CHALLENGING FUTURES

“How can scenarios help to cope with uncertainties?”

A handbook for applying the scenario analysis method for innovation agencies
Challenging futures
“How can scenarios help to cope with uncertainties?”
A handbook for applying the scenario analysis method in innovation agencies

Arjen Goetheer
Jeroen Heijs
Jan Peter Oelen

The Hague, December 2010

Contact person: Jeroen Heijs, NL Agency: jeroen.heijs@agentschapnl.nl
INDEX

Index .................................................................................................................................. 3
Preface ................................................................................................................................ 4
1. Taskforce ..................................................................................................................... 5
   1.1 Introduction ............................................................................................................ 5
   1.2 Aim ......................................................................................................................... 6
   1.3 Approach ............................................................................................................... 6
   1.4 Organisation .......................................................................................................... 7
2. Scenario analysis Method ............................................................................................. 8
   2.1 Introduction ............................................................................................................ 8
   2.2 What is scenario analysis? ..................................................................................... 8
   2.3 Eight steps in scenario development ..................................................................... 9
      2.3.1 Determining the purpose and the scope of the analysis ................................ 9
      2.3.2 Gathering existing scenario analyses ............................................................ 11
      2.3.3 Identifying and analysing trends .................................................................... 11
      2.3.4 Selecting the critical uncertainties ................................................................. 13
      2.3.5 Experiencing the scenarios ............................................................................. 14
      2.3.6 Building scenarios ........................................................................................ 15
      2.3.7 Generating strategic options .......................................................................... 16
      2.3.8 Use of scenarios ............................................................................................ 17
3. Conclusions and recommendations .............................................................................. 18
   3.1 Conclusions ........................................................................................................... 18
   3.2 Recommendations ............................................................................................... 18
Annex A: Literature ........................................................................................................... 19
Annex B: Identified Trends ............................................................................................... 20
Annex C: Description of the two selected critical uncertainties for the agency 2020 project ........ 21
PREFACE

Predicting the future is impossible due to the many uncertainties and contingencies. Who could for example, predict that in 2010 the future of the euro would be seriously discussed?

However, it is possible from the present to outline future realities based on trends and developments. Not only the future of the euro is uncertain. The financial crisis in 2008 and the subsequent economic crisis also affected innovation agencies. How to cope with declining private R&D budgets and declining budgets for innovation funding? How the future of innovation agencies in 2020 looks became topical. This question was first discussed in the spring of 2010 by the TAFTIE Taskforce Agency 2020. The purpose of the Taskforce was to develop a method that could provide insight into developments and trends that impact the strategy of innovation agencies.

This handbook is one of the results of this project and describes the methodology as applied by the Taskforce. The handbook is primarily written for staff members of TAFTIE agencies, but is also suitable for other people interested in scenario analysis. The handbook contains a customized approach for agencies with the steps that can be used to perform scenario analysis. We also included practical examples and exercises. Hopefully, the handbook offers inspiration and practical guidelines for those who want to apply this methodology in their agency and with the insights of possible futures improve and accelerate innovation.

Jeroen Heijs
Chair of the TAFTIE Taskforce Agency 2020
1. TASKFORCE

1.1 Introduction

In October 2009 the TAFTIE Academy organized a workshop on ‘Managing Agencies in times of recession’. TAFTIE Board Members and (senior) strategic management of the Agencies of 10 agencies participated in the workshop about implications of the financial and economic crisis on the budgets and (thus) on future activities of the agencies.

The direction of the implications due to the crisis is hard to foresee. In the workshop some possible implications were identified:

- **Managing decrease**: in the last decade most agencies saw a rapid growth in budgets, activities and staff. Much of our attention was on managing the growth. Now we most probably face a period of decline in budgets and staff. What does this mean for the agencies activities? What are our core activities: where do we really add value? Is it in efficient handling of government budgets or is it in organizing networks that effectively stimulate innovation? If we must reduce staff, what are our core functions or ‘unique selling points’? Can we outsource other functions?

- **Society and innovation**: there is a big debate going on, on the impact of innovation on societal problems such as ageing, safety, care, sustainability and education. Is this debate going in the right direction? What can the agencies contribute to that?

