home Hogewey is a subsidiary of Vivium Zorggroep, a not-for-profit regional Dutch health care provider in a domain with financially thin margins; and Newvac is a small start-up enterprise that is a spin-off from a scientific programme, connected with different mature stakeholders, and working in an international environment.

The following Table 4.3 summarises the characteristics of the organisations and innovation project leaders in the three cases.

Table 4.3 Summary of the characteristics of the three cases

	BeerTender	Hogewey	Newvac
organisation			
domain	FMCG and durables	health care	biotechnology
innovation	products	service	product-service system
type of innovation	installed base	living facility (care)	treatment (cure)
level of innovation	radical	radical	radical
users	consumers	patients/ consumers	patients/ oncologists
stakeholders	users, retail, suppliers, various internal, partner org	family, internal care givers, authorities complex	patients, hospitals, authorities complex
environment	complex	medium sized	small sized
enterprise	multinational	non-profit	profit
business orientation	profit	national	international
market	international		
inno project leader			
gender	M	F	F
education	business	human behaviour	technology
domain experience	experienced	experienced	experienced
yrs work experience	> 15 yrs	> 15 yrs	> 15 yrs
former innovation experience	-	-	-

4.4.9 PROCESS RESEARCH DESIGN

Van de Ven (2007) has indicated that the number of cases and the number of events (expected to be) observed in a case study have implications for the choices made with regards to research design and data analysis. This research project contains three cases. The focus of this study and the course of the innovation journeys, the cases contain of a relatively small number of key incidents and episodes. The cases will be qualitatively compared in a cross case analysis.

4.4.10 SUMMARISING THE PROCESS RESEARCH PLAN

The following Table 4.4 summarises the decisions made in this research design, based upon the key issues for designing a process research (Van de Ven, 2007).

Table 4.4 Key issues and decisions for the process research project of this dissertation

ISSUES	DECISIONS
Formulating the process research plan of this research project	
1. Meaning of process	A developmental event sequence how things change over time
2. Theories of process	A teleological motor
3. Reflexivity	Viewpoint of the innovation project leader; process-as-experienced
4. Mode of inquiry	Abductive
5. Observational method	Real-time and retrospectively
6. Source of change	Parallel and diachronic
7. Sample diversity	Heterogeneous sample
8. Sample size	Three cases
9. Process research designs	Comparative case study

(based on Van de Ven, 2007, p. 195)

4.5 Measuring and analysing process data

Once the data are collected, the process study needs a design for measuring and analysing the longitudinal data. This section lists the steps I took to perform these tasks in the present study.

The data analysis consisted of a number of steps:

1. organising data and transcribing interviews,
2. coding data,
3. grouping to episodes,
4. analysing data, and
5. cross case analysis

4.5.1 ORGANISING DATA AND TRANSCRIBING INTERVIEWS

I organised the field notes and archival data by date. I transcribed verbatim all video and audio taped interviews and dialogues myself.

4.5.2 CODING DATA AND GROUPING TO EPISODES

The process concepts of the four intertwined processes, the leadership to steer those processes, and occurring ambiguities and tensions, all identified in chapter 2, were the concepts that were used in the data analysis. In the measurement and analysis of the data in this research project, we make a distinction between incident and episode. An incident is defined as *an occurrence* of an action or situation that is a separate unit of experience, a *'happening'.* These incidents are empirical observations or incident stories in an interview. An episode is a constructed series of incidents. In process studies, the term used for these more abstract series of incidents is called an event. The connotation of 'event', however, is that is has the duration of a short period in time, while an episode suggests that the time of duration is more flexible. The episode is, thus, a series of incidents that is developed into a narrative description that is a coherent and separable part of the course of the development.

The coding scheme (table 4.5) to code all interview data contained 10 codes. The first four codes are based upon the four intertwined processes, a code for taking leadership, for contextual incidents, and for ambiguities and tensions. The last three codes —remarkable incident, motive for innovating, and preparation of the innovation project leader— I added as an 'in vivo' code (Saldaña, 2009), codes that could emerge from the data, to ensure openness to incidents that did not directly fit the predesigned codes.

Table 4.5 Coding scheme

	CODE	DESCRIPTION
1	developing content	incidents about developing the innovation, the outcome
2	stimulating creativity	incidents about creativity, such problem understanding and problem solving
3	guiding the group dynamics	incidents about interpersonal aspects
4	managing project constraints	incidents about the constraints of time, budget, quality, and other constraining factors
5	taking leadership	the activities to steer and guide the project, the people, the process, the outcome
6	contextual	incidents happening outside the project team
7	ambiguities and tensions	incidents that were ambiguous or paradoxical or conflictuous
8	remarkable incident	an incident that could not be coded by the other seven, yet should be coded as remarkable.
9	motive for innovating	incidents about the intrinsic or explicit personal motive to innovating
10	preparation of the innovation project leader	incidents/activities about personal preparation of the innovation project leader

The codes do not exclude each other, especially since I defined in the theoretical framework that the four processes of the innovation journey are intertwined, and leadership of the innovation journey deals with this intertwining. As a result, an incident could have more than one code. A combination of more than one of the codes 1 to 5 indicates intertwinedness.

In a second cycle of coding I coded for existing storylines: series of incidents that could be presented in a narrative sequence, with a beginning, middle and ending.

I manually coded all interviews as a solo coder. To increase the reliability of the coding process, I asked two other senior researchers to code the transcript of approximately two hours of interview data in one of the cases. I provided a verbatim-transcribed interview document and a coding scheme with a brief explanation of the categories. The researchers delivered their codes in the text of the transcript. The coded transcripts were compared with the codes that I originally assigned to the same data. The main source of differences was a limited knowledge of the theoretical framework and limited knowledge of the innovation process compared to a researcher who has investigated these processes for two decades. One of the researchers indicated that she had to make some guesses about which code to assign. To illustrate this point: the sentence 'To solve the content problem, the team sat together' has both the words 'content' and 'team'. This could be coded as these two processes: content development, and group dynamics. In some cases, this was coded by the external researchers as 'a remarkable incident', while I coded this as an action that is part of the 'content development process'. The sentence 'To solve the problem, the innovation project leader decided it was better to call the team together' could also be coded as both 'content' and 'group dynamics', while I coded this as both, indicating intertwinedness. The differences were discussed with the two researchers and all issues were resolved.
The next step was the post-coding pre-writing (Saldaña, 2009). I grouped the coded materials and labelled the groups into episodes. This was an iterative process. Where necessary, I went back to the original material, for instance to re-read the context of a quotation or situation.

4.5.3 ANALYSING DATA

Based upon the interview data and field notes, I used two different strategies to analyse the data. I followed a narrative strategy as well as a visual mapping strategy (Langley, 1999).

In each case a number of episodes, that contained related incidents, were developed into *vignettes*. A vignette is a literary 'device', a roughly sketched scene or episode, that focuses on a particular moment, character, or action. Miles and Huberman (1994) have described a vignette as:

> *a focused description of a series of events taken to be representative, typical, or emblematic in the case you are doing. It has a narrative, story-like structure that preserves chronological flow and that normally is limited to a brief time span, to one or a few key actors, to a bounded space, or to all three. (Miles & Huberman, 1994, p. 81)*

I define vignettes as narrative snippets, building blocks of a story. The vignette could lack a plot, for example, the rich description of what the situation looked like at a specific moment in time. A vignette could also lack a *series* of events and describe just one specific action. I used the vignettes to identify and develop storylines within the four processes. Writing these case vignettes served as a thinking tool. The vignettes served later on as building blocks for the short stories in each case.

To enhance this process of developing insights, I also visualised the themes into hand drawn graphs. I made multiple graphs on brown paper. These sketches also served as thinking tools, in the same way that sketches do during creative brainstorming sessions (van der Lugt, 2005). I made a visual overview of each case by designing a graphical historical timeline, following the example of Langley and Truax (1994). On this timeline main case historical incidents were plotted. An example of such a timeline is shown in Figure 4.4. The horizontal axis depicts the timeline of the overall development. At certain moments in time key episodes happen, where processes are intertwined. This is depicted with speech balloons. Below the overall case line important episodes are depicted that occur in the context of the innovation journey.

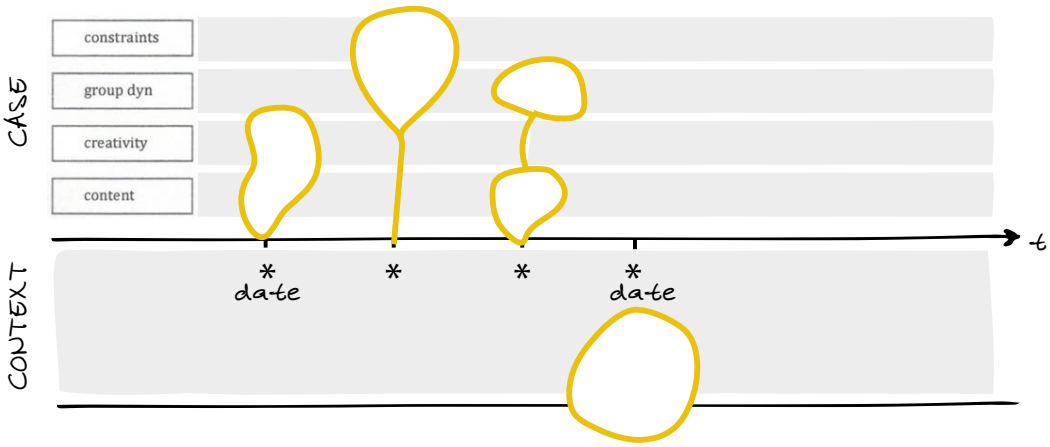


fig. 4.4. Example of visual analysis

4.5.4 CROSS CASE COMPARISON

In the cross case comparison, the courses of the innovation journeys were compared. The cross case analysis comprised a comparison of what the issues were in all four processes within the innovation journey and if and how the underlying processes were intertwined. This was mapped visually. These patterns were used to make the second step. The cases were compared using each of the intertwined process patterns as a perspective to see how the innovation project leaders led the innovation journey and how they handled ambiguities and tensions. The cross case comparison is presented in chapter 8. In a third step the cases were compared in the light of the experiences of the innovation project leaders that could be captured in a repertoire of narratives. These findings are presented in chapter 9.

4.6 The role of narratives in this research design

In this research project, narratives play a substantial role at different levels of the project. During the execution of this research project, I experienced ambivalence among peers and practitioners about the role of narratives in my research, and I received questions, such as, 'Are you doing a narrative inquiry?' or 'Are you studying storytelling?'. To eliminate or minimise ambiguities, the role of narratives in this dissertation demands some clarification.

Figure 4.5 sketches an overview of how and where narratives have a role in this research. Narratives emerged during the interviews with innovation project leaders. The interviews, including the embedded narratives where transcribed, coded, and grouped. The data were analysed in two ways, one of which was the writing of narrative vignettes. Based upon the visual analysis and the narrative vignettes, patterns were identified that led to case and cross case narratives, and to the output of each case and the narrative repertoire.

4.6.1 NARRATIVES IN COLLECTING DATA

Process data often consist largely of narratives, of what happened when and where and with whom (Langley, 1999). In the data collection in this research project the data also consist largely of narratives, besides archival data and some field notes. The narratives in the data are told by the actors, and sometimes I wrote narratives in my field notes. However, this was not because data collection was explicitly set up as a narrative research approach. The narratives in the interviews simply emerged, not because I specifically and explicitly asked for stories, but because people recall past events as stories (Bruner, 1991). I, therefore, do not label this data collecting as narrative interviewing.

4.6.2 NARRATIVES IN RELATION TO DATA ANALYSES

Polkinghorne (1995) has proposed a distinction between two forms of narrative inquiry, namely '*analysis of narrative*' and '*narrative analysis*'. In the '*analysis of narrative'*, the data that have to be analysed are gathered in the form of narratives, and a dataset consists typically of a number of narratives, and not only *one* story. The strategy to analyse these narratives could be either by concepts that are derived from the literature or by a grounded theory approach where concepts inductively derive from the data. The '*narrative analysis*' works basically the other way around. Here the researcher has to craft a narrative into 'a coherent developmental account' as Polkinghorne (1995) has put it, by combining and relating events and actions into an explanation. In this research project I used both modes of narrative inquiry. As parts of the data were already in narrative form, and I had a conceptual framework derived from the literature, I used '*analysis of narrative*' (Polkinghorne, 1995), or a narrative strategy (Langley, 1999) to analyse that specific data. I also used 'narrative analysis' and crafted narratives about the research in order to analyse the research findings. As described in the section on data analysis (section 4.5.3), I used the writing of 'narrative vignettes' to analyse the data.

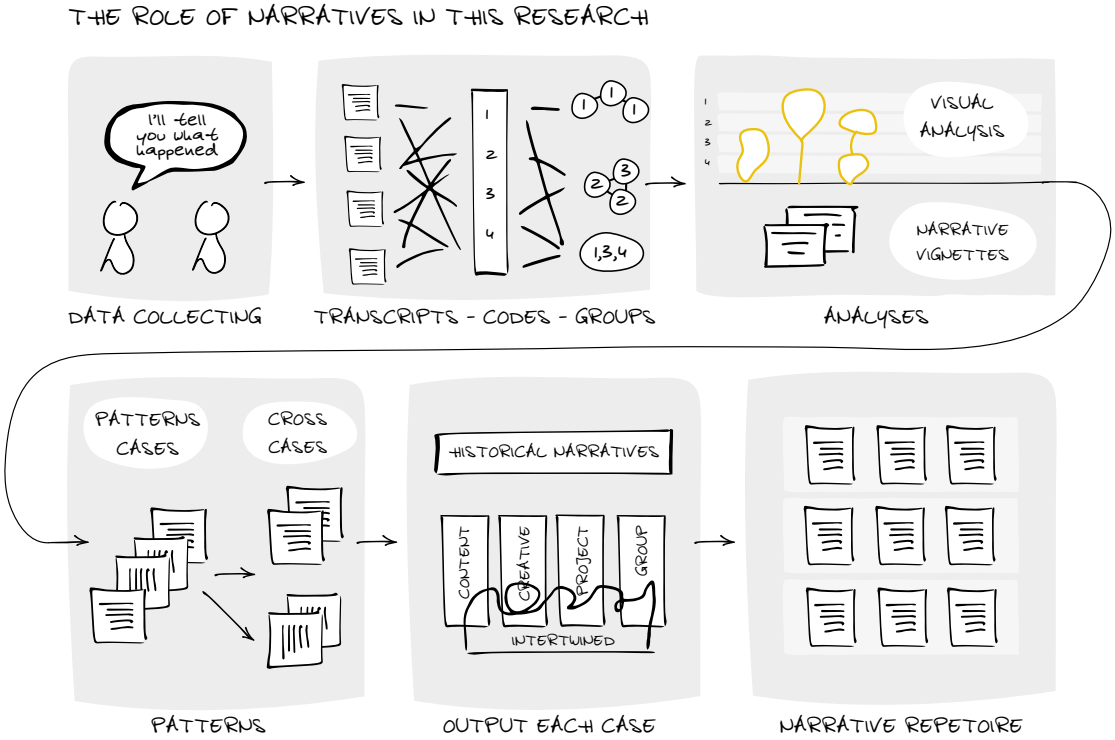


fig. 4.5. The role of narratives in this research

4.6.3 THE NARRATIVE OUTPUT OF THE RESEARCH

Process research is a combination of theory, methodology, and *literary genre* (Czarniawska, 1999; Nicolini, 2009, Van Maanen, 1988). Writing research results is part of every research project, and, especially so, for this research project. Since one of the objectives is the delivery of narratives as a starting point for building a narrative repertoire, the narratives as output of this research play a substantial role. In *Tales of the Field; On Writing Ethnography*, Van Maanen (1988) has stated:

> *Writing is intended as a communicative act between author and reader. Once a manuscript is released and goes public, however, the meanings writers may think they have frozen into print may melt before the eyes of active readers. Meanings are not permanently embedded by an author in the text at the moment of creation. They are woven from the symbolic capacity of a piece of writing and the social context of its reception. Most crucial, different categories of readers will display systematic differences in their perceptions and interpretations of the same writing. To produce an ethnography requires decisions about what to tell and how to tell it. These decisions are influenced by whom the writer plans to tell it to. (Van Maanen, 1988, p. 25)*

In process studies, the narratives are of a great importance, as the stories serve as constructs to explain the relationship between the events (Bruner, 1986; Pentland, 1999). This section will discuss the relevant literature on writing the narratives of this research project and describes the choices made.

4.6.3.1 Writing thick descriptions

Thick description is a term coined by Gilbert Ryle and further expanded by Clifford Geertz (1973) for a written account of the events in the context of the lived experience. Thick descriptions provide the reader with a detailed and rich description, as a contrast to 'thin' descriptions of factual findings (Cunliffe, 2010). 'The ethnographer "inscribes" social discourse; he writes it down. In so doing, "he turns it from a passing event, which exists only in its own moment of occurrence, into an account, which exists in its inscriptions and can be reconsulted" as Geertz has put it (Geertz, 1973, p. 19). Geertz has indicated that the ethnographic (thick) description has four characteristics: it is interpretive, it interprets the flow of the social discourse, it tries to capture what is said, and it is detailed (Geertz, 1973).

In this research the thick descriptions are written at different levels of detail into the process. At the surface in each case the historical narratives give an overview of the innovation journey. The descriptions around the patterns and themes in the four processes are based upon narrative snippets. Writing the thick descriptions about what happened could seem a pretty straightforward job. The incidents are observed by the researcher, and the story should unfold quite naturally. *Exercises in Style* (Queneau, 1947) has demonstrated that not the facts make the story, but the whole of facts and scenery and setting and tone. Queneau took a few simple facts: the narrator observes a crowded bus, a

man in a dispute with another man, a vacant seat, and two hours later the narrator sees the man again, being advised by a friend about his clothes. Based upon these data, Queneau wrote 99 different stories. Without being aware of the author's exercise, it leaves the reader with a totally different feeling about the happenings of that afternoon, and close reading is required to understand the resemblance between some of these stories. This example demonstrates that there is no such thing as one way to tell the story from the data. Writing thick descriptions in each case study about events during the innovation journey is therefore an interpretation and the reproduction of reality (Alexander, 2008). Although the thick descriptions are the interpretation of the researcher, the narratives should reflect the events as experienced by the participants. To evaluate the thick description and enhance the credibility and trustworthiness of the narrative output, I member-checked not only the interview quotes and the observed events with the participants , but I also member checked the written thick descriptions.

4.6.3.2 Narratives as theorising

The thick descriptions are narratives to describe what happened, to sketch the scene and the context during which the events happened. Some thick descriptions could serve as narratives for theorising, to provide an understanding and if possible an explanation of why and how events happened (Cornelissen, 2017). Weick has pointed out that the process of theory construction in organisational studies is a process of disciplined imagination (Weick, 1989). "The contribution of social science" Weick has emphasised, "does not lie in validated knowledge, but rather in the suggestion of relationships and connections that had previously not been suspected, relationships that change actions and perspectives" (Weick, 1989, p. 524). Process studies, as I have demonstrated earlier, are concerned with how and why things emerge, develop, grow, or terminate over time. Narratives as theorising deal with the relationships and connections of things (organisations, people, environments, strategies, routines, and innovations) that develop over time.

If theorising is not driven by concerns of validity but rather by plausibility, Weick has stated "it would follow that conjectures generated during theory construction are selected based on judgements of their plausibility, which can be assessed by a variety of selection criteria" (Weick, 1989, p. 525). "A good theory", Weick has argued, "is a plausible theory. The reactions to a theory could be *'That's interesting', 'That's absurd', 'That's irrelevant'*, or '*That's obvious*'". (italics in the original, Weick, 1989, pp. 520). "Whenever one reacts with the feeling that's interesting that reaction is a clue that current experience has been tested against past experience, and the past understanding has been found inadequate" (Weick, 1989, p. 525). That's interesting could be a substitute for a plausible theory.

4.6.3.3 Elements of narrative

The elements of a story are a protagonist, a series of events, a conflict, and a climax (McKee, 1997). Playing with these elements crafts a story. The protagonist and the series of

events are for most people familiar elements in a story. The story, according to McKee (1997), is "a series of acts, that build to a last act climax, or story climax, which brings about absolute and irreversible change." The conflict is an essential element to show the questions the protagonist is struggling with; it posses the questions that will, or will not, be solved by the story climax. These elements each have many variations, with one or many protagonists, with inner or external conflicts, in linear or non-linear timelines, with closed or open endings.

Pentland (1999) has identified five elements of narrative texts, based on Bruner (1990) and Barthes (1977):

1. Sequence in time. Narrative should include a clear beginning, middle, and end . . . Chronology is a central organising device. The events or actions referred to in a narrative are understood to happen in a sequence.
2. Focal actor or actors. Narratives are always about someone or something. There is a protagonist and, frequently, an antagonist as well. The characters may not be developed or even identified by name, but, along with sequence, they provide a thread that ties the events in a narrative together.
3. Identifiable narrative voice. A narrative is something that someone tells, so there should always be an identifiable voice doing the narrating. That voice reflects a specific point of view of the key participant or stakeholder choice.
4. 'Canonical' or evaluative frame of reference. Narratives carry meaning and cultural value because they encode, implicitly or explicitly, standards against which actions of the characters can be judged. . . . But even without any explicit moral, narratives embody a sense of what is right and wrong, appropriate or inappropriate, and so on.
5. Other indicators of content or context. Narrative texts typically contain more than just the bare events. In particular, they contain a variety of textual devices that are used to indicate time, place, attributes of the characters, attributes of the context, and so on. These indicators do not advance the plot, but they provide information that may be essential to the interpretation of the events (e.g. knowing that the scene is a wedding changes the significance of the utterance 'I do').

Pentland (1999) has not discussed the form of the narrative: fiction or non-fiction, nor the elements of style. The choice between fiction and non-fiction seems obsolete, since writing a research narrative is nearly always a non-fiction story. However, there are some cautious voices to listen to that suggest the exploration of fictional stories as a possible output (Fox, 2003; Kara, 2013; Rhodes 2005; Vickers, 2013). For a story to be worth telling and repeating, stories also have to be entertaining, well timed, involve a protagonist and maybe other characters, and have a plot (Gabriel, 2000). Although Caulley (2008) has called for qualitative research to be made less boring by using journalistic creative non-fiction techniques, the chapters on the cases studied are not designed as journalistic reports. However, writing the research output required making choices about the elements

of narrative in the case chapters, and being transparent about those choices. These are the choices that I made.

Protagonists

The stories are told from the perspective of the innovation project leader. However, these stories are not meant as hero stories. The innovation journeys that are portrayed in this dissertation and the innovation project leaders who led these journeys are not the type of lone, innovator genius who are glorified in popular publications, or the highly respected CEOs who changed their whole company or industry by their charismatic performances (Kets de Vries, 1998). These innovation project leaders were all 'just' employees, who happened to be in situation at a certain time, so that almost by coincidence they became leaders of the innovation journeys; steering the raft, and getting their feet wet, as we will see in the next chapters. Each case chapter outlines some characteristics of the innovation project leader to understand this person in their context. I could have chosen to write the stories in a neutral third person he or she, or even all in one gender neutral s/he. Instead, in an analogy with a 'persona' in design studies, I have chosen to name the innovation project leaders by their full name, to make them more human, and to make it easier for the reader to connect with that person (Green & Dill, 2013). The innovation project leaders are called by their real names Joris Craandijk, and Yvonne van Amerongen, and by the pseudonym Caroline de Vries.

Authenticity and language

The starting point of the narrative vignettes were the words spoken by the interviewees taken from the verbatim transcriptions. Using literal quotes from the interviews can disrupt the fluid line of a story (Crowther, Ironside, Spence, & Smythe, 2017), as people happen to speak in half sentences, adding extra details in between that do not matter for the story, leaving verbs out, making remarks out of the context, and so on. As a consequence, I sometimes edited a quotation or re-wrote a narrative during the process of analysis, without losing the authentic voice of the interviewee.

Literal quotations are even more difficult when the language of interviewing and publication differ. These language issues are rarely discussed (van Nes, Abma, Jonsson, & Deeg, 2010) although they impact the narratives and the authenticity of the voices of the interviewees. In this research project all three innovation project leaders and innovation team members are Dutch. Therefore, all field notes, workshops and interviews are recorded in Dutch, which is the native tongue for all of us. The used quotations in the narratives had to be translated. This was a challenging job, and even more so when the quotes contained sayings, metaphors, or culturally embedded examples. The majority of times, I translated from Dutch to English. This was an act of interpretation as well, though performed in line with the interpretation of the findings. After finishing the draft manuscript, a native English editor checked the grammar of the dissertation and the flow of the narratives, and made recommendations to improve language and readability.

A third problem from that perspective were the quotes from people with dementia, who had increasingly difficulties in finding the right words. Their sometimes gibberish Dutch could only be understood with the help of a subtitling other who could understand the provenance of the words. In this specific situation I dodged this language problem and used the quotes from people with severe dementia who were still able to speak and express their ideas and emotions to contextualise the case context (see further discussion of this in chapter 6).

Scholarly or literary tone of voice

As the narratives presented in this dissertation are first and foremost narratives for an academic audience, the tone and the chosen sequence of events is primarily meant for academic readers. For readability reasons I suppressed the scholarly tendency to abbreviate important constructs, such as IPL for 'innovation project leader' or RI for 'radical innovation'. Although Tsoukas pleads for scholars to become more novelist, and to play with the narrative times of past, present and future (H. Tsoukas, personal communication, 24 June, 2017), literary narratives are quickly experienced as frivolous, or as unnecessarily colourful sketching of a surrounding context before coming to the point. With the editor publishing my paper about the BeerTender case, I had a discussion about the word 'fun', which the editor preferred to change to 'exiting' since theirs was a scholarly publication. In the case of whodunits, scholars seem to prefer the murder to take place no later than the first page. This assumption guided the crafting of the narratives and the chosen tone of voice, although this all is a matter of taste and personal preferences.

4.7 Evaluative research criteria

This research does not claim an objective explanation of the world and therefore measures such as reliability, objectivity, and generalisability (Lincoln & Guba, 1985) are not useful to judge the trustworthiness of this research (Schwartz-Shea, 2006). Trustworthiness (not to be misunderstood as an objective 'truth'), "rivals the positivist standards for 'validity and reliability' in its clarity, while, at the same time, emphasizing the human aspect of interpretive research" Schwartz-Shea (2006, p. 103). Reviewing the literature about qualitative research, including Lincoln and Guba's *Naturalistic Inquiry* (1985) and Miles and Huberman's *Qualitative Data Analysis* (1984), Schwartz-Shea (2006) came to a set of six criteria for readers to judge the quality of what may be methodologically expected from interpretive research (Schwartz-Shea & Yanow, 2009). All together these six elements should inform the reader about the trustworthiness of the research.

1. The level of detail of thick descriptions should be sufficient for the reader to understand the situation that is less familiar to the reader than to the researcher.
2. The reader should gain an understanding of the researcher's reflexivity and how the researcher reflected on her role in the research process.

3. Triangulation, the use of different sources and different methods to understand the phenomena, should inform the reader not only about how this research was carried out, but also how it dealt with inconsistent or conflicting findings.
4. Audit refers to the way the research shows transparency to readers if and how the research process was followed or changed.
5. Negative case analysis is a means of showing the reader how the research has challenged its own meaning making process, and not looking for confirmation alone.
6. Member checking, to check with participants for possible differences in interpretations, beyond simply quote checking, is a way to perform such a negative case analysis.

To come to an evaluation of the research, Weick's description could also serve as qualitative criterion.

> *A theory is judged to be more plausible and of higher quality if it is interesting rather than obvious, irrelevant or absurd, obvious in novel ways, a source of unexpected connections, high in narrative rationality, aesthetically pleasing, or correspondent with presumed realities. (Weick, 1989, p 517)*

These two different approaches of evaluating the quality of the research demonstrates a different level of quality assurance. Schwartz-Shea and Yanow's approach is focused on the technical quality of the research. If the research is done properly, and checked against the suggested criteria, one could trust the outcome. Weick's approach is focused on the level of impact of the research. The latter approach does not mean the technical quality of the approach is not important. However, in my interpretation it *does* mean that a technically well performed and therefore trustworthy research, without being interesting, still does not possess the quality one strives for. As the aim of this research is to increase our understanding of how innovation project leaders lead their innovation journey over time, and to capture those experiences as a resource for others to learn from and to be better prepared, it is essential that the audiences for this research, both in academia and in practice, assess the research as interesting. I combine the quality criteria of Schwartz-Shea and Yanow (2009) with Weick's (1989) to evaluate the research.

Part II

INTO THE WILD

THREE INNOVATION JOURNEYS FROM THE PERSPECTIVE OF THE INNOVATION PROJECT LEADER

INTRODUCTION TO PART II

Part II of this dissertation has the title ‘Into the wild’. This part contains three innovation journeys seen through the eyes of the innovation project leader. The ‘Into the wild’ refers to the metaphor of the innovation journey on the white water rapids of the uncharted river (Van de Ven et al. 1999). This chapter captures the reality of the innovation project leaders “in the flight” as Pettigrew (1987) has indicated.

This second part contains the three case descriptions. For clarity and comparability each chapter follows the same structure. The case is introduced, including the core people involved and the data collection is specified. Each case contains a historical timeline of the development process, and the innovation is sketched within the context. Thereafter, the course of the innovation journey is described from the perspective of the innovation project leader.

The innovation journey is unpacked into the motive for innovating, the preparation of the innovation project leader, and the four intertwined processes. The four processes are

1. Developing the content process: acquiring knowledge (learning about customer needs, organisational fit, and technological possibilities) and making decisions about the content development;
2. Stimulating the creative process: problem finding, understanding, sensemaking, and (trial-and-error) problem solving;
3. Guiding the group dynamics process: team composition, communication and conflict resolution;
4. Managing the project constraints process: managing time, costs and quality constraints within the scope of the innovation project;

In the discussion section of each chapter I outline what has been learned so far about the course of the innovation journey, how the innovation project leader dealt with and led the four intertwined processes, and how they handled the ambiguities and tensions during the innovation journey.

CH 5 | THE CASE BEERTENDER, A HOME APPLIANCE FOR DRAUGHT BEER AT HOME[3]

5.1 Introduction to the case study

5.1.1 THE CASE BEERTENDER

The case BeerTender is a case about the development of the Heineken BeerTender, a system for draught beer at home. Draught beer was at the time of the product's development only known from the pub. The BeerTender was aimed at the consumer market. The product consisted of two components, a home-appliance and beer in a small keg. The home appliance was marketed by Krups, a brand name of the Moulinex-Brandt organisation, and the beer was initially only from the Heineken brand. At the time of introduction, it was an innovation in all respects: a new product, a new experience for consumers, a new supply chain, and with patented technology and new production methods for the Heineken organisation. This case was followed from 2000 until 2003. The project had several severe setbacks and unexpected incidents, but despite these, the innovation was introduced on the market in 2004.

5.1.2 CHAPTER OUTLINE

This chapter is the first case studied in this PhD project, that aims to better understand how innovation project leaders manoeuvre through the obstacles and white water rapids of the innovation journey (see chapter 2) This case study chapter is structured according to the same logic as the other two. In section 2 the case is introduced, along with the core people involved. I also describe how I collected which data and what my role was as researcher in this specific case. Section 3 discusses the innovation of BeerTender. This section begins with a historical narrative about what happened during the innovation journey. In section 4 the innovation journey is unpacked in relation to the motive for starting the innovation journey, how the innovation project leader was prepared, and how

3 Part of this chapter is based upon Enninga & van der Lugt, 2016

the four processes of the innovation journey, as identified in chapter 2, unfolded over time. Paragraph 5 discusses the findings of this innovation journey. In a brief section 6 I conclude this chapter and refer to chapter 8 for a full case studies comparison.

5.2 Research

5.2.1 CORE PEOPLE INVOLVED, JORIS CRAANDIJK AND COLLEAGUES

After the executive board of Heineken approved the initial idea, Joris Craandijk was appointed as the innovation project leader. Craandijk had an education in marketing and an extensive experience within the Heineken organisation. He was in his early forties and had worked for many years in several positions within Heineken around the world. To develop the product, a multi-disciplinary team with five team members was put together. The disciplines that were present in the team were industrial design engineering, technology, marketing, project management and planning, and administrative support. During the development phase a team member from Krups regularly joined the team. In line with the other two case studies, this case study is written from the perspective of the innovation project leader, depicting the process he, with his team, went through. To underscore this unilateral perspective of the innovation project leader, only Joris Craandijk is designated a name, while the achievements are, of course, not his alone.

5.2.2 COLLECTED DATA

Field data

The fieldwork was performed in two stages. I collected data from 2000 to 2003. Shortly before the market introduction, the innovation project leader left the project. In spring 2004 I interviewed the innovation project leader in a series of retrospective interviews. The retrospective interviews were conducted on three different occasions, within a period of three weeks. The setting was an open dialogue between the researcher and the innovation project leader in which we discussed all major events over the three years of his project time. The dialogue and the questions were informed by the knowledge I had acquired over the preceding years. The interview was recorded in Dutch, the native tongue of both the innovation project leader and the researcher. The conversation was recorded on video, with the assistance of a Dutch documentary film director. These recordings resulted in 10 hours of video taped conversation. Together with the documentary film director the conversation was coded with spot lists. The spot lists are an alternative to transcriptions, containing tape numbers, time codes, and shortened versions of the conversation sentences. Based upon the spot lists fragments of the conversation were extracted that mark a specific event or episode. These fragments of the conversation were combined into episodes and are transcribed and translated in English.

ARCHIVAL DOCUMENTS

During the years of the study, I had access to archival data, such as relevant reports and memos of the innovation project team. These documents served as input for the preparation of the video-taped interview.

Figure 5.1 (below) gives an overview of the moments of data collection, as described in section 5.2, plotted on the historical timeline of the development process of BeerTender as described in section 5.3.1.

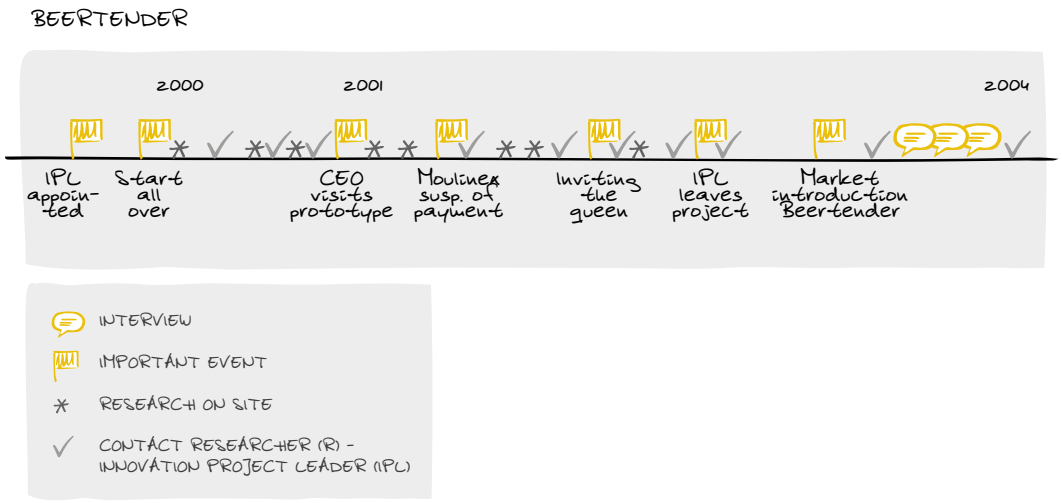


fig. 5.1 Data collection on the historical timeline of BeerTender

5.2.3 THE RESEARCHER'S DIFFERENT ROLES

The first phase of this study was not directly set up as a research project. I was present on various occasions during the innovation journey as an external management consultant. I facilitated and participated in several workshops and meetings with the innovation project team. Other external participants sometimes complemented the workshops. Most of these one or two-day workshops were held in the workshop location of the former management consultancy agency I was co-founder of. I did not attend all workshops that the innovation project team organised in this location. If I was not present during a specific workshop, I also met the innovation project team during breaks, and I had dialogues with the team. These informal meetings added to my understanding of the course of the innovation journey that this team was travelling. As the journey was so challenging and the lessons learned seemed interesting for a broader audience, I decided to start a research project to

capture the course of the innovation journey. By starting this research during the innovation journey, I combined the roles of a management consultant and of a researcher until 2003. When I interviewed the innovation project leader in 2004, I was no longer active as a management consultant in the project.

5.3 The innovation of BeerTender

5.3.1 HISTORICAL NARRATIVE OF BEERTENDER

The initial story began in the 1990s within Heineken Netherlands, a local operating company. Two young employees had developed a working prototype of a draught beer system for the home, but for various reasons Heineken Netherlands decided not to support further development. In 1999 the two men had the opportunity to present the working prototype to the executive board, which liked the idea and decided to support the development. Further development was organised with a separate project team, reporting directly to the executive board.

The idea was a breakthrough in all aspects of the existing production and marketing of Heineken in the consumer market: a different product with an installed base marketing concept, developing the market together with partners, a different packaging, a different production line for filling the kegs, and as a consequence, differences for the stores selling appliances, kegs, and taking empty kegs in. The project was also differently organised since the project leader was reporting directly to the executive board, developing a home appliance without a track record as an organisation in developing hardware. Although a few adjustments had to be made to the prototype, the expectation was that it was merely a marketing project to introduce the home appliance to the market.

Because the project was new to Joris Craandijk, he began by organising a week-long workshop to go through all details: to understand how and why this innovation could add value to the organisation and its customers, the concept, the underlying market research, the technology, the organisational issues so far, and the remaining challenges that needed to be solved. Following consumer tests had shown that the prototype was flawed. The initial keg was made of PET, a thermoplastic polymer. Consumers did not like the idea of a keg that shrank while emptying. Moreover, PET was not a returnable concept, which did not fit the regulations in several local markets.

The innovation project leader proposed to start all over again. The executive board agreed, with two conditions. It had to be a patented system. And it had to be a closed system: the beer in this draught beer consumer system would, at first, only be Heineken-beer. No other brands from the Heineken organisation would be for sale in the kegs, nor beer from competitors. The decision to postpone the market introduction and start all over again had great impact. Within the Heineken organisation the project received criticism, since the innovation project leader could not guarantee a new time frame for market introduction. As a consequence of starting all over, the project had to find a new hardware partner as well, as the existing hardware partner lost faith in the project and decided to quit. It was decided that Heineken would buy the patents so far, and they took full ownership of the development, including the development of the patented hardware. The innovation project leader found a new partner organisation in Moulinex-Brandt and their brand Krups for the marketing of the home appliance and partnered with Saeco for the production of the home appliance.

The development of a new system proved to be more complicated than had initially been imagined. Many technological issues had to be solved to meet both consumer and technological requirements. After two years of hard work, and smaller and bigger setbacks in the technological development, the team seemed to progress; the technological issues were solved or nearly solved, and plans were drawn up for a sequential market introduction in several countries. Then, the unexpected unexpectedness happened. Partner Moulinex-Brandt filed in September 2001 for suspension of payment, which was followed by a bankruptcy. In the days that followed the innovation project team operated in a vacuum. The colleagues from Krups did not answer their phones, and, although the news was public, no senior managers from the Heineken organisation seemed to have noticed or shared the devastated feelings of the innovation project team. After a period of silence, the Krups colleagues arrived with the news that the Krups brand seemed sound and they were working on a take-over. The Krups colleagues were willing to continue participation in the project, although they could not take any decisions at that point in time.

One of Craandijk's biggest concerns was that after the bankruptcy of Moulinex-Brandt, the sub-contractors that were working on parts of the system, would lose faith in the project and would quit. The innovation project team used the months that followed to do an audit of all sub-projects while keeping an open and direct communication with all participants. This intervention provided the time that the innovation project leader needed to convince the administrators of Krups to continue the project, and re-establish partnership with the new administrators after the take-over of the Krups brand by Groupe SEB.

