

## Benchmarken: hoe kan dat leiden tot verbetering?

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**Publication date**

2016

**Document Version**

Final published version

**Published in**

H2O: tijdschrift voor watervoorziening en waterbeheer

**Citation (APA)**

de Goede, M., Enserink, B., Worm, I., & van der Hoek, J. P. (2016). Benchmarken: hoe kan dat leiden tot verbetering? *H2O: tijdschrift voor watervoorziening en waterbeheer, december*, 16-30.  
[https://issuu.com/h2o-magazine/docs/water\\_matters\\_dec.\\_16/30](https://issuu.com/h2o-magazine/docs/water_matters_dec._16/30)

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Knowledgejournal / Edition 2 / 2016

Dutch drinking water sector

## Benchmarking: How can that lead to improvements?

Since 1997, the performance of Dutch drinking water companies are compared to each other using a benchmark. After a period of much improvement, the process now seems to be stagnating. Why? And what can be done about it?

Drinking water markets are natural monopolies in the Netherlands: there is a single provider in a given area. In such a market monopoly, the average cost of production can be minimized. The risk of a monopoly is that the provider may abuse its exclusive rights of supply, either by increasing the price or reducing the quality. This has negative consequences for consumers. To prevent this from happening and to ensure economic efficiency, public supervision is necessary.

The Dutch drinking water benchmark is an important tool in Government supervision of the Dutch drinking water market.

Benchmarks are conducted in the drinking water sector to gain insight in the performance of drinking water companies. Furthermore, benchmarks present an incentive for improvement for the benchmarked companies. This article provides insight on why companies will improve as a result of a benchmark and provides an answer to three questions:

1. Which mechanisms – resulting from a benchmark, will encourage benchmarked drinking water companies to improve?
2. Do these mechanisms still work sufficiently in the Dutch drinking water benchmark?
3. How can further improvements be stimulated?

The research is based on survey data from the Dutch drinking water benchmark and interviews with directors and benchmark coordinators of seven Dutch drinking water companies. The findings of this study can also be used for benchmarks in other countries and sectors.

### The context

Benchmarks are conducted to gain insight in the performance of water companies. The purpose of a benchmark is to encourage companies to perform better by measuring the performance explicitly. Thus, companies are encouraged to further improve business processes.

The mechanisms originating from a benchmark, which stimulate the benchmarked companies to improve, are called improvement mechanisms. The functioning of these improvement mechanisms is displayed schematically in Figure 1.

