

Scenarios for the Spatially Enabled Society

Peter LAARAKKER, The Netherlands

Key words: Spatially Enabled Society, scenarios, strategy

SUMMARY

In 2008 the Netherlands Cadastre, Land Registry and Mapping Agency (further referred to as Kadaster) reviewed its strategy. To get a more open discussion about the possibilities for the development of the organization, it was decided to use the scenario method. Based on two variables, four different future scenarios were produced that each described a possible alternative of the environment in which the organization would have to operate in the future. The two chosen variables were related to the information society and the role of government. It was considered that the information society can develop in an open or a hierarchal way. And the role of the government can be big or restricted. The four resulting scenario's were narrated as: 'Guaranteed Certainty', 'Knowledge is Power', 'Sharing', and 'Knowledge for Sale'. Based on these scenarios the discussion for the new strategic plan took place, both internally as with external stakeholders.

This paper describes the process of the development of the scenario's and the way they were used in the discussion. For each scenario predictions were made for the way data capture, registration, administration, distribution and consultancy could develop. The paper will discuss some of the results also in relation to developments like the introduction of key registers and the growing importance of crowdsourcing.

The paper will also give the result of a literature review on the use of the scenario method and the discussion in literature on how scenarios should be applied. Finally the paper will discuss the usability of the scenario method for the development of ideas about the Spatially Enabled Societies (further referred to as SES).

1. INTRODUCTION

In 2008 Kadaster in the Netherlands reviewed its strategy. To get a more open discussion about the possibilities for the development of the organization, it was decided to use the scenario method. A scenario team comprising of members of Kadaster under the guidance of the hired company Future Consult worked on four future scenarios. These scenarios each offer a perspective on the environment of Kadaster in 2020. In a strategy meeting, the Board of Directors and the five directors made an inventory of the threats and opportunities that the scenarios give for the present activities of Kadaster. The process led to a report that was discussed in a round table meeting with the scientific partners of Kadaster to verify the assumptions made in the report. Chapter 1 to 4 of this paper are based on this report. The report was used in the drafting of the new strategy.

The future is uncertain and unpredictable. This makes the development of strategy and vision particularly complicated. Often organizations develop strategies based on the present or on models that "predict" what the future will look like. This can create a "tunnel vision" that can be dangerous because the future is not only unpredictable but guaranteed different from today. Future scenarios are not predictions of the future, but images of another (future) reality. The scenarios are based on developments that have a high impact on Kadaster, but whose outcome are uncertain. Each of the developed image is radical, but plausible. The scenarios describe possible future environments in which Kadaster must operate, not the future of Kadaster itself. By looking seriously at these different images of the future, one can avoid to be surprised by future developments. The discussion of the functioning of Kadaster in the light of these scenarios provides information about the development potential of Kadaster in the future. Each scenario contains opportunities and threats for the functioning of Kadaster. These opportunities and threats provide clues for vision and strategy. They show which conditions are favorable for Kadaster and what conditions cause problems for the way Kadaster is currently functioning. In this way it is possible to design a robust strategy that uses opportunities as much as possible but takes into account possible threats.

2. FOUR SCENARIOS

The contents of the four future scenarios is based on two fundamental developments in the vicinity of Kadaster, namely 1) the role of government and 2) the development of the information society.

Role of Government

Since its founding in 1832, Kadaster has a government-set task. Initially Kadaster supplied data for the levy of a uniform land tax, later its task shifted more to the promotion of legal certainty. In 2008 approximately 75% percent of the revenue comes directly from that activity.

The current autonomous administrative status stems from the vision that collection, registration and dissemination of property information are public duties, which can be executed on a certain distance from the central government. Kadaster is a public organization that is not financed from general funds, but from service fees. Since independence, however, Kadaster has to deal with political discussions about the room that the organization has to

make its own policies and to execute market activities.

This has to do with the political climate in which sometimes the primacy of the market prevails and then the government takes a strong role. The degree of government involvement in society and the (information) market for Kadaster is an uncertain factor with great impact and therefore an important dimension in the scenarios.