After a nerve-racking period, in 2002 the project was up and running again. The innovation team members and their supplier partners were working hard in all sub-projects to improve their parts of the system. This improving and tweaking in sub-projects seemed to continue forever, and it seemed that the system would never be to everyone's

satisfaction. The innovation project leader decided to force the product launch, and announced the introduction in Switzerland by spring 2003, followed by the Netherlands in 2004. After this last stressful period, Joris Craandijk experienced that the moment had come to leave the project, and that another project leader should lead the market introductions.

5.3.2 THE INNOVATION: DRAUGHT BEER AT HOME

The product has two components: a durable and a consumable component. The product could be compared, for instance, with a printer, or an espresso machine with coffee pads. The durable, the hardware, is the home appliance. The consumable component, the software, is beer in a keg. Once the consumer has bought the hardware product, he can use the consumables. Draught beer is a product that is known from the pub. Pub beer comes in special kegs or in quantities that are stored in a big tank in the cellar of the pub. The beer pump in the pub uses carbon dioxide (CO_2) cylinders for pressure. The pipes of the beer system in the pub need regular cleaning with tap water. From consumer research the innovation project team learned that consumers often do not clean appliances, such as espresso machines or electric kettles, on a regular basis. Early in the process of the development of the innovation, it was decided that the consumer product should be hassle free. The mantra for the innovation became 'bringing the quality of a fresh draught beer at home without hassle, no cleaning, no CO_2'. For some of the targeted consumer markets the kegs had to be returnable. The beer in the BeerTender came in plastic kegs of four litres.

5.4 Unpacking the innovation journey

5.4.1 THE MOTIVE FOR INNOVATING

For decades, the beer industry has been more or less the same, with limited renewal. The idea for a draught beer at home system came bottom up from one of the operating companies. A number of senior managers saw the potential of this combination of an appliance and beer. The quality of draught beer at home, with the experience of tapping a fresh beer from the faucet, with the correct amount of froth, would give an added value for the experienced beer drinker.

> *If that's how you approach the market and you're the first to do so and the product really is superior, you can create a revolution in the industry. In my opinion the beer industry was dramatically ready for breakthrough innovation. We can't live for another forty years on what's been there forty years. We said: were going to bring the quality of draught beer at home. Affordably, too. And it had to be idiot proof. And it had to be simple. So there had to be no cleaning, and no CO2. That was important. We knew about espresso machines and*

the de-calcifying of electric kettles: people just don't do it. There's no carbon dioxide required to push the beer out of the keg the way they do in the catering world. And you don't have to clean the appliance. All part of that breakthrough. (interview Joris Craandijk, 2004)

5.4.2 HOW THE INNOVATION PROJECT LEADER WAS PREPARED

Joris Craandijk was an experienced manager within the Heineken organisation, with over a decade of general management experience both in the Netherlands and abroad. He had received an education in marketing. He had experience in leading a team of people, had experience in all aspects of the Heineken product and beer production, and had a network within the Heineken organisation and externally. When he started this project as an innovation project leader, he was in his early forties. The assumption was that the product was almost finished, and the focus would be on the market introduction. That was familiar territory for the appointed innovation project leader. During the first months of his project time, the innovation project leader found out that the product was far from ready, and that is the point where the development phase of the innovation journey started.

5.4.3 FOUR PROCESSES

5.4.3.1 Developing the content process

The development was technically much more complicated than the innovation project leader had initially expected. Within the project team Craandijk made a division between 'front office' and 'back office'. The front office side of the project team dealt with the business side: the viability, the branding, and the market introduction. After market introduction, the exploiting operating companies of the Heineken organisation should take over. The 'back office' side of the innovation project team dealt with the feasibility side of the project: the development of the home appliance (hardware), the keg for the beer (software), and the brewery filling line. The innovation project team members were responsible for a part of either the front or the back. The team met regularly during meetings they called 'the interface meeting' (fig. 5.1).

In the interface meeting, team members discussed the progress of each sub-project, shared the problems they had in developing content or in relationships with suppliers, and aligned their time issues.

The anticipated consumer needs of no cleaning, and no CO_2 had significant consequences for the technological realisation. The whole system, machine and keg and pouring a beer had to be hassle free. The team developed a story about a suggested future user to express what they meant by hassle free.

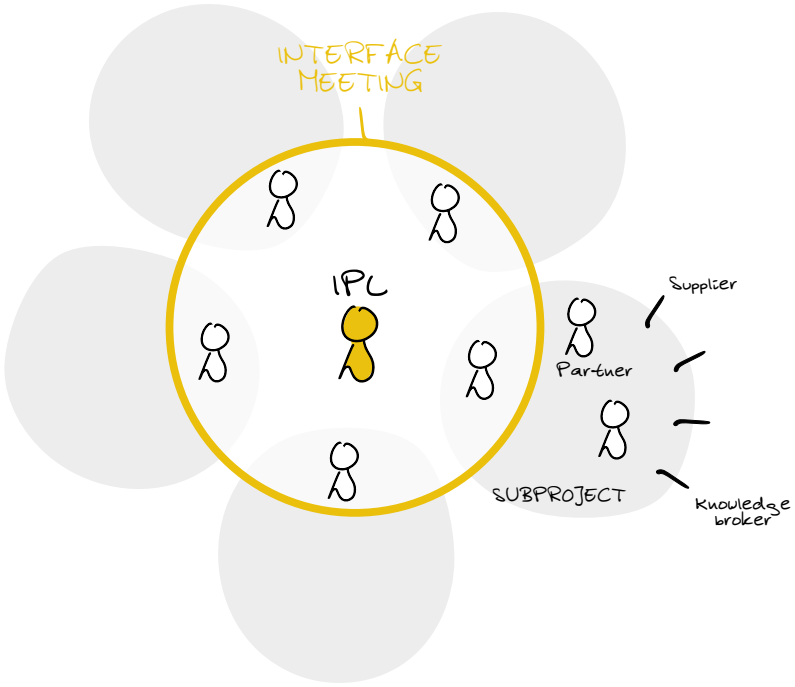


fig. 5.2 Interface meeting and the connections with sub-projects.

The appliance had to be without hassle, 'idiot proof' as we called it. To illustrate this, we created the following story. Imagine an old man (Grandpa) who has a BeerTender. He is going to watch the football match on TV. He pours himself a beer, and gets comfortable in his big armchair. The game is on. He wants to have a second beer, but cannot leave the telly, as the match is too exciting. So he shouts for his wife. When she tries to pour him a glass, she finds out the keg is empty. 'How do I put the new beer in, hon?' she asks the old man. And he shouts back: 'Come on, just fling em in, Gran!' And that shout became proverbial. Putting in a new keg should be so easy, so idiot proof, that even Grandma would have no difficulties what-so-ever putting a new keg into the appliance. (interview Joris Craandijk, 2004)

The story was shared with partners in the network to explain the simplicity of use to others. The expression 'fling 'm in Gran' became proverbial within the team.

Another anticipated consumer need was the size of the appliance. The appliance could not be too bulky, as no one would want to have another appliance at the sink that was the size of a microwave. Yet, the appliance had to carry a certain amount of beer in the keg, and had to cool the beer to the correct temperature.

The whole project was a series of decisions. The appliance has a technical side. You've got the literal dimensions of height, width and depth. There are the dimensions as you see them, perceive them. There is the concept of look and feel, the way it strikes people. That's the emotional side. Good designers can play around with that. Perhaps the real dimensions are quite large, but you can make it so nice that it strikes people as smaller. On the one hand you want to put as many litres of beer in as possible. The gross/net relationship. We want to put as much beer into it as possible, while keeping the appliance small. Those were contrasting elements. We had to find a synthesis. (interview Joris Craandijk, 2004)

The team figured out that the look and feel had a different connotation for different people in one household. If in a household of two, one person loves beer, and would like to have the BeerTender, and the other does not, the look and feel from those two perspectives matter. If the home appliance is too big, no one will have the machine on the sink. The innovation project team called this 'the battle of the sink'.

The project challenged the unwritten rules of the organisation about 'how we do things here'. This was experienced in relation to packaging, distributing and selling beer: beer in a plastic keg, no carbon dioxide but oxygen pressure, a brewery filling line without pasteurising afterwards, and selling under the condition that the consumer has already installed a home appliance, were all changes from the existing status quo. This had consequences for nearly all existing processes within the organisation. The beer had to be bottled in the kegs under different conditions, the distribution would change as the kegs had a different size than a carton of beer bottles. In the supermarkets the storage of beer changed, as well as the process of returning kegs. Most supermarkets had a machine installed for the intake of empty bottles and crates. These had to be made suitable for the kegs, too. The conditional side of the system worried the commercial people. It was the first time Heineken would sell their product in a so-called 'installed base' system. The consumer first had to buy a product, the home appliance, before he could enjoy his Heineken beer. The colleagues that worried the most were the brewers. In their opinion the proposed system was technically speaking an inferior product, since oxygen could ruin the quality of the beer.

There we really turned things upside down. Much more than in logistics or supermarkets. By replacing the good old can or bottle... with a four-litre volume keg. Beer in plastic. And the real, the real experienced brewers, as they call themselves look with startled eyes at beer in plastic. Because plastic is a worse barrier than steel, tin or glass. They're dead scared carbon dioxide will leak out and oxygen will seep in, so that the quality is reduced. We lavished a lot of care on that subject because there were always critical questions from brewers. There was worse to come: We put the beer in a bag. That was unpalatable for some people. The same questions: oxygen will seep in, and carbon dioxide will come out. That was a cause of worry to them. The next thing was that filling had to take place under

aseptic conditions. Glass and tin can be pasteurised afterwards in a 60 degrees environment. If anything should have gone amiss pasteurising can cure it, but not in this case. It has to be right first time. So the bags are filled in a special location. In a 'clean room'. They're filled aseptically in the brewery. And in the world of breweries it raises a lot of eyebrows if you suggest that. But if you want to use the Heineken name... you have to satisfy the very highest quality requirements. So it was an uphill battle to achieve. But in the end, we managed to deliver despite the fact that we changed or ignored some industry rules. (interview Joris Craandijk, 2004)

The innovation project team had to make sense of the new problems that arose, and new solutions had to be found for those new problems. The innovation project team worked closely together with Moulinex-Brandt, the owner of the Krups brand, as well as with Saeco. In addition to these two main partners, the project had a great number of sub-contractors working on different parts of the home appliance or the keg, as well as a great number of advisors for those different parts.

The knowledge is somewhere. We just had to get it around the table at the moment we needed it. For patents you need a patent expert. For plastics a 'plastics professor'. For cooling you need a cooling professor. That's what I did. I learned not to be the smart ass who can do everything by himself. (interview Joris Craandijk, 2004)

5.4.3.2 Stimulating the creative process

Many smaller and bigger issues needed to be solved with unorthodox solutions. One problem for instance was the size of the appliance and the size of the cooling unit inside it. The appliance had to be as small as possible to be allowed on the sink (see content development process). The cooling unit had to be small, yet had to cool down the beer as fast as possible. The innovation project team called this cooling process 'the reverse microwave'. This terminology made the problem clear at once: not heating as in a microwave, but reversing, meaning cooling, with the speed of a microwave, that is in just seconds. The innovation project team tried to find a solution to make the cooling unit smaller, by looking into different analogical products, for example the small refrigerators in hotel rooms. In the end, they found the solution in Peltier cooling, a principle of thermo-electric cooling that was used in the health care industry, which allowed for the design of a smaller device.

Some problems were more complex to articulate than a reverse microwave. The innovation project team used scenario stories to depict such problems, for example the story below concerning 'a father from Schier'. This was a fictive customer journey in the buying process of a suggested future user, to depict the anticipated problems in the supply chain. The story was not based upon preliminary research but on common sense, and the scenario arose during one of the workshops.

The partner making the appliance has a different business model than the brewer. A hardware appliance is produced in quantities at one time, and sold only once every few years to a consumer, while the brewer is a 'fast mover' with a business model based on selling over and over. The production of the beer kegs is not fixed and can be augmented depending on the demand. Traditionally, household appliances and fast moving consumer goods are sold in different stores. And in some countries, hardware stores are not allowed to sell beer. So how do you align those two different models in the supply chain? To understand the nature of the problem, the team decides to illustrate the case with the story of a customer: Suppose a young man in the Netherlands buys an appliance for his father. For his fiftieth birthday, let's say. However, the father happens to live on Schiermonnikoog, a small island in the very north of the Netherlands. When he gets this appliance as a gift, he needs to buy the beer as well. His son isn't going to bring a keg every week, is he? So the only grocery store on the island has to sell the beer. Otherwise this birthday present is useless to the father. And the shop will only sell beer, if it has a certain turnover in beer. Not for one father with one appliance! If you make the appliance available all over the country, as you would with a standard appliance, you will encounter this kind of problems. It led to a discussion of how to approach the market, with scenarios for the father, where to buy appliance and beer, and scenarios for the various retailers as well. The solution was found in a different business model than usual, and in selective distribution. We named it 'Revving while braking'. Both the character 'a Father from Schier' and the 'revving while braking' became common expressions that the team used to address this complex issue. (interview Joris Craandijk, 2004)

5.4.3.3 Guiding the group dynamics process

'Group dynamics' could suggest that the innovation project leader had only one group to manage, which was not the case in reality. The various groups that the innovation project leader had to deal with (see fig. 5.2) were first of all the team members. Then various groups within Heineken, the exploiting organisation, such as the executive board, the senior managers, and content experts such as brewers or supply chain managers who cooperated in the sub-projects. Outside Heineken, yet close to the innovation team, the innovation project leader had to manage group dynamics with partner organisation Krups, and the appliance builder Saeco. A number of different suppliers worked in sub-projects or added knowledge to the project. The innovation project had a relatively large number of advisors over the duration of the project. The users were stakeholders but, in this project, not a group in terms of group dynamics. Users were consulted as part of the development process in market research sessions.

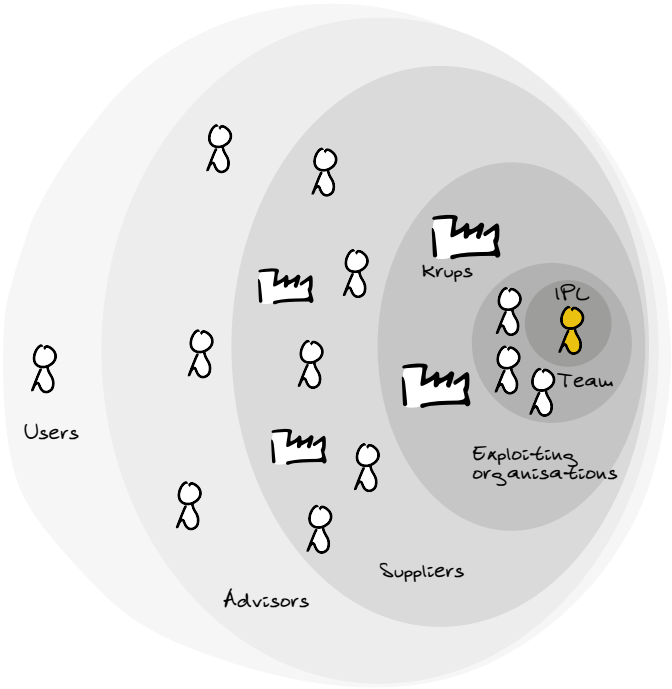


fig. 5.3 Groups in relation to the innovation project leader BeerTender

The Heineken organisation is organised hierarchically into a staff organisation at a corporate head office and a line organisation with a number of operating companies, organised in transnational regions. The innovation project team was organised as a project organisation, outside both the staff as well as the line organisation, and reported directly to the executive board. This was intended to protect the development of the innovation from overly strong influences from of the exploiting side of the company.
The innovation project team members were each responsible for one part of the project. The team discussed their ideas, ambitions, and expectations and gave their end goal a name: New York. To establish a sound connection between the content of the sub-projects, and between the individual team members, the innovation project leader organised the interface meetings as a platform were everything came together.

I had organised my team in various sub-projects. And the link that connected us we called the interface. Like a technical interface: How do the keg, the dispenser and the filler work together? They have to be geared to each other. The funny thing is that we all felt, since each of us had a sub-project to work on, that we'd better regard the interface meeting as a holy institution. Otherwise, since everyone was responsible for part of the problem we'd be pulled apart. I used the metaphor of a boat. Really Dutch. We're all in the same boat. We'll

sail to New York and then we'll have a big party. We sail to New York, but don't ask me how. The wind will take us somewhere. We're all in that little boat. There's no way you can get out halfway. Just make sure that the rudder, the foresail and the galley operate. Then there's a chance that all of us arrive there one day. If spinnaker, foresail, rudder and galley are all well manned... and the boat goes very fast because there's a lot of wind... it would be strange if you didn't get to New York. Apart from sailing into a whale. (interview Joris Craandijk, 2004)

The innovation project leader realised that the team chemistry was important, especially because this multi-disciplinary team had to connect well at the interface of all sub-projects. Craandijk found it important that all team members were able and willing to cooperating and finding solutions not only in the individually steered sub-projects but more importantly at the interfaces of the sub-projects. He invested time and energy in team building.

We spent lots of sessions on getting to know each other and explore our chemistry. Is this a crew to go sailing with? In sailing contests, too, a crewmember may be sent away if he doesn't fit in. He may be a great sailor, but if the chemistry isn't right, out he goes. A fine sailor. But he just doesn't fit in this team. The interest of the team weighs more than individual interests. I was sensitive to that: Is it good for the team or not? You have to keep making sure that the chemistry between them stays right. As the manager you must put on the agenda: 'Off to the pub.' I did that a lot with them. Because it's a good thing to do. We went to the pub at Schiphol Airport. We spent a lot of time having a beer on a Friday night. People have to let off steam on a Friday night when the work is stressful. You have to be sensitive to that. And if there's an outburst, don't jump overboard in a panic. If you want to work together you have to be able to laugh and cry together. (interview Joris Craandijk, 2004)

Events that happened during the innovation journey could affect the morality of the team and the bonding. The team had their internal difficulties at times. At other times, events could enforce their motivation, such as the time that the CEO visited their prototype lab to see the progress. The CEO didn't know how difficult the previous period had been, and was quite happy with the result of the working prototype.

The first beer we drew from the prototype was all foam. You couldn't even drink it. I remember telling the guys the CEO was coming to see us. Man, they worked night and day. Literally, night and day. I can still see the CEO coming in, going to the BeerTender prototype. Without asking anyone he pulled on the faucet. We all missed six heartbeats. He even did it right, without knowing. You've got to pull it right down. There are cowards who stop halfway. But he gave it a firm push. And the beer was perfect. And he said: 'Well, this is a piece of cake.' A piece of cake? He should have noticed all our pale, tired faces. OK, a piece of cake. But that's the kind of moment you need: When the perfect beer comes out. That gave all of us an enormous amount of new energy. (interview Joris Craandijk, 2004)

The complexity of the group dynamics increased, as circles of people involved outside the innovation project team grew during the development process. Within the Heineken organisation the team was in contact with colleagues in the exploiting organisation to discuss the project and get input and support for aspects of the innovation project. Not everybody was happy with the developments.

> *One day a man came to my office and I asked him to help me and he said straight to my face: 'I simply don't believe in your project!', and that was it. I had a few of those. If you are to take those criticasters seriously and you are to say: 'This man surely knows what he's talking about...' you might come to the conclusion you should stop your project right away. (interview Joris Craandijk, 2004)*

The team also found supportive colleagues, who liked the idea, although some still thought it was crazy. These positive people were willing to spend some time on an aspect of the project, to help the team in their development and help explore the production process. In the brewery in Den Bosch, the innovation project team set up a prototype of a production facility with the help of the plant manager.

> *In the brewery in 's-Hertogenbosch there were lots of people who said that it was a bizarre idea and that it wouldn't be possible. But the manager would let us use their brewery. They made space and people available. And all those new machines from our project, essentially different from what they used there. Imagine: they have a hall where ninety thousand cans of beer are filled in an hour. And there we were playing around with a keg on a conveyor belt. It had to be aseptic, everything just spic-and-span. Not a single dust particle was allowed. A completely different world for those guys. But the manager just loved it. If the manager had been one of those grumbling types, wondering what I was doing, saying: 'It only costs money and it gives me a headache'... we'd never last together until the end. It would have caused friction. If I'd had that kind of person there in the brewery, where I had to test our filling concept, I would have said: I'll find someone else. We're not going to make it together.' You have to find people who are not easily put off by complicated challenges. They'll see that it doesn't fit in with what they do, but they're not daunted. They will make time and people available for it, and they will help with what they can. (interview Joris Craandijk, 2004)*

The external group of participants also grew during the project. It was important for the innovation project leader to keep all participants 'on board', to stay within the same metaphor used by Joris Craandijk. The innovation project leader managed those group dynamics by trying to make the progress as tangible as possible.

> *I learned very early on, by experience and from others as well, that you continuously have to lead people by the hand through the tangible evidence for what you're doing. First it was a drawing, then it was a little model. Then it acquired a rudimentary prototype. That*

way, slowly, you help people to walk along with you. You have to build in moments when things become more concrete. If you stay in a vacuum for too long you won't last, and you lose the cooperation of important people. There has to be tangible progress. (interview Joris Craandijk, 2004)

A special episode was the suspension of payment and the bankruptcy of Moulinex-Brandt. When telling this episode, Joris Craandijk referred to the metaphor of a boat, sailing to New York, the metaphor he had used to institute the interface meetings.

At a certain moment, everything was going smoothly. Everything was doing its job, the spinnaker, the mainsail, and the people too, the helmsman and the cook, and as long as you have wind, the right winds, strong and in the right direction, then the boat goes very fast... Yes, then it would be strange if you didn't reach New York. Apart from hitting a whale. So we never expected the unexpected. We were sailing at full speed. And then, all of a sudden, there was that mad Friday morning when the telephone rang. I was at home and my colleague from Switzerland rang to say he had heard that the CEO of Moulinex-Brandt had just applied for a suspension of payment. Moulinex-Brandt was the mother company of our hardware partner Krups. That was like crashing into a whale, full speed! Then it's all hands on deck. Suddenly there are a whole lot of other things happening. And don't adjust the sails when you're stuck on a whale. There's no point. For two months I had the feeling: Guys, this ship is going down... I was so afraid that all the other smaller partners would leave, too. But as a result of enormous efforts we got all the partners in the project aligned and were able to carry on. I said to my wife: 'We made it. We've reached the Hudson!' We hadn't made it yet, of course. It took a lot more time and money. But basically, we had passed this point of no return. (interview Joris Craandijk, 2004)

The innovation project team used the months that followed to do an audit of all sub-projects. They learned that some of the supplier-partners working in sub-projects were not so worried about Krups, as they were so busy trying to solve the technological issues they had themselves. In some other sub-projects, the audit was less necessary as all participants knew the precise state of the sub-project, but the audit gave an opportunity to keep an open communication with all involved, even when there was no news about the situation on the Krups side.

5.4.3.4 Managing the project constraints process

Money

With hindsight, money was not the biggest issue for the innovation project leader during this innovation journey. Technological problems and unexpected events that had a negative influence on the timing, required that the budget had to be increased a few times during the innovation journey. The innovation project leader succeeded in having the executive board approve these budget increases.

Time

How could the innovation project leader finish the project on time? That was one of the biggest issues for Joris Craandijk. After the hurdles of the Moulinex episode, everybody worked hard to put an extra effort in making his piece even better than before. The innovation project team invited a project manager from a totally different innovative project to learn how this manager forced the ending of the project at a certain moment in time.

> *Those 'Gyro Gearloose' people [named after the world-famous Disney inventor, TLE], are never ready; the appliance will never be 100% finished. There is always room for improvement. Nobody is the master of time. In a project like this, one person holds the purse strings. Another one manages the manpower. And then there's a boss who deals with the overall concept development itself. In this kind of innovation projects, there isn't one person who is the boss of time, not in a large company, not even when you're doing it on your own. Nobody can say: I'm the boss of time, and today this or that has to happen. We talked to the co-director of the Arena project, the Ajax football stadium. That was a very innovative concept with a stadium roof that could open and close. And this guy had construction supervisors who ran into problems as one job turned out to be very difficult. They kept buying time, wanting to move the completion date further and further away. So then the manager said: 'Guys, tomorrow I'm sending the invitation to Her Majesty the Queen to open the Arena building.' And he really did. One could also say: We'll have a presentation with the Board of Directors. We have to do it well and it's next week. But then there's a safety margin. You don't show everything, or not yet. Or you can add something the next day. But inviting the Queen for the opening...that's when your boat arrives in New York. There's no way out. But be careful! You can only play a trump card like that once! And if you fail in the eyes of the Queen, you fail big-time. (interview Joris Craandijk, 2004)*

Inviting the Queen to cut the ribbon for the introduction of the innovation immediately made sense to the innovation project leader. The expression 'inviting the Queen' became also a proverbial expression within the team. Craandijk realised from this experience that he had to force the product launch, with the knowledge that the product would not be ready. He acknowledged that when the product was on the market, the organisation could learn from the market feedback to improve the product and design an improved model. The product launch was forced by announcing the market introduction in Switzerland by spring 2003, followed by the Netherlands in 2004.

Quality Constraints

The executive board had the innovation project approved under the condition that the technology would be patented. The innovation project team had to meet quality constraints with regards to the beer quality. One of the issues was the oxygen for pressure and the permeability of plastic. If the beer were exposed to oxygen, somewhere in the process, the taste, the brightness, and the quality of the froth would be negatively influenced. This was one of the biggest worries for the experienced brewers in the company. Consumers, however, turned out to have different worries.

> *Durability, oddly enough. That was their first worry. People all asked: And how long will it keep? And although I'm a marketing man, it surprised me. Nobody wonders how long you can keep a beer bottle. It's not an issue. You take your bottle from a crate, but do you check the date? No one does. Most people know, by instinct, that in catering, beer has to be fresh. So by implication probably it doesn't keep well. And suddenly, with draught beer at home, they worry about shelf life. Suddenly it's an issue, whereas at home they never look what the best-before date was. But here, they asked: How long will it keep? Should I finish it in one day?*
>
> *The enemies of beer are heat and light. But this is beer in a keg and the appliance has a cooler inside. So the light and the temperature don't bother the beer. Of course, we checked how long we could guarantee quality. And we arrived at 21 days. 21 days! A month would have been better. But 21 days is three weeks for half a bottle crate. For consumers that happened to be that is the end of the issue. Half a crate in three weeks is enough to reassure the consumer. (interview Joris Craandijk, 2004)*

5.5 Discussion

5.5.1 INTRODUCTION

The previous sections described the course of the innovation journey of BeerTender's development seen through the eyes of the innovation project leader. In this section I will discuss the lessons learnt so far about the course of the innovation journey, how the innovation project leader dealt with and led the four intertwined processes, and how he handled the ambiguities and tensions during the innovation journey.

5.5.2 THE COURSE OF THE INNOVATION JOURNEY OVER TIME

The innovation project of BeerTender had a development path with a number of unexpected events and the road was bumpy from time to time. Comparing the development path of the BeerTender journey with the innovation process model of Van de Ven and colleagues (Van de Ven et al., 1999), some differences are visible (fig. 5.3).

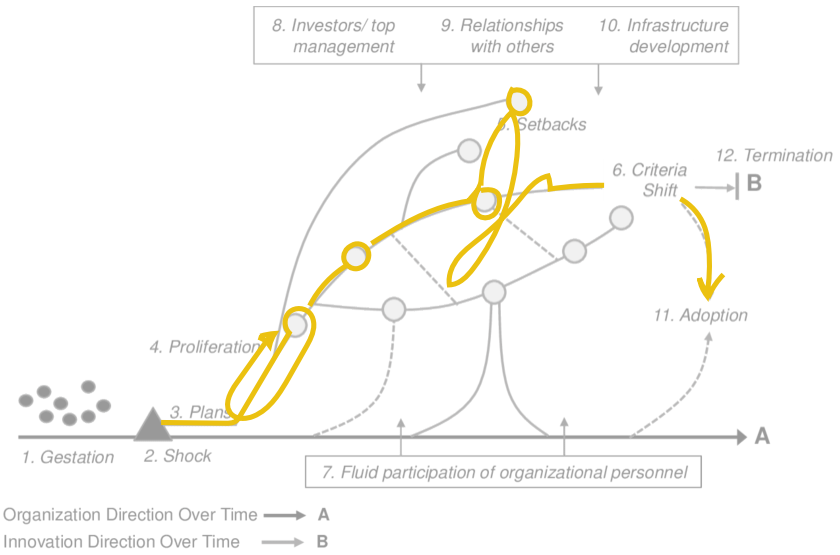


fig. 5.4 The innovation journey of BeerTender (adapted from Van de Ven et al., 1999)

The gestation (1) of the product idea of BeerTender took a number of years, before the idea comes to the attention of to the executive board. The shock moment (2) is the moment the executive board adopted the prototype idea and appointed Craandijk and his innovation project team. Soon after the beginning (3 and 4) of the development phase, the innovation project leader rewrites the plan (3) and suggests starting all over again, which results in a serious setback as the partner organisation at that time decides to quit the project. Here, the course of the innovation journey makes a loop back to planning (3) and proliferation (4). Based on the initial idea of draught beer at home, no other product lines or extensions are innovated.

The innovation project develops at a distance (B) of the path of the existing organisation (A). The innovation journey has some knots (circles in the line) with technical problems or delays, before hitting a major setback (5) with the bankruptcy of Moulinex. The shifting criteria (6) are mainly shifts in time and money; the initial criteria for a draught beer at home, without hassle, no cleaning, no CO_2, remained the same for the duration of the project. Due to the relatively large distance of the innovation project team from the organisation, the 'fluid participation of organisational personnel' (7), which Van de Ven and colleagues (1999) have referred to, is limited in the innovation journey of BeerTender. The innovation project leader handpicks a few colleagues from the organisation to participate in the project. Top management (8) is involved at a distance and the innovation project leader shares updates on a regular basis with the CEO. The innovation project leader and his team establish relations with a variety of others (9), such as partners, sub-contractors,

knowledge brokers, and consultancy firms. The innovation project leader also develops an infrastructure (10) for the production and distribution of the new home appliance as well as the production and distribution of the beer in the keg. After solving most issues, the innovation journey continues towards market introduction and adoption (11).

5.5.3 LEADING THE INNOVATION JOURNEY

During course of the innovation journey, the innovation project leader had to steer and lead and act, and had to deal with whatever hurdles or setbacks occurred. Taking a step back, how did he accomplish these tasks?

5.5.3.1 Leading and integrating the processes at the interface meeting

The interface meetings, that the innovation project leader installed early on in the process were a steering mechanism to lead both content integration as well as group dynamics. Interface meetings were meetings to use the wisdom of all to solve content problems in a subproject. Interface meetings were also used to align the content development, to align how to solve problems in content issues, make choices, or align timing issues of all the subprojects. Here group issues were discussed, and also group dynamics in a subproject could be discussed.

5.5.3.2 Leading by story-ing around

The innovation project leader was a narrator by nature and used rich language to lead the innovation process and, later on, to recount the process, sketching the situations he had been through.

Deuten and Rip (2000), have found ‘a mosaic of stories’ in the project that was the focus of their study. The same can be said here, as the innovation project leader used narratives as a management tool. From 15 stories used in the project, four were fictional and 11 were non-fiction stories, using metaphors and analogies. There were 10 retrospective stories about ‘what happened’ and five stories that depicted the future and ‘what might be’. Some narratives were rich and colourful and had a clear plot, while others were provisional. Some changed form in the telling: for instance, the story about sailing to New York started as a provisional story without a plot, but in the end, it became a structured story, continuing with a second episode, ‘Hitting a Whale’.
The narratives in this study had considerable variety. Just as with other case studies about the use of narratives in organisational settings, fictional characters were used to imagine and understand a problem at hand, or to depict a possible route towards a solution (Madsen & Nielsen, 2010).

Although the imagery is described in one of the four processes, the imagery helped intertwining more than one of the individual processes. Table 5.1 lists the imagery and the stories found in this case study, grouped under the process, which was used to describe it

in the previous sections. Where the imagery or story affected more processes, this is indicated with ‘idem’. The story of Granma is about the ease of use of the appliance, developed in a creative process of understanding and framing the problem, which affected the group dynamics in the team, as well as other contributors, such as the designers of the appliance, for instance, and this also framed the quality criteria that the innovation project team held for the appliance.

In the left hand vertical column a grouping is made based on the protagonist of the imagery or story, divided into imagery about the consumer (Granma, the couple who battle over the sink, and the father from Schier and his son), the product (a keg is half a crate, a reverse microwave) or recounting the process (revving while braking as a strategy for controlled distribution, we are all in the same boat, we sail to New York, hitting a whale, inviting the Queen).

The narratives of Granma, and the father from Schier, and the battle of the sink, use one or more fictitious consumers to build the story around. These characters are not directly based upon data from user research, and are not directly personas. The Queen who is invited to open the stadium is the real Dutch Queen HM Beatrix. In the proverbial ‘inviting the Queen’, Her Majesty blurs into a more fictitious character, like a Queen from a fairy tale, or the Red Queen from Alice in Wonderland; a metaphorical person of high standing that one would not dare to disappoint.

Some of these expressions became proverbial. Granma, New York, Inviting the Queen, were used during the innovation process and were good for a laugh and for the shared understanding of the team.

Table 5.1 Imagery and stories during the BeerTender innovation journey

	PROCESSES			
PROTAGONISTS	leading CONTENT development	stimulating CREATIVITY	guiding GROUP DYNAMICS	managing PROJECT CONSTRAINTS
CONSUMER	Granma who has to fling the keg in	idem	idem	idem
	the battle of the sink	idem	idem	idem
		a father from Schier and his dear son	idem	idem
PRODUCT	-	idem	idem	half a crate as image to explain to consumers
	a reverse microwave	idem	idem	-
PROCESS	revving while braking	idem	idem	-
	-	idem	we are all in the same boat	-
	idem	idem	we sail to New York (and have a big party when we arrive)	-
	idem	idem	hitting a whale (Moulinex bankrupt)	idem (time)
	idem	idem	idem	inviting the Queen

Stories were used to communicate at the different interfaces identified by Kleinsmann et al. (2010). In the interface with the outside world, there were stories about prospective users and their behaviour. In the interface with the organisation, there were the narratives, such as 'A Father from Schier', to explain the difficulty of different business models and dealing with the supply chain, although this story had aspects that involved interfaces with the outside world as well. Most of the stories worked at the interface within the development team. The story about sailing to New York was not only a story about shared ambition (reaching New York), but also a story about the regular knowledge exchange within the team (being in the same boat). The team even called their regular meetings 'interface meetings'. In the second episode of that story, when the going got tough and 'the boat hit the whale', the interface changed from inside to outside the team.

Kleinsmann et al. (2010) have also noted two different roles in the 'interface' with the outside world: the outside world as supplier of knowledge (giving information), and the outside world as consumer of knowledge. We found this distinction in the 'inbound' or 'outbound' direction of the narratives. For instance, in the narrative 'Fling 'em in, Gran!' knowledge from the outside world—information about consumer behaviour—was adopted by the team and built into a story. In the story 'Half a Case', dealing with the shelf life of the beer in the keg, the information from the project was meant to inform the outside world. ('Half a Case' is not used in this text as one of the story examples.)

In some situations, we also found a change in the interface, and therefore, a change in the direction of the narrative. The 'A Father from Schier' story originated within the interface of the team. The story was, however, also used at a later stage of the project to communicate with others outside the team, in the interface with the organisation, and to some extent, even with the outside world; it became an outbound story. A similar shift in interface and the direction of information happened with the narrative 'Inviting the Queen'. The story came from an outside expert, but it became part of the team's knowledge. At a later stage, the project leader shared the story with others in the organisation to explain why it was important to force the product launch.

The narratives emerged during the innovation process. 'It just happened', the innovation project leader remarked. Neither storytelling nor storymaking was explicitly used as a management tool. The construction of a narrative emerged as a way to make sense of a problem at hand, or a way to reframe or redefine a problem or situation. Often, this happened during so-called interface meetings, where the multidisciplinary teams updated one another about their progress in developing the NPD content and project deliverables, and where problems and issues were discussed. The 'A Father from Schier' story, for instance, emerged during a group discussion between the two partners Heineken and Krups, in which their different business models and approaches to the supply chain became obvious. The discussion was tense at some moments, with people having differences of opinion and trying to convince one another. The discussion was also rich and evocative. It

went on and on, without any clear perspective on a solution. Someone tried to explain his point of view (once again) by using a basic storyline. And then another person added a line. Step by step, the narrative about a father living on a tiny Dutch island was born. This led to a discussion of how to approach the market, with scenarios for the father (where he could buy the appliance and beer) and scenarios for the various retailers. The solution was found in a different business model than the established model, and in selective distribution.

In the case study of Deuten and Rip (2000) the narratives were used to connect the project to the emerging environment and to 'tell the project forward'.

I identified four purposes for the use of stories in the BeerTender project:

- understanding and framing a problem
- developing a solution
- having a shared understanding of a problem or situation
- helping others to see differently

The first two, understanding and framing a problem and developing a solution, could be seen as part of the creative process. The second two, having a shared understanding of a problem or situation and helping others to see differently, could be seen as part of the guiding the group dynamics. I elaborate further on the purposes of stories in the cross case analysis.

5.5.3.3 Leading by managing tensions

The innovation project leader and his team experienced severe tensions at different levels.

During the interface meetings, where all aspects were combined and tuned, tensions occurred. Ambiguities existed in sub-projects with conflicting or ambiguous solutions to problems in sub-projects. What was a good solution in sub-project A could be sub-optimal in the light of the whole. Tensions also arose due to differences in pacing and progress of sub-projects. A difference in pacing and progress cannot only influence the content developing of one's sub-project but also interpersonal relationships. Personal characteristics also played a role in the existence of tension between team members. Tensions arose in dealing with unknown unknowns and unexpected events. One person is better in dealing with uncertainty or unknown unknowns than another.

The innovation project team experienced tensions with the Heineken organisation: some managers in the exploiting Heineken organisation, for instance, who thought this project was a money consuming operation without any positive results. Some people fought the team via rear-guard fights. Other critics were a number of experienced brewers who were worried nothing good would come from this project since the elementary rules about beer, oxygen, and carbon dioxide were not respected. The innovation team also experienced tension because of the remarks of people who, probably well meant, thought it was not that difficult to achieve after all.

The period of the biggest tension for all was 'the Moulinex episode' with the uncertainty of what would happen with Krups after the bankruptcy of Moulinex and what the consequences would be for the project. The enormous pressure on the innovation project leader and the team was sometimes hardly bearable.

The team handled this by working hard to keep all participants on board. On Friday evenings they often went for a beer together to blow off steam.

After his time working on this project, Craandijk realised how different the tension was being in the heart of the process or, afterwards, looking back from the outside.

> *It's funny: now that the BeerTender is there and I'm the man behind it, I meet so many professionals who say: 'What a great thing to do once in your life!' You hear that afterwards. When the thing is there. I wish I'd heard that during the course of the project. I should have had an answer-phone tape that said: 'Oh, it must be so fantastic to manage such an inspiring project.' During the journey it sometimes felt so different. And don't forget to tell the family at home that you're going to be an innovation project leader, because they'll bear the brunt of it. (interview Joris Craandijk, 2004)*

5.6 Conclusion

The innovation project leader of BeerTender experienced a bumpy road, which was not what he had expected at the start when he thought the product was almost ready for market introduction. Soon after the beginning of the project, the first setback in the process occurred when the innovation had to start all over again. Another severe setback occurred when hardware partner Moulinex went bankrupt. Soon after, Groupe SEB took over the activities of Moulinex and the innovation journey could continue. The journey ended with the market introduction of the BeerTender.