- **Non-technical innovation**: are technological bottlenecks the main bottlenecks in innovation processes? Should we be more willing to support non-technical innovation, and take a bigger risk of interfering in the market?

- **Changing instruments**: now venture capitalists are less willing to take (technological) risks; should agencies be more active in the field of venture capital, soft loans and guarantees?

- **Project portfolio**: should agencies be more willing to accept more risky projects?

The overall conclusion of the workshop was that these questions were urgent and they should be addressed. The changes to come will have a permanent character and will lead to a new phase in the development of innovation agencies. A look in the future is needed to define what an agency should be 10 years from now: **Agency 2020**.

Some of the questions were already discussed by the **Smart Agency Network**. This network was asked to elaborate on the discussion in the workshop and develop an approach or how to proceed on this. In
December 2009 the TAFTIE Board discussed the ideas of the Network. In February 2010 the Executive Working Group (EWG) agreed on the proposed roadmap and the ideas for developing scenarios.

1.2 Aim

The aim of the TAFTIE Taskforce Agency 2020 is to develop a method for TAFTIE Agency’s Top management to understand drivers for future developments and trends and to reflect on the meaning and the effects of this on their organisational strategy.

For this the main drivers will be analysed and some possible future scenarios will be conducted. Scenarios can help agencies in thinking through different possibilities and their strategic options. In the development of the scenarios both general developments (like the world economy or future EU-policies) as well as national developments (like the balance between national and regional policies) will be taken into account. Examples of scenarios might be:

- A worldwide economic upswing with declining R&D-budgets;
- A worldwide economic upswing with strong R&D off-shoring trends;
- Strong development of EU-policies and shrinking national budgets;
- Slowing down of EU-policies and rising national budgets.

The following specific questions will be answered with the project:

1. What are the main developments and trends that have an impact on the future of agencies?
2. Which scenarios are likely for agencies in 2020?
3. Which impact do these scenarios have on agencies?
4. What are strategic options for agencies to cope with the scenarios identified?
5. How can the outcomes be used by agencies?

1.3 Approach

The objective of TAFTIE task forces has traditionally been to deliver final reports to the EWG or the Board on subjects of interest and relevance to the TAFTIE agencies. However, experiences of scenario development, foresights, etc. show that the key to success related to scenario, foresight and forecast exercises lies in the process itself. A report on future related exercises has very limited impact compared to the impact of participation and involvement in the process. Hence, having a report-based approach is not recommended. Instead, Agency 2020 will be formed as a series of workshops involving strategists from the TAFTIE agencies. Besides the involvement of strategists, the project’s outcomes
are both scenarios as well as a starting point for each agency to develop specific scenarios for their own future.

The first workshop, held on May 17th and 18th in Berlin, was the kick-off of the project. The aims of this workshop were: defining the scope of the scenario analysis; collecting strategic challenges of agencies; collection of global and innovation trends; selection of axes for framework scenarios; and collection of elements for scenario stories. In preparation of this workshop (global) foresight studies were gathered and additional scenario analyses were shared between the participants.

The second workshop was held on September 20th and 21st. The aims of this workshop were testing and determining scenario stories; generation of strategic implications of scenarios for agencies; and testing and determining scenario methods. The final aim of this second workshop was to develop and describe the method, by which TAFTIE agencies can build their own specific scenarios to reflect the meaning and the effects of this on their organisational strategy.

Both workshops were facilitated by a moderator.

1.4 Organisation

The Taskforce was chaired by Jeroen Heijs (NL Innovation). In total participants from 11 Agencies were involved in the Taskforce. The participants are:
Berenika Marciniec (PARP), Erna Wenche Østrem and Paul Bencze (NRC), Deniz Bahhan (TTGV), Kari Komulainen (TEKES), Madis Võõras (EE), Nathalie Delorme (OSEO), Leo van de Loock (IWT), Søren Jensen (DASTI), Leonhard Joergh and Mariana Karepova (FFG), Kjell Hakan Närfelt (VINNOVA), and Arjen Goetheer (NL Innovation). Jan Peter Oelen (NL Innovation) was involved as facilitator.
2. SCENARIO ANALYSIS METHOD

2.1 Introduction

This chapter focuses on the methodology of scenario analysis. Firstly, we will describe what scenario analysis means and when this method can be applied. Secondly, we describe a customized scenario method for innovation agencies, based on the experiences of the Taskforce. In paragraph 3 the eight steps that can be followed to put the method in practice are set out. For each step, some practical examples are included.