Structure of the Information Society

Kadaster has experienced a strong transition through the introduction of ICT. Kadaster was more than a century specialized in processing and storage of data on paper. Now all these processes are digitized and automated. The processes at Kadaster have changed and these changes will continue.

Information and ICT are the main drivers of the economy in the current era and it is expected that their importance will increase in the coming decenium.

The rapid developments have profound and unpredictable consequences for the way society deals with information. Is information a public good or private good? Who determines the quality of information? How will the balance between publicity and privacy develop? Is access to information a fundamental right, such as education and free movement of goods and persons, or is information a marketable product that is only accessible to who pays? The answers to these questions are of great importance for the structure of the information society and the dynamics of the information.

		Government role	
		Limited	Expanded
Information Society	Hierarchic	Limited market Certainty Guaranteed Govt certifies	Market vs Govt Knowledge is Power Govt in control
	Open	Inform. Market Knowledge for Sale Govt Withdrawn	Inform. Infrastr Sharing together Govt facilitates

Figure 1, Four scenario's (Future Consult 2008)

Figure 1 shows how the scenarios are developing from the two key uncertainties regarding the role of government and the development of the Information Society.

Regarding the role of government the extremes are a limited role or an expanded role. In the limited role the government has retreated as much as possible and is confined to its core tasks of public order, security and justice and leaves the implementation to the market. In case of a expanded role the government tries to influence and control social life and takes a strong

responsibility for implementation. In the second dimension, structure of the information society, the extremes are hierarchical on one side and open on the other. In a hierarchical structure of the information society the quality of information is centrally guaranteed. In an open structure the information is openly accessible without guarantee of quality.

The four quadrants each offer a different perspective on the future environment of Kadaster. In scenario I “Certainty Guaranteed” the information market is dominated by private parties, however, strictly controlled by the government.

In scenario II “Knowledge = Power”, the government has increased its grip on the information society and it uses information for supervision and control of citizens and businesses.

In scenario III “Sharing Together” the government maintains an information infrastructure to make information as much as possible accessible.

In scenario IV “Knowledge for Sale”, the government has transferred the complete information chain to the market.

3. ACTUAL ADDED VALUE KADASTER

In preparation for the discussion of the scenarios it was identified in which fields Kadaster has added value in the actual situation.

This societal added value concerns:

- The country wide and independent registration of 'legal (f)acts' and spatial objects and the provision of information about them.
- Being an information hub for geo-information.
- Providing decision support and process guidance for spatial development.
- Providing international consultancy based on organisational knowledge and own experience.

These items of added value are examined in the light of the four future scenarios. The scenarios can be considered the wind tunnel in which these items of added value are tested on their robustness for the future. Can Kadaster in each of the scenarios deliver the desired added value? What are the opportunities and threats?

Essential features of the current Kadaster are country wide coverage and independence.

These features constitute the "public core" of Kadaster. This "public core" cannot be privatized without endangering the independence and the country wide coverage. In the value chain the independence and country wide coverage are particularly applicable to the links registration and storage. The public nature of these links is reinforced by the high reliability of the executive agency.

In the links registration and storage legal facts are combined with geographic data. This actually means that Kadaster produces an information product from the supplied data. This is the core business of the current Kadaster. In this way registration and storage form the basic infrastructure of Kadaster.

The establishment of legal certainty in real property transactions is also mentioned as a core task of Kadaster. This added value is also produced in the links registration and storage.

The value chain legal facts and geodata within Kadaster can be seen as follows:

- collection

- registration
- storage
- dissemination
- consultancy

In figure 2 the value chain of the current Kadaster is put into a scheme. Especially in the lower parts of the scheme there is also high activity of the private sector.