The innovation project leader experienced a complex content development process, with technological difficulties and with many participants in various sub-projects. He led this journey by initiating a process of regular meetings where all team members, who were each responsible for a part of the innovation project, came together. He named these meetings 'the interface meeting'. During these interface meetings the content development of all sub-projects was aligned both for content aspects as well as timing and pacing. Combining and integrating content issues during the interface meetings also enabled the innovation project leader to guide the group dynamics of the core team. The innovation project leader used the making and telling of stories as a tool to manage the creative process and solved issues in the content process along with guiding the group dynamics process. Guiding group dynamics with many participants in the sub-projects

became more significant due to the bankruptcy of Moulinex. The innovation project leader was afraid the supplying participants in the content development would leave. He chose to invest time and energy in guiding these group dynamics by reviewing and discussing the state of the content development at sub-project level. As the innovation project team worked as an independent project organisation, the innovation project leader also had to deal with and manage frictions between the exploring innovation project team and the exploiting organisation. The innovation project leader and his team managed the tensions of the bumpy road by having joint activities, such as going to the pub together and having a good laugh from time to time.

CH 6 | THE CASE HOGEWEY, A NURSING HOME FOR PEOPLE WITH SEVERE DEMENTIA

6.1 Introduction to the case study

6.1.1 THE CASE HOGEWEY

Hogewey is a nursing home for people with severe dementia. Hogewey is a publicly funded organisation, part of a regional working care organisation called Vivium Zorggroep. Hogewey exploits a nursing home in Weesp, a medium-size provincial town, close to Amsterdam. Beginning in 1993, Hogewey changed its care concept to support people with severe dementia in taking control and living a normal life, with likeminded people, under the roof of a nursing home. In 2009, Hogewey opened a new built environment, a 'dementia village' that is based on the same philosophy.

6.1.2 CHAPTER OUTLINE

This chapter is the second case studied in this PhD project that aims to better understand how innovation project leaders manoeuvre through the obstacles and white water rapids of the innovation journey (see chapter 2). This case study chapter is structured with the same logic as the other two. In section 2, the case is introduced, as well as the core people involved. I also describe how I collected which data and what my role was as researcher in this specific case. Section 3 discusses the innovation of Hogewey. This section begins with a historical narrative about what happened during the innovation journey. To provide a context for the innovation journey, this section also contains a description of having dementia, as well as a description of the different aspects of the developed, innovative, care concept. This description is more detailed than the descriptions in the other two cases, as understanding the value of the innovation requires a deeper understanding of both the disease as well as the details of the concept. In section 4, the innovation journey is unpacked with the motive to begin the innovation journey, how the innovation project leader was prepared, and how the four processes of the innovation journey, as identified in chapter 2, unfolded over time. Section 5 discusses the findings of this innovation journey. In a brief section 6 I conclude this chapter and refer to chapter 8 for a full case comparison.

6.2 The research

6.2.1 CORE PEOPLE INVOLVED, YVONNE VAN AMERONGEN AND COLLEAGUES

The leadership team of Hogewey, which is the founder of the Hogewey concept, consisted of six people in 1993. Two of them still worked at the Hogewey organisation when I entered the field in 2001. These two, the innovation project leader and the managing director, worked throughout the years of this study at Hogewey. The third manager, responsible for facilities, entered Hogewey in 2002. These three people were the leadership team for establishing the innovation during this study. Yvonne van Amerongen was the innovation project leader. She had a background in occupational therapy in psychiatry and was also educated as a social worker. Van Amerongen's job title was Staff Manager Quality and Innovation. She went on retirement leave at the end of 2016. The managing director of Hogewey, with an education in hospitality management, started her career in Hogewey as facility manager, and was also part of the team that founded the Hogewey concept. In line with the other two case studies, this case study is written from the perspective of the innovation project leader, depicting the process she, with her team, went through. To underscore this unilateral perspective of the innovation project leader, only van Amerongen is given a name, while the achievements are, of course, not hers alone.

6.2.2 COLLECTED DATA

The initial development of the Hogewey concept took place in 1993–1994. Data collection took place between 2001 and early 2017. I entered Hogewey in 2001 for the first time. As the research took place over a long period of time, I chose to give details on the various kinds of data I collected and in what roles I collected data.

Field data

The data collection comprised active observation, since I was involved in facilitating workshops, and as a passive observer during my preparations for workshops as well as for an article about Hogewey that I co-authored with the managing director in 2009 (Enninga & Spiering, 2009). I also visited twice for a workshop facilitated by the innovation project leader for professionals from other nursing homes. I kept field notes and other materials from these moments in the field. I also had retrospective semi-structured interviews with the innovation project leader and core people involved. I retrospectively interviewed management team members and staff members. I visited Hogewey and spoke to the managing director and the innovation project leader, on average, once every year.

I collected three extensive retrospective, lightly structured, interviews with the innovation project leader in 2001, 2007, and 2017 of, in total, approximately 10 hours of taped material. The first two of these interviews with the innovation project leader were video-

taped, the latter was audio taped. In 2001, I met van Amerongen, the innovation project leader of Hogewey, for the first time. I undertook a research project for a Dutch bank to depict innovations in Dutch healthcare, as inspiration for future scenarios and product development. I interviewed van Amerongen about the innovation journey retrospectively and I was shown around. This interview was video-taped. In 2006, I started a project to investigate how the story of Hogewey could be told to inspire others to innovate. The project idea was to make a documentary film, together with a Dutch documentary film director. The film director and I undertook research with secondary data, visited Hogewey, and wrote a synopsis for a scenario. For this project, van Amerongen was interviewed in 2007, and the interview was video-taped. Due to funding issues, the documentary project was halted. In 2017, I had a three-hour conversational interview with van Amerongen, who went on retirement leave at the end of 2016. This interview was audio taped. All interviews were transcribed verbatim.

In addition to my fieldwork, the supervisory team of this PhD project was present on site in 2017. The team paid a two hour visit, and was shown around by Yvonne van Amerongen, and had the opportunity to talk briefly to personnel and observe personnel, visitors and residents. After the site visit the team had a conversation with van Amerongen.

Archival documents

During the years of this study, beginning with the periods of research for the documentary, I collected a vast number of material artefacts: brochures and website pages, annual reports of Hogewey, Vivium Care Group, and other nursing homes, policy papers, newspaper and magazine articles about dementia and nursing homes and healthcare. The material artefacts were used as points of reference and to enhance the contextual image of Dutch and international dementia care, and the continuing debate concerning this topic in healthcare.

In recent years, awareness has increased in Dutch society concerning the human side of having dementia, being a family caregiver, having a relative, a spouse, a parent, with dementia. The number of studies and the number of real stories on channels, such as YouTube and Vimeo, have intensified over the last decade. I used the stories from the Dutch Alzheimer Society (Alzheimer Nederland) and the project of the University of Groningen (Praten over gezondheid/ Talking about Health) to contextualise my research. Since the completion of the built environment 'the Hogeweyk' in 2009, the number of external publications on the topic has increased. The number of external press articles rose after CNN and the BBC covered Hogewey as the 'dementia village'. I collected around 150 external publications. Publications were from national (Dutch) and international newspapers, magazines, scientific journals, and video contributions. The majority of these publications were in the files of Hogewey's PR officer, who gave me free access to these files and piles. The scientific papers were sourced in scientific journals, and some additional webpages about Hogewey were found on the Internet. The video items from

the BBC, CNN, and a few other sources mentioned are available online. The videos were earlier broadcast on the international television channels of CNN and the BBC. Figure 6.1 gives an overview of the moments of data collection, as described in section 6.2, plotted on the historical timeline of the development of Hogewey and the built environment 'Hogeweyk' as described in section 6.3.1.

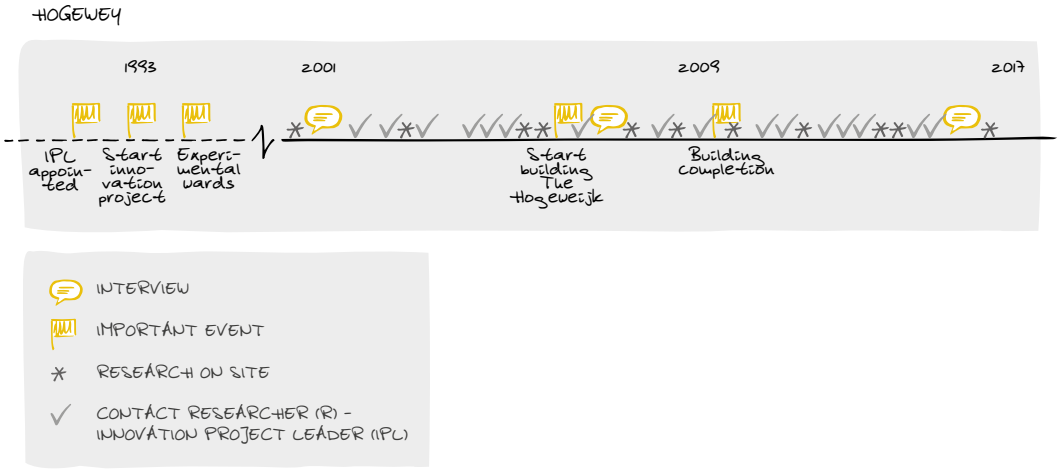


fig. 6.1 Data collection on the historical timeline of Hogewey

6.2.3 THE RESEARCHER'S DIFFERENT ROLES

The connection between myself as researcher and the core people involved was easily established. We are roughly in the same age range. The innovation project leader is a few years my senior and the facility manager is a few years younger than I. When this research began, I had been a management consultant for 10 years, after working for 15 years in the service industry. For the duration of this research project, I took up positions on various supervisory boards of health care organisations, which gave me a deeper understanding about health care in general, the Dutch governmental finance structure in health care over time, and the current rules and regulations for quality control and measurements. My own understanding of dementia and the Hogewey concept deepened after a close relative was diagnosed with Alzheimer's disease in 2009.

During the 16 years that I was involved in this project, I had different roles and different primary aims in collecting data. The main reason to have semi-structured interviews with the innovation project leader, managing director, facility manager, and staff manager (2001, 2007, 2016, 2017) was to undertake research and capture the information from interviewees. When I discussed problems in the organisation, co-designed, and facilitated workshops (2003, 2005[a], 2005[b], 2008, 2013, 2014), I was an actively participating observer. Since I was

not part of the 'tribe' I was with, I chose to label this as being an observer and not a co-worker. When I observed employees of other nursing homes during a site visit at Hogewey and shadowed their dialogue with the innovation project leader (2006) or observed design students during a site visit at Hogewey (2015), or during the final presentations about their assignments for Hogewey (2016), I was a more passive, participant observer.

6.3 The innovation of Hogewey

6.3.1 HISTORICAL NARRATIVE OF HOGEWEY

This history began in the early 1990s. Hogewey Nursing Home was a publicly funded nursing home in Weesp. Shortly after the initial introduction of the new concept, Hogewey changed from one holding to another, and became part of the health care organisation Vivium Care Group. The nursing home was initially housed in a multi-storey building with long wards and lino flooring. The sounds reminded of a hospital environment: friendly nurses speaking with slightly higher voices that expressed their care and concern, the echo of nurse's quick steps in the long hallways, the rattle of a hospital cart with a skewed wheel. The smell was an indifferent mixture of disinfectant, food preparations from the central kitchen, and a hint of urine. Hogewey had around 170 patients who suffered from severe dementia. None of the patients were able to perform daily tasks themselves anymore, and all received help to get showered and dressed. The long wards had living rooms where patients could sit during the day. The bedrooms were shared by one to five people. Every ward had an office for the nurses on duty where the nurses could take care of the paperwork and have their lunch and coffee breaks. For daily activities, occupational therapists worked with the patients.

The leadership team of the nursing home recognised that it was hard for both patients and family to have (a loved one) living in a nursing home. Together with some personal experiences, the management team decided that it was time for a change. The leadership team blocked their schedules for a day and sat together. The question they asked themselves was simple: suppose we ourselves, or one of our loved ones, had to live here, how would we like to have it? The answer seemed simple as well: *living* is the key coordinating principle, not care. People, patients live here, and, although this sounded cruel, literally for the rest of their lives, as the illness cannot be cured and will only progress. People do not *live* in a hospital. The perspective had to change: patients became residents. People, even very ill people, want to live in an environment like home. And home does not look the same for everybody, so the team came up with the idea of differentiating in living with likeminded people. That was in broad strokes the end result of that day. They used the last hour of that meeting to discuss how they could operationalise this idea. One of them, van Amerongen, was appointed to become the project leader. The word innovation was not yet part of their vocabulary.

Hogewey initially took one year to operationalise the idea: the whole year of 1993. They took half a year to define the rough ideas, and another half a year to perform a try-out. In the second half of 1993, Hogewey established two experimental groups of 10 residents (not patients) and figured out how the organisation could provide the means and the guidance for residents to live in a normal household. By the end of 1993 it became clear that this concept would persist. The nurses' offices were tiered down, the big living rooms were rearranged in smaller units, mobile kitchens were installed, and, in early 1994, all the living rooms were changed into one of the seven lifestyles.

The whole concept and the turnaround were carried out with no extra budgets and in the same old-fashioned high-storey building. This was not the ideal kind of built environment, but it was the current reality at that time.

For various reasons, funding for rebuilding was not approved by the authorities. Beginning around 2002, the management team, slightly changed, though van Amerongen was still in the project leader's role, began to concretise their plans for a new building concept. A major point was how this process could be organised while the nursing home had to stay operational to secure a safe place for their current residents and also keep a revenue stream. The idea of a village took shape. In 2009, the transformation of the built environment was finished. Two-storey terraced houses had taken the place of the high-storey building. Where the high-storey building was set in the middle of a great plot of land and surrounded by a garden, the terraced houses were built on the outside of that same plot of land, with all front doors opening to the village centre. The inner side of this new 'village' was a safe place for people with dementia to wander around.

6.3.2 HAVING DEMENTIA

It is difficult to understand how it must be to have advanced dementia. Patients cannot remember what they did a short while ago, and lack structure in thinking and talking (Verbraecke & van der Plaats, 2016). The decreasing abilities in language make it difficult to interview people with severe dementia who are living in a nursing home. To illustrate what having dementia means for a person, the University of Groningen set up a series of interviews with people with progressive dementia. The interviewees were still living at home, and could still express their feelings and their worries, although some got tangled in the middle of a sentence and their alarm was visible, and their relief when the sentence reached an ending, whatever that ending was. Talking about the impact of the disease on their lives, they spoke about the loss of pieces of their personality, loss of confidence, loss of independence, how they struggled to keep up appearances, and their shame at saying or doing something stupid (Stichting Praten over Gezondheid, 2012).

The majority of residents in Hogewey are in their seventies or eighties and have had certain routines for a long period in their lives: the time they get up, the time they make dinner, their daily walk to the supermarket, a little nap after lunch. These routines help them structure the day, and structure their understanding of the day. They lose, bit-by-bit, the ability to perform normal habits and rituals, their hobbies and interests.

For a long time, even up until the present, many people believed that it must be a blessing for people with dementia to reach the phase of deep severe dementia. 'Then, at least, one doesn't know and doesn't notice anymore', people might think. That is not the case. Explicit remembering and experiencing are not the same. Not understanding the world around them causes dementia sufferers fear and anxiety, and this can result in what is called 'challenging behaviour'. Or as the innovation project leader frames it: *'We call this "challenging behaviour", because it is challenging for the staff to deal with'.* This behaviour can be restlessness, wandering, loss of decorum, verbal or physical aggression, anxiety, and permanently asking for attention, delusions, or hallucinations. This challenging or inappropriate behaviour is a major issue in many nursing homes.

6.3.3 THE INNOVATION: THE CARE PHILOSOPHY OF HOGEWEY

The care philosophy of Hogewey is to support the residents to design their own lives, to make their own decisions. Due to their severe illness, the residents may need some help to take control or express what they want. The role of the supporting professionals is not to take the decisions on behalf of the residents, but to try to read the signals of every individual, and help finding out what this person at this moment in time would like to do, to have, to achieve. The care philosophy is built upon four components: a normal life, living with likeminded-people, activities and clubs, and (helping) experiencing, that should together contribute to a quality of life.

Living here means that the house where they live is *their* house, and caregivers are more or less visiting in the house of the residents, assisting them to perform the tasks that are needed to have residents live the life they want.

Besides living a normal life, one preferably lives with likeminded people. People, who share the same culture, have the same kind of daily routine and share a set of values. Lifestyle is not as much about socio-demographic criteria, it is about the values and standards one has, the things in life that are important to a person. Based on research during the first period of development of the concept, Hogewey identifies seven different lifestyles, with some of the characteristics of the values of each lifestyle:

Urban (‘Stads’)	*open, outgoing, talkative*
Traditional (‘Ambachtelijk’)	*traditional, handcrafting, mashed potatoes*
Homely (‘Huiselijk’)	*traditional, cosy, household work*
Indonesian (‘Indisch’)	*East Indies traditions, nostalgia, Indonesian food*
Upper middle class (‘Goois’)	*courtesy, classical music, high tea*
Cultural (‘Cultureel’)	*fine arts, wine, vegetarian meals*
Christian (‘Christelijk’)	*modest, religious music, praying*

These lifestyles are differentiated in the interior decoration, in the pace of the daily routines, in the choice of the food, how the table is laid, in the choice of television programmes or evening newspaper. The reason Hogewey differentiates in lifestyles is because of the recognisability and creating a feeling of at ease with a familiar lifestyle. Hogewey also has hobby clubs. People can meet other people for activities, and experience—with some assistance—the same interests or hobbies they had during their life before the dementia. Hogewey has around 40 clubs, with all kinds of interests: various music clubs; physical activities, such as gym, walking, swimming, and biking club; baking and cooking clubs; photography, painting, and arty clubs. The clubs are run by and coordinated by professional staff.

When Hogewey changed to the normal living in lifestyle concept, the long corridors became indoor streets, with households with a front door and a doorbell. All households were equipped with cooking facilities. The number of people living in one household in 1994 was 10. In the cellar of the high-storey building a small supermarket was installed, and on the ground floor, a restaurant was created, and there was also an old-style Dutch pub, a music room, a few clubrooms, and the staff offices. In 2009, a ‘dementia village’ replaced the old building. The new buildings were called de Hogeweyk (a ‘wijk’ is a neighbourhood, a district in Dutch, and ‘weyk’ has the same pronunciation. So ‘De Hogeweyk’ is the Hogewey-district and, by some others, is named the Dementia Village). It contains 23 houses for six to seven residents, with front doors opening to the streets and a square in the village centre. In the village, De Hogeweyk has a restaurant, a pub, a theatre, a supermarket, a GP’s practice, a physiotherapist, and several clubrooms. The supermarket has shopping carts and a cashier. Residents of Hogewey are free to wander around in the village whenever they like. The village provides a safe environment, without traffic, where residents cannot get lost, but can enjoy fresh air and freedom.

The built environment and the visible activities, such as shopping in a supermarket or the way the table is laid, should help people with severe dementia to recognise the situation, and minimise anxiety and feelings of disconnection. As patients with severe dementia cannot perform all the daily activities themselves, and often have difficulties in understanding experiences coherently, the behaviour of all personnel, not only of the caregivers, aims to help the residents make their own choices, minimise anxiety, and assist in experiencing and giving meaning to whatever is happening.

6.3.4 CHANGES IN THE CONTEXT OVER THE YEARS OF THIS STUDY

During the years of this study, the mental models about dementia and long-term care concepts in the Netherlands shifted, and the complexities of the context increased.

In the 1990s, when this innovation journey began, the general image of people with dementia was an image of patients, and patients having to be treated with a medical solution in a medical institution. Most nursing homes were organised like hospitals, with groups of 20 to 30 people on a ward and centrally organised facilities. When patients showed anxieties or aggressive behaviour, psycho-pharmaceuticals were prescribed and medical restraint devices, such as bands and jackets could be used. For these people, experiencing a normal life, with activities, smells, and sounds that are familiar for most people, was an unknown phenomenon in the early 1990s. In the 25 years since the start of the Hogewey concept, general tendencies have changed. In 2017, the majority of nursing homes for people with dementia have smaller group sizes and have policy statements that favour the needs of their patients. In practice, there is a wide diversity in how these patients' needs are operationalised in day-to-day situations. Many more nursing homes for people with dementia have smaller household facilities, which are referred to as 'normalised small-scale living' (genormaliseerd kleinschalig wonen). The language of that term implies an institutionalised context. It is a phrase that seems to be wrapped in a professional language that contradicts the original intended meaning, namely 'ordinary life'. The predominant model for care for people with severe dementia is slowly shifting from a medical approach towards a socially-oriented approach (The, 2016).

6.4 Unpacking the innovation journey

6.4.1 THE MOTIVE FOR INNOVATING

In 1992, Hogewey was a nursing home like any other. The patients lived in a high-storey building with long wards and a daily routine like a hospital. The caregivers were all dressed in uniforms. Patients had limited privacy with shared bedrooms and sitting in a living room in a group of around 20 people. Highlights of the day were the next meal coming from the central kitchen: a warm meal for lunch, and a sandwich for dinner.

Hogewey felt their business was threatened. The financial situation of the nursing home was under pressure. At the same time a new nursing home was being built by another care organisation in Almere, a town just a few kilometres away. Both employees and families indicated that this fresh and newly built facility seemed an attractive alternative to the old-fashioned Hogewey building. The leadership team felt the threat of this competitor.

Sometimes, personal experiences assist in seeing changes that are needed, as van Amerongen explained:

My mother phoned to tell me that my father, who was in his early sixties, had had a heart attack and died unexpectedly. Driving up to my mother's house that evening, it crossed my mind in a split second that, although I was very sad, I was so happy that my father had never had to stay in a nursing home. That was a disturbing thought, since I was part of the leadership team of a nursing home. However, all leadership team members recognised immediately this feeling. We all had our stories, of course. During informal gatherings, once in a while we said to each other 'It must be terrible to be so vulnerable in a nursing home and be waiting and having to accept all the things that people are doing to you and doing with you.' But then day-to-day issues pushed those thoughts away. (interview Yvonne van Amerongen, 2001)

By sharing and recognising these personal experiences, the leadership team came to the conclusion that they, as a team, had the agency to change their nursing home into a better place, and they could no longer leave this thought without taking action anymore. Shortly after, the leadership team sat together for a one- day meeting, to discuss and decide how they could make that change.

We asked ourselves: how do we want to live ourselves, when we are 84 and have dementia? How do we want our loved ones to live with dementia? The basic idea was simple: we do not want to live in an 'institution'. Patients, who come to live here, are really living here, not staying temporarily. We focus too much on the medical side with 'patients' and staff in white uniforms and clean wards and efficient day routines. We should better understand that people live here. Living here should be like people lived before, should be like home. As this happens to be their new home, residents (not patients) should be able and be encouraged to live the normal life they want, which means making their own decisions, taking control. Doing things. Or just not do things. And preferably living with likeminded people. We recognise ourselves in likeminded people, and recognising and feeling familiar with a situation happens to be an extra advantage when you have advanced dementia. And they would still like to do the things they liked to do before, hobbies, interests, activities, and daily routines. By the end of that day we had a rough image of how our new nursing home for people with severe dementia should look like. (interview Yvonne van Amerongen, 2001)

6.4.2 HOW THE INNOVATION PROJECT LEADER WAS PREPARED

Yvonne van Amerongen was appointed innovation project leader by her peers after the one-day session with the management team, at the end of 1992.
She was educated as an occupational therapist and social worker. She had professional experience within long-term care in psychiatry as well as in psycho-geriatrics and had solid experience with the behaviour typical of people with severe dementia. Van Amerongen also knew the organisation very well and had established close relationships with her peers in the leadership team. The leadership team had a culture of cooperation and trust. She had no earlier experience with innovation projects, nor with large-scale projects.

Van Amerongen did not allow herself much time either. Within six weeks after the ideation meeting, she had reorganised her former tasks and duties and stepped into the project leadership role. Nor Yvonne van Amerongen, nor for her peers in the leadership team, the impression existed that they were going to develop an 'innovation', although they realised they were going to do it radically different. Van Amerongen's preparation was mainly buying a booklet about 'what is a project'. She had the confidence that with the help of her committed peers and a lot of common sense, she could take on this task.

> *We decided by the end of that day that I would take the responsibility to lead the project. I would be completely exempted from my other duties and responsibilities. That did not mean I had to do it all by myself, but I would lead the project. All the others from the management team, everyone had committed themselves to the project. I started to write a memo of what all those aspects of our idea meant in relation to what we currently did. And I bought a booklet, in the bookstore, on 'what is a project?'. I started reading that. That gave me some ideas on how to handle it. I learned that there are always people who do not agree; that there are people who want to go far ahead. I did, however, need to stay motivated for myself, because if people are trying to stop it because people are afraid of change, then you should know that this is part of your change project. If you do not know that, then it leads you in the wrong direction, and you might fall back and think, 'Maybe it was a strange dream, anyway'. So, by reading that booklet, I knew what kind of processes happen in a group if there is a change. That helped me to understand what happened and to just keep going. (interview Yvonne van Amerongen, 2007)*

In the search for input, van Amerongen visited a nursing home for people with severe dementia in Belgium. She was inspired by what she saw there: not by the way the Belgian nursing home organised their facilities, but by the freedom the residents had. This Belgian nursing home was in the countryside. People could walk outdoors without any dangerous traffic; the road was flat, and the view was uninterrupted for kilometres.

> *We learned from them not to be afraid. Just do. If someone does not want to eat breakfast in the morning because he may not have had breakfast all his life, he will not get breakfast. Why push for breakfast because you think everyone in a nursing home has to eat three*

times a day? That is something that you must learn to let go. You have to dare. Just, dare to say that. If someone has been going to sleep by 2 am all his life, why should he lie in bed here at 11 pm? Because then the night shift comes in? Nonsense. But to act like that, we had to become more daring. (interview Yvonne van Amerongen, 2001, 2017)

What the innovation project leader took home from that visit was the feeling of freedom for residents and the daring stamina of the staff.

6.4.3 FOUR PROCESSES

6.4.3.1 Developing the content process

At first start, the innovation project leader made an inventory of all aspects regarding the new nursing home that the leadership team had sketched on 'the back of a napkin'. Based upon that inventory, it was decided to take a year to develop the plan more in detail and see whether the concept could be feasible and viable. During the first half-year, the innovation project leader worked out all the details on paper.

The innovation project leader divided the activities between 'on-stage' and 'back-stage', a division that is still used in Hogewey today. On-stage, everything is a resident experience. Here the residents are the experts, as they know best how their normal life looks like. The relatives of residents help the staff to learn about the lives of their loved ones, their habits, their rituals, their routines. Back-stage is how the care philosophy is operationalised. This is the world of the professionals. The professionals have both the knowledge and the responsibility to organise this normal life professionally.

Based on the core components: living a normal life, with likeminded people, and experiencing activities, the innovation project leader worked out all aspects in greater detail. The innovation project leader discussed all aspects of the on-stage world with the family members of the residents. Based on the on-stage aspects, the back-stage organisation was designed together with the various professionals in the organisation. So on-stage was leading how the back-stage was organised.

In the second half of that first year, the innovation project leader used a controlled experiment to see how this idea could work in practice. The experimental ward consisted of three households, each with a different lifestyle. The innovation project leader served as a coaching observer and was there to support the staff and observe what went well, and where adjustments had to be made.

An aspect like 'meals' for instance, happened to have a multi-facetted problem.
Meals are an important aspect of daily life in a health care setting. Meals were centrally cooked for all residents in the nursing home kitchen and by lunchtime a serving trolley

entered the room with hot meals on plates under plastic lids. Noon is, for most Dutch people, not the time they normally eat their hot meal, but a convenient timing for kitchen personnel in the day shift. For people with dementia, having all courses, soup, main and desert, on one tray is odd, as it lacks structure, it arrives all of a sudden, and most times it is not really hot anymore. Malnutrition is often a problem in nursing homes. Stemming from the new philosophy, the innovation project leader had to develop an understanding of which aspects of 'having a meal' were important in the content development. Malnutrition was not the starting point, but 'living a normal life'.

> *We wanted it to be like home. Well, at home you are discussing with your family members: what are we going to eat? And that you go for groceries, and then the groceries are brought into the house and stored, and when it's time, you'll peel potatoes, wash and cut vegetables and start cooking, and the table is laid, and you'll eat together. Having it 'like home' goes beyond the activities; eating is also how do you eat it, how the table is laid, how you prepare your sauerkraut. You can eat sauerkraut in different ways, which resembles your life style in a way. You can eat sauerkraut vegetarian, you can eat it with pineapple and cheese, and you can eat bacon and sausage, and a hole in the middle with gravy. All variations: what is normal for one isn't for the other. And that means a lot to someone when you eat your sauerkraut as you are used to. Food has so many aspects for everyday life to make it 'normal' or 'not normal'. (interview Yvonne van Amerongen, 2001)*

Understanding what and how the experience 'on-stage' should look like, did not answer how this could be organised for over a hundred residents. Someone from the Inspectorate suggested the innovation project leader should have a look at a group setting for people with cognitive disabilities, who cook and eat together. When Yvonne van Amerongen visited the suggested organisation, she learned that eating together was the essential part. That specific organisation had the customised cooking of meals operationalised by ordering meal components that were re-heated in a microwave. This taught the innovation project leader that she was looking for a different experience. The pre-cooked meals in the microwave could be efficient from an organisational perspective, but lacked the preparation part of cooking, which was not only an essential part of 'living a normal life' but that is also essential in the mental preparation of people with dementia that the moment is approaching when dinner will be served.

Based upon this idea of meals, the preparation of meals and the eating of meals, the back-stage part was developed. In the new situation the caregivers in each household would cook in the presence of and together with the residents. This meant that all households should have a kitchen. In the old building this was organised by mobile kitchens. When the Hogeweyk, the newly built village, was designed, each household was designed with an open plan kitchen.
To go from chefs who prepared centrally cooked meals to cooking by caregivers, a step-by-step approach was designed. At first, the experimental ward with three households would

ordered their meals in the central kitchen. These meals were customised for each household. When the experiment continued for the rest of the nursing home, the cooks started cooking in the household and taught the caregivers how to cook for a group of around 10 people. After that phase, the professional cooks became the kitchen staff of the additional in-house restaurant, where each household could go out for dinner once a week. After the introduction of the concept in the whole nursing home the cooks often gave workshops and cooking classes for caregivers. The chefs were also the professionals who advised about professional hygiene and HACCP regulations in the household kitchens. HACCP is the abbreviation for 'Hazard Analysis and Critical Control Points, a systematic approach to food safety.

The caregivers learned to support and follow the daily routines of their residents. This meant that people got up at the time they normally used to get up. For people who worked in constructing, this could be 6.30 am rise and shine, for others, nine-ish was the time their natural body clock was set to. Following the rhythm of the residents, the caregivers found that the whole process of having breakfast, getting showered, and dressed, went far more easily and smoothly. Based on these experiences, the schedules of staff were differentiated accordingly. When most members of a household got up late, there was no need to have the day shift start at 7 am. When most residents of a household were early birds, 7 am was too late to start the day shift.

Overall the philosophy answers most practical questions. 'How do you do this at home?' is still an often-heard question, followed by 'Then why would you do it differently at Hogewey?' Some staff is rather creative in creating awareness for 'normal' against 'the norm' of a health care institute. Living a normal life as an adult does not incorporate wearing a diaper, for instance. Experiencing a diaper helps to understand that this is not a normal situation.

> *We agreed that someone would only use absorbent products when the doctor had established that someone is incontinent, not just because someone is old. If someone is old and has to go to the bathroom in time, we have to make sure that he is on the toilet in time, instead of giving a diaper. It also means we have to have the awareness of what it is for someone to put on a diaper. Some staff still does that as a test in their team: let's all take a diaper one day and pee in the diaper. Learn how that is as an experience. Understand that someone does not want that! (interview Yvonne van Amerongen, 2017)*

The idea of living with likeminded people was already present in the first ideas of the new concept, although not yet conceptualised into 'lifestyle'. When Hogewey decided to convert the whole organisation to this care philosophy, the innovation project leader undertook further research into similarities and differences in what people experience as normal living, and had the residents and their relatives interviewed. Based upon this research the innovation project leader and her colleagues arrived at labelling this 'lifestyle' and at the division into seven lifestyle groups.

6.4.3.2 Stimulating the creative process

To interpret 'doing what one normally does' as a creative process, seems contradictory at first glance. However, the 'normal' here is what is normal for an individual, a person who happens to have dementia, which is often contradictory with the 'normal' of a health care institution. The 'normal' in institutions, such as nursing homes and hospitals, often derives from taking over the responsibility of the institution for the (physical) health of patients and the necessity for organised efficiency.

An important part of the creative process that the innovation project leader had to lead was finding solutions for patients' needs out of the 'common response zone' of an institution. In the meals example, in the previous section, the problem of centrally cooked meals was not so difficult for the innovation project leader to point out: residents did not experience any connection between a normal process of preparing, cooking, and eating dinner. The solution to cook meals in each household fits the idea of normal living yet was out of the common response zone of the institution. The insight that the time most people in a household get out of bed in the morning influenced the time the day shift starts, and therefore could better differ throughout the institution, was also not immediately obvious for all. Another important aspect of the creative process was depicting how solutions in parts of that daily process could look.

Finding solutions out of the common response zone became more difficult in relation to formal care aspects. Whose voice has the most power in decision-making on behalf of a resident, and when the resident, due to their illness, becomes a patient incapable of decision-making themselves? During the design of the concept, van Amerongen had intense discussions with professionals, for example, in a dilemma concerning physiotherapy. The common response zone is that physiotherapy is better for a person or even necessary, and that for a person who has dementia and lives in a nursing home, it is the professional, the expert, who decides. Seeing and treating the resident as the expert of his own life, the innovation project leader experienced that this was not the common response.

> *In the old Hogewey, the physiotherapist heard from the doctor or observed Mr Jansen was not walking so well, and suggested and organised physiotherapy. And we wanted the physiotherapist to only talk to the resident and the family and advise them regarding physiotherapy, and the resident could decide for themselves. That is what we do in normal life.*
> *If my doctor said to me: I think you should do fitness three times a week and I dislike fitness, then I decide what I do with that advice. When I get so much trouble from my joints at a certain moment that it is a better choice to do fitness, I go looking for a type of exercise that I like. That's the same way here. When a client says to the doctor I have a lot of problems with my joints, the doctor says, well, it is a possibility that you exercise a bit more. And if the client dislikes exercising, the doctor could say: we can search together in*

this house for what is the nicest exercise for you. We have a walking club, for example, a gymnastics club, a swimming club, a cycling club.... If that resident happens to say no, then that physiotherapist must be very creative to see if they can seduce the resident! Because it is the choice of the client that counts. If you force someone to come along, you only have fear, sadness, aggression, confusion! (interview Yvonne van Amerongen, 2007)

The creativity to do it differently inspired most caregivers and families, too. Inspired by the concept, and having seen the progression over the months of the experimentational households, nobody wanted to be last in line. During these first months of 1994, all kinds of coordinated and uncoordinated changes happen.

In 1994, when we were converting all the wards, there was this very enthusiastic caregiver. He took initiative and had talked to the families of his residents and he developed a nice plan to painting the whole corridor heavenly blue because that was 'freedom'. He had everything done overnight... beautiful ... That happened over a weekend and we came in Monday morning and thought 'oeeehhhh'. And I said, dude, did you look at what that colour does to the residents. Yes, it was maybe a bit agitating, he agreed. So by the end of the day it all had to be painted again. We all laughed. A moment of learning! (interview Yvonne van Amerongen, 2017)

An instance of how philosophy and creativity were combined in solving a problem was the following example of a resident who regularly visited the reception area wanting to leave the village. A solution for this could have been to make a lock for the door.

One morning I arrive at Hogewey to meet Yvonne van Amerongen, and have to wait for a few minutes before she comes to pick me up to have a coffee at the Hogewey restaurant. When I look from the reception area towards the main square, I see that something has changed. As if a glass wall is put between the reception area and the rest of the village. When I walk with Yvonne in the main square, I see what it is: a wooden frame with glass windows that serves as a terrace shield like the ones the beach restaurants have, to keep the sea winds out. I could not see from the reception area that at the other side of the windshields, a terrace is made, with tables and chairs and some potted plants. Yvonne explains what happened. One of the new residents was trying to find his way out of the village, inspiring his peer strollers to do the same. The receptionists had difficult times to keep the residents inside the village. The easiest solution would have been a number lock on the glass sliding doors. But such a lock is against the philosophy that this is the living environment of the residents, and a lock would distract this resident probably even more. Therefore, they came up with the idea of a windshield, as an extension of the pub's terrace. With potted plants the windshield would keep the glass sliding doors and the reception area much more out of sight. Experience shows that this resident who wanders and looks for the way out is less attracted to the reception area, as are his peers, although it did not solve the problem fully. (Based upon field notes TLE, 2016)

This example illustrates how the team found simple solutions with a limited budget, without making any compromises in the philosophy. It also illustrates that the permanent searching of the team to adapt to the current situation of all individual residents, to make their lives as normal as possible, is never a status quo.

6.4.3.3 Guiding the group dynamics process

The innovation project leader had no dedicated staff to help developing the concept. The innovation project leader equals the dedicated innovation team, although the leadership team is involved and connected (fig. 6.2.).

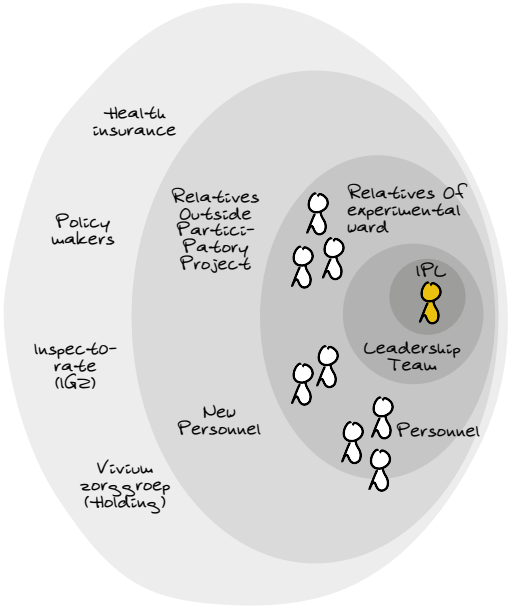


fig. 6.2 Groups in relation to the innovation project leader Hogewey

The innovation project leader had a great number of part time co-designers at a short distance. These were the relatives of the residents living in the experimental wards, and all personnel. At a greater distance, were the relatives of residents that moved later on in the process to households that were run according to the Hogewey philosophy. Also, new personnel coming in after the concept was implemented were at a greater distance. Other stakeholders included policy makers, authorities, and health insurance companies. Vivium Care Group, which became the mother organisation during the first period of the new care concept, was at a relatively greater distance and not directly involved in the innovation journey.

Van Amerongen reported as innovation project leader regularly to her peers of the leadership team. Although van Amerongen was appointed project leader, she felt backed-up by her peers and experienced that they were in the project together. This leadership team was a group of people that worked together very well.

> *We were a special group of people, this leadership team. We worked very well together. It was never a matter of power; we all strived for the same idea. Never a struggle about 'my department is bigger than yours'. If your department needs more budget than mine to convey the philosophy, I'll see how I could give you some slack in budget out of my budget. We really aimed for the same dream together. (interview Yvonne van Amerongen, 2017)*

The most directly involved stakeholders were the caregivers, the personnel of Hogewey, and the relatives of the residents.