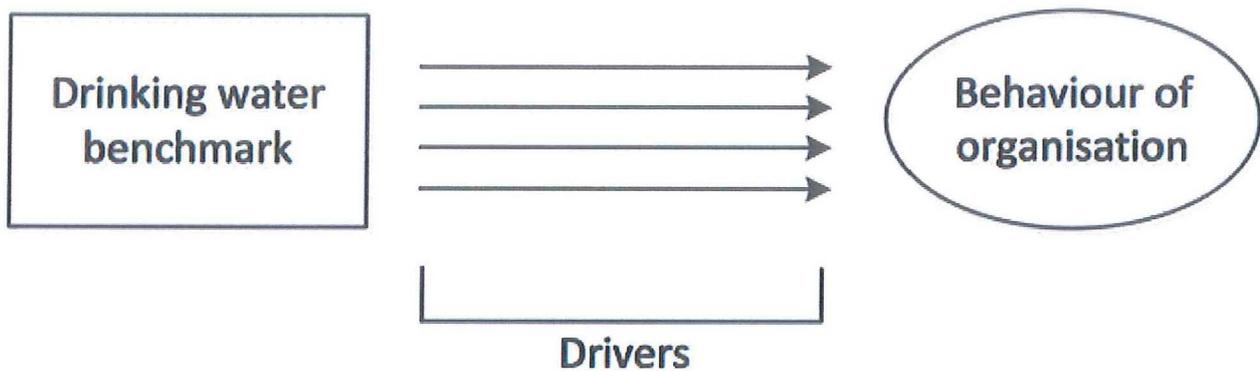


Figure 1 - Drivers for performance improvement

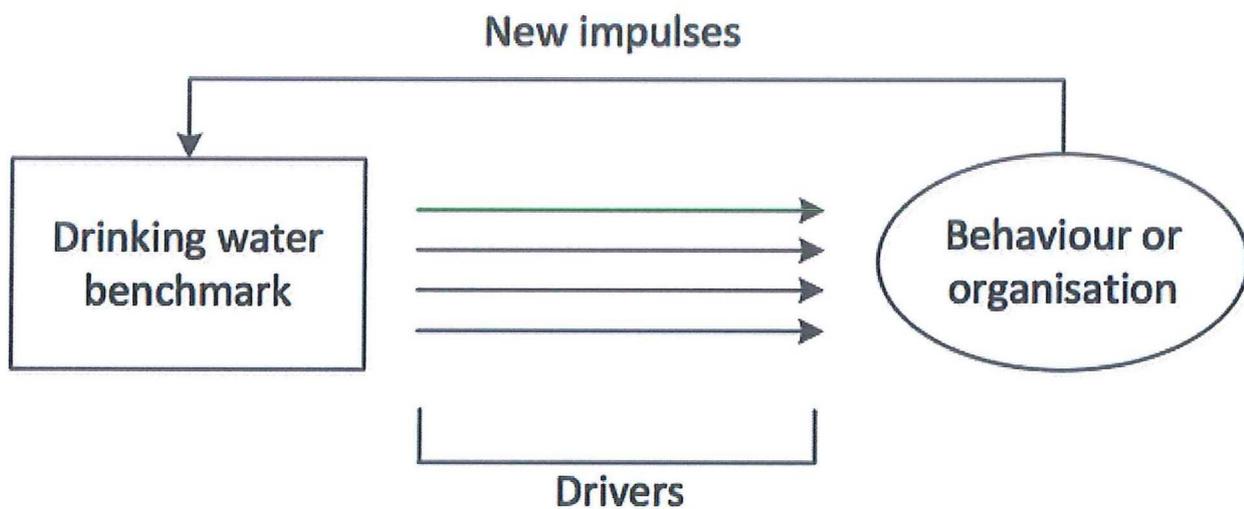


Figure 2 - Drivers for performance improvement with feedback loop

When the improvement mechanisms of a benchmark are known, it is possible to explain the origin of behavioral change, the improvements and any stagnation of further improvements, and to search systematically for new impulses to stimulate further improvements.

This research identifies five improvement mechanisms for drinking water benchmarks. The first improvement mechanism is the **learning effect** of a benchmark. Companies that score low on the benchmark, can learn from high scoring companies. In addition, the **transparency** of the companies increases through benchmarking. Government and consumers gain insight in the performance of the participating companies. Companies are eager to show they perform well; This provides an incentive for improvement. Benchmarking creates an environment of **virtual competition**: companies compete with each other for the top spot in the benchmark. This too is a benchmark improvement mechanism. Fourthly, there is the **fear of further government intervention** at drinking water companies. To prevent this, they want to show they perform well and that more government intervention is not needed. In addition, from a personal sense of honor, directors of drinking water companies would like a high position on the benchmark, this is the fifth and final improvement mechanism, the 'prestige of the company and its Director'.

The benchmark results lead to a change in the behavior of the participating organisations through identified improvement mechanisms. Stagnation of improvement is a sign that the impact of the improvement mechanisms has declined and could be a reason for benchmark adjustment. The improvement mechanisms can also be used as a framework to assess the impact of new design choices for a benchmark, as shown in Figure 2. The influence of the new design choices can be analysed in a structured way, by estimating the effect of these design choices on the improvement

mechanisms.

## Application on the Dutch drinking water benchmark

The Dutch drinking water benchmark was executed for the first time in 1997. The performance of the Dutch water sector has improved since this first edition. The efficiency of the companies in the sector has improved by an average of 35 percent since 1997. It seems improvements as a result of the benchmark has since come to a halt. There are a number of explanations for this.

Firstly, there is less variation between the drinking water companies in the benchmark results. Variation is needed in a benchmark to differentiate between a good and poor performance. If the variation decreases, then so does the differentiating ability between good and bad. The variation has reduced for two reasons. Firstly, there are less Dutch water companies than in 1997 (then 23, now only 10). Secondly, the variation decreased as a result of the drinking water benchmark. Organizations specifically take the initiative to improve, if the benchmark results are low. Therefore, benchmarking often leads to convergence to an average performance level. In addition, drinking water companies believe the remaining variation is to a large extent caused by external factors on which they have no influence. The remaining variation is therefore not seen as an incentive for further improvement.

A second explanation is that participation in the Dutch drinking water benchmark has become mandatory for all Dutch drinking water companies in 2012. The companies themselves consider this a negative development. The benchmark now has two goals; besides an improvement objective, also an accountability objective. If these two goals exist next to each other in a benchmark, organisations can end up focusing too much on showing their performance meets the standard, so the improvement target comes under pressure. If benchmarking becomes mandatory, the chance of unintended consequences increases: This means the measurements become targets and as Goodhart's law states: *When a measure becomes a target, it ceases to be a good measure.*

A third explanation is that the Dutch potable water benchmark has no focus on the future. This does not match the character of drinking water production, where investments often have a depreciation period of 30 to 50 years. A future focus for companies could be included in the benchmark by adding performance indicators, for example for risk analysis, asset management, sustainability and innovation.