2.2 What is scenario analysis?

Scenario thinking is a methodology for strategy development that is particularly suitable for organizations (in a turbulent environment) who face complex and risky strategic choices. Risky means that a wrong choice can lead to bankruptcy. Examples of companies with years of experience with the use of scenarios in strategy development are General Electric and Shell. Both these companies have applied scenario thinking since the seventies of last century. Scenario analysis is also applied by governments for policy development, such as macro-economic outlooks. In addition, scenario planning is often used by military organizations for strategic and tactical options mapping.

<table>
<thead>
<tr>
<th>Scenario analysis at General Electric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power company General Electric had in the '70s one of the world’s most comprehensive and advanced methodologies for strategy development. However, the methodology lacked anticipation of unexpected events. For example, the company's strategy did not include the possibility of the oil crises of the 70s. So, after the first oil crisis, which hit the company hard, in collaboration with Shell, a pioneer in the field of scenario analysis, the strategy reviewed by the strategic planning also includes uncertainties regarding the future.</td>
</tr>
</tbody>
</table>

Many of the regular methods of strategy development adopt the assumption that the world in 3-10 years will not significantly differ from the present one, and that the organization has a great influence to its relevant environment. Scenario thinking assumes however that the (near and distant) future may differ materially from the present. Another basic idea of scenario planners is that predicting the future is impossible. Organizations would do well to map some of those possible futures. Next, one must examine the opportunities and threats for the organization in different worlds. Scientist Peter Schwartz calls this scenario "Rehearsing for the future".
As mentioned before, predicting the future is impossible. Future scenarios are stories that outline how reality itself develops from the present into the future, and what the future reality looks like.

Future scenarios are plausible stories. They are not surrealistic visions or science fiction. The scenarios can in principle become reality, because they outline a possible course of development, and are reproducible from the present to the future. For this reason, scenarios need to be based on the deeper patterns of thinking throughout the organization, and are only useful when they reflect a probable picture of the organization with which all employees can identify themselves.

Scenarios can be used for various purposes. Examples include:

- Developing a robust strategy (or product's).
- Generation of exciting ideas for products, services and competencies.
- Moving a dialogue that is stuck forward.
- The setting of risk management guidelines (what if scenarios) and Business Intelligence feature sets.
- Learning and thus better understanding future core competencies of organizations or function groups and knowledge strategy.

### 2.3 Eight steps in scenario development

The scenario process involves several steps: from the identification of trends, the development of scenarios to the examination of the implications of different future scenarios. Scenario routes can vary from a single workshop in which the steps are completed at high speed, or a management process that can last several years. The emphasis in the description lies in what happens in the different steps. The main analysis tools, techniques and creative brainstorming methods are briefly described. The steps will be discussed in chronological order.

#### 2.3.1 Determining the purpose and the scope of the analysis

Before a scenario analysis project is started, it is important to define the aims and the scope of the scenario process. There are roughly four different purposes for which a scenario analysis can be used. Scenarios can be used as a planning tool or as a learning tool. They can be used to innovate or to evaluate.

When scenario thinking is used as a planning tool the process is focussed at preparing strategic choices and decisions. Here, the process serves the results. Scenarios used as a learning tool are used to
stimulate processes of thinking, reflection and collective learning. The scenarios are used here to jointly develop new images of the future, and to develop new plans. In this case, the process is often more important than the result.

When scenarios are used for innovation, the aim is to develop new business and new policies. The focus is on the identification of opportunities for the future. The future scenarios are used as design studios that inspire people to develop creative ideas. Scenarios can also be used for evaluation: how does the current policy relate to the future? The scenarios form a testing environment for policy. What are the threats? How robust is the current business or existing policies in light of the (expected) future?

The combination of these dimensions gives four possible objectives for a project scenario:
- exploring or designing new business or new policies;
- exploring or designing new paradigms or new assumptions;
- testing existing assumptions or reviewing the existing paradigm;
- testing existing the developed strategic policy choices or policies.