> *We went to various places in other sectors to see what we could learn from their experiences. I have to say that we have not always learned a lot, but because you are in a car with people, you do a lot of talking, talking, talking, and so there is already a shared basis for change. (interview Yvonne van Amerongen, 2007)*

To manage expectations and prevent the co-designing relatives and personnel, in their enthusiasm and willingness to cooperate, from interfering with everything, the innovation project leader installed smaller project groups to solve issues in the operationalisation of the philosophy. For the back-stage development, all personnel participated in one or more project groups. All of them, from the GP to the cleaning staff, from manager to volunteer. The leadership team asked a mature and experienced care team from one ward to participate and run the experiment later that year. The daily work of all employees changed with the introduction of the new concept. For some professionals, the change in concept was difficult. One aspect was the loss of authority. Some professionals lost their white coats and were not directly recognisable as a doctor or physiotherapist anymore. Based upon knowledge and experience, professionals make decisions in the interest of the resident. In the new concept, it was the resident who decided. Managing this innovation process was also a process of changing professional worldviews and mental models. The expert was no longer the professional. A resident, regardless of the progression of their illness, was the expert of their own life.

Another aspect was the behaviour that fits with the care philosophy. After some time, all staff knew and understood the philosophy and the associated aspects, such as the freedom for residents to take control over their lives, and the aspects of normal living with likeminded people. However, in the eyes of van Amerongen and colleagues, it was not the case that all staff knew how to operationalise the philosophy in every situation. The behavioural aspect of the whole concept happened to be the most difficult part for many staff members.

When we started and had everyone trained and all those things, well then, we thought now they know it. And that was true. So now we can stop, we thought. But that wasn't true. And two months later we said, oh, that is not possible. Apparently, that behavioural aspect is something that you constantly have to work on. People are often very stuck in what they have ever learned. The hardest part is that people who work with us have to unlearn things that they have learned in their training and during their internship. These are not things that they have learned consciously but things that they have copied from the people with whom they worked. That kind of behaviour is apparently how you do it. But people, staff, are looking for convenience, too. In the high-storey building we had those mobile kitchens. There was this heat wave and it was far too hot there, so we decided upon a so-called summer protocol. Guys, when it is 25 degrees or warmer outside then it is no longer justified that you use the mobile kitchen in the living room, so then you can order meals in the Hogewey restaurant. The heat wave passed, still everyone keeps ordering food at the restaurant. Because it is easy. Oh yes, ordered, oops, and forgotten why. And that 'oops, forgotten why' is what happens in one-way or another. A large group of people is not so much involved with that philosophy but have simply learned: that's how it goes. You have to know why something happens. And you cannot copy how it happens, because it is a translation you have to make. Every moment again. From philosophy to execution, from philosophy to what fits this one resident best. (interviews Yvonne van Amerongen, 2007, 2017)

A second group of staff members were people who had no direct patient contact in the old nursing home context: the kitchen staff, the cleaners, and the administrative staff. For the chefs from the kitchen it was a threatening situation. They were not used to meeting the residents. When the chefs were asked to help caregivers to learn to cook for a group of 12 residents, they asked the innovation project leader that they could be shielded by a fence to prevent the residents from coming into the household kitchen.

The innovation project leader managed these group dynamics by talking to people, was open for their worries. She, first, explored these changes in an experimental setting, and, then, was there in person during these experiments. Despite all the conversations, for some people, the changes were too sudden, too quick. The innovation project leader realised that she was so involved in the proposed change that she sometimes forgot that others were less informed and connected.

I had a conversation with the paramedics, and I put it quite rudely, saying 'the client no longer needs your advice, unsolicited. The client decides for himself what he wants, and you just have to wait and see if you can do something '. Well that's pretty threatening, I think, especially for the paramedics who would like to help. And now I said, yes, maybe they do not want your help. And that is difficult. And I had given too little context, and we had not discussed how they should act in this situation. I had already thought so much about this concept and I already saw so many images of how it would look like, that I

thought they would pick this up instantly. So I had paid too little attention to the threat that people face in certain departments with such a change. I had not thought enough about how threatening change could be. We have also lost some people, who did not agree with this philosophy or were not ready to change at that moment. We did have a lot of critical people, who said, we have to think about your ideas, because we do not know how to do this, or how this will work out. But most of those people have said at a certain point in time: 'now I see what is happening, now I see what you mean!' and cooperated and were involved from that moment on. (interview Yvonne van Amerongen, 2007)

After the introduction of the concept in 1994, the leadership team and middle managers scheduled full-day meetings every six weeks to discuss all issues, big and small, with regards to the operationalisation of the concept. What went well, what should be discussed, where do we need rules, or what should be regulated? As the middle managers were also responsible for the operation, decisions could be effectuated overnight.

Besides the direct stakeholders, such as residents and family, leadership team, and staff, the innovation project leader also had to manage the stakeholders at a greater distance: various policy makers, authorities and inspectorates. The innovation project leader kept an open communication during the process, and involved the Health Care Inspectorate (IGZ) about the steps being taken in the process. Outside opinions could be very harsh. In the beginning people said: you work unprofessionally, you guys just do whatever you like. After building the Hogeweyk, some publications in newspapers or popular magazines were critical about the lifestyle concept, as in the eyes of the critics the differentiation was stigmatising.

6.4.3.4 Managing the project constraints process

Money

Money for projects in healthcare is always a big constraint. Hogewey is a publicly funded healthcare organisation. Hogewey had no initial budgetary reservation made for the innovation and the possibility of reserving money was limited, as the budgets were tight. The same applied to the old multi-storey building: it would take some years before the authorities approved funding for rebuilding. Both were a burden in developing a normal living environment.

The facts of the lack of a serious innovation budget or an ugly building were such showstoppers, that the team had the idea that this would stop all inspiration and creativity. The solution was simple. We just decided not to talk about the lack of budget or the ugly building that didn't fit our plans. We just didn't talk about it. Thinking from the priority of what you want to achieve, of what we desired for our residents, having no budget makes you more creative. You'll have to find other ways. By rescheduling the budget, or because

assumptions do not fit reality. All these years we kept saying: 'no money or the building doesn't fit our vision are no excuse' and it still is our mantra. (interview Yvonne van Amerongen, 2007)

The project therefore had a very small budget. The innovation project leader worked with all staff members from the wards that were part of the experimental phase. For the staff, this was an extra task besides their normal shifts. Participants were asked to keep track of their extra hours and hand in the hours of overtime to receive payment. But none of the staff did. They made extra hours, came to meetings in their free time, but did not ask for overtime payment. All participants were inspired by the change and afraid that the lack of money would prevent giving the project a real try.

Budget was also found in doing things differently. The team learned during the experimentation phase, for instance, that cooking in each household is not more expensive, as assumed, but, instead, less expensive than cooking in a central kitchen. As caregivers knew the preferences in their household, they knew that a small tin of milk would do, if hardly anybody drank milk. And buying groceries in bulk sounds more efficient and cheaper, but by the end of the day a lot ends in the bin. One budget the innovation project leader had to increase after the introduction of the philosophy was the coffee. The amount of coffee each household consumed was underestimated. Relatives felt more welcome and more at ease to visit more often. To give each household the flexibility to run the household according to the needs and wishes of its residents, household budgets became the responsibility of the responsible caregiver of each household. A tiny example of such a consequence was the use of cellulose tissues. In hospital environments, cellulose tissue is used often. The fabric is clean, easy to use, and takes in a lot of fluid at once. But the tissue is more expensive than kitchen paper for instance. Budgets on a household level mean smarter choices in spending money. When someone spills a mug of coffee, it is cheaper to use a paper kitchen cloth than a cellulose tissue.

Time

Time was not really an issue. In many organisations, it is difficult to go from development phase to implementation phase. Hogewey is full of active do-ers, which speeded up the execution of plans. In one day, the broad outlines of the new concept were discussed, in six weeks Yvonne van Amerongen finished off her other responsibilities and took the innovation project leaders role; in half a year the first ward was ready for a guided experiment, and after another six months the decision was made to change the whole organisation into the new concept. Managing 'within time' often has the connotation that the progression of the change is too slow, and one has to find solutions to speed things up. At Hogewey, the innovation project leader experienced this the other way around. The leadership team made the decision to transform the wards in a step-by-step pace, starting in the beginning of 1994. But this pacing happened to be too slow for many. After the six months of the experimental setting, everybody was eager to step into the project himself

or herself, and change all wards. The staff wanted to start, the relatives put pressure on for the transformation of the ward of their loved one as well, so many people already started by making first changes 'while they were waiting their turn'. Shortly after the transformation began, the innovation project leader had to leave the idea of a step-by-step approach and anticipate quickly, as the activities spread like a peat fire. The change was everywhere.

Quality constraints

The innovation project leader learned to deal with *quality constraints* in process. When the project started in 1993, nursing home quality standards were not yet fully developed. The public discourse about 'quality of life' of nursing home residents had not yet begun. The innovation project leader worked with what the relatives of Hogewey residents expressed as quality for their loved ones, what quality really meant for individual residents. This notion of quality was incorporated in the development of the on-stage situation. Nevertheless, the public and professional opinions about the mode of practice at Hogewey were sceptical. Although Hogewey worked hard to develop a nursing home beyond the connotation of an 'institution', in the view of the law and the inspectorates, Hogewey was a health care institution. This was an extra motivation for the innovation project leader to develop a quality control programme alongside the development of the concept. Starting in 1994, Hogewey was one of the pilot nursing homes in a bigger project for developing a quality control system. As the innovation project leader had already described the processes, a quality management system was a logical extension. The innovation project leader also became responsible for the quality control process.

Besides a quality management programme, various quality constraints were applicable, such as the food safety regulations of HACCP, for instance, that are not applicable in private households but do apply in a nursing home.

> *In a nursing home it is, of course, a little different from home because you have rules and protocols, like the HACCP hygiene rules for example. We have to balance permanently between living those rules and at the same time arranging it in such a way that a resident experiences this as normal. Which means, for example, that we have to go every day to the supermarket, because we are not allowed to keep fresh food in a household refrigerator because of the hygiene rules. In Hogewey, the supermarket is open seven days a week and all households shop for their fresh food, every day, even on Sundays [which was not the norm outside Hogewey back then, TLE]. (interview Yvonne van Amerongen, 2001)*

The innovation project leader considered these rules, regulations, and protocols as part of their back-stage responsibility. She searched for a good fit between these regulations back-stage and still keeping an undisturbed on-stage situation. Where necessary, the innovation project leader rewrote rules and regulations, to emphasise the resident's choices as the starting points.

6.5 Discussion

6.5.1 INTRODUCTION

The previous sections described the course of the innovation journey of Hogewey's development of the nursing home concept for people with severe dementia, seen through the eyes of the innovation project leader. In this section I will discuss the lessons learned from the progress of the innovation journey, how the innovation project leader dealt with and led the four intertwined processes, and handled the ambiguities and tensions during the innovation journey.

6.5.2 THE COURSE OF THE INNOVATION JOURNEY OVER TIME

Comparing the innovation journey of Hogewey with the innovation process model of Van de Ven and colleagues (1999), the Hogewey process had some differences.

In the first year, the innovation journey of Hogewey followed a path according to the model of the innovation journey of Van de Ven and colleagues (1999), as Figure 6.3 shows. The gestation (1), the idea that the nursing home could do it differently, is simmering for a period of time, before the 'shock' (2) happens. One element of this shock is the unexpected death of the innovation project leader's father and the recognition of her thoughts on this from her peers in the leadership team. This leads, shortly afterwards, to the full-day workshop that ends with the plan (3) to change the care philosophy. In the model of Van de Ven et al. (1999), this is where the development phase starts. The following period of proliferation (4), where the initial idea proliferates into numerous ideas and activities in divergent, parallel, and convergent paths of development, is short. Immediately after the start of the development phase, the innovation project leader already has the fluid participation of all personnel (7).

The experimental ward starts early on in the process, and, shortly afterwards, the implementation of the innovative care philosophy for the whole organisation follows. After this proliferation, the path of the innovation journey of Hogewey differs from the model of Van de Ven et al. in two aspects. The development paths of the organisation and of the innovation melt together after this first year of exploration in 1993. 'Innovations terminate when they are implemented and institutionalised', Van de Ven and colleagues have observed (1999, p. 58). One could argue that the innovative concept of Hogewey is implemented in 1994. After this year, the innovation is not yet established, and the innovation journey has not yet finished. During the combined path, there is an iterative process of continuously developing and implementing. During this process, the innovation project leader experiences small setbacks (5), shifts in criteria (6), of relationships with others (9) and development of infrastructure (10).

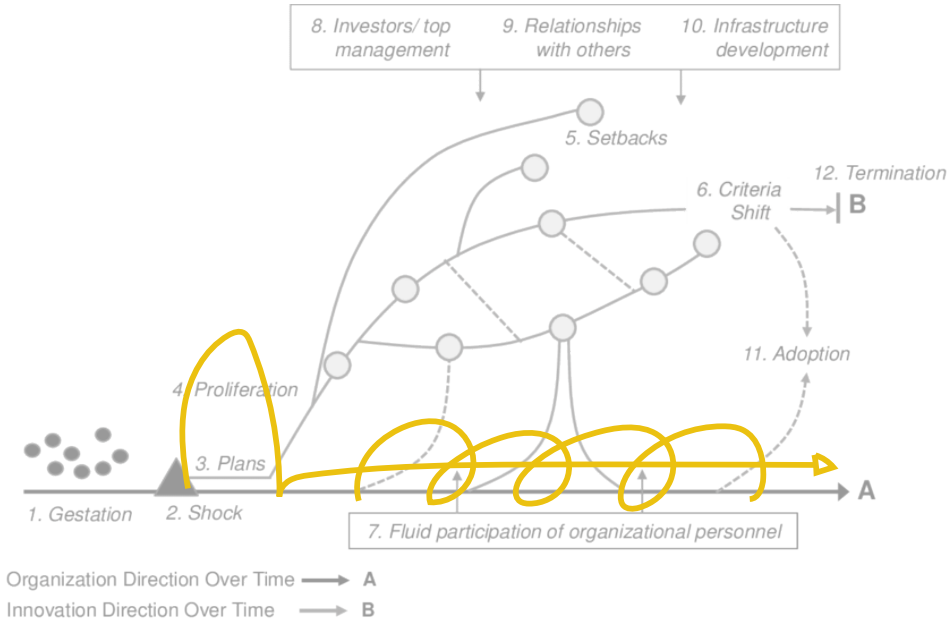


fig. 6.3 The innovation journey of Hogewey (adapted from Van de Ven et al., 1999)

The process from development to implementation should not be seen as a process of consecutive stages, but in the case of Hogewey as an intertwined process between development and implementation, going to and fro, iterating, crossing the apparent boundary between development and implementation phases. It could be argued that without the consequent steering, adjusting, and reflecting, the operationalisation of the philosophy, the innovation as we know it today, would not have been established. The built environment, the decoration of the living rooms, the clubs, would then all be the same. But if the organisation had not been striving for the change in the behaviour of caregivers, residents would still not be experiencing a connection with a normal life. The findings imply that after the initial year of development in 1993, the innovation journey of Hogewey had a *long tail*. When the innovation project leader began, the expectation was that after an initial period of developing and training all personnel, the innovation journey would be completed and come to an end. In contrast with that expectation, the innovation journey was far from finished after this first year and continued in iterative cycles between developing and implementing, spiralling continuously in order to achieve outcomes that fit the needs and wishes of many stakeholders (residents, relatives, and professional caregivers), taking their individual dilemmas into account and, where possible, reconciling those dilemmas.

6.5.3 LEADING THE INNOVATION JOURNEY

Within this course of the innovation journey, the innovation project leader had to deal with hurdles or setbacks that occurred and had to lead and act and direct in the intertwined processes. Taking a step back, how did she do this?

6.5.3.1 Leading by 'How do you do this at home?'

The care philosophy guided the content developing and the creative processes and helped the innovation project leader to lead the innovation process as a whole. The care philosophy served as a scaffold to lead the intertwined processes, as a corner stone to find answers for unsolved problems. 'The philosophy is so clear, and so easy to understand, that for every question we found answers nearly fluently,' the innovation project leader recalled.

The innovation project leader often asked '(How) do you do this at home?' and by asking this simple question, lots of answers came spontaneously. With this question '*how do you do this at home?*' the innovation project leader could support others in finding their own answers, which stimulated creativity and guided the group. This question bridged the old reality —*how were we used to do this in a nursing home setting*— with the new reality of normal living —*how do we do this at home* and *how would a resident have done this at home?* This made it easier to understand what the difference was between the 'old' nursing home way of doing and the 'new' way of doing based upon the care philosophy.

The vast idea what 'professionalism in a health care organisation' looked like, seemed in conflict with a normal life. The mental model that 'efficiency is cost and risk effective' seemed in conflict with customisation to the needs of individual residents. These two models are tacit models that are rooted in our Western society. Staff had to 'unlearn' these mental models and replace these with a new reality. The innovation project leader led this process in a reflexive manner of working. For some it was more difficult to reflect upon their own do-ing than for others. It was and is a quest to change implicit behaviour. This aspect also required a focus on the group dynamics of mainly of the internal groups of personnel.

6.5.3.2 Leading by participatory developing

The innovation project leader chose to have all personnel and many relatives participating in the innovation process. From the start of the project the innovation project leader established a participatory way of working with caregivers and relatives. When the aspect of cooking was developed, the innovation project leader could have chosen to develop a guideline for each lifestyle. This cooking aspect, however, was not only a list of cooking food, but should be coherent with the lifestyle, the tableware, the preferences of the residents, and should be doable for the staff. Therefore, the participation of the staff and relatives of residents was essential for developing the guidelines and securing that the staff could work according to these guidelines.

Although the cooking should resemble 'home', the whole process of buying, storing

ingredients, and storing cooked food had to be carried out according the HACCP rules. The choice of the innovation project leader to lead the innovation process as a participatory process did affect and enhance both the content development as well as the group dynamics process. Some of the staff were very critical about the feasibility of the project. The innovation project leader encouraged their criticism as this would, in her opinion, strengthen the project. According to the innovation project leader, the staff felt respected by the participatory character of the project and inspired by the out-of-the-box possibilities of achieving the best possible care for their patients. They did not want the project to be at risk by spending money on their extra hours. The innovation project leader felt encouraged by this behaviour.

6.5.3.3 Leading by reconciling dilemmas

The innovation project leader had to manage the dynamics of different individuals within the various stakeholder groups: relatives of the residents, professional caregivers, such as nurses and therapists, the management of the health care organisation, and the inspectorates that supervise the professional care. These stakeholder groups did not have the same aims for the residents, and moreover the aims, and motives, and opinions of the individuals within one stakeholder group were also not homogeneous.

The story from the innovation project leader who lost her father unexpectedly, and how she felt that he had been lucky he had never had to call a nursing home his home, seems a universal emotion. In his novel *Being Mortal*, Atul Gawande, a practicing surgeon, explores how medicine has learned to 'fix' illnesses, and how that sometimes counters the treatment of decline and death.

> *In a nursing home, the official aim of the institution is caring, but the idea of caring that had evolved didn't bear any meaningful resemblance to what Alice would call living. She was hardly alone in feeling this way. I once met an eighty-nine-year old woman who had, of her own violation, checked herself into a Boston nursing home. (...) She told me she was glad to be in a safe place- if there's anything a decent nursing home is built for, it is safety. But she was wretchedly unhappy. The trouble was that she expected more from life than safety. 'I know I can't do what I used to,' she said, 'but this feels like a hospital, not a home.' It is a near-universal reality. Nursing homes priorities are matters like avoiding bedsores and maintaining residents' weight -important medical goals, to be sure, but they are means, not ends. (Gawande, 2014, p. 74)*

No one wants a loved one to be in a nursing home. We want our loved ones to have quality of life, even when they are old and if they have dementia. 'Relatives are happy as Mum stills sees the eight o'clock news, like Mum used to do,' Yvonne van Amerongen stated. Yet, if our loved ones are dependent on the care in a nursing home, we want 'a safe place for Mum'. From the intrinsic and urgently felt need to do our best for our loved ones, this is the dilemma of the relatives: torn between autonomy and safety.

According to Merriam Webster care is 'the responsibility for the safety and well-being of someone or something, the duty or function of watching or guarding for the sake of proper direction or control, and the act or activity of looking after and making decisions about something.' In this description, the caregiver is in the lead, and the person (or the object) that is taken care of has a more passive role. The caregiver as a professional knows what is best, and has pride in giving that to the patient. These professional tasks or professional view could interfere with how we assess 'normal life' outside a health care institution. Yvonne van Amerongen, who started her career in psychiatry, gave this example:

> *I still remember a psychiatrist who said during a staff meeting: 'When the patient sleeps, we should not wake him to give him his sleep medication.' Everyone is a bit confused. 'Yes,' he continued ' if they sleep, they don't need sleep medication.' It took a bit before everybody understood. Apparently, that had to be explained. Maybe it is there that we learned to think differently, not as a medical institution, but from a human perspective. (interview Yvonne van Amerongen, 2017)*

Also, doing the work in a way that assumes the professional to be leading, provides a routine for certain tasks. And working within a routine is less tiresome and helps to get a lot of work done. Caregivers are often busy and on the run. In the philosophy of Hogewey, a caregiver should be alert to act and react on the signals of the residents. This is the dilemma of the caregiver: torn between an image of professional caring for a patient, and the individualised personal non-routine care on the other.

The quality of health care has been an on-going debate over the last decades. In the Netherlands some poignant cases received attention in the press. The public calls for action and the answer of policy makers and policy controllers is often in rules and regulations. In 2015, Secretary of State van Rijn started a programme 'Dignity and Pride' to improve the quality of care in long term care facilities, and in 2017 a new quality framework for nursing home care was approved by the Dutch Health Authority NZa. At the same time, the health care industry has an increasing need for innovation, to keep healthcare state of the art, as well as affordable. Rules and regulations could be at odds with innovation, where new solutions should break free from standards and existing procedures. In a radio interview (NPO1, 2017) Ronnie van Diemen, Inspector General of the Healthcare Inspectorate IGZ acknowledges that for decades rules and regulations have had the primacy in long term care for elderly people. Inspector General van Diemen.

> *Legislation seems to be more about less risks, or about coercion (..) and how you are weighing freedom with risks. That is always a tension. Until something happens. If things go wrong, if it is called 'a calamity', everyone is suddenly in a stir. And that is the dialogue we should have together. Loving care, that is not possible without incidents. (Van Diemen, 2017).*

Different directly concerned stakeholders, such as relatives of the residents, caregivers, and the authorities, have different aims for the quality of life and quality of care for the residents with severe dementia. Yet, these aims of stakeholders could change, due to the context from which an issue is observed. If these dilemmas are not managed and balanced, the innovation will not fly. The innovation project leader managed these differences by staying in dialogue with all stakeholders. During these dialogues, the care philosophy of Hogewey was the focal point. The innovation project leader explained why she would choose for a specific solution and how this would impact the resident's living a normal life. Dilemmas and controversies were discussed first and foremost from the perspective of the resident and how all participants could enhance the resident's experience of living a normal life, without losing the responsibilities and aims each stakeholder had in this process. These dialogues were a process of reconciling dilemmas, exploring where and how views seemed to be opposing and how these differences could be reconciled for each stakeholder. These differences could not always be solved, especially in the early phases of the innovation process. As a consequence, this sometimes meant that a relative did not choose Hogewey as nursing home for their loved one, or that a professional changed jobs. What also helped in reconciling the dilemmas was the experiment in the early phase of the project, where the ideas how this philosophy could work, were explored in practice. (See the further discussion of this in the next section).

6.5.3.4 Leading by early experimenting and prototyping

A third aspect of how the innovation project leader led the intertwined processes, was by doing, trying, and experimenting. Having a guided experiment early on in the process, helped to experience the developed content, together with the dynamics within the groups of different stakeholders, solving problems that arose and checking whether the project constraints, such as quality control issues or budgets, could be met in the reality of the experiment. Also the participants who were critical at the outset could experience whether their criticism held in the reality of the experiment. In later years, criticism or remarks from caregivers were often grounded in particular real-life problems. The innovation project manager's strategy was to discuss the situation and see how the organisation could learn from this.

6.6 Conclusion

The innovation project leader of Hogewey expected to develop a concept and train all personnel within a period of one or two years, yet she experienced a different course for the innovation journey. Compared to the innovation process model that Van de Ven and colleagues (1999) found in the 14 cases they studied, the course of this innovation journey was different. The period of shock, plans, and proliferation was short, approximately six months. Personnel were invited to participate in the planning phase, which was an earlier

stage than that identified in Van de Ven and colleagues' research. The innovation journey of Hogewey did not have severe setbacks or criteria shifts or other major events. To develop the innovation fully, including the desired behaviour of professional caregivers towards each individual resident, took years of adjusting, steering, learning, and training to establish an organisation where personnel embodied the behaviour that fits the care philosophy. Due to this long period of adjusting, the innovation journey had 'a long tail', without which the innovation could not have been established. It could be argued that without that, the innovation as we know it today would not have survived. The built environment, the decoration of the living rooms, the clubs, would all have been the same. But if there had not been such an effort to support the establishment of the behaviour of caregivers, that was such an essential part of the philosophy, residents would still not be experiencing the connection with their normal lives. Guiding the group dynamics and reconciling the dilemmas was the most important process to support the content development process.

CH 7 | THE CASE NEWVAC, AN IMMUNOTHERAPY FOR THE TREATMENT OF CANCER

7.1 Introduction to the case study

7.1.1 THE CASE NEWVAC

Newvac is a small-sized biotechnology enterprise, originating from a scientific research programme for immunotherapy. As the product is still under development, the name Newvac and the names of people involved are pseudonyms. In 2013 the activities of the research programme are separated from the mother organisation. Newvac aims to validate their immunotherapy for specific types of cancer treatment and after approval by the European Medicines Agency (EMA) and Food and Drug Administration (FDA) to make the therapy available for patients.

7.1.2 CHAPTER OUTLINE

This chapter is the third case studied in this PhD project, that aims to better understand how innovation project leaders manoeuvre through the obstacles and white water rapids of the innovation journey (see chapter 2) This case study chapter is structured according to the same logic as the other two. In section 2 the case is introduced, as well as the core people involved. I also describe how I collected which data and what my role was as researcher in this specific case. Paragraph 3 discusses the innovation of Newvac. This section begins with a historical narrative about what happened during the innovation journey. To provide a brief context of the innovation journey, this section also contains a brief description of the disease, as well as the context of medicine development and clinical trials. In section 4 the innovation journey is unpacked regarding the motive for starting the innovation journey, how the innovation project leader was prepared, and how the four processes of the innovation journey, as identified in chapter 2, unfolded over time. Paragraph 5 discusses the findings of this innovation journey. In a brief section 6 I conclude this chapter and refer to chapter 8 for a full case comparison.

7.2 The research

7.2.1 CORE PEOPLE INVOLVED, CAROLINE DE VRIES AND COLLEAGUES

The innovation project team consisted of three core people. Caroline de Vries was appointed innovation project leader and worked together with two colleagues; one was responsible for the commercial side of the development, the other for the scientific-medical side. De Vries was in her early fifties, and an experienced manager within pharmaceutical research. She had over two decades of general management experience, and therefore a vast experience in leadership. Caroline de Vries also had experience in building and growing a company, and experienced unexpected events and issues in various situations and projects. She had a network in the field of pharmaceutical development. She had no former experience in innovation projects, nor did her colleagues. In a small team, as in the case of Newvac, all innovation team members are important for the process and to the achievements during the process. In line with the other two case studies, this case study is written from the perspective of the innovation project leader, depicting the process she, with her team, went through. To underscore this unilateral perspective of the innovation project leader, only Caroline de Vries is given a name, while the achievements are of course not hers alone.

7.2.2 COLLECTED DATA

Field data

I heard about the project from the innovation project leader in 2013. I had a first retrospective interview with de Vries and a colleague in the spring of 2014. The data collection ended by the summer of 2017: not because the project of Newvac was finished, but because this PhD project needed to be finished. In the three years of this study I collected data through five retrospective conversational face-to-face interviews, as well as 16 conversational telephone interviews. The innovation project leader informed me when something important happened. All six hours of face-to-face interviews were audio recorded. These interviews took place in informal settings. The telephone interviews were recorded in field notes.

Archival documents

Besides field data I collected archival documents like presentations, company information, and information from the EMA. I also collected documentation about cancer and immunotherapy in general, in order to get a basic understanding of the innovation.

Figure 7.1 gives an overview of the moments of data collection, as described in section 7.2, plotted on the historical timeline of the development of Newvac as described in section 7.3.1.

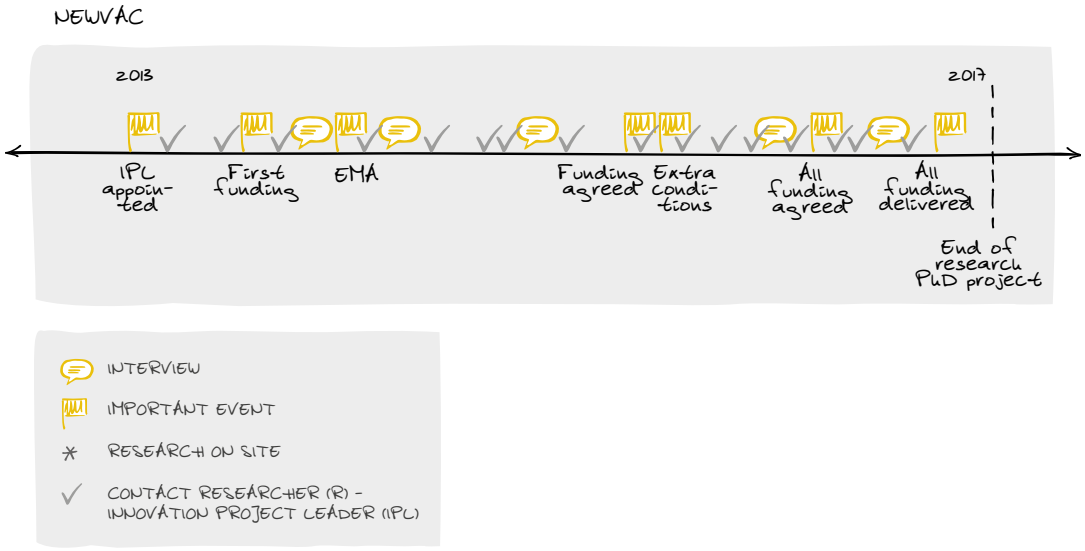


fig. 7.1 Data collection on the historical timeline of Newvac

7.2.3 THE RESEARCHER'S ROLE

My role as researcher in this case was the role of interviewer. Since the team was small, and the pressure and workload were high, the innovation project leader was willing to cooperate in this research but did not want to add any extra workload or pressure for the people responsible for the development. The dialogues we had, both face-to-face and by telephone, were two-way conversations. The dialogues were intended for the interviewer to gain knowledge and understanding about the situation of the interviewee and how the process of the development of the treatment of Newvac unfolded. Yet, as interviewer I also shared knowledge with the innovation project leader about my experiences in innovation process research and innovation practices in similar situations. This mutual sharing of information gave the interviewer–interviewee relationship a character of reciprocity.

7.3. The innovation of Newvac

7.3.1 HISTORICAL NARRATIVE OF NEWVAC

Immunotherapy is a relatively new way of treatment in the oncology arena. The initiatives underlying Newvac's treatment started at the beginning of this century in a scientific research programme. After nearly a decade, the results gave rise to the first treatments of patients. Before treatments could be accepted for the market, products have to be thoroughly tested in clinical trials. As these clinical studies with patients are time and

money consuming, the product owners decided in 2012 to establish a new legal entity. This opened opportunities for both external investors and scientific partners to participate and cooperate in the development of the therapy.

The search for external funding started in 2013. Newvac applied for scientific advice from the EMA early on in the process, as positive advice would be beneficial in attracting funding. After a successful round of pre-seed financing, a first clinical study with patients was performed with the product that was selected for further development. The results were promising. The innovation project leader expected to be able to start with a clinical trial in 2016, after the necessary funds were collected. At the same time that the team were searching for funding, they had to think through how the production of the therapy could be organised, starting with developing the clinical trial, followed by the production of the treatment after market introduction. This involved developing a strategy for the clinical trials, selecting and contracting the participating hospitals, developing procedures for each country and for each hospital, developing the production process for the medicine during the period of clinical trials and already developing the basic concept for the production process after the medicine is accepted for the market.

Finding funding turned out to be more complicated than expected. The innovation project team investigated various forms of capital: subsidies, grants, venture capital, and loans. Many providers of capital were interested in this radical innovation, yet all had many questions about the product, the production, the protocols, and procedures. Some of these questions were detailed. Providing answers took time and slowed down the process. Providers of capital also looked at each other and waited to see who would be the first to join. In 2016, the organisation received a commitment for a part of the required capital, under the condition that the forecasted budget for the following trials would be provided by others before the end of 2016.
A challenging time followed. As pressure to come to closure rose, some capital providers decided at the last minute not to join. The team managed to extend the deadline for a few months. Shortly before this second deadline expired, they received the commitments for the whole budget.

In the months that followed, the innovation project leader steered two different streams of activities: one was to organise all legal paperwork to convert commitments into transactions; the second was to develop and organise the trials, including procedures and protocols. The whole enterprise almost went wrong when one of the capital-providing parties unexpectedly added an extra financial condition to their commitment. Months of negotiation followed. The capital flow came to a stand-still, as all participants in the funding had based their commitments on a fully covered budget. It was hard for the team to cope with this second hurdle in the funding process, with the knowledge and understanding that the project could fail, while they thought they had been out of the woods. So soon after the previous, stressful period in which they had managed to attract the necessary funding,

the team experienced this new hurdle as a stab in the back. It was possible that the negotiations about extra conditions for the funding party could impact on the conditions of other capital providers as well, which then, in turn, would have to be renegotiated as well. The capital continued to be kept safely in escrow by the civil law notary, and the innovation project leader could not make use of the funds. As the negotiations slowed down the process, the innovation project leader also had to manage communications with the other funding parties. During these nerve-racking months, the preparations for the clinical trial procedures had to continue: informing authorities, preparing for application of trial permission with medical ethical organisations in every country of the trial, negotiating with clinical research organisations, and communicating with participating hospitals and doctors. Literally on the final day of the deadline, they came to an agreement in the negotiations about the conditions for the external capital. For the second time the project was saved for the time being.

This was the moment where data collection had to come to a stop, to be able to finish this PhD project. The innovation journey continued. The participating hospitals were selected. Now that the funding was secured, the next steps were the requests for approval from the medical ethical committees in the participating countries, finalising the research protocol for the clinical trial, and communication with the participating hospitals and their specialists.

7.3.2 CANCER TREATMENT

Cancer is a collective name for a series of progressive diseases, which have in common the growth of malignant cells that cause damage and destruction of vital parts of the body over time. Cancer can occur in different parts of the body and with different paces of progression. Originating in one part of the body, the malignant (harmful) tumour cells can metastasise, that is translocate through the body and start new, secondary tumours elsewhere (cancer.gov).

Cancer is a long known disease. The first medical description is found in 2500 BC (Mukherjee, 2010, p. 305). The treatments that are used to cure or slow down the progression of the disease have been surgery, radiation, and chemotherapy. Surgery on tumours has been performed for centuries and without anaesthesia, which has only been in use since 1846 (Mukherjee, 2010, p. 56). Radiation joined the list of cancer treatments with the discovery of radium in 1902 (Mukherjee, 2010, p. 74), and chemotherapy followed soon after WWII (Mukherjee, 2010, p. 92). Radiation and chemotherapy are aimed at destroying malignant tumour cells, but also destroy normal cells. The three different kinds of treatment are often combined, depending on the type of cancer, the phase of the progression, and the contextual factors. How these treatments are combined is based on evidence-based protocols. In the last two or three decades, growing knowledge about cancer and about individual differences in the behaviour of tumour cells has spurred

various new lines of treatment. Not all breast cancer tumours, for instance, react in the same way to a specific chemotherapy. If the characteristics and behaviour of the cancer of patient A can be determined, the treatment can be customised by dispensing chemo A that is the most effective for patient A, without having the side effects of ineffective chemotherapies B and C. In this way, the treatment can be personalised for each individual patient: which chemotherapy and when, and in combination with what else, and this is, therefore, called personalised medicine.

A relatively new line of treatment is immunotherapy. The journal *Science* nominated immunotherapy in 2013 as 'Breakthrough of the Year' (Couzin-Frankel, 2013). Immunotherapy is a collective name for therapies that are focused on harnessing the immune system to attack the tumour. These treatments are especially promising for patients diagnosed with types or stages of cancer that have little to expect from the 'traditional' treatments. Immune therapy reactivates the immune system of a patient, which is under severe suppression by the tumour. One of the first products that was approved by the FDA was ipilimumab, which entered the market in 2011. The 'mab' at the end of the brand name stands for monoclonal antibody. Since then a range of different monoclonal antibodies have been introduced on the market. The medicine is a product of a fixed composition, which can be personalised by changes in dose and by combination with other medicines.

7.3.3 THE INNOVATION: THE IMMUNOTHERAPY OF NEWVAC

Newvac's treatment is also an immunotherapy, although the patient is not treated with a fixed product. Newvac's immunotherapy is based on cell therapy. Immunotherapy is a therapy aiming to 'train' the patient's own immune system to recognise and attack cancer cells. In this therapy immune system cells from the blood of the patient are, treated and changed ***outside*** the body of the patient. When this own 'processed blood' is reintroduced into the patient, the immune system cells should 'know' what the cancer cells look like and appoint the immune system to destroy this malignant invader. The patient is 'vaccinated' so to speak with their own processed blood. This therapy is individually customised, as the vaccine is based on the own blood of the patient. This makes this immunotherapy not simply a product but a product-service system: a product component from Newvac, and the service to process the patient's blood with the product and deliver it back to the patient.

7.3.4 CONTEXT

Before a treatment is approved by the EMA for the European market or the FDA, for the American market, the product has to be thoroughly tested on patients. These are the so-called clinical trials in humans, divided into three phases I, II, and III. The aim of a phase I study is to investigate if the treatment is safe and what is a safe dose. The aim of a phase

II trial is to gain an indication of whether the treatment is effective and what the possible side effects are. Phase III clinical trials aim to investigate if the treatment works better than other treatments, so what the value is in clinical practice. In cancer treatments, the trials of phase I and II are often combined in one study. The number of patients that participate in a phase I/II trial is around 10 to 20 people, where a phase III trial is an advanced randomised controlled clinical trial that contains hundreds to thousands of patients. The clinical trials have strict protocols. Trials in humans have to be approved by medical ethical committees, which are active on a national level, and locally in every participating hospital.

7.4 Unpacking the journey

7.4.1 THE MOTIVE FOR INNOVATING

Caroline de Vries was an experienced manager in pharmaceutical research and as such she was aware of the limitations of the current cancer treatments. When she first heard about the possibility of immunotherapy she was thrilled, as she believed this could be a breakthrough in cancer treatment. She did not need much time to consider when she was asked to lead the team. This therapy meets an unmet medical need. An unmet medical need in cancer treatment is the somewhat euphemistical expression used in the industry, meaning that such patients have no alternative, which in this case means people will die. This motive for innovating, for providing a possible treatment for patients who have no options, continued as motive to pursue the project over the years of this study. At the beginning of 2017, when the going was tough, the innovation project leader was still convinced of the purpose.

> *At this moment in time I am not sure if we are going to make it. Not because I do not believe in our treatment, but because the odds seem sometimes against us. However, I am convinced that this is the future of cancer treatment. We have to pursue! (interview Caroline de Vries, January 2017)*

7.4.2 HOW THE INNOVATION PROJECT LEADER WAS PREPARED

As project leader, de Vries prepared for the innovation project by reading about the treatment, the scientific proof of concept, and started talking with people in the field. Her frame of reference was her long-standing experience in pharmaceutical research. At the outset, she did not believe she was going to do something daring, nor that she was going to do something she had never experienced before.