The fourth development for further stagnation in improvement as a result of the benchmark, concerns the experienced financial pressure. Innovation can lead to improvements of business processes, but also means you will be exploring uncharted areas. This increases the risk that the results will be less than expected, which in turn can lead to a worse score on the benchmark. Benchmarking thus rewards reproduction of the known and punishes innovation and investments.

As a result of these four developments (less variation, obligatory character of the benchmark, no focus on the future and high financial pressure), the impact of the improvement mechanisms has decreased, and nowadays there is less incentive for improvement from the Dutch drinking water benchmark than before.

Table 1 represents the influence of these four developments on the individual improvement mechanisms.

## New strategies

Due to the aforementioned developments, the incentive for improvement as a result of the benchmark has decreased. However, the improvement mechanisms can also be used to analyse the impact of new strategies in a structured way, by estimating the effect of the strategies on the improvement mechanisms.

Four new strategies are examined in this study. The first alternative is to add new themes to the benchmark, to add variation, this has a positive effect on the improvement mechanisms. This also reduces the focus on finance, because this is being compensated by other important themes. A variation on this first strategy is making the benchmark adaptive. An adaptive benchmark is a benchmark that has the possibility to adjust the benchmarked themes based on changes and expected changes in the context of the Dutch drinking water sector. This has the same advantages as the first alternative; only these benefits are stimulated again and again because the themes constantly change. A third alternative is to increase the number of participants, as for example is done in the European benchmark. Variation increases with more participants, with the additional positive influence on the improvement mechanisms. The fourth and last alternative is the involvement of consumers in determining the benchmarked themes or determining weights for the themes.

Table 2 shows an estimate of the influence of these four new strategies on the improvement mechanisms. This assessment is based on an extrapolation of the findings from the interviews. The table shows that all four new strategies stimulate further improvements. This means that the incentive for improvement following the drinking water benchmark will be increased with the introduction of these strategies.

This research will further focus on two of the four strategies: making the benchmark adaptive and involving consumers in determining the benchmark themes or allocating weights to the benchmarked themes. These two alternatives have the most positive impact on the improvement mechanisms.

## Conclusion

This article identifies the improvement mechanisms resulting from drinking water benchmarks. Using these improvement mechanisms, it is possible to explain improvements as a result of benchmarks. It explains why improvements are currently stagnating, and it creates the possibility to analyse the influence of new strategies on the benchmark in a structured way.

The most promising new strategies for the Dutch drinking water benchmark are the creation of an adaptive benchmark and involving consumers in the benchmarking process. Further research is needed to develop the two proposed strategies. It is expected that these two strategies will create a new incentive for the benchmark, and the improvements as a result of the benchmark will thereby increase.

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Developments	Less variation	Mandatory character	No focus on future	Financial pressure
<b>Improvement mechanisms</b>				
<b>1. Learning effect</b>	--	--	-	--
<b>2. Enhanced transparency</b>	0	--	-	-
<b>3. Managed competition</b>	-	++	0	+
<b>4. Avoidance of negative consequences</b>	-	+	0	0
<b>5. Prestige of the company and its Director</b>	-	+	0	+

Table 1 - Overview of the influence of the developments ‘less variation’, ‘mandatory character’, ‘no focus on future’ and ‘financial pressure’ on the five improvement mechanisms: ++ very positive; + positive; 0 neutral; - negative; -- very negative

New strategies	Add new themes	Make benchmark adaptive	Increase number of participants	Involve consumers
<b>Improvement mechanisms</b>				
<b>1. Learning effect</b>	++	+++	+	+
<b>2. Enhanced transparency</b>	++	+++	+	+++
<b>3. Managed competition</b>	+	+	--	+
<b>4. Avoidance of negative consequences</b>	0	0	0	+
<b>5. Prestige of the company and its Director</b>	+	+	0	+

Table 2 - Overview of the influence of the new impulses on the five improvement mechanisms: ++ very positive; + positive; 0 neutral; - negative; -- very negative

### Summary

Benchmarks are conducted to gain insight in the performance of (drinking water) companies, and form an incentive for improvement. Improvements as a result of a benchmark are the result of improvement mechanisms: learning effects, increased transparency, virtual competition, avoidance of further government interference and the prestige of the Director and the company.

The Dutch drinking water sector has been benchmarked since 1997 and has led to many improvements in the sector. Various developments have resulted in the stagnation of further improvements: the variation on the benchmarked performance indicators have decreased, participation in the benchmark has become mandatory, the benchmark focuses on the past and has no focus on the future and participating organisations experience a high financial pressure.

Four new strategies were examined and the influence of these strategies on the improvement mechanisms has been analysed. The two most promising alternatives are making the benchmark adaptive and involving consumers in the benchmarking process. This increases the impulse for improvement as a result of the drinking water benchmark.

### Literature

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