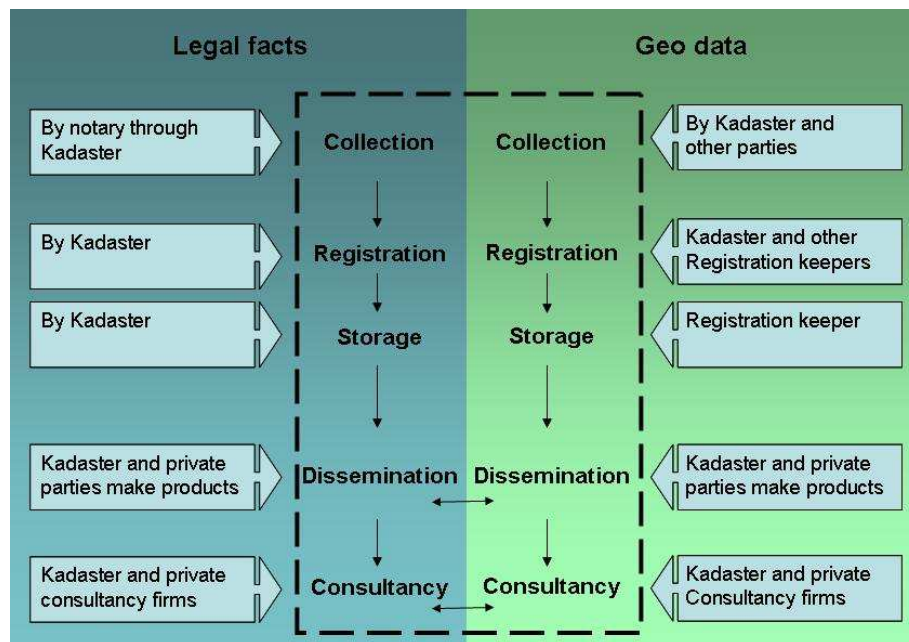


Figure 2 Value chain Kadaster (Future Consult 2008)

4. SUMMARY OF THE DISCUSSION

4.1 Scenario 1 Certainty Guaranteed

The scenario 'Certainty Guaranteed' describes a situation where the government withdraws from its implementing role but keeps control over the market by way of regulations. This scenario is consistent with the increasing risk-aversion in society and the need for independent supervision of the market. In the information market the government will act as certifier. The government wants an authoritative system of registration and therefore applies strict quality requirements for the organization that is involved in registration. Although there is an information market, this market is difficult to access for new players, unless they have already established abroad and can get a certificate easily. Many of the quality standards and protocols are defined at European level.

Key elements of this scenario are:

- The government guarantees the certainty of information by means of certification.
- Country wide coverage is no longer a condition. The government allows multiple parties to

be involved in the registration of deeds and parcels.
- All activities of the current Kadaster will be privatized.

4.2 Scenario 2 Knowledge is Power

The scenario 'Knowledge is Power' is based on current developments. The credit crisis leads already to increasing influence of national governments (under the umbrella of the European Union) in the banking sector. Current trends can lead to a strengthening of the public domain, as counter-movement against the hitherto dominant trend of privatization.

The Kadaster currently operates at the intersection of the public and private domain. In the current Dutch system the Kadaster does not give positive guarantees for the registrations but that task is left to a private party like the notary. In this scenario however the government has the entire chain of registration, storage and dissemination in hands and can guarantee the legal certainty of the registrations.

A third development that is currently playing is the emergence of a parallel private market for real estate information. At Kadaster plays the feeling that it should also go into this market. In this scenario, the separation between public and private is strict and clear: the government is not moving into the private market, but has integrated the total supply chain. A fourth development is that of the emergence of a European real estate market and a associated supra national registration. With the emergence of a European market the balance of power is shifting from the member states to the European Union. Thus a European Kadaster will dome above the national registrations.

Finally, this (European) Kadaster has a role in the detection of real estate fraud. Because Kadaster manages the entire chain and that public duty is legally anchored, people will submit the required information.