> *I did not judge it as an innovation, maybe still don't see it that way. I was going to build an enterprise or expand one. That was familiar territory; I did that before. I talked to many people, but all in relation to the content I was going to develop. It did not cross my mind to*

talk to people who are experienced in innovation. And I did not expect that the process would be so different. Maybe that is OK. I'm not sure if I had known all this before, if I would have jumped in. (interview Caroline de Vries, January 2017)

7.4.3 FOUR PROCESSES

7.4.3.1 Developing the content process

Product becomes product-service system

The first ideas on how to develop an immunotherapy stemmed from the beginning of this century. After a period of ideation and preliminary testing, the results of the first 'in human' tests, during which a few patients had been treated with the therapy, were promising. Before the decision was made to split off the activities of Newvac, a business plan was made. The basic idea was that Newvac needed another year to set up a clinical trial and organise for production, as preparation for a request for registration of the treatment with the medical authorities. In the first months after the split off, it became clear that the development was much more complex than originally thought. When a manufacturer produces a 'pill' (liquid or solid), such as a chemotherapy, or a monoclonal antibody immunotherapy product, the product can be bought by a hospital that treats the patient. In such a case, a product is manufactured, and sold, and delivered to the pharmacists of the hospital. In the case of Newvac, the initial idea was to follow the same logic and deliver the product to the hospital, together with a protocol on how to treat the patient's blood. Giving blood to a patient, in the form of a blood transfusion, is a standard procedure, and something that hospitals do frequently. A manufacturer of a medicine, however, is responsible for the product until this enters the patient. And because the treatment is a medicine, and not a blood transfusion, Newvac, as manufacturer of the treatment, is responsible for the whole process until the processed blood is brought back to the patient. In this line of reasoning, it is not only the medicine with which the patient's blood is treated that is the product, but the patient's own exposed blood that qualifies as the medicine. Therefore, Newvac has to control the quality of the treatment beyond the production of the medicine. This had huge consequences for the development process, that was not only a product development process anymore, but became the development of a product-service system: a system containing a product with a chain of events, as depicted in Figure 7.2.

In the case of a pharmaceutical company that produces a medicine, the actions and connected quality control stop after the product is put in a box. Yet here, as Figure 7.2 shows, manufacturer Newvac produces a medicine, and the patient gives a blood sample. The medicine is used to process the patient's blood, which after processing results in processed blood (blood^{+}), which is transported to a hospital that uses the blood batch to vaccinate the patient in one or more series. The quality of this whole process is the responsibility of Newvac.

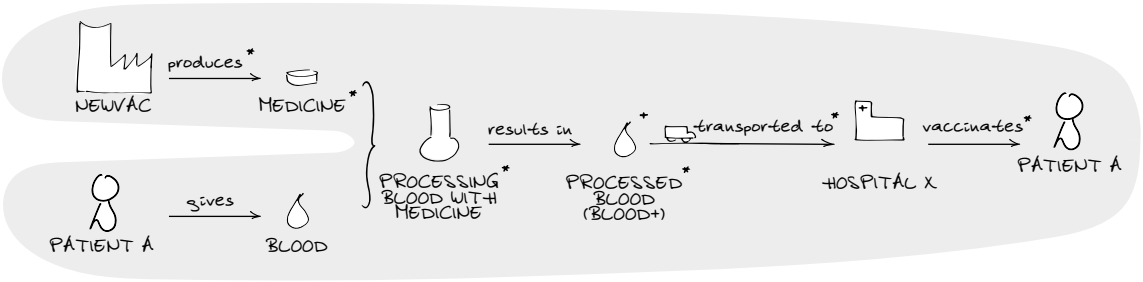


fig. 7.2 The routing of Newvac's product-service system

At all points marked with an *, Newvac has to have quality control procedures in place to control whether the expected quality is secured. The innovation project team developed a new routing, the chain of events from the medicine to the patient's processed blood that is used to vaccinate the patient. The developed routing relates to the patient's blood that is taken, the processing of the blood that takes place outside the patient's body, the delivery of the processed blood, and vaccinating the patient with their own, processed, blood one or more times. At first this routing was developed for the use during the clinical trials. If necessary, this routing can be adapted when the product-service system is accepted for the market. As a consequence of the product-service system logic, a new business model also needed to be developed.

> *We have talked to many other biotech enterprises. Many of those are in the same position, that the current models and current ways of working do not fit the new reality. As far as we know there are no examples yet. (interview Caroline de Vries, January 2017)*

Developing the clinical trials

To develop a clinical trial protocol, Newvac had to make a prognosis about the statistical improvement of the treatment. In the case of cancer medicine, this is measured in terms of expected overall survival gain, the expected time patients will live longer with the new medicine than without. The expected survival time gained by patients that are treated with a new product is compared to the expected survival time of patients that receive the treatment according to the current protocol. The impact of the treatment has to be hypothesised before the clinical trial starts. The expected gain has an effect on the size of the research population. If the hypothesised overall survival gain of a treatment is for instance three years compared to the control group that is not treated with the product, the clinical trial has to incorporate less patients in the study to prove this significantly, than when the overall survival gain is hypothesised to be one month. A clinical trial with more patients is, of course, costlier than a trial with a smaller population.

Both for the costs of the trial as for the impact of the treatment when accepted on the market, a high prognosed overall survival gain is preferred. Suppose a trial hypothesises an overall survival gain of three years. When the actual overall survival gain in the trial appears not to meet the hypothesised three years, but 'only' 35 months which is still a significant gain from a patient's perspective, the clinical trial fails to prove the prognosed expected overall survival gain. If the manufacturer wants to have the product accepted by the Medicine Authorities, the trial procedures have to start all over again. Hypothesising an expected overall survival gain has therefore strategic implications. Every doctor and every pharmaceutical company hopes to provide its patients a product with an overall survival gain as high as possible, yet during clinical trials the company needs to set the expectations at an acceptable level in relation to the risks of failing the trial.

Correcting plans

The two aspects, developing a product-service system and the number of patients to incorporate in the clinical trials, have a significant impact on the forecasted time and budget of the development project. By the end of 2013 the plans were corrected for these aspects.

> *We talked to many other people, also outside the business. So far, we received a wide range of remarks, suggestions, and critics, some more bizarre than others. We have also to endure that some are rather rude. Some laugh us in the face and say 'what you guys want is impossible'. Which, by the way, we strongly believe is not! We had to learn to 'read' these critics, to understand why they are critical. Sometimes we can improve our ideas. Or we can improve our communication, because we learn about their way of looking at these kinds of problems. At some other times, we learn that although the other side of the table doesn't agree with our reply, we feel we have thought it through and feel confident. And once in a while, the criticism teaches us something about the speaker of that criticism as well. (interview Caroline de Vries and colleague, April 2014)*

The results of the first in human tests were promising. The innovation project leader never spoke directly to patients, but Caroline de Vries learned some anonymous stories from the medical team members. The story of a young woman, for instance, a mother of three, who was diagnosed with cancer when her children were still in nappies. The prognosis was poor, as she was not responding well to chemotherapy. She was one of the first people treated with the immunotherapy, and by now, a few years later, she is still in relatively good condition. Those additional years gained were priceless for the patient. These kinds of stories kept the innovation project leader and her team going.

7.4.3.2 Stimulating the creative process

The creative process, sensemaking, diverging, and converging were present daily, although not always prominently, but under the surface. Many different situations required making sense of the problem at hand and finding solutions in unknown situations. An

example was the course of the clinical trial. Different hospitals in different countries with different people and different experiences in clinical trials, cooperated in the trial. All participants were thoroughly briefed from the outset. The team had created scenarios for what this process could look like, what kind of different routings were possible, and which decision points they would probably face in working with different parties in the process of the clinical trial. Based upon these divergent routings, they decided how they could best approach the process of the clinical trial, what to decide at each of the decision points, and converged this into a strict trial protocol. For the comparability of the results, it is essential that all participating hospitals approached the trial in exactly the same way and followed the trial protocol meticulously. With the finalised protocol, the team met again with one of the participants to discuss the final details and practicalities. As this protocol was a specification of earlier plans, the team did not expect any difficulties, and the explanation seemed clear for the participants. Until one of the people in the room said: '*We understand. There is only one minor problem, we do not have all the facilities you mention as essential. We never work with a controlled cell culture chamber, and do not have such a facility in the building'.* A controlled cell culture chamber is a dedicated room with a controlled environment. The trial protocol requires such a controlled cell culture chamber. The team's assumption that all hospitals in the clinical trial would have the requested facilities, proved to be wrong. A small detail with a big impact, which forced the team to find a creative solution without endangering the comparability of all research settings.

Another aspect of creativity were the images the team used in their presentations. The team searched for images that could help the diverse audiences to understand and make sense of the process of the disease and how the treatment should intervene in this process. The creativity was not aimed at understanding, making sense, or solving a problem of the innovation project team, but aiming at helping others to understand and make sense of the difficulties that come with treating cancer.

The process of the development of the disease is complex. In her presentations to non-medical audiences, the innovation project leader used the depiction of the Cancer Immunity Cycle (Chen & Mellman, 2013). Although this visualisation was developed for a medical-scientific audience, it assists in understanding the process of the immune system for non-experts in the field of oncology. This visualisation (fig. 7.3) depicts how various connected and sequential steps in the immune system function to attack and clear away foreign intruders, such as bacteria or tumour cells.

Dendritic cells are the scouts of the immune system, the 'army' that should clear away foreign intruders. The dendritic cells should recognise the tumour's antigens, the foreign protein at the surface of the tumour. The dendritic cells present these antigens to the T-cells. T-cells are the soldiers of the system. The presentation of the antigens should stimulate the T-cells to multiply. These T-cells should then go to (trafficking to) the tumour, infiltrate the tumour and recognise which cells should be destroyed, and do exactly that.

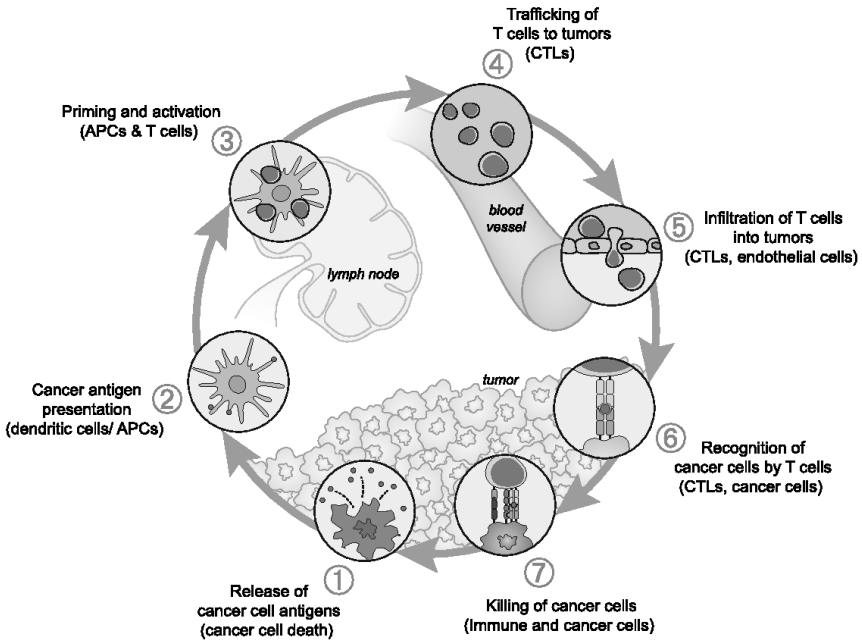


fig. 7.3 Cancer-Immunity Cycle (Chen & Mellman, 2013)

All steps in the Cancer Immunity Cycle are essential in order to have a well-functioning immune system that could clear away the tumour cells. Tumours, however, have the ability to interfere in this process and inhibit, suppress, or prohibit the immune system from functioning well. It depends on the kind of tumour how and where this process is obstructed or disabled. Cell therapy is based upon the understanding of this cycle and the understanding of the mechanism of interfering in relation to the specific tumour.

Introducing this image to non-experts in oncology provided a framework for understanding how Newvac's treatment is an intervention in this system. At the same time, the team learned that too much medical-scientific information could be difficult to absorb. The innovation project leader used a metaphor to depict cancer.

> *We use the image of a dragon. When I say: 'there are many antigens in a tumour, and these antigens vary over time and are also heterogeneous within a tumour', then everybody thinks huh-huh. When I say: 'cancer is like a multi-headed dragon, and all the heads look into different directions. To kill the cancer, we have to take off all the dragon heads at once!' then you see the audience thinking 'ah-yes, I understand.' And it doesn't really matter if they all have the same dragon in mind. I want them to think: its many, and all in one strike. I try to keep all scientifically correct information; I don't want to make it*

childish. It is a serious matter, and I want people to be seriously interested. Yet, the image of the dragon helps to understand that serious matter. (interview Caroline de Vries, 2017)

7.4.3.3 Guiding the group dynamics process

By the end of 2013, Caroline de Vries asked a colleague, with whom she had already worked in previous projects, to join the team. The former working experience of the two team members provided a basis of trust.

Due to the understanding we had, we knew already that our dialogues would be open, to the point, and could be sharp without being mean. As personalities we thought we could do the job. We also looked at knowledge and experience, and we know that that is complementary. We did not need many discussions or preparations upfront. We do it along the way. And from every step we make we learn, about the process, about how each of us thinks about a topic, what is missing, about what topic we should develop an understanding of, or about what and when should we make a choice. The interesting thing is that each of us experiences that something is missing or wrong, or that a choice has to be made, at different moments and in different situations. Quite essential; we cover different aspects and bring different skills to the table. (interview Caroline de Vries and colleague, April 2014)

The team of people directly involved was only three people, combining pharmaceutical, medical, scientific research and business skills. The communication lines between the three were short and open. All shared the same ambition. The innovation project leader experienced the dynamics in the team as not difficult to manage. Differences in opinion were talked through.

The innovation project leader also had to deal with the dynamics outside the team, in and between groups at different distance levels to the innovation project leader (see fig. 7.4): the core team of three, the extended team with dedicated experts, the financially involved stakeholders, and national authorities and supervising and regulatory authorities.

The situation with regards to group dynamics with the financial stakeholders was of particular significance in the months that followed the commitments of the investors. The group of financial stakeholders was diverse. Capital came from grants, venture capital, loans and subsidies. Some of the financial stakeholders were experienced in cancer research or biotechnology, others had no former experiences in this field. It was not directly a homogenous group of people, coming from various organisations. This required tailored communication, and the innovation project leader had to be alert that what was perfectly clear for one, could lead to a sense of unease for another stakeholder. In the wider circle the stakeholder dynamics were even more complicated. The innovation project leader and her team had to deal with authorities in different countries, registration authorities, and rules and regulations from the participating hospitals.

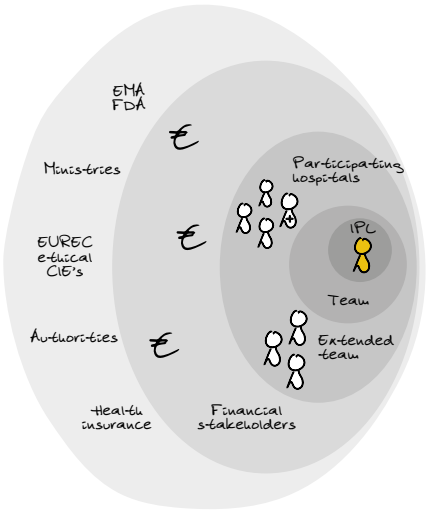


fig. 7.4 Groups in relation to the innovation project leader Newvac

Rules and regulations of supervising authorities are often built upon existing situations in other cases, and these situations rarely fit the new reality for the new kinds of treatments, such as Newvac's. To enhance the process of finding new solutions, the team tried to establish an open dialogue with the various authorities, and shared its line of thinking and the explorations of finding new solutions. With some authorities that happened to be easier than others. The team experienced a diversity of preliminary knowledge and a diversity in the sense of urgency.

7.4.3.4 Managing the project constraints process

MONEY

The search for capital took a lot of time, which was unexpected at the start of the project. The innovative character of the treatment and the process of clinical trials incorporated risks. The innovation project team understood that a decision to participate financially takes time and ample consideration, and potential investors like to assess the risks of the project as much as possible. What the team learned during this process of attracting potential investors, was which questions many of the investors had, and to tailor their information to those questions. The presentation grew in terms of focus and concreteness. Some parties seemed to have so many questions that led to more questions, that this process seemed never ending.

> *In the beginning we thought that all those questions were showstoppers. If we would not answer those questions the show was over. And we wanted to attract money for our trial.*

We learned, however, that some of these parties bought time by asking these questions, and new questions, over and over again. Questions not for the sake of finding answers to reduce the risks or calculate opportunities of the investment, but questions that only seemed to be asked for the sake of postponing a final decision to participate, to keep us busy as the time went by. We even came up with a word for that behaviour: carrot cake. In analogy with the rabbit that walks into a bakery to ask for carrot cake, which the baker does not have. After days and days of asking, the baker decides to bake one, and the next morning, when the rabbit walks in, the baker is happy to say he has carrot cake, yes! Then the rabbit says: 'Uggh, dirty, no? I hate carrot cake.' We learned that what we experienced as waves of questions, sometimes, yet not always(!), was like this carrot cake. We had to learn to differentiate between the different piles of questions and had to learn to dare to say: sorry, I really appreciate your questions. However, at this moment in time, we cannot answer all those questions as this is too time consuming, or too early, or whatever reason. We will be happy to dive deep into this matter later on in the project. (interview Caroline de Vries, 2017)

A second reason the quest for capital appeared more difficult than originally imagined, was the time horizon of venture capital. As the treatment is a radically new product-service system, venture capitalists expected it to be more difficult to resell the company after a short period of time. At this moment in time, it was difficult to assess in what kind of business portfolio this product-service system would best fit. With the time horizon of a venture capitalist of a few years, for some, this was a reason not to participate.

Time

In the innovation journey of Newvac so far, time played an essential and controversial role. When the innovation project leader began, the idea was to organise for funds, and sequentially organise the clinical trials, estimated in a process of approximately one year. As outlined above, finding funding became much more difficult than expected upfront. At the same time the team was preparing for the clinical trials and, due to increasing insights, the plans for the trials changed and had to be adjusted. The innovation project manager was looking for a way to end the tweaking of the plans, and to share the ideas with the EMA. She remembered how months ago —in a dialogue with the researcher— the story of 'Inviting the Queen' was shared (see for the provenance of the story, the case portrait of BeerTender in this dissertation, section 5.4.3.4). The innovation project manager decided to play this story as a trump, and told her team the same story, ending with the announcement that the appointment with the EMA was made. When she recalled this incident later, she said:

It is all very busy, and we all work 80 hours a week, and we had the possibility to go to the EMA every month. So, when you are not ready for September, you'll postpone to October. But we all knew we had to do it. Of course, I could have made the appointment, just saying: 'Guys, this is important.' So I told the story, and we all understood: When the Queen comes,

the main idea has to be ready. If you are not ready in the details, too bad, but the Queen has to enter the red carpet. But by telling this little story, everybody said, yes, you're right. This is how it works! (interview Caroline de Vries, 2017)

The email the innovation project leader sent to all team members showed a different queen than the one from the original story. The researcher remembered the story of Queen Beatrix, opening the Arena. The innovation project leader copied a picture of Queen Máxima in her email. Caroline de Vries's colleague, when asked in an interview, could not remember the origin of the story, but did remember the feeling of the metaphor: the point in time where all comes together, and it has to be as good as possible as you only have one chance to make the proper impression.

Some funding parties made commitments to Newvac under the condition that all funding would be settled to start the clinical trials within a certain amount of time. The pressure rose, when the rest of the funding was delayed. The liquidity dropped, and at a certain point in time the liquidity was so low that the salary payments were at risk. The team continued and worked unceasingly. They pushed forward, at a certain point against the odds. If the project failed, they wanted to have the feeling that they had all given it their best efforts. The clock ticks, and at a certain point there was only a few weeks left before the deadline of one of the capital providers would end. In the beginning of the quest for funding, the team kept communication open with all possible fund providers. As long as a potential provider had not yet said 'no', the possibility of 'yes' still existed. When the team felt time was running out, the communication became more focused, asking clearly if one was interested or not. The final funding commitments were settled in far less time than the first. Time became a different phenomenon as the team expressed to potential funding parties, in spoken words and body language a 'now-or-never-timing'. Time, and the lack of time, became the crowbar, the 'device' that the team used to communicate the urgency for both the necessity to continue this project for those patients who have no alternative yet, and the urgency for venture capitalist to invest now. Two days before the deadline expired, the innovation project leader sent the researcher a text message with only two words: 'Got them'.

Quality constraints

As with all medicine, Newvac had to deliver against strict quality constraints procedures, both in the clinical trials as well as the delivery of the medicine after registration. So far, quality restrictions and responsibilities of pharma providers were based upon products. Newvac however, delivers a product-service system. As a consequence, Newvac has not only to provide the controlled consistent quality of the product, but also to assure the quality of the whole process through the system. Newvac has to guarantee that the treated blood the patient receives back is of good quality. Newvac had to determine and describe what 'good quality' meant in this perspective, and how Newvac would control this process and assure delivery against the defined standards. As the method of delivery of a

personalised medicine such as Newvac's is relatively new, no common practice exists. Newvac had to define, develop and discuss this quality process, as well as the criteria they would use, with the medicine authorities and clinical ethics committees of each country.

7.5 Discussion

7.5.1 INTRODUCTION

The previous sections described the course of the innovation journey of Newvac's development of the immunotherapy to date, seen through the eyes of the innovation project leader. In this section I will discuss what has been learned so far in the course of the innovation journey, how the innovation project leader dealt with and led the four intertwined processes, and handled the ambiguities and tensions during the innovation journey.

7.5.2 THE COURSE OF THE INNOVATION JOURNEY OVER TIME

The innovation journey of Newvac is not finished yet. Although the project leader knew the proposed treatment was very new and innovative, she had expected a shorter development path. Comparing the innovation journey of Newvac so far with the innovation process model of Van de Ven and colleagues (Van de Ven et al. 1999), some differences are visible.

Figure 7.5 shows the course of the innovation journey of Newvac so far. The gestation (1) of the immunotherapy of Newvac starts at the beginning of this century. The innovation journey experiences not a real shock (2), '*where concentrated efforts to initiate innovations are triggered by "shocks" from sources internal or external to the organization'* (Van de Ven et al., 1999, p. 23). The point where Newvac comes into being is after some first promising results from the therapy. The planning (3) starts just before the innovation project leader is appointed. The proliferation (4) after the start soon changes into a cutback of progress of the development of the innovation. The innovation project leader and team experience multiple events where they have to go back to the plans (3). As the enterprise has no exploiting organisation, the course of the innovation is also the course of the development of the organisation. This innovation journey has therefore no 'fluid participation of organisational personnel' (7). During the course of proliferation and setbacks, the involvement of investors (8) grows, although a number of investors decide not to participate (and relationships end), and relationships with several others (9) are developed, such as the participating hospitals and the EMA. While developing relationships with potential investors, the innovation project leader and her team also work on developing an infrastructure for the clinical trials and the production after acceptance by the medicine authorities over the same period of time.

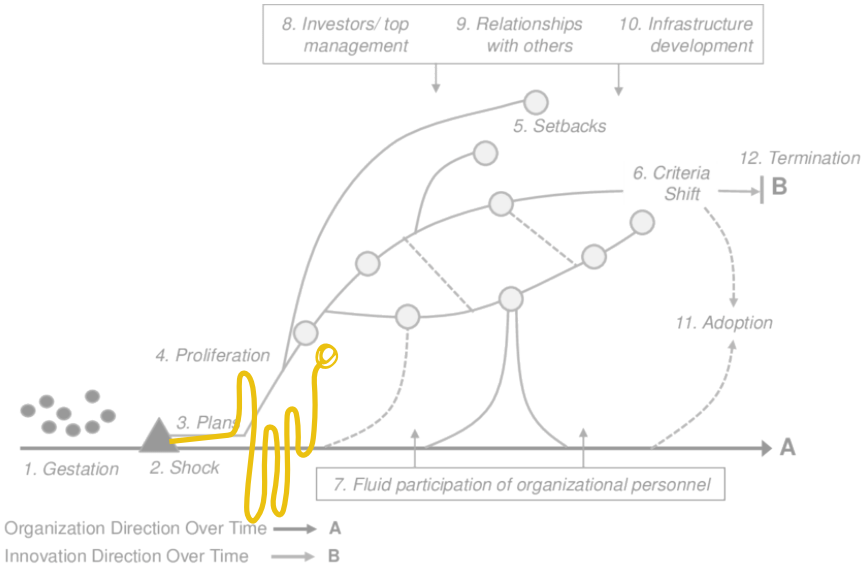


fig. 7.5 The innovation journey of Newvac (adapted from Van de Ven et al., 1999)

The process developed in loops and turns, at some points even below the continuity line of the organisation, as the lack of funding set the advancements of the organisation at risk. The development process did not proliferate into various product streams.

7.5.3 LEADING THE INNOVATION JOURNEY

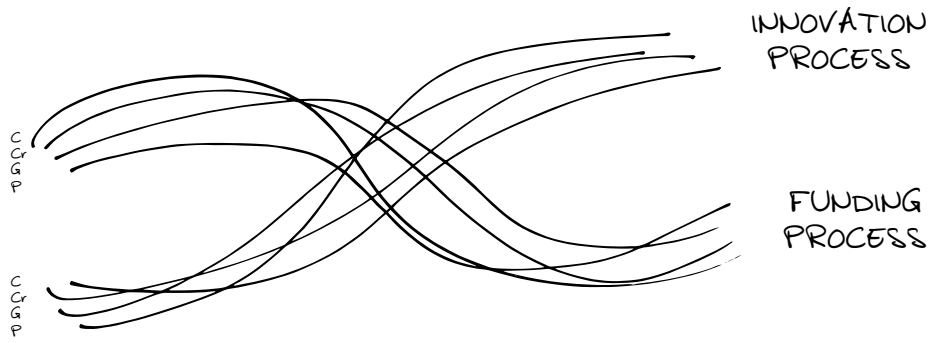
Within this course of the innovation journey, the innovation project leader had to deal with hurdles and setbacks, and had to lead and act and direct in the intertwined processes. Taking a step back, how did she do that?

7.5.3.1 Leading by intertwining a double helix of processes

The innovation process to develop the innovation was an intertwined process: the content development had two main components in the development of the clinical trials, and the development of the production process of the treatment when the medicine will be accepted by the authorities. Various issues had no common answers, so these aspects of the content development process were intertwined with the creative problem solving process. The issues in the development of the clinical trials mainly came from outside the innovation project team, from participating hospitals and oncologists, medical authorities and research ethics committees. The content development process was also intertwined with the group dynamics process. In addition to the process to attract funding, the content

development had to be developed within the strict quality criteria of the industry and within the pressure of time.

The process to attract funding became a process of considerable size and impact. This could not be seen as managing project constraints, as this was a process with its own dynamics, its own creativity and its own time and quality issues. Information and content had to be developed to inform various types of potential funding parties. The content for grants was different from the content for attracting subsidies, that again was different from content to attract venture capital. Understanding the problems of these different parties, and solving issues, asked for creative solutions. This process of attracting funding was also intertwined with the process of managing the group dynamics within each of the potential partner organisations, as well as within the group of funding partners.



C = Content development process
Cr = Creative process
G = Group dynamics process
P = Project constraints process

fig. 7.6 Double helix of intertwined processes

The intertwined processes in the case of Newvac could be seen as a double helix of two core processes, as visualised in Figure 7.6. Each line depicts the historical timeline of either the process to develop the content or to find funding. In the timeline of each of the two processes events were happening, either events coming from outside or initiated by the innovation project team, visualised with a bullet point on the timeline. These events had consequences in each of the four intertwined sub-processes and led to actions: activities and decisions to develop content, to understand and solve problems creatively, to guide group dynamics, while managing project constraints.

In each of the two strings, all four intertwined sub-processes occurred. In the finding funds process, the innovation project leader led activities to guide group dynamics, and actions

to keep stakeholders informed, connected, and to understand stakeholders' worries. In the content development process, activities and actions are undertaken to guide group dynamics to keep stakeholders informed and understand their worries with regards to content aspects. In guiding the group dynamics, the type of actions was often some sort of communication. The stakeholders in the finding funds process, however, were a different group of stakeholders than those of the content development process. And the content of the information, or the content of stakeholders' worries were different, too. The same logic applied for the other processes. These different streams in the double helix added to the complexity of the overall innovation process.

The labels for the activities in these two distinct streams of development for the clinical trials and production of medicine on the one hand, and of the quest for funding on the other, are the same. In a quick glance these could seem the same process, all aiming at developing the innovation. However, these were such different games to play, that this asked for permanent switching between these two modes. In both games the expertise of the team members was vital, so the processes could not be divided, and each assigned to one team member.

7.5.3.2 Leading by staying firmly together

During the process the innovation project leader and her team were confronted with various forms of criticism: such a small company between the giants of pharma, such a tight budget, such a small team to do all the work. Right from the beginning there were people who expressed their unsolicited disbelief, which the team sometimes experienced as disdain. In the beginning this criticism could destabilise the team, while I noticed also that it evoked anger.

In the four years of this study the innovation project leader and her team experienced the journey, at times, as rather challenging. Unexpected issues arose at unexpected moments in time. The innovation project leader and her team also experienced tensions between the different processes. While they worked to find funding, the preparations for the clinical trials continued in parallel. Negotiating with a contract laboratory that would be the linking pin between Newvac and the participating hospitals, while the funding was so precarious, and the time was running out, was a tension the team experienced as almost physical. Talking to an employee of the contract lab, the innovation project leader could tell that she was not sure if the team would ever have the funds to hire the lab. Showing their cards would probably have slowed down the process from the side of the contract lab. So the team had to keep up appearances. Identifying and solving problems in the procedure of the clinical trial in all those different hospitals, while at the same time the team would have preferred to spend all available energy in solving the funding issue, was a tension that felt like a divide.

The biggest tensions the team experienced were the combination of time pressure and not having full control over the progress of the innovation process. When one capital provider had set a deadline for the funding process (when the funding was not completed before date x, this commitment for funding will expire), and the deadline was approaching, while other organisations in the funding process did not experience the same level of urgency, the stress level in the innovation project team rose. The team also experienced increasing tension when the process was delayed due to aspects that were out of their control, while they knew that patients were waiting to participate in the clinical trials and their time was running out.

The innovation team members expressed to each other when and how they experienced these tensions and acknowledged to each other that they had to deal with these feelings. Tensions and time pressure and high stakes were fertile soil for conflict. Here, the team managed to stay close, and the journey was experienced as a team effort. They valued each other's contributions, trusted and supported each other. This did not diminish the tensions or contradictions but helped to deal with the situation at hand. It sometimes made them angry, too, which was used as an energy to push harder.

7.6 Conclusion

The innovation project leader of Newvac estimated that within a year or two after the start the clinical studies would be running. However, the innovation journey, so far, has been a process where, in loops and turns, the hold off of funding has set the continuity of the organisation at risk. At this moment in time, it is not clear what the innovation journey of Newvac will look like, as the organisation is still in the midst of this process. When this PhD research had to stop, Newvac had secured the funding, the participating hospitals for the clinical trials were selected and approved, and the procedures and protocols for the clinical trials were thought through. The next steps are to apply for permission from the medical ethical committees in the participating countries and other authorities involved.

For the innovation project leader and her team, remarkable points in this innovation journey are the delays in time due to the funding issues, and the splits in activities and attention into the two different processes of funding on the one hand and developing clinical trials and production of the medicine on the other, which leads to what I demonstrated as the double helix of processes. The complexity of the content development process combined with the funding process and the awareness of patients' unmet needs add to the pressure the team experiences to pursue and try to speed up the process. The complexity of issues and the necessity to lead others out of their common response zone are higher than the innovation project leader had initially expected.

Part III

DEBRIEFING

LOOKING BACK ON THE INNOVATION JOURNEYS FROM THE ARMCHAIR

INTRODUCTION INTO PART III

The journeys came to an end. This part III of this dissertation is the debriefing section. The term ‘debriefing’ originated with the military and is used after soldiers come back from a mission. The role of debriefing is to receive information about what happened and reflect upon those actions and occurrences (Bartone & Adler, 1995). The same term ‘debriefing’ is used in experiential learning settings. The learners reflect upon the former experience and learn to integrate this with existing knowledge by describing, analysing, and communicating the recent experience (Nicholson, 2012). This Part III takes a ‘deep dive’ into the data, and describes and analyses what happened in the three journeys and analyses overarching patterns in chapter 8. The prototype of a narrative repertoire, delivered in chapter 9, serves as a means of communicating the experiences to those who were not part of the journeys. In chapter 10, I ‘debrief’ on this PhD-journey by reflecting upon the findings, the contribution, and the methodological choices made in this dissertation.

CH 8 | CROSS CASE COMPARISON[4]

8.1 Introduction

We embarked on the journey of this study to answer the research question

> **How do innovation project leaders in different organisational settings lead the innovation journey over time, and in what ways could their experiences be built into a narrative repertoire?**

To add to our understanding of how innovation project leaders lead the innovation journey, intertwined the four processes, and handled ambiguities and tensions, the chapters 5, 6, and 7 presented the accounts of three different innovation journeys through the eyes of the innovation project leader. In this chapter the findings of the three cases are brought together, compared and discussed. The structure of this chapter is as follows. The next section 8.2 answers the sub-question of how the innovation journey unfolded over time in the three cases. This is followed by a comparison of the four unpacked processes of the innovation journeys in section 8.3, and the issues that emerged during the innovation journeys and how the four processes were intertwined. Section 8.4 reflects upon the leadership during the innovation journeys. Section 8.5 will then conclude by summarising and answering the second sub-question on how the innovation project leaders led the innovation journeys, intertwined the four processes and managed ambiguities and tensions.

8.2 Comparison of the courses of the innovation journey over time

The first sub-question leading this PhD project is how the innovation journey unfolds over time in different organisational settings, seen from the perspective of the innovation project leader. The courses of the innovation journeys of the three cases under study were compared with the innovation journey model described by Van de Ven and colleagues (1999). Van de Ven and colleagues have demonstrated that innovation processes are messier in reality than the stage-gate models suggest. In the three cases described in this dissertation, none of the three courses followed a path that was orderly, nor did the steps and phases follow an orderly sequence.

4 Part of this chapter is based upon Enninga & van der Lugt, 2016

Differing from the projects studied by Van de Ven and colleagues (1999), none of the three innovation processes discussed in this dissertation developed into parallel paths with the development of product extensions. All three cases in this dissertation developed one single innovation that was the starting point of each journey. The 'fireworks' model of Van de Ven and colleagues (1999, p. 34) should, in the three cases of this dissertation, be simplified into a single path, as shown in Figure 8.1.

The lower horizontal line depicts the development of the organisation, while the upward line depicts the development path of the innovation. It should be noted that in the case of Hogewey and Newvac these two development paths are the same. In the case of Hogewey because the whole organisation changes due to the innovation, and in the case of Newvac because the organisation equals the innovation project team. In these two cases the lower horizontal line could be seen as the current situation in the market, and the development path of the innovation deviates in an upward line from the current status quo.

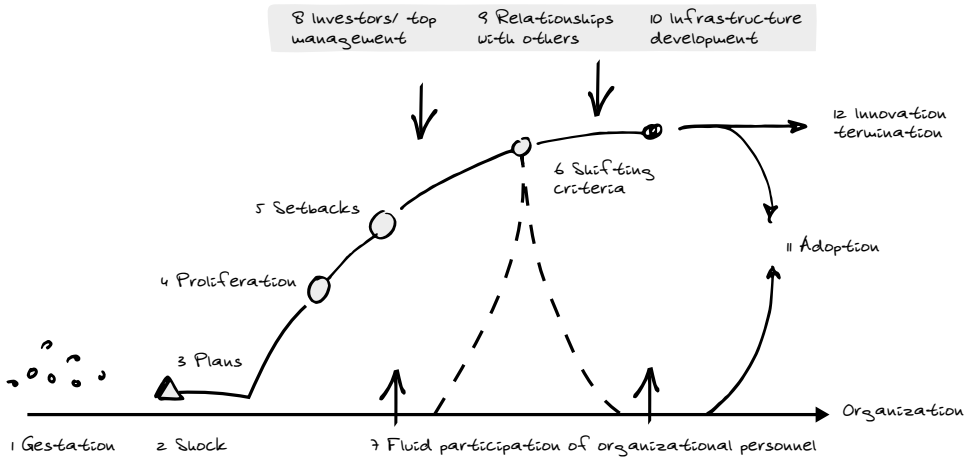


fig. 8.1 Key components of the innovation journey (adapted from Van de Ven et al. 1999)

The three innovation projects all have a gestation period (1), where various events are the inspiration and breeding ground for the later innovation.
In the case of BeerTender, former activities in one of the operating companies lead to the start of the innovation process; before the project starts at Hogewey, the leadership team have already shared some thoughts about change, but are kept too busy by day-to-day

challenges to allow the change process to ignite; and, in Newvac, the ideas and first steps that lead to the treatment have been set years before the actual enterprise is established. However, the innovation journey of the innovation project leaders starts with 'the shock' (2) that changes this gestation into the beginning of developing the innovation. For BeerTender, the shock is the decision of the executive board to transfer the project to a dedicated team. For Hogewey the shock is a combination of the sudden death of the father of van Amerongen and the competitive threat. Newvac's 'shock' is the establishment of the enterprise, after some promising preliminary results of the treatment with incidental patients. According to Van de Ven and colleagues (1999), an event that marks the transition from initiation to development period is the securing of plans and budgets. For Newvac, however, this is only partly the case, as the quest for a substantial part of the budget is part of the development period.

All three innovation project leaders start by making plans (3), and soon after the project proliferates into many different aspects (4). Setbacks (5) are observed in the journeys of BeerTender and Newvac. BeerTender, well into the development phase, experiences that consumers do not want the suggested solution and the project has to start all over again and it is set back to 'shock'. Starting all over again, the criteria shifts as well (6), and the executive board decide on a closed system (no beer from competitors) and a patented appliance and keg. Beyond smaller setbacks in the development of the technologically challenging system, BeerTender experiences a second severe setback with the bankruptcy of their hardware partner Moulinex. Newvac experiences a series of smaller setbacks in their quest for funding. When the funding seems secured at the 11th hour, the team experiences a severe setback due to the capital providing party unexpectedly adding more conditions to their financial participation. These additional conditions are an example of shifting criteria by resource controllers, as indicated by Van de Ven and colleagues. The innovation journey of Hogewey does not experience severe setbacks, or shifting criteria from resource controllers: in the case of Hogewey, the money is no issue, and the time spent between plans and implementation is short.

The fluid participation of organisational personnel (7) is observed in only one of the three cases. In the BeerTender project the participation of personnel from departments of Heineken and from partners Moulinex and Saeco is limited, other than the dedicated team members of the innovation project team. The innovation project team operates in isolation outside the line organisation and reports directly to the executive board. During the innovation process, members of the standing organisation are consulted or asked to participate on a few occasions, as with the example of the pilot with the bottling line. Hogewey chooses a development path that is opposite to this manner of organising, and the innovation project leader secures fluid participation from planning onwards with both organisational personnel as well as relatives as spokespeople of the users. In the case of Newvac, one cannot speak about 'organisational personnel' as the enterprise is basically a start-up.

In all three cases the innovation project leader establishes relationships (8) with investors (Newvac) or top management (BeerTender and Hogewey), as well as relationships with others (9). This is discussed in more detail in relation to group dynamics in section 3. And in all three cases the innovation project leaders develop infrastructure. In the case of BeerTender, the innovation project team is a temporary team, and, after introduction, the current line organisation has to take over both production, and marketing and sales of the product. For Hogewey, the infrastructural changes are part of the content developing from day one. The innovation team of Newvac has to develop the infrastructure of both the clinical trial as well as the infrastructure of the treatment once the product goes forward to be accepted for market introduction.

The innovation journeys of BeerTender and Hogewey end in a market introduction and adoption (11). As the innovation journey of Newvac has not come to an end yet, it is unclear if the treatment will be adopted by the market or the journey will be terminated (12).