**Figure 1: Overview of aims of scenario analysis**

![Diagram showing the four possible objectives for a project scenario:](image)

- **Aim: exploring new choices and assumptions**
  - Exploring new business or new policy
  - Exploring new paradigms or new assumptions

- **Aim: preparation of strategic choices**
  - Testing of existing choices or policy
  - Testing of existing assumptions or paradigms

- **Aim: thinking and contemplation**
  - Scenario as innovation tool
  - Scenario as planning tool
  - Scenario as learning tool
  - Scenario as evaluation tool
These objectives may overlap. In practice, the dividing lines between different applications is therefore not very sharp.

Besides the objective of the analysis, defining the scope is of great importance. In an analysis with a scope of 10 years, the futures generally have a much greater resemblance to the present, then if a scope of 40 years is chosen. This is because many trends are already visible and for many trends there is often insight into the possible direction. The uncertainty and impact of trends in a period of 10 years can be estimated more precisely than for over 40 years.

2.3.2 Gathering existing scenario analyses

In the recent years, many large organizations in the profit and non-profit sectors have started expanded scenario projects in which past, present and possible future developments of demographic, ecological, social, technological, economic and political trends (the so-called DESTEP trends) were analyzed. Because performing a trend analysis and the development of a scenario set needs much expertise and is time consuming, gathering all existing scenario analysis gives a good starting point. By doing this it is possible, in a relatively short time, to build a high quality and reliable overview of trends. Also, the already developed scenario sets can often be reused and quite simply adapted to the desired specific context.

Annex A gives examples of scenario analysis of companies and governments.

Scenarios by the Global Scenario Group

The Global Scenario Group was convened in 1995 by the Tellus Institute and Stockholm Environment Institute to engage a distinguished and diverse international group in an examination of the prospects for world development in the twenty-first century. In the years since, numerous global, regional, and national studies have relied on the GSG’s scenario framework and quantitative analysis. The Global Scenario Group synthesized its findings for a non-technical audience in ‘Great Transition: The Promise and Lure of the Times’. The essay describes the historic roots, current dynamics, future perils, and alternative pathways for world development. It advances a Great Transition as the preferred route, identifying strategies, change agents, and values shifts for a new global agenda.

2.3.3 Identifying and analysing trends

The third step aims to identify, define and analyze the relevant trends in the non-influenceable environment. Trends are developments that are already visible for some time, and are relevant if is expected that they also play a role in the coming years. The purpose of identifying and analyzing
trends is determining the impact and uncertainty and defining building blocks that need to be present in the scenarios. The core of this phase consists of a workshop from 4 to 16 hours.

Input is the trend analysis of already conducted scenario analyses collected in step 2. The collected trends can be classified into the DESTEP dimensions. Supplementation with specific trends happens in a workshop with a cross section of the organization. If necessary, the group can be supplemented with external expertise on trends (dimensions) for which no knowledge is present in the organization.

Homework assignment to collect organisation specific trends
Before the workshop, based on already known scenario analyses, an overview can be made of relevant trends. This overview can be supplemented in a simple way by asking workshop participants trends they are aware of. Many trends are already visible in daily practice. In addition, the input of the participants gives insights into trends that are specific to the organization. As preparation for the kick-off workshop for the Agency 2020 project the following two questions were put to the participants:

1. What are the most important strategic choices for your agency in the coming years?
2. What are the most important trends you see for your agency? For answering this question please use the sub questions below.
   a. Name and a short description of the trend
   b. Drivers of the trend: what makes the trend possible?
   c. Consequences of the trend for society
   d. Consequences of the trend for the agency

The workshop begins with a brief presentation of the trends already collected. In the presentation the emphasis is on the description of the trends, their drivers, the potential developments, and sometimes the consequences for society. Then the participants will be divided into subgroups and be guided to answer the following questions: will the trend increase or decrease, what are the consequences for demand, supply and organization, and what are the vacant questions about the trend. The results of the subgroups will be discussed in a plenary meeting and tightened.