The scenario has the following specific features that create different opportunities and pose threats to Kadaster:

- Registration and dissemination of property information is a public task in the hands of a government organization
- There is a publicly managed geo-information node.
- The emergence of a European real estate market and the dominance of the EU towards the member states is reflected in a European Kadaster

4.3 Scenario 3 Sharing Together

The scenario 'Sharing Together' is based on a number of trends that already now are emerging in society. The main developments are: the ever-increasing automation of data processing, the linking of databases and building of a central key register by the government, the setting up of data systems such as the Electronic Patient File and Electronic Child File by the government.

The scenario has the following specific features:

- Collection and management of data is fully automated.
- Converting data into information products is a government responsibility.
- Legal certainty is not the primary task.

4.4 Scenario 4 Knowledge for Sale

The scenario "Knowledge on sale" describes a situation in which the activities of the current Kadaster can be carried out by the market. The scenario is consistent with a development that services that were previously in the public domain were privatized and the development that public tasks are carried out by the market. The scenario suggests the most

extreme variant: full privatization. In addition the trend is recognized that various private parties are marketing geo-information and like to use the data from Kadaster. We also see that in a short time several new location-based services are developed and over the internet and mobile telephony are offered. Google Earth and TomTom are the examples. The scenario has the following specific features:

- Privatisation of public services such as Kadaster.
- Strong development of the private market for geographic information.

5. SOME POINTS OF DISCUSSION

5.1 Maintainance of the scenarios

The scenarios were developed in 2008 and the report was one of the building bricks for the development of the strategic plan 2009-2013. Recently an assesment was made whether the assumptions on the trends that formed the basis for the scenarios are still valid.

The assesment showed a trend to a more open information society. Open data policy of the government is getting momentum. Social networks and crowdsourcing are making more and more information generally accesible. But there are also contrary developments like the introduction of key registers that give high authoritativity to a large number of government data sets and the increasing government worries about the robustness and savety of the ICT infrastructure and the related measures.

The role of the government in the Netherlands is overall considered to be decreasing. The actual government has a strong policy to reduce government involvement and to strengten the private sector. Decentralisation is continuing. But also in this case there are contrary movements like the increased government involvement in the financial sector but also in the geo-information sector through the INSPIRE guideline.

The results of this assesment will be used in the draft of the new 5-year strategy 2012-2016

5.2 Different scenario approaches

Scenarios exist in many different appearances. Dammers (2000) categorizes scenarios in a number of ways:

Production time:

- large scale (3-5 years)
- small scale (1 week to 1 year)
- instant scenario (less than a week, merely for training purposes)

Wideness of the theme:

- sectoral
- multi sectoral

Level of aggregation:

- micro
- meso
- macro

Kadaster used the approach to define four scenarios for the environment in which Kadaster could possibly have to operate in the future. In this method the environment is considered to be inalterable and the organisation has to react to it. So the environment scenarios were starting point for the discussion on the future of Kadaster which lead to four goal scenario's that described how the organisation could look like in those environments. Tevis (2010) pleads for a more goal-oriented approach. In his vision an organisation should start with making an ideal design of its planned future. After that environmental scenario's are made which are merely used to execute a kind of stress test on the ideal design. In that way for each scenario possible measures can be designed to "change" the future in such a way that the ideal design can be achieved.

When applying the scenario method it is important to consider which type of approach will be used. Especially the last mentioned choice deserves careful consideration.

5.3 Scenarios for the Spatially Enabled Society?

Aims of the "FIG-Task Force on Spatially Enabled Societies" is to come up with a definition of SES and to support the surveying profession to become aware of the issues linked to SES in order to provide the appropriate services. (Steudler 2011)

SES is not a goal in itself. In literature the establishment of a SES is always put in the light of realising sustainable development goals which can be specified further in economic, environmental and societal goals. But are these sets of goals articulate enough to be able to have the right discussion on the type of SES that we need to realise these objectives? Van Egmond (2011) connects the concept of sustainability to the value orientations in society. He made an overview of value orientations and structured them based on two axes idealistic-materialistic and collective-individual (figure 3). In his reasoning sustainability has a different shape in each of the quadrants of the graph.