The courses of the innovation journeys in this dissertation endorse the findings of the MIRP-studies that in reality the innovation journey is messier and more complex than a linear sequence over time. However, the model in Figure 8.1, without the 'fireworks' of proliferation into parallel pathways, could at first glance suggest that the innovation process develops in a linear sequence, which is not in line with the fuzziness and messiness of the innovation journeys described in this dissertation. To depict the innovation journey over time, it is useful to incorporate this messiness by combining the design model of Sanders and Stappers (2008) as shown in Figure 2.6 in chapter 2, and the model of the innovation journey as developed by Van de Ven and colleagues (1999). This combined model (fig. 8.2) demonstrates that reality is not as straight forward as one might hope.

The numbers shown in Figure 8.2 correspond with those in Figure 8.1. above. After the shock (2) the first plans (3) start to be developed in a linear path, although soon after this beginning, the process becomes fuzzy. When the project proliferates (4) into subprojects, the subprojects are developed in parallel, although each with their own dynamics. The participation of organisational personnel (7), fluid or not, is depicted at more and different moments in time. Towards the end of the innovation process and adoption by the organisation and the market (11), the messiness is largely solved and the line in the model flattens.

Each of the three innovation journeys in this dissertation demonstrate messiness and complexity at different moments and in different compositions over time. The next section describes the issues and complexities in the four underlying processes of the innovation journey in more depth.

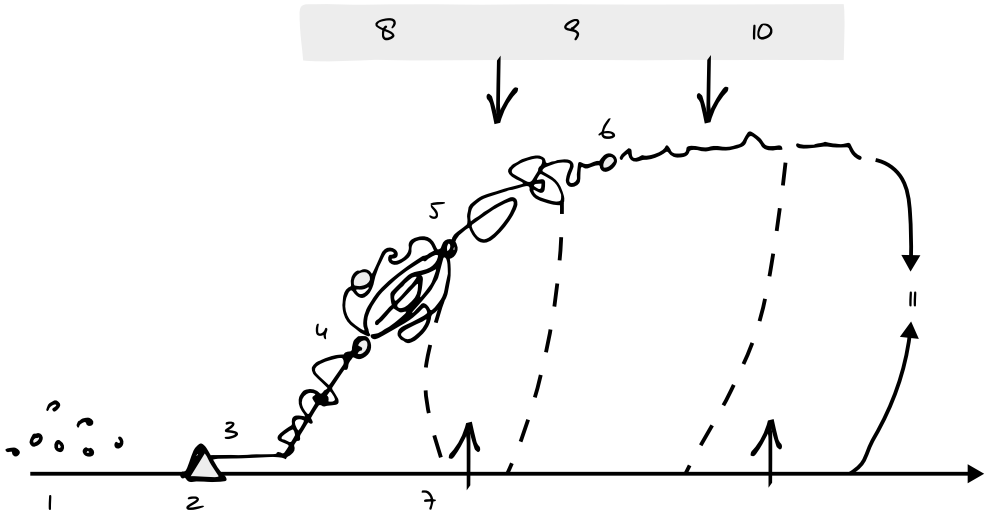


fig. 8.2 Key components and the fuzziness of the innovation journey (adapted from Van de Ven et al. 1999)

The three researched innovation journeys show differences in process time to accomplish the innovation. The BeerTender innovation project was finished in a number of years when the product was brought to the market. The Hogewey innovation project was a little more than a year after the start fully operational; however, the innovation project needed a long time (more than two decades) to strive for establishing and anchoring the change in behaviour in the organisation, and this innovation process had ‘a long tail’. The Newvac innovation project did not finish during the four years of this study.

8.3 Unpacking the innovation journey

This section describes what happened and what had to be managed in each of the four processes in the three different innovation journeys, while section 5 describes how the innovation project leader led and intertwined the four processes.

All three innovation journeys aimed for a radical innovation, a radical change from the existing situation. When Heineken developed the BeerTender draught beer for the consumer market did not exist, nor did a combination of a home appliance with a packaging of beer. Such a combination with a ‘fast mover consumer good’ was at that time only known in the coffee market. Hogewey changed the way patients with dementia were cared for dramatically. Although long-term care facilities existed, small units of people living together and performing a normal living situation were unknown at that time. Helping residents to continue their life, instead of treating patients according to the severe

state of their illness was and is a radical change to the existing, ingrained model of long-term care. Living according to life style, and the later development of a dementia village, are still rare and radically different. Newvac's treatment of cancer is radically different as this treatment is a personal and customised treatment for each patient. The radical change is not only in the immunotherapy, the content of the medicine, but also in the process of treatment. It is no longer a medicine, a 'pill' that can be stored on a shelf, that is produced and given in a certain dose to the patient, but a product—Newvac's medicine—and a service—Newvac's treatment of the patient's blood. The product-service system also makes this development a radical innovation.

Due to this radical newness of the innovation under construction, the innovation project leaders had no direct analogical examples in their industry to compare with, to imitate, or to learn from. As a consequence, the innovation processes of the three cases under study encountered many issues. Some of the issues were expected, the so-called 'known unknowns': problems that could be foreseen but were hardly understood. Some of the issues were unexpected 'unknown unknowns', problems that the innovation project leader and his team could not have foreseen. Unknown unknowns are phenomena that cannot be expected because there has been no prior experience for expecting the phenomena. As a result, the cases under study showed a great number of different issues that had to be understood and had to be solved.

The issues in each case (BeerTender, Hogewey, and Newvac) were grouped into the four processes defined in chapter 2: developing content, stimulating creativity, guiding group dynamics, and managing project constraints (fig. 8.3).

On the left hand side, the rationally oriented processes of content developing and managing project constraints are shown. On the right hand side, the creative/emotional oriented processes of creativity and group dynamics are shown. Following the grouping of Pettigrew (1987) into content, process, and context, the upper two are more content oriented, the lower two more process oriented, and embedded in the context that also influences the processes.

Within each process, the issues were categorised, elaborating on the conceptual framework sketched in chapter 2 (see section 2.6). For the grouping of content issues, the categorisation of Brown (2009) was used, dividing the issues into desirability, feasibility, and viability. The issues in the creative process were categorised by the creative problem solving activities (Isaksen, Dorval, & Treffinger, 2011): understanding and defining the problem, and generating options and solving the problem. A third category was added: seeing differently out of the common response zone (which will be further explained in section 8.3.2. This common response zone is drawn as a horizontal lane within the creative diamond model of Kaner and colleagues (Kaner et al., 2011).

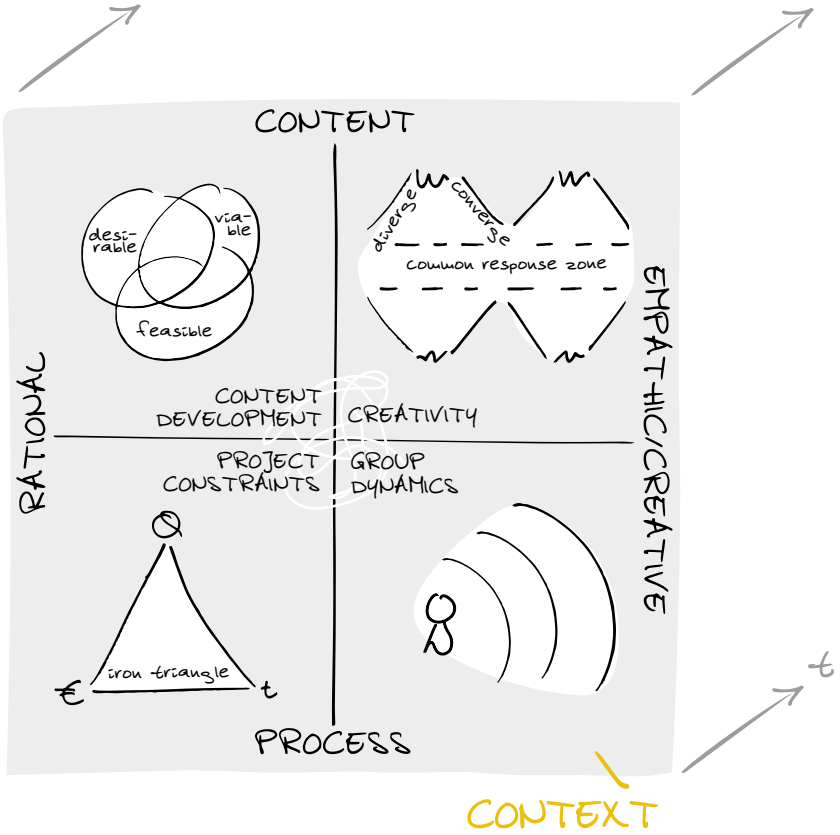


fig. 8.3 Four intertwined processes

The categorisation used in the group dynamics process was allocated according to the roles of the people who participated: team, organisational personnel, users, suppliers, and authorities.

Within the fourth process of managing project constraints, the issues were categorised by the iron triangle of time, money, and scope/quality criteria. Table 8.1 shows examples of issues that the innovation project leaders had to manage.

The issues were categorised in one of the four processes, although in practice the issues that had to be dealt with comprised more than one process, since these processes were intertwined. This is further discussed below. I chose to categorise each issue under the process that was the starting point of each issue. I first discuss the issues in each process in 8.4.1 to 8.4.4, followed by discussion of the intertwinedness of processes in section 8.4.5.

Table 8.1 Overview of issues in the four processes in three case studies

	Aspects / Issues	BeerTender	Hogewey	Newvac
Content development	desirability (users)	usability design appliance	developing 'on-stage'	unmet medical need
	desirability (others)	brewers: permeability	dilemmas stakeholders	hospitals: fit with existing treatments
	feasibility	patents, cooling, a/o	developing 'back-stage'	clinical trials production and logistics after approval
	viability	bridge two different business models Heineken and Krups	developments within standard budget	-
Stimulating creative process	problem understanding	how to force the product launch user worries	normal living	questions to reduce risks and buy time
	problem solving	Peltier cooling	how do you do this at home?	treatment process
	seeing differently/ out of common response zone	users (half a crate)	from medical model to social model of care	depict the multiple issues of the disease
Guiding group dynamics	team	defining shared ambition interface meetings tension relief	no dedicated team; close connection to both leadership team as well as organisation	working closely together; small team
	organisation	manage information gathering and cooperation	manage participation & co-design	-
	users	(no participation) only user tests	manage participation & co-design	explaining why trial is postponed
	suppliers	keeping open dialogue (esp. in Moulinex bankruptcy episode)	-	manage unexpected events
	authorities	-	manage process of checks and balances	manage process of checks and balances

Managing project constraints	time	lead time of process inviting the Queen	at the start: implementation non-sequential later in process: developments in situ long process time to establish behaviour	lead time of process and experienced pressure for patients the now-or-never timing to attract funds inviting the Queen
	money	increased budgets	no budget	quest for funding capital
	scope and quality constraints:			
	- users	durability	dilemma of relatives	-
	- organisation	O2 or CO2 tin or plastic cleanroom	dilemma of care givers dilemma of managmt	cell culture chamber
	- suppliers/buyers	bottle deposit return system		
	- authorities	n.a.	changing criteria dilemma of authorities	criteria for scientific evaluation and safety (EMA/FDA)

8.3.1 DEVELOPING THE CONTENT PROCESS

The content issues were found in aspects of technical feasibility, in viable business aspects, and in the desirability of the solution. All three innovation project leaders had a clear image of the desirability from a user perspective, and during the development their views about this user desirability was a point of reference. In the development of the feasibility and how to deliver this desirable value, the (feasibility) issues that emerged were understood and solved from this user perspective. In the BeerTender case the design of the appliance was a technical issue, as the cooling system had to fit inside, and the design choices made were also based upon the idea that the appliance had to fit the sink in a household kitchen, where the gap between sink and upper cupboards was one of the design criteria. In the Newvac case the patients were too ill to travel, so the product-service system logic had to be developed to ensure patient interactions as close to the patients as possible: in their treating hospitals. The viability of the concept was an issue to develop in the case of BeerTender, where a solution had to be found between two partners with different and non-compatible business concepts. In the case of Hogewey, the viability was a checking point: could the new concept be delivered and performed

within the standard funding system of the Dutch national health care. This check was performed during the phase with the experimental wards. In the Newvac case, the viability of the treatment was not an issue at this stage in the development process.

The cases described, demonstrate that stakeholders other than users have their own desirability issues. The brewers in the BeerTender case did not particularly desire a product that would increase the risk of ruining the quality of the beer, due to the permeability of plastic. In the case of Hogewey the various stakeholders had different desires, which could conflict for each stakeholder group as well as between groups. In the Newvac case the hospitals in the clinical trials had their own desirability issues. In the content development process, desirability should not be limited to the desirability of users.

8.3.2 STIMULATING THE CREATIVE PROCESS

The issues in the creative process in the three cases were mostly content-related issues, partly in understanding the problem and sensemaking, and partly in creatively solving those problems. Within this creative process, the innovation project team and other participants in the process tried to generate novel options in divergent steps and focus on convergent steps. The novel options aimed at staying out of the 'common response zone', as Isaksen and colleagues (2011) have labelled this way in which things are normally understood, done, or approached.

Some issues, however, were not directly issues for the innovation project team in the content development that had to be understood or solved but were issues in the eyes of others who were involved in the process. Here, creativity was used to bridge the old, the common response zone, with the new reality. People do not think inside or outside the box, but in different boxes (Hargadon, 2006). In the BeerTender project, consumers came up with the unexpected question about the shelf life of the beer in the keg. The quality of the beer could be guaranteed for at least 21 days. That could have been the answer. But the team reframed this to a comparison to the existing reality of consumers and explained: half a crate of beer stays fresh after opening for at least three weeks. In the Hogewey case, the innovation project leader asked participants how an issue was solved in their households, connecting the existing world of participants with the new concept in the nursing home. In the case of Newvac, the innovation project leader had to find ways to explain the innovation of the treatment to non-medical audiences. The image used of the cancer immunity cycle was, for some, too technical, but the notion of cancer as a multiheaded monster, where all heads have to be cut off in one action to prevent the monster from continuing his monstrous work, was immediately understood by all. A suggested solution could become clearer for an audience, when the solution was made tangible by a concept representation such as a story, a metaphor, or a prototype (van den Hende, Dahl, Schoormans, & Snelders, 2012; Seidel & O'Mahony, 2014).

The issues, here, were not only to find a bridge, but also to be aware of a possible misfit between the existing reality and the new reality, in understanding what this misfit was before it could be reframed. The innovation project leader of Hogewey, for instance, indicated that she had so many ideas and mental images about the new concept that she sometimes almost forgot that others were not yet as aware of it as she was. The innovation project leader had to understand what the existing frame was in the minds of her stakeholders and then help them to reframe, to bridge the existing ideas with the newly developed reality. Patton and Dorst (2010) have indicated that reframing is key to the creative process. The act of reframing that I mention here, is somewhat different from that indicated by Patton and Dorst, as this reframing does not happen *during* creative problem solving of content issues, but *because of* a creatively found solution.

8.3.3 GUIDING THE GROUP DYNAMICS PROCESS

The issues in guiding the group dynamics process are shown in Table 8.1, and are differentiated by type of group: team, organisation, users, suppliers, and authorities. Issues within group dynamics were both rational as well as emotional issues within a certain group, or between a group and the innovation project team (Menges & Kilduff, 2015). The teams of BeerTender and Hogewey both developed a shared vision about the scope and ambition of the innovation project (Edmondson & Harvey, 2017). As the innovation project teams in the three cases in this dissertation were organised differently, guiding the group dynamics within each core team also differed. The BeerTender's project had the largest dedicated team, with each team member responsible for a sub-project. Here, the guiding of the group dynamics in the team was focused on the connection between the members, and the tuning of issues during the interface meetings. The Hogewey project was organised with only the innovation project leader as a dedicated team member, and the project was staffed by all personnel and relatives in various subprojects. As the level of enthusiasm was high, guiding the group dynamics here was also a matter of keeping focus in each subproject, and keeping clear responsibilities, to prevent participants from wanting to participate beyond their sub-projects. Newvac's team was small, and the group dynamics were not different from any team working in close cooperation.

The 'groups' in the three projects under study happened to be a wide and diverse group of many people at a smaller or greater distance to the innovation project team, as Kleinsmann and colleagues (2010) have found in their study. Kleinsmann and colleagues have focused on the knowledge translation that has to cross the boundaries at the interfaces. In the projects described in this dissertation, I found that guiding the group dynamics also implicated process communication. The role of this communication was to keep stakeholders connected. Stakeholders in a project were kept informed about the fact that the innovation team had no new information yet, for instance, or, in an open dialogue, the occurrences on one side of the project were discussed and parties informed each other about how they experienced this on their side of the project. This kind of

communication did not transfer information such as facts, or expected timelines, nor did this solve any content problem. This communication was meant to establish connections and enhance feelings of inclusion in the process. During the problematic period of the bankruptcy of Moulinex, for example, the BeerTender team kept an open communication with all directly involved suppliers. The team of Newvac did the same in similar circumstances and communicated with their funding partners that they were still negotiating with one funding party.

8.3.4 MANAGING THE PROJECT CONSTRAINTS PROCESS

Money was an issue that impacted on the innovation journey solely in the case of Newvac. In the case of BeerTender, the budget increases were approved by the executive board, and in the case of Hogewey, it was clear from the beginning that the innovation project did not have a budget.

In managing the *quality constraints* and quality criteria, the innovation project leaders in all three cases experienced that quality is subject to different perspectives. Formalised criteria, such as the HACCP in the case of Hogewey, or the criteria for the scientific evaluation or the quality control procedures in the case of Newvac, were not subject to debate. In other issues, the assessment of quality depended on the perspective of each specific group. In the case of BeerTender, the quality criteria of the brewers were different from those of the users. In the innovation journey of Hogewey, the assessment of quality had different connotations within each stakeholder group, which we named the dilemma of each group, as well as differences between the stakeholder groups. In the case of Newvac, one of the participants in the clinical trial had a different idea regarding the quality criteria of the process, which resulted in an issue about the cell culture chamber. Within the BeerTender project, people outside the team struggled with the idea that oxygen was used for pressure instead of carbon dioxide, as they knew oxygen and beer were a bad mix. Although the innovation project team had proof of concept, and had incorporated experts' knowledge in developing this solution, it took some time to convince the brewers.

The issues of *time* were multidimensional in the cases described in this dissertation. Time was a factor in decision-making about long-term strategic choices for the product, such as the choice of Heineken to make BeerTender a closed and patented system, or shorter term tactical decisions in the innovation journey, such as the moment at which the Hogewey organisation started to convert the whole nursing home to the new concept.

Another aspect of managing time in the three cases was the *pressure of the clock*, with deadlines or different motions or pacings of timing issues. Different issues within the innovation project could have different timeframes. When the innovation project team had a difficult problem at hand, which they could not solve within a certain timeframe, the

pressure increased. In the BeerTender project, this could have the effect that other sub-projects connected with this problem, also came under a time squeeze. Also, deadlines impacted on the pressure of time such as when BeerTender's CEO came to see the prototype or the deadline of the first funding party of Newvac. Sudden events could increase the time pressure, such as the bankruptcy of Moulinex, or the unexpected criteria of one funding party that had to be met. Another aspect was the pace of the process and how events influenced this speed. The innovation project team of Newvac struggled with delayed time when the quest for funding delayed the project. The innovation project leader of Hogewey, on the other hand, experienced accelerated time pressure when, unexpectedly, all wards decided at the same moment in time to undertake actions to change.

The innovation project leaders also experienced the impact of *'the right time'*. Unlike chronological time, *chronos*, the window of opportunity in time is called *kairos*, a concept that has already been identified in innovation processes (Dougherty, 2013; Garud et al, 2011; Orlikowski, 2002). The BeerTender team learned from a fellow innovation project leader that he forced the right time by inviting the Queen. The innovation project leader from Newvac learned from this story and called her own Queen to force the team to present to the EMA. In Aesop's fable 'Kairos', the last sentence is translated by Gibbs (2002) as '*Men of old invented this particular image of Time so that our efforts would not be undermined by laziness or hesitation'.* In the situation of Newvac and the approaching deadline for the funding, it was not that efforts were undermined by laziness or hesitation; it was the final phone call that created the opportunity. It was not only sensing the *right* moment, it was sensing there would be *no other* moment after this one that focused all energy and made the potential fundraisers with whom Newvac discussed funding also experience that they had to decide now or never.

8.3.5 INTERTWINED PROCESSES

The findings demonstrate that the issues the innovation project leaders had to deal with were divided over each of the four processes. The results of this study show that the issues were often intertwined with more than one of these four processes. Figure 8.4 illustrates these connections in the two by two matrix of the four processes embedded in a context.

The connections of the four processes begin at the content development process, as the delivery of the innovation is the main goal of the innovation process. The development of a desirable, feasible, and viable innovation, the centre of the Venn-diagram, is intertwined with the process of creativity, understanding problems, and finding new solutions. The development of a desirable, feasible, and viable innovation is also intertwined with the quality criteria in the project constraints process.

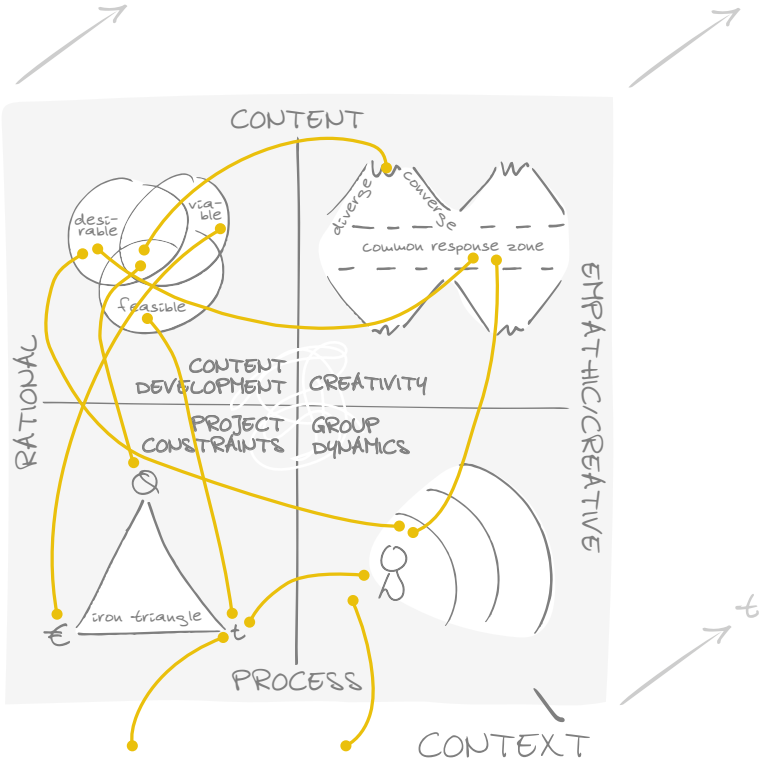


fig. 8.4 Connections between four intertwined processes.

Desirability is intertwined with the group dynamics of the various stakeholder groups: not only the users, but all the different groups that have their reasons for desiring the innovation, or not desiring it. Due to these content-related desirability issues for different stakeholders, the content development in the three cases was intertwined with managing the group dynamics with stakeholders.

In case of non-desirability of the innovation, understanding and creative solutions have to be found to help stakeholders see beyond their common response zone, and therefore stakeholders and creative process were intertwined. The viability of the innovation process was intertwined with the money of the project constraints: costly choices in the development will impact on the money constraints, and, eventually, even on the business case for the innovative product.

Issues around feasibility, (how) can we make it, often needed time to be solved, and impacted on the time constraints. Modelling or prototyping or making the product tangible

in any other way, helped in the understanding of problems or in finding new solutions in the creative process, as well as helping to depict the differences from the common response zone (and via this route helped stakeholder groups to see differently).

Guiding the group dynamics with stakeholder groups had an impact on the time constraints. These group dynamics were also influenced by issues outside the innovation process in the context. Moreover, other contextual issues could impact the time constraints of the innovation process.

8.4. Leading the innovation journey

8.4.1 INTRODUCTION

The previous section 8.4 described what the innovation project leaders had to manage, while this section describes *how* the innovation project leaders led the journey and dealt with the ambiguities and tensions during their project times.

In each case, the innovation project leader had different concerns and set different emphases. The innovation project leader of BeerTender had the biggest team of the three cases. Managing the interface meeting and connecting all sub-projects was one of his main concerns. The innovation journey of BeerTender encountered some severe setbacks and managing the tensions and keeping the team together was another important aspect. The innovation project leader used narratives in various formats and for various purposes to lead the innovation project. The innovation project leader of Hogewey used a question that each and every time opened a whole mosaic of life stories. The question was 'How do you do this at home?'. As the innovation journey of Hogewey was a project divided into an on-stage and a back-stage development, with different participants in on- and back-stage, the innovation project leader had different group dynamics to steer and coordinate. She had to lead through and reconcile the different dilemmas in her different groups of stakeholders. One of the aspects the innovation project leader of Newvac had to lead, was to manage the tensions with the stakeholders and stay firmly together with her small team. The biggest tension came from the two different streams of activities: one focusing on the development of the innovation, including the clinical trials and production of the medicine, the other stream focusing on the quest for funding to be able to develop the innovation.

In this section I will focus on four aspects relating to leading the innovation journey and dealing with the ambiguities and tensions: how the four processes were intertwined, or the intertwining was established by activities of the innovation project leader, the use of narrative constructs to lead, the role of preparation and persistence, and what makes leading the innovation journey so difficult.

8.4.2. LEADING PROCESSES THAT ARE INTERTWINED, AND LEADING BY INTERTWINING PROCESSES

The four processes of the innovation journey that are at the basis of this research are intertwined, and the innovation project leader has to lead these intertwined processes. In some situations the innovation project leaders could also deliberately choose to intertwine the processes. This is usually accomplished by intertwining the issue at hand with (different) groups and guiding the group dynamics. The innovation project leader of BeerTender deliberately chose to incorporate all suppliers in a process during the unpredictable months after the bankruptcy of their partner. In the Hogewey case the innovation project leader chose to develop the front stage in participation with relatives, and back stage in participation with all personnel. In the Newvac case, when one of the funding partners insisted on extra conditions, the innovation project leader kept an open communication with the other funding partners, although the negotiations and the solution took some months. I observed this in other situations as well: keeping an open communication while there is no new information. This meant informing the others that there was no solution yet; that the next steps would be taken at that moment in time, and that after that the innovation project leader would get back to them. By these kinds of communication the others were kept connected. Intertwining different processes with different groups then becoes a choice that an innovation project leader could use to steer and lead the project.

8.4.3 NARRATIVE INTERVENTIONS AND NARRATIVE CONSTRUCTS

During the innovation journey, all three innovation project leaders used imagery and narratives in their dialogues with different groups.

In the BeerTender case the innovation project leader actively used stories to lead the team. The innovation project team gave a name to their ambitions: New York. The team also learned to understand that they had to finish the development period and bring the first edition to the market, which, an analogy with another innovation project, became the proverbial story of inviting the Queen. As the project team worked as a project outside the exploiting organisation, the innovation journey was not disturbed by those people in the organisation who had worries about the feasibility of the project. Consumers were initially concerned about the perishability of the beer, and the innovation project team came up with the explanation of half a crate. The difficulties in two different supply chain models was made clear by developing the story about the father from Schier, and the solution was found in an introduction strategy called ‘revving while braking’. The technical problem of the cooling unit was explained with the reverse microwave, and the simplicity of use was explained with the story of Granma.

The innovation project leader of Hogewey did not have a dedicated team and worked with all personnel to develop the back-stage, and with relatives of residents to develop on-

stage. For all stakeholders, it was important to understand that the new concept was about *normal* living. To help understanding this new reality and how this was different from a hospital kind of normal, the innovation project leader often asked a simple question 'how do you do this at home?'. By asking such a question, a world of images opened up for the person or the group this question was posed to, and the discrepancies between those images and the existing situation in a health care institution.

In the Newvac case, the story of inviting the Queen was told during one of the first interviews with the innovation project leader. Months later this story was used to help the team understand that they had to force a date to go to the EMA. The innovation project leader and her team developed an understanding that not all questions from stakeholders were asked to have a better understanding, but that some questions were asked to buy time. This led to the joke of the carrot cake and the use of that metaphorical phrase in the team. The innovation project leader had to explain the concept of the treatment to potential funding parties and used the image of the cancer immunity cycle and the metaphor of the dragon: the many-headed monster with heads looking to all sides, and that the treatment had to chop off all the heads in one firm stroke.

Table 8.2 Narrative constructs used during the innovation journeys

		GROUPS		
		BeerTender	**Hogewey**	**Newvac**
IMAGERY	**team**	Sailing to New York Inviting the Queen	-	Inviting the Queen Carrot cake
	organisation	-	Back-stage: normal ≠ hospital or health care institute	-
	suppliers	Father from Schier Revving while braking Reverse microwave Fling 'm in, Gran	-	Cancer Immunity Cycle Cancer is a multi-headed dragon
	users	Half a crate	On-stage: normal ≠ hospital or health care institute	-

Imagery and narratives are not the same. Imagery is the use of figurative speech. The innovation project leaders used imagery, such as *analogies* (half a crate, normal living), *similes* (reverse microwave) and *metaphors* (the Queen, the dragon, the plot of the story of the carrot cake), and *images* (cancer-immunity cycle, the picture of a multiheaded dragon). *Narratives* have a sequence of events, with a beginning, a middle, and an end. In narratives, time is an esseial element. This applies to fictional narratives (the father from Schier, Granma, the rabbit and the carrot cake), as well as to stories about actual events (the CEO is coming, the initial story of inviting the Queen). Analogies, metaphors, narratives, and images are different in nature, yet, all these constructs tell a story, implicitly or explicitly. I use the overarching label 'narrative construct'. All these constructs have in common that the narrative construct stimulates the imagination of both the 'teller' and of the 'listener'. Table 8.2 above gives an overview of the main narrative constructs used in the three cases and the interfaces with different stakeholder groups.

The use of narrative constructs could be divided into four purposes: understanding and framing a problem, developing a solution, having a shared understanding of a problem or situation, and helping others to see differently.

Based upon these differences in purpose, a division could be made between the making of a narrative construct, the telling of the construct, and the construct as such. Van der Lugt (2005) studied the role of sketching in the early phases of the NPD process. Van der Lugt distinguishes between 'thinking sketches,' 'talking sketches,' and 'storing sketches'. Thinking sketches are individual sketches to focus and guide nonverbal thinking; talking sketches share a common graphical setting for the idea being debated; and storing sketches archive design ideas. We propose an analogical grouping for the narratives in this case studies: thinking narratives, talking narratives, and storing narratives. In Figure 8.5 the cohesion between the different provenances and purposes of the narrative constructs is depicted.

An individual thinking narrative (in one's mind) could be developed into a narrative construct. Furthermore, events happening in the context could be the input of a narrative, such as the 'I'll tell you what happened'-stories, or written accounts of 'and then, and then and then…'. When a talking narrative is developed in a team, an act of story making, the purpose of that storymaking activity could be to make sense of the situation or problem at hand, to bridge thinking styles, and to bridge differences in opinions. The output of that storymaking activity also leads to a narrative construct. The narrative constructs, whether an analogy, a metaphor, a proper or a provisional narrative, or an image that tells a story, could be kept, stored as a storing narrative, and transferred and told to others. Hearing the narrative or seeing the image serves different purposes. The telling of the narrative construct enables shared understanding between participants, and helps people to become insiders with the shared vocabulary. Transferring the narrative construct helps others to make sense, and bridge old with new realities.

The narratives could also be told to audiences outside the innovation journey. This storytelling is not intended to only serve leading the innovation process. These narratives are mostly told after the process, such as the previously mentioned Java Saga (Bank, 2004, see section 1.4), or the narrative repertoire in this dissertation. An example of how this repertoire could serve future innovation project leaders is the use of the story of inviting the Queen. It was told by the innovation project leader of the Amsterdam football stadium to the innovation project team of BeerTender; captured by this researcher and told to the innovation project leader of Newvac as an example; and sometime later used by the innovation project leader of Newvac to inform and encourage her team to set the appointment with the EMA.

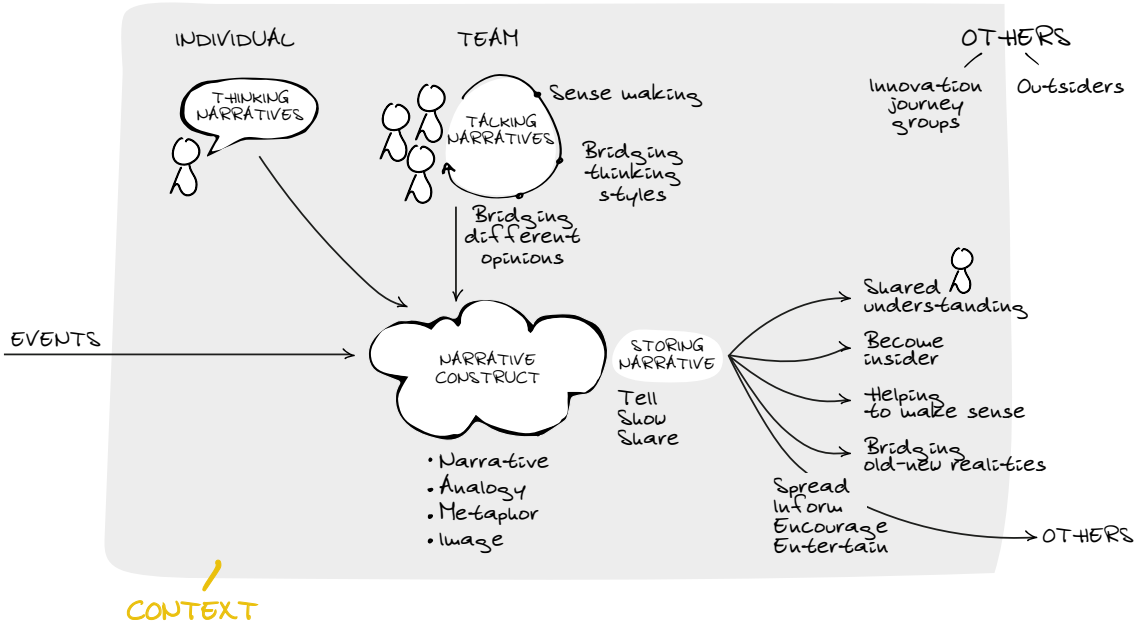


fig. 8.5 Developing and spreading of narrative constructs

Sources

The narrative construct could stem from different sources. Events from inside or outside the innovation journey give input for a story. See for instance the story about the CEO who came to visit the innovation project team of BeerTender, poured himself a beer, and all team members missed two heart beats as they were startled by this unexpected action. The narrative construct could also stem from individuals or the team (see below in the sections addressing thinking and talking narratives).

Thinking narrative

Thinking narratives are individual narratives 'in one's mind'. These thinking narratives were difficult to observe as long as they were not shared and brought out in the open. It is plausible to assume that thinking narratives existed, as most of our experiences are stored as narrative (Schank & Abelson, 1995). Some of these thinking narratives however, were brought out in the open, like the image of the reverse microwave, or the question 'how do you do this at home'. The narrative construct emerged in the thought of one individual, who developed a narrative construct, and the construct was told to others.

Some of these individual thinking narratives were more 'narrative sparks', narrative snippets. An image popped up, a story came to mind, an analogy was found. And as some team members had a more visual imagination and visual language than others, these first narrative sparks did not always come to fruition and were abandoned. When the narrative snippet was taken up by the team, a talking narrative emerged.

Talking narrative

Talking narratives are narratives that are developed during a dialogue. The dialogues that resulted in talking narratives during the innovation journeys in this dissertation were dialogues of the innovation project team or dialogues of innovation team members with suppliers. In these dialogues the participants were people from different backgrounds and with different educations. I observed differences in 'thinking styles' (Leonard & Straus, 1997) in such multi-disciplinary teams. Some of the team members were more rational thinkers, who were at ease with an Excel spreadsheet, and others were quite comfortable presenting their ideas in memos and reports; that kind of rational thinking is often considered a 'left brain' activity. The industrial designers in a team, or the architects in another team, were more 'right-brainers', trained to think creatively and visually. Talking narratives —developing an image or characters in a series of events— could serve as a link between rational and creative thoughts (Rasmussen, 2005) and bridge differences in thinking styles (Wood & Anderson, 2001).

The becoming of such a narrative was an act of sensemaking (Weick et al., 2005). In an uncertain situation, sensemaking is an important role for the leader. It can be seen as an act of cartography: 'Where are we now?' and 'Where are we going?' In this process of observation, discussion, and inquiry, the making of the narrative maps new terrain. As Ancona and colleagues (2007) have pointed out, sensemaking is more an act of creativity than analysis, and that is certainly the case during the making of a narrative. When the situation in a team was tense, the making of a narrative, like the father from Schier-example in the BeerTender case, influenced the dialogue. At first, participants had opposing views and people argued, trying to convince one another about the merits of their own viewpoints. By building a storyline with a character and events, team members were able to suspend their own beliefs and mental models and 'perceive' the images of their team members via the fictional narrative elements. This process of a talking narrative,

of *making* a story, was an intervention that moved the participants from a tense situation where they stated their own beliefs and opposing points of view toward a more reflective dialogue where there was room for inquiry.

In this perspective, developing the narrative resembled Scharmer's (2000) model of the differences in language in the four fields of conversation (fig. 8.6). Scharmer has observed patterns or 'fields' in the conversations of people in organisations. Within each pattern, a different conversational pattern exists: Field I (lower left) the pattern is 'what *they* want to hear', Field II the conversation is 'what I really think', in Field III, a shift is made towards 'seeing *myself* as part of the *larger whole*' towards Field IV 'speaking from what is *moving through'* (italics in the original). The conversation partners mirror the same pattern in the conversation. Also, when the conversation moves from one field (e.g. politeness) to another (debate), 'this does usually involve all the participants in the conversation, not just a few of them.' (Scharmer, 2009, p. 271)

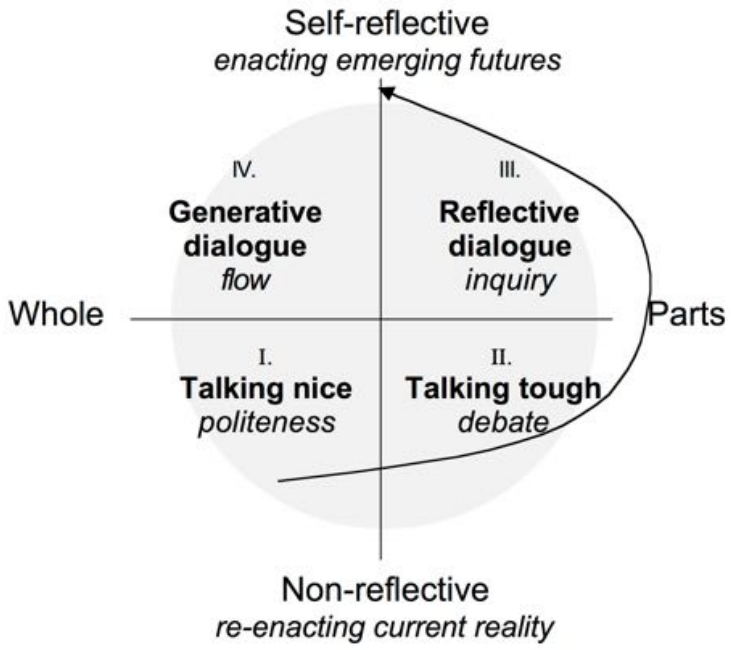


fig. 8.6 Languaging- Four fields of conversation (Scharmer, 2000)

This storymaking process was an intervention that moved the participants from a tense situation where they stated their own beliefs and opposing points of view (Field II) towards a more reflective dialogue where there was room for inquiry (Field III).