Annex B contains an overview of trends based on existing scenario analysis that were collected before the workshop in Berlin. During the kick-off workshop in Berlin this overview was supplemented by the Task Force members with missing trends.
2.3.4 Selecting the critical uncertainties

When all trends are identified and their development has been established and analyzed, the fourth step follows: selecting the most uncertain trends in their direction of development, and which have the biggest impact on the future of the organization. Trends with a high uncertainty and high impact, are the so-called critical uncertainties. These trends are difficult to predict and could develop in an opposite direction. The goal is to define a limited number of trends, preferably two, which together form the axes of the scenario set. The core of this phase consists of a workshop from 4 to 16 hours.

**Figure 2: Two examples of critical uncertainties**

In the Agency 2020 project the following two trends came up as a critical uncertainty: both have a high uncertainty in the direction of their development and a high impact on business innovation:

- **Process of globalisation**: slowing down versus high speed
  - Slowing down
  - High speed

- **Consumer behaviour**: fragmentation versus harmonisation
  - Fragmentation
  - Harmonisation

Starting point for this step are the trends identified and analyzed in step 3. To bring down the large number of trends to a manageable number, the workshop is started in a plenary discussion with a clustering of trends with related content or clustering trends that have a common driver. Subsequently, participants are asked to score the remaining trends on two aspects: uncertainty regarding the direction the trend will develop and the magnitude of their impact. The results of the individual scores are added, and the results to the group are presented and discussed. Ideally there will be two or three critical uncertainties which score high on both aspects.
Another possibility for the selection of critical uncertainties is the use of critical uncertainties from other scenario studies. This step is less time consuming than the above described workshop. The procedure is as follows. First, consider what scenarios have been made in the past 5 years in countries, (the EU or the U.S.) which are similar to the subject of the analysis in question. The relevant scenarios are then examined to the trends used in the scenarios. When 80% of these trends match usually they match to the critical uncertainties used. Incidentally, also relevant scenarios that are made for different sectors or themes could be useful to indentify relevant critical uncertainties.

Annex C contains the description of the two selected critical uncertainties for the Agency 2020 project.

2.3.5 Experiencing the scenarios

When the critical uncertainties have been selected, the axes for the scenarios can be defined and the four scenarios can be developed. The development of the scenarios starts with experiencing the scenarios. The aim of experiencing is that the scenarios come to life for the participants. Participants need to understand the essence of the scenarios and understand and feel the differences between the scenarios. The best form to expercience the scenarios is in the form of a workshop. The workshop lasts 2 to 4 hours.

For experiencing the chosen scenarios, the group is divided into subgroups, and each subgroup works on one or two scenarios. The subgroup is asked to prepare a short presentation of the scenarios (5 to a maximum of 10 minutes per scenario for each scenario). As presentation format the groups can make a 'normal' PowerPoint presentation, or a collage of photographs, newspaper headlines, a fairy tale, or role playing (“Day in the Life of” or a news show). Besides making a short presentation for each scenario, the subgroups are given the task to prepare short scenario scripts for each scenario.

Scenario scripts can be short stories be which the world of the scenario is described in a colourful way, from the perspective of one relevant individual (typical resident, customer, employee) for that scenario (and for the organization). Another option is to ask the subgroups to describe the main characteristics of each scenario. In the case of the Agency 2020 project the subgroups were asked to describe the following three characteristics: the state of the economy (growth, openness, dynamics, competition, etc.), the innovation system (key actors, speed, drivers, etc.) and market failures. Figure 3 shows the results of the brainstorming session included the development of two scenarios.
The results are then presented in a plenary meeting, discussed and tightened.

