Scenario building for e-government in 2020

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ABSTRACT
Many European Union (EU) Member States have revised their strategies for public sector modernization and transformation of e-government to meet the objectives of the EU. Yet these strategies and activities often focus on the short or mid-term and there is no clear on the future of e-government. The eGovRTD2020 project aims at sketching e-government in 2020 and identifying future strategic research fields. In this project views on the future of e-government were derived by applying the scenario building technique. This is a technique aimed at stimulating different perspectives and images on the future. In our research we define scenarios as internally consistent, mutually different and plausible stories about a possible future. In total 29 scenarios were developed in 7 regional workshops. These were analyzed to derive a final set of 8 scenarios describing e-government in 2020.

Categories and Subject Descriptors
K.4.1 [**Computers and society**]: *Public Policy Issues* K.4.3 [**Organizational Impacts**]: *Reengineering.*

General Terms
Management, Measurement, Documentation, Performance, Design.

Keywords
Futures research, Forecasting, Roadmapping, scenario-building method, e-government.

1. INTRODUCTION
E-government research requires careful planning if the maximum value is to be obtained from the investment. Many current initiatives are aimed at solving problems occurring at the short term [1]. Furthermore the research activities within the European Union are fragmented over many countries and areas. In order to improve the effectiveness of future research more insight into the possible future is needed. In respect to e-government, one also has to bear in mind that the area is multidisciplinary and is shaped by many distinct aspects of research and development [10]. Scenarios are a way to describe alternative futures in distinct dimensions. The approach was used in corporate strategy for the first time during the 1950s [9].

Scenario building is a technique to stimulate different perspectives and images on the future. This technique allows to better predict the evolution of a certain domain beyond short-term forecasting. While forecasting predicts the near future based on the extrapolation of past and current developments, scenario building cuts off the past and requires us to look solely into the future. Figure 1 shows that certain developments will continue for some time into the future (the single dashed line). From this point onwards, scenarios need to be used to explore the future.

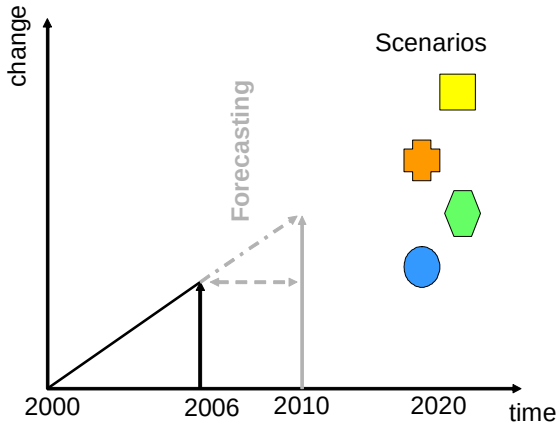

Figure 1. Overall methodology (based on [2])

The use of scenarios within both commercial and non-commercial organizations received a significant boost in the 1970s when Shell was able to anticipate the oil-crisis for the oil-industry by using scenarios [9]. Together with the Rand Corporation they turned simple 'what if' exercises as common practice within the militaries into a fully-fledged futures research method [3, 4, 7]. There are many different methods of scenario development [e.g. 2, 4, 8]. Creativity and the involvement of sometimes conflicting subjective opinions by (possibly biased) humans are important ingredients of all scenario-methods.

2. SCENARIO BUILDING METHODOLOGY
For the overall scenario methodology of e-government research we used workshops, which is commonly used in futures research [4, 5, 7]. The method used in the eGovRTD2020 workshops is shown in figure 2. Participants were grouped in three to six participants to discuss and describe potential futures of governments based on a holistic understanding of e-government (cf. left side of the figure) thereby using a predefined template. Thereafter, all participants came together to present their scenarios and to discuss them with the others. After the scenario discussion in the plenum, a final round of identifying and

categorizing scenario dimensions was carried out. In this activity the dimensions were assessed for both high and low impact and likelihood using the matrix shown at the bottom right of figure 2.

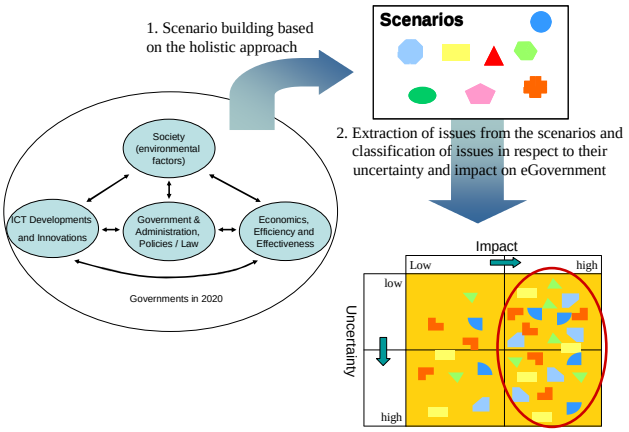

Figure 2. Scenario building methodology within the eGovRTD2020 project

The novelty of the approach comes from analyzing the scenarios conducted in the workshop and aggregating them into a final set of scenarios. The purpose of this is to end up with only a limited number of scenarios which can be easier communicated. The seven regional workshops resulted in 29 different scenarios - all capturing different types of issues. The scenarios were constructed *bottom-up* and are heterogeneous as they contain many different issues on a global, regional and national level. However, also similar and overlapping issues were mentioned. Therefore, each scenario was properly analyzed to extract the number of issues it embodied. In this way the main issues resulting in various futures were derived and the final set of scenarios was constructed *top-down*. The main issues were clustered in three variables resulting in a final set of scenarios. To avoid that regional differences were lost, all issues mentioned in the regional scenario-building workshops were included in the comprehensive descriptions of the final scenarios.

3. PROJECT RESULTS

In total 140 participants attended 7 scenario building workshops held in various parts of the world to capture regional differences.

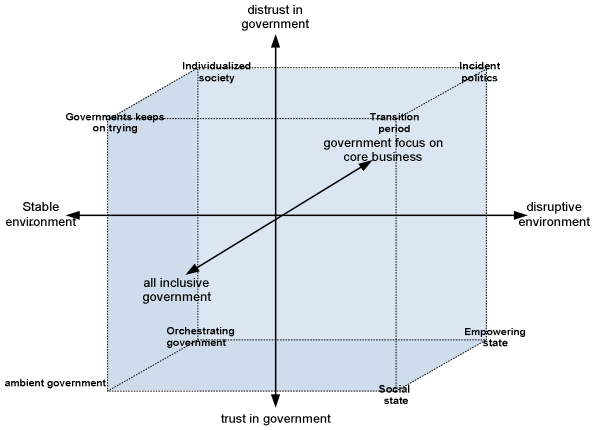

Figure 3. Final set of scenarios

During the workshops in total 29 different scenarios were generated and 159 dimensions impacting different futures were identified. The dimensions correlating with each other were merged into three key dimensions: environment, attitude toward government (trust) and the scope of government (service provision). The three dimensions result in 2*2*2 = 8 scenarios. Figure 3 shows a 3-dimensional picture of the three axes and top down constructed scenarios with their names in every corner. The scenario names are as much as possible based on the names derived in the regional workshops.

Further details of the 29 scenarios of the regional workshops as well as the final 8 scenarios are available online (see the deliverable 2.1 at the project's website: www.egovrtd2020.org).

4. ACKNOWLEDGMENTS

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