The talking narratives, the process of storymaking, served as an intervention with different purposes: a sensemaking tool, a tool to bridge differences in thinking styles, and as a tool to bridge differences in opinions, and as such it served as an intervention that stimulated participants to find a way to solve a content problem and to develop a new, coherent outcome together. Most talking narratives were developed in relation to a content issue, and developing the narrative served as a tool to intertwine the content developing process, with the creative process and guiding the group dynamics process.

Storing narratives

Storing narratives are those narratives that 'stayed alive' and were used to share with others. For 'storing narratives', the narrative as such, the 'artefact' is more important than the process of making it. People who entered the BeerTender innovation team long after the narrative was developed learned about the 'idiot proof' device and the winged saying of Granma, and the vivid description of 'sailing to New York' became part of the vocabulary of many people involved in the innovation journey over the years.

This supports the view that narratives can serve as translation devices in various interfaces (Bartel & Garud, 2009). Although talking narratives were not developed to use the resulting artefact, the narrative became a boundary object (Carlile, 2002; Star & Griesemer, 1989) that was used to explain the problem and approach to various stakeholders outside the core team and help others to make sense of the project and its issues. This means that the function of the narrative changed over time, from a 'talking narrative' to a 'storing narrative'.

A limited number of storing narratives will be applicable for or attractive for people outside the specific innovation process, or outside the context of innovation processes. Examples of storing narratives are Inviting the Queen, used by the teams of BeerTender and Newvac, and the narrative construct of the image of a normal household used by Hogewey, that is also understood by people outside the innovation team.

A specific role of the narratives is bridging the old reality with the new world of the innovation. In all three cases the innovation project leaders experienced that stakeholders (organisation, suppliers, authorities) had their own reality, their own mental models. As all three innovations were radical innovations, the break with the existing situations was bigger than would have been the case with incremental innovations. The brewers in the Heineken organisation were worried about the plastic of the keg and the risks of oxygen, various professionals of Hogewey were critical about the suggested concept, and in the case of Newvac outsiders were critical about the innovation power of a small enterprise in the world of cancer research, to name just a few. Often people outside the dedicated innovation team did not instantly understand how (an aspect of) the innovation *could* fit, or why it *should* fit into the existing reality.

8.4.4 THE INNOVATION PROJECT LEADERS: NOT PARTICULARLY PREPARED, YET PERSISTENTLY STEERING

The three innovation project leaders where not novices in their field at the time they began their innovation journeys. All three were at least mid-career, in their forties and fifties, and experienced in the content domain. All three, however, were new to the field of innovation. At the start of leading the innovation journey, they did not prepare for the journey ahead. The innovation project leader from Hogewey, bought a booklet 'how to lead a project'. The other two innovation project leaders relied on their experiences in projects and general management. None of the three innovation project leaders specifically prepared for other aspects that could be specific for innovation processes, other than the content, the product, or service they were going to deliver.

Early in the process, all three innovation project leaders developed a clear image of their strategic goal for their projects. The innovation project leader of BeerTender named this goal 'New York'. In the three cases, I observed clear and explicit views of the what and how and why of their specific destinations. For all three, this goal was focused on value for their users and helped them to make decisions and evaluate options and scenarios. The motive, why it was important to deliver this value, kept all three going during difficult times.

The innovation project leaders had to handle difficulties in the content developing and tensions in group dynamics. I was surprised, however, by some of the negative criticism and even the violence with which a critic could approach an innovation project leader during the innovation journey. In the BeerTender project, the innovation project leader recalled the story of the man entering his office, saying, 'I totally do not believe in your project…', and this was one of the milder responses. More often, the negative remarks were spread through the grapevine. In the case of Hogewey, during the first phases of the project, personnel could be very critical, but often in a cooperative way. Since the completion of the built environment de Hogeweyk, the project became internationally known. This resulted in much positive coverage in the international press (see e.g., Tinker, 2013), but also in criticism. It is striking that the tone of that criticism is sometimes emotionally laden with anger (see, for instance, Oberhofer, 2016). Newvac also had their share of negative remarks, people who laughed them in the face or called it an impossible mission. During the journey of a radical innovation, no one has proved that it is a possible route to success, so none of the innovation project leaders could 'prove' that they would succeed. If the innovation project leaders had not had strong beliefs that the ideas could work, and a strong motivation that it had to work, negative remarks could have undermined their morale.

Some of the resistance and criticism the innovation project leaders experienced during the journey encouraged their stamina and all three showed the persistence to deliver the innovation to the market. It also helped to inspire their teams or participants to pursue the goal. All three of the innovation project leaders seemed aware of the tensions the

innovation journey could bring for their team members, and the necessity of blowing off steam, working hard but having a good laugh, a drink, and a bite, from time to time.

Two of the three innovation project leaders stated by the end of their project (BeerTender) or by the end of my research period (Newvac) that the journey had been very different from what they had expected at the outset, as they had no expectation they were going to have such a difficult or challenging journey. 'Had I known this ahead of time...', they said. I asked the innovation project leader of Hogewey if there had been moments during her long journey that she wondered why she had ever started this whole project anyway. 'No', she answered with a huge smile, 'maybe others did, but I am always notoriously optimistic!'. Based on my research I cannot know whether these differences in how the innovation project leaders experienced their innovation journey is a matter of character, a matter of the number of project threatening setbacks and hurdles encountered during the journey (BeerTender, Newvac), or because hurdles were spread over a longer period of time (Hogewey).

8.4.5 WHAT MAKES IT SO DIFFICULT? THE PARTS AND THE WHOLE OF THE INNOVATION JOURNEY

'What makes it so difficult?' Sandberg and Aarikka-Stenroos (2014) have asked out loud in their literature review on barriers to radical innovation. The authors reviewed 103 articles and came to a set of barriers. The authors have identified as external barriers: resistance or lack of support (customers, government, external finance, rivalry) and restrictive macro environment (undeveloped network and ecosystem, technological turbulence, inappropriate infrastructure, and restrictive local culture). The internal barriers the authors have identified in their literature review are restrictive mindset, lack of competence, insufficient resources, and unsupportive organisational structure. Implicitly, the authors have indicated that radical innovation is so difficult because these barriers are broad and deep and many.

Many of these aspects could also be identified in the cases described in this dissertation. Seen from the perspective of the innovation project leader, these barriers are not the only or the main reason that it is so difficult. The difficulty lies in the number of issues, both barriers and opportunities, the contradictions in the nature and content of these issues, the contradictions in required thinking style and psychology, combined with differences in time issues.

The *number* of issues that have to be understood and solved are many, as I also demonstrated in Table 8.1. The intertwinedness of the processes and the interrelation of the issues already make for a difficult job. An issue can, for instance, be feasibly difficult, a solution to that difficulty could be non-desirable for users, or out of scope from a viability perspective.

The contradictions *in* and *between* issues is also a difficulty-increasing factor: different stakeholders have different aims and different views about how things should be done, and these can create conflict. The distance of the horizon can create contradictions, where short-term problems or solutions can cause contradictions for long-term strategic choices.

Unexpected events could happen in the context of the project that impact on the whole course of events.

Because the innovation project leader has to deal with multiple issues at the same time, she or he could also *experience contradictions* in types of activities that have to be performed at the same time: contradictions in the problem-solving stage of each issue, which asks for diverging in one issue, while having to converge in another issue; *contradictions in psychological stance*, while one issue asks for an analytical rational approach, while another asks for a creative stance; and contradictions in relation to other people, where one issue asks for a directive steering, while another issue has to be dealt with through participation and co-design with others.

The *perspectives* and interests of different stakeholder groups could also be conflicting, within the team, with the stakeholders within the organisation or in the context. Stakeholders could have opinions that are against all expectations. Stakeholders' perspectives could change over time: stakeholders could change their position due to new insights, and changes in the context could cause these positions to change (again).

All this is undergone and experienced under time pressure. The pressure could build up to high levels, and this pressure could last for a long time. The innovation project leader has to bear the tensions of issues, the unexpected events, the perspectives, the ambiguities, and minimise the tensions within the team. And as the innovation project leader has no map, she or he has to steer the project with the uncertainty that this is the right way to progress.

What makes leading the innovation journey so difficult is much more than the number of barriers encountered. It is the complexity, the intertwinedness, the contradictions, the pressure in time, the changes over time, that make this process feel as if it is never fully under control.

8.5 Conclusion

The cross case comparison demonstrates how the innovation journeys unfolded over time, and how messy these processes were at times, and were not as neat as stage gate models would predict. The studied innovation journeys showed similarities with the model of the innovation journey of Van de Ven and colleagues (1999). The problems that had to

be solved and the contexts were complex. During the journeys unexpected events also happened, because of events in the context, but also because stakeholders acted or reacted in unexpected ways.

The findings show that the four underlying different processes (content developing process, creative process, group dynamics process, project constraints process) are intertwined, and how the processes are intertwined is shown in Figure 8.4.

Unpacking each of the four processes, the findings illustrate that in the content development process the desirability aspect (T. Brown, 2009) differs for different stakeholders, which had consequences for the innovation process. The creative process involves not only problem understanding and problem solving around the content development (Isaksen et al., 2011) but also in understanding and solving problems in the common response zone of various stakeholder groups. Guiding group dynamics involves also actively managing the relationships with various groups of participants and stakeholders, including tensions and differences in aims and opinions between individuals or stakeholder groups (Buijs, 2007). However, the innovation project leaders learned that guiding group dynamics also involved communicating with individual stakeholders and groups when no new content information is available, or the team does not make any progress. In addition to the findings of Dougherty and colleagues (2013), time had different connotations for different stakeholders, and one of the roles of the innovation project leader was to manage these different 'times' in relation to the group dynamics and content development.

The innovation project leader had to lead these four intertwined processes, and act and react accordingly. At times the innovation project leaders proactively chose to intertwine the processes. In section 2.6 the contributions of Brown and Eisenhardt (1995), Van de Ven et al. (1999), and Buijs (2007), articulate the content development process, the creative process, and the existence of a group dynamics process. The managing the project constraints process is underexposed in these contributions, where this study shows that managing the project constraints process over time is an essential part of the four intertwined processes.

Although the leadership and the focus of the innovation project leaders revealed differences, the findings illustrate how the use of imagery and narrative constructs assisted in leading the innovation journey: imagery and narrative constructs helped understanding problems and finding solutions, as well as helping others to understand the project or helping others to see it differently, outside their common response zone. The findings also indicate that the innovation project leaders did not prepare very much for the specificity of their innovation journey; their persistence and motives for innovating helped them through, although two of the three found, with hindsight, that the journey was quite a challenge.

The innovation project leaders experienced ambiguities and tensions during the journey. What makes the journey challenging to lead are: 1) the number of issues that emerge; 2) the differences in kinds of activities in the four intertwined processes, 3) the contradictions between issues and activities, with different dynamics: e.g. rational and emotional, long term and short term, converging and diverging, 4) the contradictions between people and priorities, with different dynamics, 5) all occurring at the same time, 6) and over a longer period of time, 7) and the psychological pressure that follows from this cocktail. Assessing the innovation journey through the parts of the process, such as the barriers listed in the literature review by Sandberg and Aarikka-Stenroos (2014), leaves the audience with a different image than seeing the process as a whole. The process to develop an innovation is a complex process that does not happen in isolation and is embedded in a bigger context, of the firm, of the domain, and of the society it is part of. Understanding such a complex process cannot be accomplished by taking the whole apart in building blocks and analysing those (Capra, 1996). To paraphrase the poem of the six blind men: though each part is in the right, through the parts the whole cannot be seen.

Process studies are intended to capture these relationships within the context and between the parts of a process. Capturing such relationships in a process model sheds light on the functioning of the process. It does not shed light, however, on how one experiences such a process, when being part of it. The expression of one of the innovation project leaders is an exemplar of how the process is experienced: 'Now that the project is finished people say to me *"Oh, it must be so fantastic to manage such an inspiring project."* During the journey it sometimes felt so different!'

The four intertwined processes with very different activities and dynamics, the number of issues, the contradictions between issues, and the psychological splits makes it difficult to lead the innovation journey. In what ways could these experiences of these innovation project leaders be built into a narrative repertoire? I answer that question in chapter 9.

CH 9 | A REPERTOIRE OF NARRATIVES

9.1 Introduction

The first part of the research question asked how innovation project leaders led the innovation journey over time. The second part of the research question that guides this research is *'in what ways could the experiences of the innovation project leaders be built into a narrative repertoire?'* Looking at the experiences of the innovation project leaders as described in the empirical chapters 5, 6, and 7, and the insights developed in chapter 8, the question 'in what ways' could be answered in different ways. The first way to answer that question depends on the main purposes of the narrative. A second way to answer that question is by the choices in the design principles of the narrative. I will elaborate on both approaches before developing narratives about the experiences of the innovation project leaders.

9.2 The aim of the repertoire and purposes of narratives

The aim of the narrative repertoire is to provide insights about the innovation journey and to provide a source of reference to develop one's own narrative repertoire and one's own insights. The narratives in such a repertoire could serve different purposes for the innovation project leader as well as the scholarly audience. First, a differentiation could be made between the purpose of showing the whole process, an overview of what happened, or presenting a narrative about a certain aspect. The presentation of sequence of events, is labelled as *historical narratives*;

Within the narratives about a certain aspect, a differentiation could be made in the applicability of the narrative: some narratives provide an understanding that a certain kind of events could happen, although maybe with a different appearance, and the audience could recognise such an event at a later stage. In other narratives the process that was followed or the chosen solution is applicable in other situations as well. The presentation of a problem with the aim of recognising the phenomenon, is labelled *awareness narratives*; and the aim of presenting a possible solution to a problem, is labelled *solution narratives*.

The *historical narratives* are narratives that recall what actually happened during the innovation journey and provide an overview of the course of the process, of the sequence of events. Historical narratives could be written as thick descriptions, giving detailed information about what happened and about the context (Geertz, 1973). An example is the historical outline in each of the case chapters.

Based on the experiences of the innovation project leaders, narratives could be distilled that have the aim of raising or increasing *awareness* of something that could happen during the innovation journey. The goal of this kind of narrative is to make the reader aware of possible circumstances and occurrences: events that happened in the situation of another could happen in other situations as well. I suggest that these awareness narratives lie at the heart of being better prepared. To be forewarned is to be forearmed: these narratives serve as the forewarning, that enables the audience to forearm. Expect the unexpected is an example of such an awareness narrative.

A third category makes the narratives that carry a *solution* out of a problematic situation. These narratives go one step beyond the awareness narrative. A solution narrative entails both the narration of the occurrence, as well as what the focal actor did to solve the problem. To be included in this category I make a judgement that the solution could be applicable for other innovation project leaders. An example is the story of inviting the Queen.

The historical narratives provide an overview of actual events that happened during the innovation journeys. The awareness and solution narratives focus on a specific part of the innovation journey. These three kinds of narrative do not capture the complexity of the whole of the process, or, as mentioned in section 8.4.5, 'what makes it so difficult?'. A fourth kind of narrative is presented to capture the overall complexity from the perspective of the innovation project leader, labelled a *process narrative*.

This narrative repertoire covers all four narrative purposes.

9.3 Design choices in writing the narrative repertoire

The narratives about the innovation process are recountings of 'a sequence of events', which is, according to Pentland (1999) *the bare minimum* for a process narrative. The elements of a narrative that Pentland has suggested are sequence in time, focal actor, narrative voice, evaluative frame of reference or moral context, and other aspects of context. These elements provide a range of possibilities for design choices.

A *sequence in time*, inherent to all stories, carries the choice of the order of the sequence. Although this is not often used in scholarly texts, the order of events does not have to be

chronological. A different order could enhance the curiosity of the reader. An example is the Java Saga (Bank, 2004, p. 134), that relays in the opening paragraph an outline of the lawsuits, setbacks, and disasters after the market introduction, closing this paragraph with the sentence: *'But all that came later. Before Java was even released, it nearly became a business-school case study in how a good product fails'.* This journalistic style makes the reader curious and 'sells' a story. In this narrative repertoire, however, I chose to stay as close as possible to the chronological order of events as this is more in line with the style of an academic narrative.

The *focal actor* is the perspective of the protagonist, and eventually of an antagonist as well. In the narrative repertoire in this dissertation the obvious choice is the perspective of the innovation project leader as this is the focal actor in the whole story in this dissertation.

The identifiable *narrative voice* is obviously mine. No story presents itself from the data (Van Manen, 2006), although some stories were nearly ready, and told by the interviewees as a narrative. The narratives illustrate the experiences and the perspective of the innovation project leaders, although I am aware that this picture is an interpretation of what I have seen. To minimise distraction and questions about the truthfulness of a text, Pentland (1999, p. 715) has pointed out that '*researchers tell their stories in their own scholarly voice, rather than letting their research subjects do the talking*'. In this narrative repertoire I use both types of narrators: me as researcher, and the innovation project leader, when I use a full quotation. The difference is always identifiable.

The choices I could make about the *evaluative frame of reference* or *moral context* are about choices of presenting a 'right' and a 'wrong' point of view. For this narrative repertoire this evaluative frame should be neutral as the aim of the narratives is not to prescribe a preferred way of acting, and it is up to the reader to assess the moral context. In one narrative, 'Intertwined and intertwining', I chose to broaden the point of view. Here I developed a storyline by describing what other options the innovation project leader could have had, as in the film *Run, Lola, Run* (Tykwer, 1998) that shows in three different interwoven scenarios how a chain of events could have gone differently, would the actor at a certain moment in time have chosen differently.

The last point in Pentland's list is the *other context*. Here the choice will be to provide as much context as is necessary to understand the narrative, though nothing more. The reader who would like to learn more about the situation at hand, could turn to the historical narrative.

In his overview, Pentland (1999) has not mentioned the choice between *the forms* of the narrative, between fiction or non-fiction. All narratives in this narrative repertoire are based upon the data found during the years of studying the three innovation journeys. Nearly all narratives retold and developed for this repertoire of narratives are non-fictional,

documentary style narratives, except one: 'A day in white water rapids'. I used a fictional, metaphorical narrative to report on the complexity of the innovation project leader, keeping all the cones of the juggling act in the air, both rationally and emotionally (Buijs, 2007). I used this different format for two reasons: I needed to tell the whole complexity of the journey with all aspects that happened in parallel, without getting lost in the details. And secondly, I had to give words to the dilemmas the innovation project leaders were in, torn between two streams of activities that conflicted in time, experience of time (such as long-term strategic vs short-term tactical decision) or emotion (such as rational and emotional), or mode of thought (such as divergent and convergent). I was encouraged by Kara (2013) who has emphasised that emotion is an inevitable part of the research process, and yet we rarely use this in our texts.

9.4 A narrative repertoire

Based upon the case chapters (5, 6, and 7) and the insights about how the innovation project leader leads the innovation journey over time (chapter 8), the different aims of the narratives (section 9.2), and the design choices (section 9.3), I designed a number of narratives as prototypes for a narrative repertoire. These prototypes are exemplars of narratives that could be developed from the three cases in this dissertation.

Table 9.1 gives an overview of the prototypes. The case descriptions of the three cases contain more stories than presented here, as this overview is primarily meant to discuss the types of narratives that could be developed and not the number of narratives.

Table 9.1 Overview of types of narratives

AIM	Title of narrative	provenance	nonfiction fiction
historical narrative	Historical narrative of BeerTender (ch 5.3.1)	BeerTender	NF
	Historical narrative of Hogewey (ch 6.3.1)	Hogewey	NF
	Historical narrative of Newvac (ch 7.3.1)	Newvac	NF

awareness narrative	Hitting a whale	BeerTender	NF
	You will only see it when you got it!	Hogewey	NF
	What if, Lola?	Newvac	NF/F
solution narrative	Inviting the Queen	BeerTender & Newvac	NF
	The carrot cake	Newvac	NF
	Story making and a father who lives on Schier	BeerTender	NF
process overview narrative	A Day in White Water Rapids	3 cases	F

9.5 Historical narratives

In the historical narratives the main events during the innovation journey are chronologically structured. The historical narratives could have an impact on the awareness or contain a solution to a certain problem, but that is not directly the aim of the narrative. The aim is to present the reader, who might be scholar or working in practice, with an overview of the events.

In each of the case chapters the history of the course of the innovation journey is described in such a historical narrative.
In the case of BeerTender, the historical narrative can be found in section 5.3.1 on page 116.
In the case of Hogewey, the historical narrative can be found in section 6.3.1 on page 142.
In the case of Newvac, the historical narrative can be found in section 7.3.1 on page 169.

9.6 Awareness narratives

The aim of an awareness narrative is to present a story about a sequence of events during the innovation journey. These narratives handle about specific events from one (or more) cases, but have a more general aspect that could raise readers' awareness about that aspect.

9.6.1 HITTING A WHALE

'Hitting a whale' is a story that Joris Craandijk, the innovation project leader of BeerTender, told about the moment that he heard about the bankruptcy of his partner. The metaphors about New York, sailing a boat, and hitting a whale originated from his story. It is an example of how all of a sudden, an event, unexpectedly, can turn the whole project upside down, to raise awareness for the 'expect the unexpected' of unknown events during the innovation journey.

Narrative: Hitting a whale

Soon after Joris Craandijk, the innovation project leader of BeerTender, started and had put his team together, he organised a day with his team. He had his team members share their individual ambitions with each other, as a means of getting to know each other better, and understanding each other's ambitions. 'New York' symbolised their collective end goal, finding new land, being ambitious and daring. And how were they going to get to New York? The project leader began with this story: '*We all felt, since each of us had a sub-project to work on, that we'd better regard the interface meeting as a holy institution. Otherwise, since everyone was responsible for a part of the problem... we'd be pulled apart. I used the metaphor of a boat. We are sailing to New York, but don't ask me how. The wind will take us somewhere. We're all in that little boat. There's no way you can get out halfway. Just make sure that the rudder, the sails and the galley all operate. Then there's a chance that all of us will arrive there one day.*'

Sailing to New York, as a metaphor, was referred to once in a while. The innovation project encountered some setbacks and hurdles, but at a certain moment, everything was going smoothly. '*So, we made a bit of a joke about it',* Joris explained. '*All equipment on board was doing its job, the spinnaker, the mainsail, and the people too, the helmsman and the cook. And as long as you have wind, the right winds, strong and in the right direction, then the boat goes very fast.... Yes, then it would be strange if you didn't reach New York. Apart from hitting the whale.*'

So, the innovation project team never expected the unexpected. Joris: '*We were sailing at full speed. And then, all of a sudden, there was that mad Friday morning when the telephone rang. I was at home and my colleague from Switzerland rang to say he had heard that the CEO of Moulinex had just applied for a suspension of payment. Moulinex-Brandt was the mother company of our hardware partner Krups. That was like crashing into a whale, full speed! Then it's all hands on deck. Suddenly there are a whole lot of other things happening. And don't adjust the sails when you're stuck on a whale. There's no point. For two months I had the feeling: Guys, this ship is going down.... I was so afraid that all the other smaller partners would leave, too. But as a result of enormous efforts we got all the partners in the project aligned and were able to carry on.*'

The innovation project leader was relieved. '*I said to my wife: "We made it. We've reached*

the Hudson!" We hadn't made it yet, of course. It took a lot more time and money. But basically, we had passed this point of no return.'

9.6.2 DIFFERENT VIEWPOINTS

One of the inspired expressions of Dutch soccer player and coach Johan Cruijff (1947-2016) was 'You will only see it when you get it'. This expression covers the differences in viewpoints that the innovation project leaders experienced during their journeys. The three cases studied were very different in nature, yet in all three cases the innovation project leaders experienced differences in perspectives between their view of the new product and the views of others about that same new product. At some points people outside the innovation project team had different viewpoints about issues the innovation project leaders did not expect to raise any differences. As I did not specifically investigate these differences in perspectives and have no interview data other than from the innovation project leaders. The story about these different perspectives is based upon my field notes. The narrative contains a story from the Hogewey case about differences in viewpoints that could influence the innovation journey.

Narrative: 'You will only see it when you get it!'

In all those years that the new nursing home concept was operational, many people visited there. The majority of times, professional visitors who wanted to learn about the Hogewey concept came for half-day workshop. First, visitors viewed a film with a general introduction on the concept, and then they were shown around, followed by a dialogue with the innovation project leader. All aspects of the concept were shown, and how this all together amounted to the concept of normal living with likeminded people. When asked at the end of such a meeting, what these professionals saw as their 'take away' of the day, people often indicated that they were inspired and encouraged to have a more client-centric approach and pursue normal living. Some people even indicated that they were already working according to such principles, as their nursing homes also had clubs or living in smaller households. Here, some aspects of the Hogewey concept that were used in another nursing home were viewed as doing the same thing. Speaking to the innovation project leader after the event, she indicated that such elements such as clubbing or small households did not make for the real thing in her opinion. As a management consultant and researcher of Hogewey, it took me years to understand the how and why of seeing differently. Was it because Hogewey believed there was only one way of treating people with dementia? Was it because the other nursing home could not see the value of the consistent whole? I would now describe the difference in perspective as how one assesses this nursing home: as a non-tangible philosophy or as a set of activities. For the innovation project leader, the philosophy was her yardstick to assess all tangible and intangible manifestations. She saw through the manifestations, so to speak, to the underlying philosophy. Without having such a strong guiding principle as the philosophy, the concept is a set of tangible manifestations and activities. The difficulty here is that on a general level

it seems that both parties share the same perspective, while under the surface the guiding principles are different. You will only see it when you realise it.

9.6.3 INTERTWINED AND INTERTWINING

In the innovation journey four processes are intertwined: the processes of content development, creativity, group dynamics, and managing project constraints. The innovation project leaders have to lead through these intertwined processes. At some events the intertwinedness of the processes is not manifest. The innovation project leader can choose to intertwine processes, in order to achieve a smooth continuation of the overall innovation process. Yet, choosing to intertwine implicates other options that could have been possible as well. The following narrative recalls such a situation during the process of Newvac. In an analogy with the film *Run, Lola, Run,* (Tykwer, 1998), where the film shows three different scenarios of what could have happened, I elaborate on the choices made by the innovation project leader to explore what other options could have been possible. These alternative scenarios are called 'what could have happened'. The suggested scenarios and outcomes of such other choices are fictional, as these choices never occurred in the reality of Newvac's innovation journey. The rationale for this narrative is to emphasise the notion of making choices about what and how to intertwine (or not).

Narrative: What if, Lola?

Finding funding for the development of the treatment of Newvac turned out to be more complicated than expected. The innovation project team investigated various forms of capital: subsidies, grants, venture capital, and loans. Providers of capital looked at each other and waited to see who was the first to join. One party made a commitment for a part of the required capital, under the condition that the forecasted budget for the following trials would be provided by others within a period of months. A challenging time followed. As pressure to come to closure rose, some capital providers decided at the last minute not to join. The team managed to extend the deadline for a few months. Shortly before this second deadline expired they received the commitments for the whole budget. The whole enterprise almost collapsed when one of the capital providing parties unexpectedly added an extra financial condition to their commitment. Months of negotiation followed. The capital flow came to a standstill, as all participants in the funding had based their commitments on a fully covered budget.

What happened?

As the negotiations slowed down the process, the innovation project leader also managed the communications with the other funding parties. She informed the other funding partners about the delay and the reasons behind the delay and kept informing them on a regular basis during the difficult months that followed. Literally on the final day of the deadline they came to an agreement in the negotiations about the conditions for the external capital. For the second time, the project was saved for the time being.

What *could have* happened 1:
The innovation project leader informed the other parties about a technicality in the contracts with one party. The legal advisors would work this all out. She promised the other funding partners to inform them the minute the legal paperwork was finished and assured the parties that she would do everything within her power to minimise the time delay. After some months, on the final day of the deadline of the conditioning partner, they came to an agreement. Now that the project was saved for a second time, it was essential that she put her efforts into strengthening the relationships with the other parties.

What *could have* happened 2:
The innovation project leader assessed this as a problem that affected all funding parties in the development process. If the problem could not be solved, this would endanger the project. After some individual conversations, she organised a full-day meeting with all funding parties to explore the options of solving the issue. This resulted in a list of five possible ways out. The participants had listed the options from more to less promising. The innovation project leader followed up by exploring and elaborating the options. In a second meeting the parties collaborated in choosing the preferred solution. For the second time, the project was saved for the time being.

9.7 Solution narratives

The aim of a solution narrative is to provide insights in a sequence of events that not only depict the events, but also the *way* the innovation project leader came to a solution. It is not the aim to prescribe the solution as such, but to make a suggestion for a way to solve a certain problem.

9.7.1 INVITING THE QUEEN: HOW TO STOP TWEAKING AND FIX A DATE

Sometimes it is difficult to end a development process. A number of people have been busy for a period of time, and ending this process is a difficult step. The product that comes out of that process is never ready. Yet, to improve a product it has to get to the market, receive customer feedback and the experiences of use. So the developers have to get the product out of their hands. How could the innovation project leader force that moment?

Narrative: Inviting the Queen
The innovation project leader of BeerTender was wondering how he could force the product to the market. The system was full of technological ingenuities and the innovation project leader had the impression the engineers could go on forever. So he asked another innovation project leader to stop by and tell them about his technologically difficult product

and explain how that project leader managed to bring the project to an end. They talked to the co-director of the Amsterdam Arena, the football stadium that Ajax calls home. The stadium had a very innovative concept with a stadium roof that could open and close. During this project, one aspect seemed to be very difficult. They kept buying time, wanting to move the completion date further and further away. So then the manager said: 'Guys, tomorrow I'm sending the invitation to Her Majesty the Queen to open the Arena building'. And he really did. Queen Beatrix opened the stadium. One could also say: We'll have a presentation with the Board of Directors. We have to do it well and it's next week. But then there's a safety margin. You don't show everything, or not yet. Or you can add something the next day. But inviting the Queen for the opening.... There's no way out. And if you fail in the eyes of the Queen, you fail big-time. But be careful! You can only play a trump card like that once!'

Years later, the story was told to the innovation project leader of Newvac. It somehow resonated and she kept the story in the back of her mind. Months afterwards, the innovation project leader of Newvac understood she had to call the Queen, in the middle of her process, not to ask HM the Queen for the grand opening of the first patient treatment, but to achieve an intermediate goal to apply for permission for clinical trials from the EMA, the European Medicines Authorities. And she told the story of the Queen to her team, followed up by an email of the appointed time slot with the EMA and a picture of the Dutch Queen Máxima. The story encouraged a second generation process decision during the innovation journey, figuring a second generation Queen, while all understood: one can only use that trump card once.

9.7.2 THE VENTURE CAPITALISTS AND THE CARROT CAKE

Attracting funding requires talking to people who are not directly involved in the development process and explaining the product and the opportunities for parties to invest in the development of the product. Before deciding upon investment, most funding parties will make an assessment of strengths and weaknesses, the opportunities and risks. This process takes time and answering a lot of questions. How could you prevent staying in this process of questions and answers?

Narrative: The carrot cake

In the quest for funding, the innovation project leader spoke to a number of venture capitalists (VCs). The innovation team had a presentation about the innovation and the development path of the product and the trials that had to be performed before the product could apply for market acceptance. Every VC had a number of questions about all kind of aspects of the process, as every VC wanted to assess the chances for success and to assess the risks. In the beginning, the innovation team thought that all those questions were showstoppers. If they would not answer those questions the show was over. So the team put effort in answering all those questions. And, after some time, they had a great

number of answers ready for all kind of questions. In the meantime, they learned that every VC had their own focus, and every new potential party came with new questions. After some time, it became clear that not all answers led towards the point of decision-making. Some questions took a serious amount of time to answer, while the answers seemed to be put aside. The innovation project leader recalls: 'Some of these parties bought time by asking questions, and new questions, over and over again. Questions not for the sake of finding answers to reduce the risks or calculate opportunities of the investment, but questions that only seemed to be asked for the sake of postponing a final decision to participate, to keep us busy as the time went by. We even came up with a word for that behaviour: carrot cake. In analogy with the rabbit that walks into a bakery to ask for a carrot cake, which the baker does not have. After days and days of asking, the baker decides to bake one, and the next morning, when the rabbit walks in, the baker is happy to say he has carrot cake, yes! Then the rabbit says: 'Uggh, dirty, no? I hate carrot cake'. We learned that what we experienced as waves of questions sometimes, yet not always, was like this carrot cake. We had to learn to differentiate between the different piles of questions and had to learn to dare to say: sorry, I really appreciate your questions. However, at this moment in time, we cannot answer all those questions as this is too time consuming, or too early, or whatever other reason. We will be happy to dive deep into this matter later on in the project.'

9.7.3 STORY MAKING AS A TOOL FOR PROBLEM UNDERSTANDING

When two partners with different backgrounds work together in the development of a product, their perspectives and the rules of their industries could differ. The two partners took the perspective of the user, a perspective that was relevant for both partners, yet different from their respective industry perspectives. The scenario they developed for their character gave insights into the supply chain issues in their market.

Narrative: Story making and a father from Schier

A beer brand and a manufacturer of a home appliance partner in the development of a new system for draught beer at home, were aiming at the consumer market. They had a problem in finding a solution in the way they would approach the market with their new product. As the problem could not be understood or solved by one of their current ways of working, they had to find a different route to understanding the problem. They decided to use a fictitious user as the protagonist in a fictitious story. 'Suppose', they started the conversation, 'a young man in the Netherlands buys an appliance for his father. For his fiftieth birthday, let's say. However, the father happens to live on Schiermonnikoog, a small island in the very north of the Netherlands. When he gets this appliance as a gift, he needs to buy the beer as well. His son is not going to bring a keg every week, is he? So the only grocery store on the island has to sell the beer. Otherwise, this birthday present is useless to the father. And the shop will only sell beer if it has a certain turnover in beer. Not for one father with one appliance! If you make the appliance available all over the country, as you

would with a standard appliance, you will encounter this kind of problem.' By developing a character for a customer, a context for that customer in relation to where and when and how to use the product, and making this scenario, a discussion emerged on how to approach the market, with scenarios for the father, where to buy the appliance and the beer, and scenarios for the various retailers as well.

9.8 Process overview narrative

The former set of nine narratives, three historical, three awareness narratives, and three solution narratives are prototypes of what happened, what could happen, and how the innovation project leader found ways to come to a solution. None of these narratives combine the events to reflect how the innovation project leader might experience the innovation journey. One aspect of a process, such as the innovation journey that is not depicted well, is the tension in the process where more events and episodes play a role at the same time, or over a certain time. In a film, or in a book, the author can intertwine the events into one coherent story line. In scholarly research writing this coherent story is possible in one case but becomes more difficult in a cross case analysis of three cases, if the author of such a story does want to do justice to the research data.

9.8.1 A DAY IN WHITE WATER RAPIDS

To depict that process of the tension of various and different episodes, happening at the same time, I wrote the following metaphorical narrative. This narrative is based on the episodes described in the three case chapters. With the assumption that the readers of this chapter have followed the linear order of the pages, the narrative is first presented to *experience* the aspects of time and tensions.

Spoiler alert: this narrative will be followed by a rationale of the issues and how these are based upon the various episodes from the three cases. The numbers in the story correspond with the numbers in Table 9.2.

Narrative: A day in white water rapids: a metaphorical narrative about the innovation journey

It is a sunny morning when Jonas arrives at the head of the uncharted river.[1] The boat is already in place; the team members are waiting for him. Jonas is excited. Jonas is an experienced boat captain, although he has never sailed a raft. The motive to sail these white water rapids is inspiring. This is going to be fun! They all climb aboard and with a big smile push the boat off, and here they go. The first few kilometres, or should we say nautical miles, are really pleasant. The pace of the boat gives Jonas time to talk to team members, explore the shores, make him comfortable aboard, and have the team make connection with each other and with the shores. Everything is under control.

Then the speed of the boat increases and the first rapids are in front of them. Before they even know it, they are in the midst of what becomes the first of a series of rapids. When they come out of the rapids, still a bit dazzled and wet, the team smiles. ‘That went pretty well, guys’, Jonas shouts over the noise of the water. ‘We should tidy up and discuss how we would tackle a second one. If there are any.’

So Jonas steers for a tiny beach. By now, they all understand this is much more than a fun trip. This is serious business and is going to be a little tougher than they originally thought. They look each other in the eye.[2] They discover and acknowledge that they differ in character and attitude. One had preferred to discuss the rapids more thoroughly beforehand, while another could easily live with the chaos that came with rapids. For one, it was more difficult than for another to choose between their own tasks and responsibilities and the overall speed of the boat. What connects them as a team is the growing awareness of the impact of their trip, and how this could make a difference. A real difference. They look ahead; they suspect a few more rapids will follow. But suppose, just suppose[3] that they could finish this successfully... This increases their desire to hurry up. They will not have forever. They push the boat back into the water, and go, go, go.[4]

The speed increases, Jonas thought he would have time to do some side exercises for another project, but by now he needs all head and hands[5] to keep the boat safe and sound. He kicks the other projects out. They are moving with high speed towards the next rapids, when Jonas sees a figure with a notepad and pencil on the shore,[6] trying to keep track of the boat. The figure shouts: ‘Please approach the shore, sir, to check for quality reasons. I would like to check seats’. ‘Wrong call, pal’,[7] Jonas thinks, ‘we have no seats on a raft.... and then all Jonas’ attention has to go into steering the next rapids. It is all hands for the rapids, but that does not mean that Jonas has lost the quality figure.[8] In the midst of the rapids, he sees the figure standing on a rock; the next moment he sees the figure on the distant shore. ‘Seats on a white water rapids boat. Those are rules for canal boats’, Jonas grumbles. ‘How do we explain to the guy that his premise isn’t correct?’[9] It is a long series of rapids, this time, and all the way Jonas has to steer the boat and at the same time find solutions for the persistent figure and his quality criteria. ‘All boats need seats, sir’, the man with the pencil persists. ‘I have to admit that I have never seen a boat like this, and never seen a team sailing white water rapids on an uncharted river,[10] but that happens to be your choice, not mine. My only concern is that we’ll have all the criteria right[11] to give you a license. That is my job. And our criteria stem from canal boats.’ Finally, while steering the boat through the next rapids, the team has to figure out a solution for the seats.[12] The team comes up with inflatable seats that could be used in flat water,[13] and stored when sailing the rapids. The guy takes the specifications, walks away, and when he is nearly out of sight, shouts over his shoulder, ‘I’ll let you guys know within a month or three,[14] if this will do’. Three months! It’s as if they are trapped in ‘Snakes and Ladders’. Doesn’t the guy know how tight their time schedule is? And what the impact is on others if the process is delayed?[15]

The boat and the team are used to each other by now. When sailing the fast-flowing river, the team members each have their own tasks and responsibilities. The rocks and fallen tree trunks follow each other at irregular speed.[16] Each time a new obstacle comes into sight, Jonas has to try to understand, decide, and take action[17] on how to ride this one. Some, he does not even see coming.[18] He manages, though with a few near misses.

With the boat at full speed, Jonas has to jump off and run to the village[19] to collect resources.[20] Running towards the village, he changes suits behind a bramble bush, combs his hair, and is in shape to collect what he needs.[21] This takes longer than initially imagined. He knows the team is working hard to steer the boat, so he runs back, changes behind the bramble bush into his wetsuit, jumps aboard, checks the speed, and the team, and the shores. Jonas jumps off again, changes suits, and is back in the village, still panting a little. Jonas knows he has not much time left and they all need the resources desperately, but luckily the resources are ready to take with him. He tries to hide his impatience,[22] thanks the owner of the resource warehouse, walks away and only starts running when he is around the corner.