**Figure 3: Two examples of scenario scripts**

<table>
<thead>
<tr>
<th>Current speed of globalisation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Next Generation Coca Cola</strong></td>
</tr>
<tr>
<td>Economy</td>
</tr>
<tr>
<td>- high dynamics and high competition</td>
</tr>
<tr>
<td>- growth opportunities for SMEs and Multinationals</td>
</tr>
<tr>
<td>- availability of capital and talent</td>
</tr>
<tr>
<td>- mass production</td>
</tr>
<tr>
<td>- economies of scale: emphasis on cost reduction</td>
</tr>
<tr>
<td>- growth or die</td>
</tr>
<tr>
<td>- services for differentiation</td>
</tr>
<tr>
<td>- high economic growth, due to (new) BRIC markets</td>
</tr>
<tr>
<td><strong>Innovation</strong></td>
</tr>
<tr>
<td>- high speed of innovation (technical, business, marketing, etc.)</td>
</tr>
<tr>
<td>- innovation driven by private interests</td>
</tr>
<tr>
<td>- international system of innovation (sectorial)</td>
</tr>
<tr>
<td>- mobility of talent</td>
</tr>
<tr>
<td><strong>Failures</strong></td>
</tr>
<tr>
<td>- high risk on innovation</td>
</tr>
<tr>
<td>- framework regulations</td>
</tr>
<tr>
<td>- (probably) grand challenges</td>
</tr>
<tr>
<td>- education</td>
</tr>
<tr>
<td>- research</td>
</tr>
<tr>
<td>- competitiveness attractiveness</td>
</tr>
</tbody>
</table>

| SME Paradise, and Chaos        |
| Economy                       |
| - high economic growth due to open, easy access global market |
| - opportunities for SMEs & entrepreneurs due to niche markets, also international |
| - dynamic economy, small companies are vital for innovation system, favourable environment for start-ups is important |
| - high mobility of labour: countries/regions competing for skilled workers (tax payers) through living conditions, tax systems, etc. |
| **Innovation**                 |
| - ad hoc cooperation, also on R&D |
| - high speed of innovation and need to quickly grab new business possibilities |
| - strong competition for customers attention in a chaotic market makes knowledge on marketing and design very important + knowledge on spotting the customer base |
| - R&D focused on application |
| **Failures**                   |
| - battle for (venture) capital among start-ups |
| - lack of economies of scale |
| - who will initiate networks, R&D projects, long term research, etc. |
| - the challenge of interoperability and standards become important with large variation of products and services |
| - brain drain |
| - lack overview in SMEs of market development, technology, etc. |

2.3.6 Building scenarios

The scenario scripts with additions and comments are the building blocks for building the actual scenario stories. Because they are generally not very precise relevant developments it is necessary to work these out and to create logical futures. Also, the other trends identified in step 3 should be included. Building the scenarios can be most easily done by a writing team that is appointed to work out a short story (about 1 A4) for all future images.
Important general questions in developing the stories for future images are:

- What are the main opportunities and threats for the industry/organization in this scenario. Systematically, the opportunities and threats for the value chain and competitive strength could be analysed with the help of Porter’s Diamond.
- What are the main influences of the scenarios on demand for services, products, etc.?

**A workshop to test the future images and to generate strategic options**

When the scenario stories are ready, these visions could tested on logic and conceivability by presenting them to a group of people from outside the organization or people not involved in the building process. NL Agency organised a workshop with program managers to discuss the stories developed for the Agency 2020 project. The futures were briefly presented to them. Next, in a plenary session they were asked whether the futures were realistic visions for 2020. The participants were then divided into subgroups with orders to consider the impact for the organization of two opposite scenarios. This task was intended to test the scenarios, and to generate options for the role of the organization in 2020.

### 2.3.7 Generating strategic options

The seventh step in the scenario process is the generation of strategic options. Now the visions are almost ready, the next step is to identify their impact on the organization and decide what would be a robust strategy is to deal with future challenges. Generating strategic options is aimed at identifying opportunities and threats, such as new product ideas, new priorities in programs, to identify potential competitors, or changes in the organization's environment that might affect the organization’s existence. Generating strategic options best takes place in the form of a workshop, which takes about 2 to 4 hours.

To generate strategic options, the participants need to be divided into subgroups. Each group generates options for a scenario. The subgroups are asked to formulate answers the questions below:

- Which existing services (the organization's own, or competitors') are very popular in this scenario?
- What new services fit well in this scenario (which are potential stars and cash cows)?
- Can skills be developed for new services? If so, which?

When the subgroups are finished, each subgroup draws up a list with the five best ideas. The subgroups present their results in a plenary discussion. When tightening the presented ideas, the emphasis is on the degree of innovation and their impact. To conclude the workshop, the results of the
subgroups are put side by side and recommendations for the organization are formulated in the form of:

- Robust options: those options that seem to be a sensible choice in 3 or 4 scenarios.
- Identifying key risks and actions to mitigate risks. The risks are partly due to the fact that the organization in some scenarios may not seem to have a sound portfolio of services, and therefore needs to develop additional services or an ‘early warning system’ to determine when this scenario can become a reality.