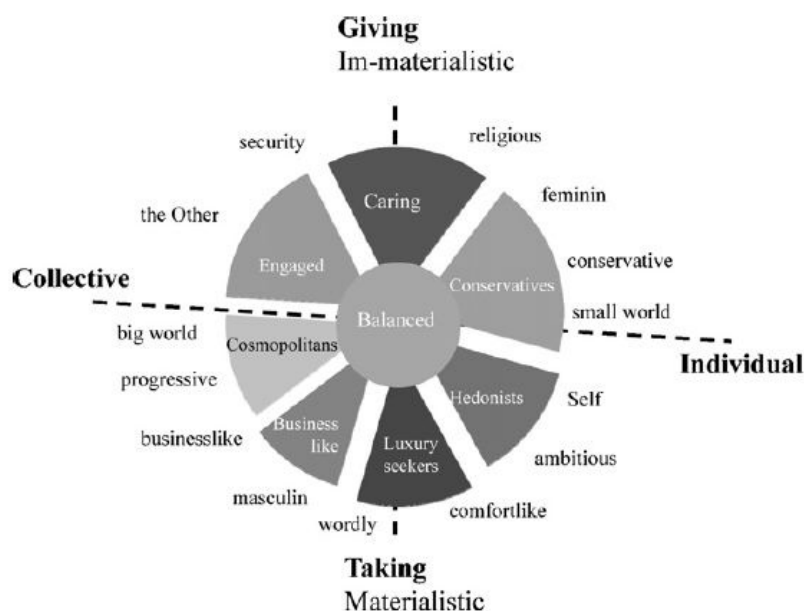


Figure 3, Value orientations in society (Van Egmond 2011)

Does that mean that the Spatially Enabled Society that has to support the realisation of sustainable development goals also has a different shape depending on the value orientation in society? Many issues that are discussed in the framework of SES can also be viewed at from a perspective of value orientation. Societies that have a more collective orientation will look differently at issues like open data, privacy, crowdsourcing or the acknowledgement of traditional rights, to name a view items, than societies with a more individualistic orientation. The same is valid for the axis materialistic/idealistic. Is SES mainly meant to economic growth or play cultural and environmental issues a dominant role also?

Cultural and socio economic differences in the background of the participants to the discussion on SES can hinder the possibility to come to a joint conclusion on SES. The scenario method gives a possibility to give room to these differences and describe a SES more in the context in which it has to operate. This might have added value to the discussion on SES.

6. CONCLUSION

When trying to define Spatially Enabled Society it might be fruitful to take into account the value orientations that can exist in different societies because the sustainable development goals that are supposed to be supported by the Spatially Enabled Society will have different accents. The scenario method has proven useful to Kadaster to have a more open view on possible futures. It should be investigated further whether this scenario method can also have added value for the development of the definition of the Spatially Enabled Society.

REFERENCES

- Dammers, E., (2000), *Leren van de toekomst (Learning from the future)*, *Eburon Delft Futureconsult* (Van Alphen, H., Nekkers, J.), (2008), *Toekomstscenario's voor het Kadaster (Future scenario's for Kadaster)*, *Internal Kadaster document*
- Stuedler, D., (2011), *FIG Task Force on Spatially Enabled Societies*, *Proceedings FIG Working Week Marrakech*
- Tevis, R.E., (2010), *Creating the future: Goal-oriented Scenario Planning*, *Futures 42*, page 337-344
- Van Egmond, N.D., De Vries, H.J.M., (2011), *Sustainability: The search for the integral worldview*, *Futures 43*, page 853-867

BIOGRAPHICAL NOTES

<http://nl.linkedin.com/pub/peter-laarakker/8/367/4a5>

CONTACTS

Peter Laarakker
Cadastre, Land Registry and Mapping Agency
POBox 9046
7300GH Apeldoorn
The Netherlands
Tel. +31 6 52481604
Email: peter.laarakker@kadaster.nl
Web site: www.kadaster.nl