When he arrives at the shore, out of breath,[23] he sees the boat coming. The moment he wants to throw the bundle of resources aboard, a grey beard incidentally passing by taps him on the shoulder.[24] 'All well, mate?' grey beard asks. 'Well, a bit in a hurry, actually', Jonas answers. 'I know the timing isn't ideal',[25] grey beard says, 'but I thought we could talk about what I know about boat seats, and guys with notepads and pencils, and how this will work out once you arrive at open sea'. The timing is bad indeed,[25] but the face of the old man has the word 'experience' written in every wrinkle. The grey beard is too old to stand for a long period of time. They decide to sit quietly on a flat rock near the shore and talk it all through, while Jonas can keep one eye on the boat in the meantime.[26] It is difficult to slow down, while Jonas experiences the dilemma that, at the same time, the team are working their socks off. Loaded with new insights after the conversation, Jonas runs for the boat. They are tired but rather confident[27] that they know how to stand the out-of-control feelings during the rapids. At that point in the day, Jonas is unaware that he is part of another story: Jonas and the unexpected whale.[28] There is more to come: the next episode will be a triathlon for all of them: having team members rafting, swimming, and running ashore at the same time. Later, when all this is history, looking back in amazement at this bizarre story, he will sigh: 'Man, had I known this ahead of time…'.[29]

Rationale of A day in white water rapids

The metaphorical narrative 'A Day in White Water Rapids' is meant to increase the understanding about the complexity of leading an innovation journey from the perspective of the innovation project leader: the feeling that not everything seems under control, the reality that unexpected events could happen, and that different events could happen at

the same time, which could give the innovation project leader the feeling of being in a splits, and the understanding that difficulties could remain for a longer time. A former draft of this narrative was shown to an innovation project leader to reflect upon the general atmosphere of the story. The innovation project leader recognised the flow of the journey, although the atmosphere was in her opinion too gentle. 'It is too "soft". The general atmosphere in my opinion should be rough, with hostile territory from time to time.' Based upon this feedback, the narrative was adjusted.

Although 'a day in white water rapids' is a fictional story, the events are based upon data from the cases studied. Table 9.2 shows the metaphorical expressions in the text, and the provenance in the quotes of a case, or the underpinning literature. The column with the metaphorical expressions is called 'figure of thought', following the terminology of Lakoff (1986) to demonstrate the reason for the metaphors used. The language used is not just a figure of speech, used for a poetical or rhetorical purpose, but as a figure of thought. In the provided narrative the metaphor of the innovation journey as rafting wild water rapids is used to conceptualise, to make a new mapping (Lakoff, 1985), of the innovation journey from the perspective of the innovation project leader.

For all figures of thought in the middle column the provenance is provided in the right column. It should be noted that the quotes in the provenance column are examples of provenance, and part of a broader set. Especially the notion of time and time pressure, and the impact of time on the innovation project leader, as addressed through the whole narrative, is based upon a broad set of observations and interview data.

Table 9.2 Rationale of figures of thought in metaphorical narrative

Aspect	Figure of thought in story	Provenance (case examples)
1. innovation process	rafting an uncharted river	*Van de Ven et al. (1999)*
2. team	team at the tiny beach they look each other in the eye	*'We spent lots of sessions on learning to know each other and explore our chemistry' Quote case BeerTender*
3. aim	impact of the trip 'suppose, just suppose...'	*All participants are inspired by the change and afraid that the lack of money could prevent giving the project a real try. Field notes case Hogewey*
4. time	awareness to hurry up, go, go, go	*'At this moment in time I am not sure if we are going to make it. Not because I do not believe in our treatment, but because the odds seem sometimes against us. However, I am convinced that this is the future of cancer treatment. We have to pursue.' Quote case Newvac*
5. innovation project leader (IPL)	needs all his attention	*IPL appointed for full time dedication cases BeerTender and Hogewey* *IPL quits other project. Field notes case Newvac*
6. group dynamics	figure with notepad and pencil checking	*'In a nursing home it is, of course, a little different from home because you have rules and protocols, like the HACCP hygiene rules for example. We have to balance permanently between living those rules and at the same time to have it in such a way that a resident experiences this as normal.' Quote case Hogewey*

7. group & creativity	'wrong call'	*'I did, however, need to stay motivated for myself, because if people are trying to stop it, because people are afraid of change, then you should know that such is part of your change project. If you do not know that, then it leads you in the wrong direction, and you might fall back and think, 'Maybe it was a strange dream, anyway.' Quote case Hogewey*
8. time & splits	rapids and the figure with notepad and pencil everywhere	*The process with each of the potentially interested parties also takes much longer than expected. At the same time the team is preparing for the clinical trials and, due to increasing insights, the plans for the trials change and have to be adjusted. Case Newvac*
9. mental model	'how do we explain…'	*The team learns which images to incorporate to explain complex issues. For people who are not experts in the field of oncology for instance, the innovation project leader depicts cancer as follows: 'We use the image of a dragon.' Quote case Newvac*
10. mental model	'never seen a boat like this'	*'We have talked to many other biotech enterprises. Many of those are in the same position, that the current models and current ways of working do not fit the new reality. As far as we know there are no examples yet.' Quote case Newvac*
11. quality constraints	'my only concern is to have criteria right'	*'In a nursing home it is, of course, a little different from home because you have rules and protocols, like the HACCP hygiene rules for example. We have to balance permanently between living those rules and at the same time to have it in such a way that a resident experiences this as normal.' Quote case Hogewey*

12. creativity	steering rapids, find a solution	*To understand the nature of the problem, the team decides to illustrate the case with the story of a customer: Suppose a young man in the Netherlands buys an appliance for his father. Case BeerTender*
13. creativity	inflatable seats	*The receptionists had difficult times to keep the residents inside the village. The easiest solution would have been a number lock on the glass sliding doors. But such a lock is against the philosophy that this is the living environment of the residents, and a lock would distract this resident probably even more. Therefore, they came up with the idea of a windshield, as an extension of the pub's terrace. Case Hogewey*
14. time	I'll let you know within three months	*The authorities have a different time frame than the innovation project team. Field notes case Newvac*
15. aim & overall process	impact on others if process is delayed	*Patients that have no sufficient alternative available, and where based on the earlier trial there is a promise of a positive result. The innovation project leader and team members find it nerve wracking that the process takes so long, and their strong belief fuels the perseverance. Case Newvac*
16. overall process	series of rocks and fallen tree trunks	*'The whole project was a series of decisions. The appliance has a technical side. You've got the literal dimensions of height, width and depth. There are the dimensions as you see them, perceive them. There is the concept of look and feel, the way it strikes people. That's the emotional side. (...) We want to put as much beer into it as possible, while keeping the appliance small. Those were contrasting elements. We had to find a synthesis.' Quote case BeerTender*

17. leadership	understand, decide, take action	*'With the family we discussed how this should look like, the on-stage, because that is where they had the expertise about the life style of the residents, and with the staff we discussed the backstage, how to handle it. How we handle this is our business. Our client, resident and family, should not worry about that.' Quote case Hogewey*
18. unknown unknowns	some he didn't see coming	*The team's assumption that all hospitals in the clinical trial would have the requested facilities, proves to be wrong. A small detail with a big impact, which forces the team to find a solution without endangering the comparability of all research settings. Case Newvac*
19. time & splits	boat at full speed- Jonas runs off to the village	*The clock ticks, and there are only a few weeks left before the deadline of one of the capital providers ends. Field notes case Newvac*
20. project constraints	collect resources	*Unexpected upfront, the search for capital takes a lot of the team effort. Case Newvac*
21. time & splits	change suits behind a bramble bush; runs back, checks team, speed, shores	*Identifying and solving problems in the procedure of the clinical trial in all those different hospitals, while funding is such a big issue and the team would like to spend all available energy in solving the funding issue, is a tension that feels like a splits. Case Newvac*
22. leadership	tries to hide his impatience	*Such events put extra pressure on the innovation team as solutions have to be found by the 11-th hour. Case Newvac*
23. leadership	out of breath	*'I remember telling the guys the CEO was coming to see us. Man, they worked night and day. Literally, night and day. I can still see the CEO coming in, going to the BeerTender. (...) And he said: 'Well, this is a piece of cake.' A piece of cake? He should have noticed the pale, tired faces of us all.' Quote case BeerTender*

24. external knowledge	grey beard with experience	*'The knowledge is somewhere. We just had to get it around the table at the moment we needed it. For patents you need a patent expert. For plastics a 'plastics professor'. For cooling you need a cooling professor. That's what I did. I learned not to be the smart ass who can do everything by himself.' Quote case BeerTender*
25. time	bad timing	*The decision to postpone and start all over again has great impact. Within the Heineken organisation the project receives criticism, as Joris cannot guarantee a new time frame for market introduction, yet. As a consequence of starting all over, the project has to find a new hardware partner, as the then present hardware partner loses faith in the project and decides to quit the project. Field notes case BeerTender*
26. time; splits in pacing	sit quietly on a flat rock, keep an eye on the boat	*The innovation project team uses the following months to do an audit of all sub-projects while keeping an open and close communication with all participants. This provides the time Joris needs to convince the administrators of Krups to continue the project, and re-establish partnership after the take-over of the Krups brand by Groupe SEB. Case BeerTender*
27. leadership	tired, yet confident	*'Yes, then it would be strange if you didn't reach New York. Apart from hitting a whale.' case BeerTender*
28. unknown unknowns	unaware of the other story: Jonas and the Whale	*'My colleague from Switzerland rang to say he had heard that the CEO of Moulinex-Brandt had just applied for a suspension of payment. (...) That was like crashing into a whale, full speed!' Quote case BeerTender*
29. overall process	'Man, had I known this ahead of time...'	*field notes (see Prelude)*

CH 10 | CONTRIBUTIONS AND REFLECTIONS

10.1 Introduction

In the previous chapters I reviewed the literature and presented empirical studies and a narrative repertoire to answer the question 'how do innovation project leaders in different organisational settings lead the innovation journey over time, and in what ways could these experiences be built into a narrative repertoire for others to learn from?'. This chapter starts with a summary of the answers to the research question. This chapter then discusses the theoretical implications of this research and suggests directions for future research. Furthermore, I discuss the implications for the practice of innovation project leaders. This chapter ends with a reflection on the methodological choices, the research design and evaluative criteria of this research, and my role as researcher.

10.2 Answering the research questions

The overall research question that guided this research was:

> **How do innovation project leaders in different organisational settings lead the innovation journey over time, and in what ways could their experiences be built into a narrative repertoire?**

To answer this research question, three sub-questions were formulated that guided the research in the three cases studied. In the following sections the findings of this research are summarised and linked to each of the three sub-questions.

10.2.1 SUB-QUESTION 1: THE INNOVATION PROCESS OVER TIME

> **How does the innovation journey unfold over time in different organisational settings, seen from the perspective of the innovation project leader?**

Each of the three innovation journeys in this dissertation demonstrated messiness and

complexity at different moments in time. The three researched innovation journeys showed differences in process time to accomplish the innovation: the BeerTender project was finished in a number of years when the product was brought to the market, the Hogewey project needed a long time (more than two decades) to strive for establishing and anchoring the change in behaviour, and this innovation process had 'a long tail'; and the Newvac project did not finish during the four years of this study.

The four processes - content development process, creative process, group dynamics process, and managing the project constraints process- appeared connected and intertwined throughout the journey. The conceptual framework of the four processes was extended into a model that shows the intertwinedness of the four processes during the innovation journey.

Although the three innovation journeys aimed at developing different innovative content, the processes showed similar intertwinednesses in various processes. In the *content development process* issues that had to be managed were found in desirability at different levels. In addition to the model of Brown (2009), desirability was not only an important aspect from a user perspective, but also an important aspect for other stakeholder groups, like personnel, partners outside the organisation, or authorities. In the *creative process,* issues were found in both problem-understanding and problem-solving. In addition to creative problem-solving on content-related issues, issues were found that were connected with the perspectives of stakeholders, who had to learn to see differently, out of the common response zone. In the *group dynamics process,* the people and the organisations involved were diverse, with different levels of existing knowledge and different perspectives, that could also change over time. The innovation journey progressed through all the different interfaces between innovation project team and different stakeholders. In the *project constraints process,* time was difficult to manage. In all three cases, quality constraints and the quality criteria of the existing reality had to fit the new reality of the innovation. In the three innovation journeys in this dissertation, the issues around money were not comparable: for the development of BeerTender money did not seem an issue; in the development of Hogewey money was also not an issue, yet for the opposite reason, as the innovation was developed without additional budget; for Newvac, attracting money to expand the clinical studies, was a difficult process that the team went through at the same time as expanding the innovation process.

10.2.2 SUB-QUESTION 2: LEADING THE INNOVATION JOURNEY

How does the innovation project leader lead the innovation journey, intertwines the four processes, and handles ambiguities and tensions?

The innovation project leader had to lead the four intertwined processes: *developing*

content, *stimulating* creativity, *guiding* group dynamics, and *managing* project constraints, and solve the issues that emerged in and between the four processes. Often the innovation project leader had to act and react in situations where the four processes were intertwined. In some situations, the innovation project leaders anticipated upon future interconnectedness, especially at the interfaces with group dynamics, and chose to intertwining and guiding group dynamics pro-actively.

Imagery and narratives were means to intertwine processes and creatively enhance the understanding in different stakeholder groups of what could be the value of the innovative content and bridging the existing with the new. The narrative constructs (both imagery and narratives) were used for different purposes: understanding and framing of a problem, developing a solution, having a shared understanding of a problem or situation, and helping others to see differently. A distinction was made between (individual) thinking narratives, talking narratives that have a focus on narrative talk to developing an understanding or solution, and storing narratives that have a purpose to share the already developed message or plot with others.

None of the three innovation project leaders were prepared for the specificity of the innovation journey. All relied on their years of experience in their respective domains. All three had a clear vision about their end goal and the reason why this was important for the users of their innovation. All three innovation project leaders highly valued this 'raison d'etre' and this kept them going. Some of the criticism and resistance the innovation project leaders experienced, encouraged their stamina to deliver the innovation.

The innovation journeys knew several setbacks and unexpected events. A way to handle these situations was to share these tensions in the team, and stay closely together as a team. What made each of the innovation journeys so challenging, however, were not the individual events. The innovation project leaders experienced the biggest tension from the number of issues that were important at the same moment in time, the contradictions in and between these issues, the psychological contradictions between rational issues at one hand and emotional issues at the other, between long term and short term issues, between thinking creatively and divergently in one issue, while at the same time convergent, tight steering in another issue, the unexpected events, the differences in perspectives and the changes in perspectives from people and groups involved, under the experienced pressure of time, and over a longer time.

10.2.3 SUB-QUESTION 3: A NARRATIVE REPERTOIRE

In what ways could the experiences of these innovation project leaders be built into a narrative repertoire?

The aim of the narrative repertoire is to provide insights about the innovation journey and serve as a source of reference for (future) innovation project leaders to be better prepared. To develop an understanding of ways in which the experiences of the innovation project leaders could be built into a narrative repertoire, a distinction is made between the purpose of narratives, and the design of the narratives.

Four different purposes are developed to capture the insights into a narrative repertoire: historical narratives, awareness narratives, solution narratives, and a process overview. Historical narratives were developed in each case study, to have an overview of the actual events that happened during each innovation journey. The awareness narratives serve the purpose of being or becoming aware of possible events or circumstances. The solution narratives provide an insight into a problem and how the focal actor developed a solution. The fourth purpose is to capture the complexity of the overall process.

Based on Pentland's suggestions of the elements of a process narratives (Pentland, 1999), the design of the narratives was specified for the choices made in the *sequence of time* (chronological), the *focal actor* (the perspective of the innovation project leader), the *narrative voice* (my voice, the voice of the researcher), *evaluative frame of reference*, which presents a right or wrong point of view (neutral), and *context* (providing contextual information). Pentland does not suggest about the form of the narratives. I have chosen to present all narratives as non-fiction, documentary style narratives, except one. I used a fictional, metaphorical form to capture the complexity of the overall process.

These different design choices made led to the development of ten narratives to cover the different purposes. The ten narratives serve as exemplars, as meaningful examples (Schön, 1983) and together form a prototype of a narrative repertoire about the experiences of the innovation project leader during the innovation journey.

10.2.4 ANSWERING THE OVERALL RESEARCH QUESTION

Through the three sub-questions the overall research question is answered. However, assessing the innovation journey through the parts of the process, such as the barriers listed in the literature review of Sandberg and Aarikka-Stenroos (2014), leave the audience with a different image than seeing the process as a whole. The process to develop an innovation is a complex process that does not happen in isolation and is embedded in a bigger context, of the firm, of the domain, and of the society it is part of. Understanding such a complex process cannot be accomplished by taking the whole apart in building blocks and analysing those (Capra, 1996, p. 29). The innovation project leaders had to lead the issues within this complex context. Fixing problems or overcoming barriers in one part could lead to new issues, new barriers, new unexpected moves. To paraphrase the poem of the six blind men: though each part is in the right, through the parts the whole cannot be seen.

The understanding of the innovation journey from the perspective of the innovation project leader is therefore not so much the empirical underpinning of the intertwinedness of the four processes, but how these intertwinednesses and the contradictions in intertwinednesses affected the leadership of the innovation project leaders and how these contradictions at the same moments in time and during a longer period in time affected how the innovation project leaders experienced the innovation journey.

10.3 Contribution to the literature

10.3.1 THE INNOVATION PROCESS OVER TIME

Innovation management in the literature is often assessed from the organisational perspective. This research took the perspective of the innovation project leader, the one who leads the innovation journey of one project in the daily thick of things. This research adds to the understanding of the process of innovation from the perspective of the innovation project leader, by illuminating the daily practice of innovation project leaders in different organisational settings.

Various authors have described process models of how the innovation process develops over time (Buijs, 2003, 2012; Cooper, 1990, 2011; Griffin et al., 2014; Van de Ven et al., 1999), as reviewed in chapter 2. The research described in this dissertation demonstrates that, in contrast with the stage-gate models of Cooper (1990, 2011) or the Delft Innovation Model (Buijs, 2003, 2012) the innovation process is a non-linear process and messier than a sequence of stages, which is in line with the findings of Van de Ven and colleagues. The innovation process of Hogewey demonstrated a somewhat different path, as the developing, iterating and establishing of the necessary behaviour of staff took a long time and I argue that the process model had a long tail. It is not the distinction between the developing of product or service per se, but the essential behavioural component that is at issue.

In chapter 2, I reviewed the contributions of Brown and Eisenhardt (1995), Van de Ven and colleagues (1999), Buijs (2007), and Pons (2008), on the facets the innovation project leader has to lead during the innovation journey. Brown and Eisenhardt's review of relevant NPD literature (Brown & Eisenhardt,1995), and Pons's study on the intersections of NPD literature and Project Management body of knowledge (Pons, 2008), look at the innovation process, basically, as a category of actions and activities. Their studies on the innovation process are studies into, what Van de Ven has called 'a category of concepts or variables that refers to actions of individuals or organisations' (Van de Ven, 1992, p. 170), and shed no light on *how* these actions change over time. Van de Ven and colleagues (1999) and Buijs (2007) take a processual lens by underscoring the sequence of events that describes how things change over time. Van de Ven and colleagues (1999) have

evaluated the innovation processes in the Minnesota Innovation Research Program from an organisational point of view and not at the individual project leaders' level. Buijs (2007) did take that innovation project leaders perspective, although his paper lacked a direct empirical underpinning of his point of view. The longitudinal research described in this dissertation adds to the understanding of the innovation journey at the level of the individual project leader, seen through a processual lens.

Building on the contributions of Brown and Eisenhardt (1995), Van de Ven and colleagues (1999), Buijs (2007), and Pons (2008), I developed a model of four intertwined processes that the innovation project leader has to lead during the innovation journey: developing the content process, stimulating the creative process, guiding the group dynamics process, and managing the project constraints process. The research described in this dissertation empirically underpins how these four processes are intertwined, and how the innovation project leaders in the three described cases manoeuvred through these intertwinings.

This research also contributes to bridging different scholarly domains. Innovation project management could be assessed and investigated from the four different scholarly domains, as described in chapter 2: business and management studies, organisational studies, project management, and NPD / design thinking. The rich empirical narratives in this dissertation could offer insights to organisational studies concerning the challenges the innovation project manager had to face in managing project constraints; for the project management community the narratives bridge project management with the complexity and the unforeseen in radical innovation projects; and for the NPD / design thinking scholarly community the narratives could bridge NPD and the desirability of the user perspective with the desirability of the organisational perspective. Bridging scholarly domains could offer the scholars from each domain different insights.

10.3.2 LEADING THE INNOVATION JOURNEY

The various aspects that the innovation project leader has to manage during the innovation journey are described in the literature by research that usually focuses on one or more variables, investigated in variance studies. The research described in this dissertation adds to the understanding of how the innovation project leader has to lead these aspects during the innovation journey: all aspects at the same time and in relation to each other, as well as over time. This process perspective enables insight into the complexity and the conflicting issues in this process, as well as the sometimes stressful interrelated activities and intertwined processes; it enables seeing the broader picture of the whole and following that 'picture' into the longer duration of the 'film'. This research partially films the gap that Griffin and colleagues (2014), and Van de Ven (2017) have addressed in their contributions, suggesting that '[t]o better understand the obstacles encountered and ways to manoeuvre through them, we need more longitudinal process

studies of how the innovation journey unfolds from concept to development and implementation' (Van de Ven, 2017, p. 42)
This dissertation also adds to the understanding of the hourglass model of serial innovators by adding the process perspective of the hourglass model as a hologram for many underlying hourglasses, as well as the perpetual issue that an executed solution could lead to new problems.

Van de Ven and colleagues (1999) and Buijs (2007) have described their views on the intertwined processes of the innovation journey: Van de Ven and colleagues from the perspective of the organisation, and Buijs from the perspective of the innovation project leader, although the latter publication lacks a thorough underpinning with empirical research. The empirical studies described in this dissertation add to the understanding of leading the intertwined processes from the perspective of the innovation project leader. The four processes of content developing, creativity, group dynamics, and project constraints are interrelated and intertwined. The 'groups' that influence the innovation journey with their dynamics are widely spread, differentiated, and sometimes fragmented. And the same goes for their views on the innovation as outcome as well as the process of development. The creativity to recognise, frame, define, and solve problems, is not only used in relation to the content issues, but also in relation to the issues defined by the group dynamics, stemming from their views and the *common response zone*. The developed content should not only be feasible, viable, and desired by users, but should also be desired by relevant groups, such as top management, organisational personnel, or authorities.

This dissertation also adds to the understanding of how *narrative constructs*, which could be narratives, analogies, metaphors and images, could be used to lead the innovation process. The process of storymaking could lead to sensemaking, bridging differences in thinking styles and differences in opinions. The storytelling could lead to shared understanding, becoming an insider, and helping others to make sense of their problems in relation to the innovation, and helping others to bridge old with new realities.

This dissertation adds to the understanding of the contradicting connections between the different activities and processes and people that the innovation project has to lead, all at one time, and over time. This dissertation demonstrates that this is not an easy job and requires a strong motivation and stamina to pursue it.

Buijs (2007) has closed his contribution on the intertwined processes the innovation project leader has to manage with the metaphor of the juggler playing with cones. I take this metaphor to underpin the findings of this dissertation as to why leading the innovation journey from the perspective of the innovation project leader is so difficult. The metaphor of the juggler is false, Buijs warns the reader, as the reality of the juggler is changing: while riding the unicycle, the cones could change in size, colour, weight, and therefore change

their path in the air, or change into a ball, and the juggler has to manage all that. The innovation journeys described in this dissertation show also that, to stay with the same metaphor, the juggler has to manage different games at the same time, let's say, riding a difficult course on his unicycle. Moreover, the act could take a long time, the juggler will get tired, and experience saddle soreness, the rules of his game change along the way, and although the juggler is doing his utmost best to perform an attractive act, the audience could be bored, or suppose that the act is not that innovative at all. And to finalise the image of this performance, a guy at the side, called Fate, has a stick in his hand and could decide unexpectedly to put that stick between the spokes of the unicycle. The research described in this dissertation adds to the understanding of that juggler, and why it is so difficult and tiring, but also that the juggler becomes more and more determined to finish what he started.

10.3.3 A NARRATIVE REPERTOIRE

Bartel and Garud have suggested that we need a repertoire of multiple narratives from which people can generate approaches that enable real time problem solving and help people to generate a rationale and script their behaviours that otherwise may be dismissed as being irrational or inappropriate (Bartel & Garud, 2009, pp. 113). This dissertation provides a series of such narratives. The narratives in the thick descriptions of the cases, as well as the narratives set out in chapter 9, provide a first set for such a repertoire that individuals can draw upon.
Answering to the suggestion of Van de Ven (2017) as described in section 2.10, the narrative repertoire provided in this dissertation contributes to the understanding how the innovation journey unfolds over time, and enables a better understanding about the obstacles encountered and the ways to manoeuvre through them.

10.4 Limitations and implications for future research

10.4.1 THE INNOVATION PROCESS OVER TIME

This longitudinal research investigated only three innovation journeys. Although generalisability is not directly the aim of process studies, future research is needed to investigate more radical innovation journeys to compare how the patterns in these journeys unfold over time.

It would also be interesting to investigate in future research if the deviant long tail of the innovation journey of Hogewey also occurs in the innovation processes of other services with a behavioural component.

10.4.2 LEADING THE INNOVATION JOURNEY

Future research could also provide further insights into how innovation project leaders intertwine the different processes of the innovation journey. I also suggest further investigation of the creativity of the innovation project team in helping others to see outside the common response zone. Better understanding the role narratives play in leading the innovation journey and developing guidance on how the innovation project leader could use these tools could be useful for both theory and practice.
The same applies to the issue of how innovation project leaders could stimulate desirability for the innovation for other stakeholders than the users.

10.4.3 A NARRATIVE REPERTOIRE

In providing more processual research about radical innovation journeys, more thick descriptions are likely to become available to grow the narrative repertoire from which individuals can draw upon. Future research is needed to assess the effectiveness of the narrative repertoire in terms of content, form, style, and use.

10.5 Implications for practice

As the research questions are grounded in the practice of innovation project managers, this research contributes to this practice as well. As Nicolini and Monteiro (2017) have acknowledged:

> *Rich representations of practices are promising tools for practitioner reflection. By bringing into language ordinary and concrete practices, thick representations of activities may in fact help practitioners to see through conventional ways of doing and saying. These may help them to explore the world of possibilities beyond what is the currently accepted norm (enacting a new practice is, of course, a different matter) and generate opportunities for abductive learning. To the extent that practices are mostly absorbed by tips, hints and exemplars, the best we can do to support practitioners refine their practice is to offer them rich examples they can use. Such examples enable practitioners to interrogate their own activity and explore new ways of doing, saying and being. (Nicolini & Monteiro, 2017, p. 123)*

This research contributes to the practice of the innovation project leader and supports novice innovation project leaders to be better prepared by being aware of what could happen and enabling more experienced innovation project leaders to refine their practice through the experiences of other innovation project leaders. Since the literature about the daily practice of innovation project leaders is scarce, the rich descriptions are exemplars of what could happen, could provide insight and are material to reflect upon. Moreover, the rich descriptions could provide recognition for those moments an innovation project leader could wonder if she or he is the only innovation project leader in the world who is having

such a hard time. It can provide encouragement to keep going, even when the going gets tough. The thick descriptions and the narrative repertoire could also add practical support to innovation project leaders on how others have solved issues in their practice.

This research could be useful for those at senior level in the organisation that initiates or supports an innovation process. It provides insights into the messiness of the process and the lack of efficiency, due to the complexities of issues within the innovation project as well as in the context. This is by no means a plea for abandoning any form of steering by top management, although this is a plea that the standard checks and balances that are useful in the current, exploiting organisation are not the same as those for the exploratory innovation journey.

The broader context of our Western world with regards to organisations is still a technological-rational approach, where efficiency, scale, and optimisation are favoured. This research is also of practical use for all kind of authorities: ministries, governmental agencies, regional investment funds, and domain specific grant offices. Many of the staff working in governmental bodies have no direct experience with the reality of innovation processes, which sometimes leads to misunderstandings and unworkable or impracticable regulations. This repertoire of narratives could provide an insight into the reality of such an innovation journey, although the understanding of the messiness and tension of the process could ask for some imagination out of the common response zone.

10.6 Reflections on the methodology

10.6.1 RESEARCH DESIGN

The choice for a process study, to study the sequence of events that describe how things change over time, is a choice that I still endorse. With a research design that would have focused on a different description of process, for example favouring the causal relationship of concepts (Van de Ven 1992), I would have missed out on how the process emerged, how the innovation project leaders sometimes wrestled with problems in this process, and how unexpected events influenced their steering of the team towards the innovation. Real time process studies, like the present study, can help in theorising the innovation journey, as Hoholm and Aroujo (2011) have pointed out. The real time ethnography gives a better idea of the uncertainties, tensions, and choices that the innovation project leader faces. It shows how the context of actions is interpreted and constructed and can give a better analytical grip on the role and controversies of different alternatives, and how the political processes in the context influence the choices made.

I combined being in the field, both actively participating as well as passively observing, with retrospective interviews. One of the problems with retrospectively reconstructed

processes is not so much that people forget key events that happened during the innovation journey, but that specific events are not noted as a key event by the interviewee (Leonard-Barton, 1990) and therefore such an event is not discussed during a retrospective interview. The research design described in this dissertation, where ethnographic participant observations were combined with retrospective interviews increased the triangulation as the observed events were discussed with the interviewees.

10.6.2 METHODOLOGICAL ISSUES

Studying three cases longitudinally resulted in a big data set. I had to find ways to organise the field data, the increasing amount of literature from various scholarly domains, and the archival data. Besides the explicit data, I increased my tacit data, sometimes even without knowing. Due to the long period of study, parts of the knowledge became tacit, knowledge that I did not know I had and that served as the fabric between field notes and interview data. This tacit knowledge came to the surface through writing.

To increase the interrater reliability, I received the suggestion to have some of the interview data coded by one or two other researchers. I asked two senior colleagues to do this and gave them a full transcription of an interview with one of the innovation project leaders and the code scheme. I had expected at the outset that, although some differences would occur, the coding would on average be comparable. However, the differences were significant, both between me and the two other coders, as well as between the two who were not involved in the project. I discussed the given codes and the process with the colleagues and the differences were explained and solved. With hindsight, it did not really make sense to have performed a research step like this. Later on, I was encouraged by Pratt (2009) who has suggested

> *If I were engaged in an extended ethnography, expecting someone else to adequately code my data— when he or she knows nothing about the context or the individuals involved— makes little sense. Part of doing ethnography is gaining rich experiences over an extended period of time. This can and should change how you view the data you collect. (Pratt, 2009, p. 859)*

Analysing the data and being transparent about the way I analysed, sometimes got me stuck into a rational mode of thinking. Thoughts crossed my mind, narrative snippets lay around that I could not fit in, and those stayed as leftovers in a folder ‘notes’. The further I came in the process of analysing and writing and going back to the data and so on, I experienced a process that I explained to my family as ‘knitting’. I found the explanation of the stained-glass window. This did not change my process of knitting, pull out the thread and re-knit, but now I understood that I was not the only one encountering these problems. The stained-glass window story has been captured by Weick (1989) and reads:

Goodfield described the style of theorizing used by a young experimental biologist named Anna, and in doing so illustrated the delicate sieve involved in theoretical selection: When a suggestion is first broached in science, however tentatively, it can be, and often is bolstered by little pieces of information which up to that point may well have seemed extraneous. These can now be picked up and cemented in place. Indeed, Anna once gave a lecture called 'the Stained-Glass Window Lecture', explaining that all scientists have these little pieces of coloured glass, intriguing bits of information or facts which they didn't quite know what to do with. They leave them lying around until, prompted by a new idea or a new piece of information, they mentally sift and select the ones that may help the pattern. (Weick, 1989, p. 528)

I also had to find my voice in this process: finding my voice in the scholarly world, and yet also wanting to write a work that was attractive and readable to those outside academia. I had to determine what to write, how to compose my story, and find the voice that was suitable to different audiences. It was a great assistance that people pointed out excellent examples, such as Susan Leigh Stars' book chapter with the subtitle 'On being allergic to onions' (Star, 2007). It taught me that I could keep my writing close to myself as a person and became confident about the 'I' in my dissertation, instead of the plural 'we'. Also knitted in other snippets of stories, like the one just a few sentences above, as these were examples of stories that helped me in this process and helped me to better understand what I was doing.
As a non-native English speaker, writing in thick descriptions and narratives was more difficult than writing a literature review because the subtle nuances of the language, both in translating dialogues or narrating what was observed, matters most.

10.6.3 EVALUATION OF THE RESEARCH

Schwartz-Shea (2006) has arrived at a set of six criteria for readers to judge and inform the reader about the trustworthiness of the research. Weick (1989) has suggested 'That's Interesting!' to judge the quality of the research. I proposed in section 4.7 to combine the criteria of Schwartz-Shea and Yanow (2009) with Weick's (1989) approach to evaluating this research.

According to these criteria, the level of thick description seems sufficient enough for the informal co-readers to understand the situation. I provided information about my role in each case study as well as a reflection in section 10.6 hereafter. To triangulate within each case, I used different sources, observations, interviews, and archival data, which are described in each case chapter. Although the words 'inconsistent' or 'conflicting findings' would not be the terminology I would use, this research showed the reader that not all processes developed in the same way, for instance in showing the difference between the BeerTender project, and the long tail of the Hogewey project. To increase transparency about how the research process was followed, each case chapter contains a specification

of the research process and a graphical timeline of that process. The negative case analysis was performed by what Guba and Lincoln have named 'peer-debriefing' (Guba & Lincoln, 1985; Schwartz-Shea, 2006) and discussing the preliminary findings with peers and the supervisory team of this research. And all case chapters were checked with the innovation project leaders, the participants in this PhD-project.

As the aim of this research is to increase our understanding of how innovation project leaders lead their innovation journey over time, and to capture those experiences that could be a source for others to learn from and to be better prepared, it is essential that the audiences of this research, both in academia and in practice, assess the research as 'That's interesting!' (Weick, 1989). It is for the readers of this dissertation to define for themselves if this research meets that criterion for each of them, as this also depends on the past experiences of the readers. Some indications that scholars and practitioners find this 'interesting' are the publication of the BeerTender case in the Project Management Journal's issue on 'Project Management and Innovation Management: Bridging Contemporary Trends in Theory and Practice' (Enninga & van der Lugt, 2016), the re-use of stories such as 'Inviting the Queen' by innovation project leaders of both BeerTender and Newvac, and the informal reactions from both scholars and practitioners in the field with whom I have spoken about this research, or who read (parts of) this dissertation.

10.6.4 MY ROLE AS A PARTICIPANT RESEARCHER

The different roles and different ways I was present in the field ask for a reflection upon these roles, the objectivity or subjectivity of these roles, intervening or not, and the legitimisation of research that was not undertaken from the primary aim of collecting data.

Being present in the field as a participant observer could have an impact on the system of the organisation and therefore is an intervention. This becomes more prominent when asking questions and to an even greater extent when facilitating workshops. This could question the objectivity of the research. During the research, and also during the writing up of this study, I was aware of this subjectivity and the awareness that all findings are my interpretations. However, in my constructivist worldview all research is subjective, or as Gummesson (2003, p. 482) puts it 'that no ready-to-consume research results pop out like a soda from a vending machine'.

Combining research and management consultancy is what Schein (1993) calls 'clinical research': doing research and making observations, elicitations, and reporting of data that are available while actively engaged in helping an organisation. Schein is an advocate of this clinical research as this could favour gaining a deeper understanding and a deeper admission into the organisation and the people involved. My role as a researcher was not limited to that of a clinical researcher, as I was also present as an observer without having any consulting role, and also as interviewer without having a management consulting role.

Being present in the way this study describes, supported my research in three ways: the consulting role gave me the possibility of building relationships with the core people involved, as the interviewees had an interest too in building the relationship; having from time to time an active role in the process also provided the kind of information that helped me to understand what happened in the process; and the reciprocity of 'bringing' one's expertise towards the organisation provides other information other than (only) observing and interviewing and 'taking' from the organisation and equalised our relationships.
The downside of these different roles as clinical researcher was the combination of activities in the field: when facilitating a workshop, one is more focused on the course of the process in real time than in observing. I compare it with following a football match or being there as a photographer: when following the match, all our senses are in the moment, while I know from experience that when being at the side-lines of the field to photograph the match, one can have the lens on the ball, or the keeper, or the corner (while partly missing being inside the heat of the match). I never felt the obligation to write about the focal organisations in a polite or kind way because of the former commercial relationship. It was more the length of the relationship that bore the risk of my identification with the innovation project team and acting like a native.

Due to the pace of this study, the frequencies of the contacts and the different roles, I was sometimes closer to the studied innovation project leader than other times and shifting position from being an outsider to an insider. I was in contact with the innovation project leaders for a period of years, and known in the organisations. I never became a real insider, although the risk of becoming 'a native' was always there. I never was at such an intimate connection that I went for drinks, or shared gossips at the water cooler. However, I realised when writing up this research I sometimes acted as 'a native' and had to step outside again. Especially in the Hogewey case, that was for such a long time a focal organisation, I increased my knowledge and insights of the Hogewey concept, the challenges of the innovation project leader to establish the concept, and the way others could benefit from this innovation journey. This knowledge and understanding did not grow in a straight line. As a consequence, the research diverged and converged in various iterations during the years of the study, adding new insights with each iterations and each conversation. Furthermore, new literature was found to ground the new insights.

Writing the narratives and the case study findings was also an act of zooming in and out, going to and from, diverging and converging. During this process of writing and zooming in and out, I had to find words for the complexity of the experiences of the innovation project leader during the innovation journey and for the tacit fabric and worldviews that are part of the context of the innovation journey.

EPILOGUE

This research study started with a brief remark from an innovation project leader who sighed after a long and rough journey: 'had I known this ahead of time'. From wondering 'what could he have known ahead of time, anyway?' the immediate question arose: How do other innovation project leaders lead the innovation journey? This dissertation is the result of that quest, and the stories about their experiences could be read from the armchair.

I wrote the last legs of this dissertation during the first legs of the Volvo Ocean Race 2017-2018. With the world getting smaller and we as outsiders being able to experience the world on our doorstep, having an on-board reporter (OBR) aboard every vessel, it was the best example of being in 'the thick of things'. Experiencing life on board was a splendid example of how different processes, inseparable and intertwined, played each played a critical role in the course of events. Sometimes I had my different chapters open in Word, my Papers database with articles, and one eye on the life footage from the Volvo Ocean on a second screen. By the end of October 2017, the first short leg came to an end in Lisbon. The team of *Vestas 11th hour* had seen it all in just one week: strong winds, no wind, shifting winds, a battle to stay ahead of the fleet, and by now they were struggling to sail up the Tagus river while the tide was out. Filling in the time that the Vestas struggled their way up the river, the studio reporter talked about what the team had done to prepare and how well prepared this team was in terms of navigation scenarios before starting this leg. The reporter talked live with the experienced Volvo Ocean skipper about team dynamics, how he worked hard to build this team spirit, and about staying focused as a team.

At the same time, the *team Akzo Nobel* was struggling with a conflict between skipper and sponsor, with budget exceedances and time pressure, and core people leaving the team only hours before the start. In the week before the start the conflict exploded and was fully covered by the press. Skipper Tienpont was dismissed, and a new skipper was contracted. Tienpont started and won an arbitration case some 36 hour before the start of the first leg. He rushed back to Alicante and one hour before the start it was announced 'with pleasure' by Akzo Nobel that Tienpont would start the first leg of the Volvo Ocean Race with a minimised crew of six and one crew member borrowed from another team. Although most people would have thought that bringing that boat safely home, and preferably winning the Volvo Ocean Race, is a matter of strategic decision making during the race and tactic team work on board, the Akzo Nobel case proved that group dynamics, within the team

and with the different stakeholders, as well as project constraints such as budgets and time, happened to be essential elements that cannot be overlooked or handled with nonchalance. And after all, the Queen wás coming, in the person of the Spanish King, to wave the teams a goodbye in the port of Alicante.

One could argue, having a hammer in hand, one easily sees nails in this example, but the analogy is striking, and it kept me going to describe the intertwined processes and the challenges to restrain the uncharted river.

This is also a book about my own innovation journey into the development of a PhD-dissertation. The research, and the writings about that research both bear my signature, my handwriting as we say in Dutch. Also literally, as the handwriting font in this book is mine.

Naarden, NL, March 2018

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