Also, the options that have been generated can be tested in a workshop with people who did not participate in the construction process. When this step is selected, experience exercises are needed to get a feeling with scenarios. The goal of this workshop is to test the robustness of the strategic choices.

2.3.8 Use of scenarios

The final stage of many scenario processes is to identify and develop the way the scenario method and the scenarios that have been developed will be used within the organization. At this stage, the following questions need to be answered:

- How can (parts of) the method be integrated into the organization’s strategy process?
- What role do the scenarios play in the development of ideas and decisions on new services and markets?
  How will the scenarios be developed further?
- Do the scenarios affect strategic questions of individual business units?
- What role do scenarios play in the activities of the Business Intelligence Division and the further professionalization of the staff?
- How often will the scenarios be updated?
3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

The future is full of uncertainties. Last year agencies were faced with the financial crisis and the subsequent economic crisis. Besides the uncertainty about the consequences of these crises, there are many other uncertainties. Conducting a scenario analysis has showed to be a very useful and valuable method to gain more insights into future scenarios for agencies. The method brings the key trends in focus, and provides insights in their possible impact on the organization. The methodology of scenario thinking primarily delivers vivid images and conceivable future in which organizations can reflect on and base their strategic choices.

From the scenarios process of the Taskforce Agency 2020 identified two critical uncertainties, both have a high uncertainty and a major impact on the future of innovation agencies. The critical uncertainties are: the pace of the globalization process, and the development of consumer tastes and needs. These two trends are important for agencies to track their development direction is, because they have major implications for their product and service portfolio, and concern organizational aspects of systems, people and budgets.

The scenario process of the Taskforce Agency 2020, in addition to insights into key trends yielded a method that can be applied by individual agencies. The generated future images can be quite simple adjusted for the specific environment of the agency in question. However, because the agencies differ in their role and position, the strategic implications are different.

3.2 Recommendations

With the scenario process extensive experience is gained on how such a path can be established and implemented. The approach offers three recommendations:

1. Because of differences in roles, and positions between agencies, for each individual agency a specific scenario analysis is needed. For building these, the results of the Taskforce Agency 2020 provide a good starting point.
2. Provide a correct representation of expertise in the organization in the workshops. When specific expertise is not involved in the trend analysis, major developments can be overlooked.
3. In developing a robust strategy the concept of added value, as developed by the TAFTIE Taskforce Smart Agencies, provides valuable insights. A workshop within the TAFTIE Academy in which the concepts of value adding and scenario analysis are integrated seem to be worthwhile.
ANNEX A: LITERATURE

Scenarios
  http://www.dni.gov/nic/NIC_2025_project.html
  http://docs.google.com/viewer?a=v&q=cache:GV_hgzuce2MJ:https://ageconsearch.umn.edu/bitstream/59038/2/Popp.pdf+axis+for+scenario+analysis+&hl=nl&gl=nl&pid=bl&srcid=ADGEEShwcRrb7s5MOz--IFy55_2QQBqsdgJb8nK1CNWBwRSsD-gH1OUmips8ceC8Xu18gwnXn_HY3Y9HqfrsnrM3U5vBGsslcXTQqjLoRX_Xwr1qcebu95hUQMtR8qGVHhKwGaiYm&sig=AHIEtbQBsvUt84pGLU8G20hgM9TXIUEw
- Dutch Central Planning Bureau (CPB) (2003). *Four Futures of Europe.*
  http://www.cpb.nl/nl/pub/cpbreeksen/document/38/

Scenario method
ANNEX B: IDENTIFIED TRENDS
ANNEX C: DESCRIPTION OF THE TWO SELECTED CRITICAL UNCERTAINTIES FOR THE AGENCY 2020 PROJECT

‘Harmonisation versus Fragmentation of customer tastes and needs’

Global availability of and the ease of access to information, goods and services, regardless of their origin tends to harmonize cultures, tastes and needs of customers. Best-selling books and movies, top-ranked travel destinations, franchising concepts in food (such as McDonald’s), global fashion brands etc. are all examples of phenomena that travel around the world making the globe “smaller” and customers more alike in tastes and preferences. The globalization by the U.S. of the world is a current example on an ongoing harmonization: Coca-Cola ads clutter the streets of every big city in China, the price of a Big Mac is used as a measure of cost-of-living among many countries, Spiderman accessories are found for kids everywhere.

