



Professional article

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# Large-scale perspective as a challenge

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## Abstract:

1. Scale forms a challenge for **chain researchers**: when exactly is something 'large-scale'? What are the underlying factors (e.g. number of parties, data, objects in the chain, complexity) that determine this? It appears to be a **continuum** between small- and large-scale, where positioning on that continuum is **situation dependent**.
2. Scale forms a challenge for **chain professionals and consultants** as well. Large-scale projects require a fundamentally **different approach** than regular, small-scale projects; starting from the principles of **gradualism** and a **good starting place**. **Fallacies of the wrong level** are looming and should be prevented.
3. Because it is difficult to determine whether a situation is large-scale, it is important to make **assumptions** about an information strategy/chain project explicit and test them on both a small- and large-scale scenarios.
4. The theory of **Chain-computerisation** can provide guidance for dealing with scale.

**Keywords:** large-scale, small-scale, gradualism, fallacy of the wrong level

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## 1 Explanation

We all intuitively have an idea of what 'large-scale' entails. It involves things like many parties, large amounts of data, many objects/cases that go through the chain, and complex chain collaboration. However, things become more difficult when asked to distinguish between what is large-scale and what is not. Because at which number of parties, data, chain objects can we say the scale is indeed large? And when is the collaboration complex enough? It seems that there is a continuum from small to large-scale, where the precise positioning on the continuum depends on the situation. In this respect, scale forms a challenge for chain researchers.

If the scale is indeed large, this also has implications for the required approach of chain projects. Large-scale projects require a different approach, much more taking into account gradualism and looking for a 'good place to start'. It is also important to avoid fallacies of the wrong level (cf. Plomp & Grijpink, 2011): do not unthinkingly adopt principles that work well on a small scale at the large-scale level. Not treating a large-scale project as such leads to significant risks of failure. Viewed this way, scale constitutes a major challenge for chain professionals and consultants too.

As long as it is not 100% clear whether the scale is large or not, the motto is: be prepared for anything. Make the assumptions behind an information strategy or chain project explicit and test these on two scenarios: small- and large-scale. Determine whether it is easier to 'scale up' or 'down'.

The theory of Chain-computerisation (Grijpink & Plomp, 2009) can provide guidance on a number of points when it comes to dealing with large-scale situations. Important is e.g. the principle of gradualism: not to change everything at once, but step by step. For example, a plan for a national electronic patient record with which all possible patient data is shared between all parties, while previously there has been hardly any exchange of information, does probably not sufficiently take into account the effects of the large scale. Pilots with collaboration at the regional level (smaller scale!) are generally more successful. These can eventually be scaled up to a larger scale, but sometimes that is not even necessary. A similar situation arises when it comes to sharing data on only one disease (smaller scale!), for example diabetes. This is often easier to realise, because much less information needs to be shared. This means that the system is technically simpler, but mainly that privacy and identity fraud risks are lower.

## 2 Guidelines

1. Assume a large-scale situation, for then at best it will be easy. But:
2. Whenever possible, start at a small scale, which is usually easier.
3. Test assumptions for factual accuracy and look where possible fallacies of the wrong level could be.
4. Researchers/consultants: pose the right question and in the interpretation of the response keep in mind that the respondent probably answers the question having the small-scale situation of his/her daily working environment in mind.
5. Chain workers/consultants: do not simply rely on your standard management tools. On a large scale, planning and budgeting are often different than anticipated.

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**Biographical notes:** Marijn Plomp (1984) is an assistant professor at the Free



University of Amsterdam, The Netherlands, where he teaches and studies information systems in organisations. He received his bachelor's and master's degree in Information Science at Utrecht University, The Netherlands, where he also obtained his PhD for his dissertation on interorganisational information systems. His research focuses on the technological and organisational aspects of chain-computerisation. Marijn has published in several international scientific journals such as *Supply Chain Management: An International Journal*, and *Electronic Markets*. He is managing editor of the scientific section of the *Journal of Chain-computerisation*.

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