Harmonization is also supported through standardization of telecommunications, economy frameworks, trade agreements etc which makes the business conditions in different markets similar for both customers and suppliers.

The world is also a place where migration and mobility of people is increasing. This might also become a potential support for harmonization.

This trend might go on or accelerate due to Internet, broadband communication, low-cost travel and a globally digitalized world.

An opposite trend might also proliferate – that of fragmentation of customer tastes and needs. The rationale is as follows: The consumption of products has been suffering from poor or limited ability to match supply and demand mostly through poor distribution techniques.

- A product has to find a given minimal customer base in order to generate a profit and motivate its supply by a retailer. However, each retailer can only generate demand from a limited local population which means that only best-sellers that are attractive to many customers are of interest for a retailer.
- Another constraint is the limitation of the physical world itself. Space in stores is limited, radio spectrum is limited, bandwidth in telecommunication cables is limited etc. To optimize use of these limited physical resources retailers focus on hits or offers that address large audiences.

But most customers want more than hits, best-sellers or trademarks that everybody is wearing. They have other niche tastes and needs which have been difficult to satisfy due the limitations described
above. However, with the emergence of affordable broadband communication and search engines that easily let a customer find information on niche products regardless of where they are offered, a new world arises. This is a world where niche tastes can be satisfied from all corners of the world since customer acquisition cost can be kept low and satisfactory markets can be created by fragments aggregated from all over the globe. For digital goods this will be a revolution since distribution cost becomes extremely low and cost of physical shelves can be avoided. (E.g. all products can be offered through the Internet at the same cost regardless of the size of the audience.)

This opposite trend can also accelerate due to almost the same reasons as harmonization: Internet, broadband communication, low-cost travel and a globally digitalized world.

‘Globalisation at high speed versus globalisation at slower pace’

Globalisation integrates regional economies, societies, and cultures into a globe-spanning network of communication and trade. Globalisation leads to the integration of national economies into the international economy through trade, foreign direct investment, capital flows, migration, and the spread of technology. Also, the increasing transnational circulation of ideas, languages, or popular culture through acculturation is part of this trend. Globalisation is usually recognized as being driven by a combination of economic, technological, socio-cultural and political factors.

It is inevitable that globalisation is an ongoing process; the question is with which pace it will continue. Will globalisation continue with the same pace or even increase, or will it slow down?

It is plausible that globalisation will continue with the same pace, or that it will even increase in speed. The process of globalisation is supported through the promotion of free trade with the elimination of tariffs and with creation of free trade zones with small or no tariffs, reduced transportation costs especially resulting from development of containerization for ocean shipping, reduction or elimination of capital controls, reduction, elimination, or harmonization of subsidies for local businesses, creation of subsidies for global corporations, harmonization of intellectual property laws across the majority of states, and supranational recognition of intellectual property restrictions (e.g. patents granted by China would be recognized in the United States). The increased mobility of people through low cost travel increases international tourism, and the ICT-revolution accelerates the mobility of information, and knowledge.

Globalisation has generated significant opposition which could lead to a slow down of the process of international integration of economies, societies, cultures, etc. Opposition is supported by growing concerns that globalisation has increased inequality and environmental degradation. For example, in
some Western countries globalisation has eaten away at their competitive edge in industry and agriculture, and lowered the quality of life. Other developments that increase opposition are "McDonaldisation" of societies through the export of cultural values of strong and rich countries, a brain drain of talent from poorer countries to rich countries, and outsourcing and off-shoring of business activities. Globalisation, for example, has allowed corporations to move manufacturing and service jobs from high cost locations to locations with the lowest wages and worker benefits. This results in loss of jobs in the high cost locations, and has contributed to the deterioration of the middle class.

The slower process of globalisation might lead to higher barriers for business to enter foreign markets, with increased trade tariffs, transportation costs, lack of capital, etc.