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Tarja Meristö & Jukka Laitinen

Foresight Workbook for Practitioners

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Preface

THE FUTURE IS not predictable but is created by individual choices and actions. There is no single future, but there are many possible alternatives depending on the circumstances and the interests of those who are working for the future, consciously or unconsciously.

This workbook is a result and a summary of the long-lasting development work which Tarja Meristö started in the late 1970s. It is based on futures studies as an MBA in 1980, a licentiate thesis in 1984 and a doctoral thesis in 1991. In addition, we have also carried out some practical foresight work. For example, Tarja worked on scenario building in corporate strategy planning in the construction material industry for Partek and she has also worked as a corporate futurist for Rautaruukki in the steel industry. In addition, Tarja worked as a corporate futurist in Kamensky Consulting, where she developed this process with hundreds of cases from various fields of industry with different firm sizes and also examined the public sector.

Tarja Meristö's research work at the Finland Futures research center, Åbo Akademi University, as well as Laurea University of Applied Sciences with a variety of different projects has provided opportunities to test ideas in the international context like ISPIM and WFS communities. Additionally, teaching work especially on various MBA programmes, for example at the Turku School of Economics, Tampere University, Oulu University and many other universities and institutions have brought common sense to the process and its tools. Ultimately, the Laurea UAS master programme in futures management has given an opportunity to integrate research work and teaching on a regular basis in a Learning by Developing(LbD) pedagogy and to spread these competences into practice widely. Tarja's work will continue as an entrepreneur.

The writers of this workbook have been colleagues in the CoFi team last 20 years. FuturesLab CoFi is a research group with a focus on futures research, foresight and scenario approaches. We have carried out dozens of futures projects in different fields. The examples presented in the worksheets are mostly based on two of the projects we have worked on, namely the Sustainable Community Scenarios project in 2010-2011 financed by Tekes (now Business Finland) and the Sustainable Business Scenarios project in 2014, financed by Makera.

We would like to thank all the co-developers on this long journey. From the very beginning Tarja Meristö would like to thank professor Pentti Malaska from the Turku School of Economics for guiding the studies in futures research from the late 1970s to the year 1991 when Tarja finished her doctoral thesis on scenarios in strategic management. Tarja would also like to thank Mr. Peder Biese from Partek for encouraging her very early to develop tools and processes in practice, while preparing her thesis. Tarja gives her warmest thanks to industrial futurist Jyrki Kettunen from MetsäGroup for the continuous support and enthusiasm in various joint projects over the last 40 years. Mr. Pekka Ketonen from Vaisala and Mr. Jorma Lukkari from Rautaruukki both deserve Tarja's thanks for their ability to apply futures thinking in joint projects in practice: Thanks guys, I learned a lot from you.

Jukka Laitinen would especially like to thank Tarja Meristö for being an inspirational mentor and colleague in numerous foresight projects throughout the years. Jukka would also like to thank industrial futurist Jyrki Kettunen for bringing his wide expertise and knowledge into several joint projects.

Tarja Meristö and Jukka Laitinen have worked together for the last 15 years on various foresight processes, first at Åbo Akademi University and then at Laurea University of Applied Sciences. Tarja and Jukka would like to especially thank their former leader in Lohja, Dr. Susanna Niinistö-Sivuranta for her supportive attitude to enable the multidisciplinary research and development work in the field of foresight. Additionally, principal lecturer Susanna Kivelä played an important role when applying Jukka's and Tarja's foresight projects in MBA programmes in futures management.

This book is a workbook that summarizes the foresight process and the tools that are useful in different phases of it. For the readers we point out that foresight is a multisided process and offers lot of opportunities for application in practice. It is good to have a team or at least a mentor to discuss things together when preparing to put foresight issues into practice. This will also bring commitment to use the results, if the team members are not only experts from different fields, but decision makers responsible for the actions based on the foresight results. We wish you a good journey into the future!

Tarja Meristö & Jukka Laitinen

KEY DEFINITIONS

The action scenario approach (Meristö 1991) aims to produce action based on scenarios. In other words, the final results are not the scenarios, but the action plans that are put into practice in the course of time.

An actor is an individual or organization which is having an influence on the future with her/his/its decisions and actions.

A driver is a key variable causing alternative development paths.

A factor is a change variable or phenomena describing the future.

Foresight is anticipation of the future(s) from some certain perspective. Foresight is an activity supporting decision-making at different levels in different organisations, and at the individual level.

A foresight process consists of different phases (setting the time perspective, collecting data, analyzing data, use of the results, and follow up) in order to systematically anticipate alternative views of the future.

Futures research is multidisciplinary research branch that studies the present from an interest in knowing about the future and combines intuition with documented information.

Learning by Developing (LbD) is a pedagogical framework which combines research, development and innovation activities, and regional development in the student's learning process.

A scenario is an internally consistent, plausible and logical story of the future which illustrates the development from the present towards the possible future.

A scenario approach is a scenario building process in which a company/organization integrates scanning of the operation environment in the strategy formulation.



1 Introduction

This workbook describes the foresight process with tools used in different phases during the process. The aim of the book is to show how to run foresight processes in practice and to encourage the readers to participate and facilitate foresight activities of their own.

Foresight is an activity supporting decision-making at different levels in different organisations, and at the individual level, too. The future is not predictable, but it is created by individual choices. The task of foresight is to show alternative futures and the consequences based on different assumptions. Foresight describes possible, preferable, probable and avoidable futures from the actor's viewpoint. That is why it is important at the very beginning to define the subject of the process, i.e., the decision-makers, whose activities will be supported by the foresight results.

The benefits of foresight are as follows. It lengthens the time horizon to the future and helps decision-makers to recognize the possible changes early enough to be proactive instead of merely reactive. It also draws attention to new actors not yet seen in the field and to respond to their plans, which provides an opportunity to change the rules and have an impact on the expected development path.

In this workbook, we will describe the foresight process with the tools used in different phases. This process has its background in the action scenario approach, with actions based on scenario alternatives as a key goal. The approach not only describes these scenarios, but helps people and organisations to use the results to make things move in a preferable direction. The purpose of this book is to provide the readers with a process description and worksheets, which will also help newcomers to recognize and meet future challenges in a practical way.

In the workbook, each phase of the foresight process will be described shortly, including advice on how to use the tools required to complete each phase. Foresight activity here is a process including different phases and tools. In practice it is better to run through the whole process phase by phase to get a holistic picture of

the future. The time reserved for the foresight activity will have an impact on the process, too. Sometimes we need to prepare foresight activity to run in a shorter time frame, in one day or even in a half day, and in those cases a variety of pre-work for the session is needed. For example, web-surveys and other activities to collect data may be necessary. The foresight process has been described as a summary in Figure 1.

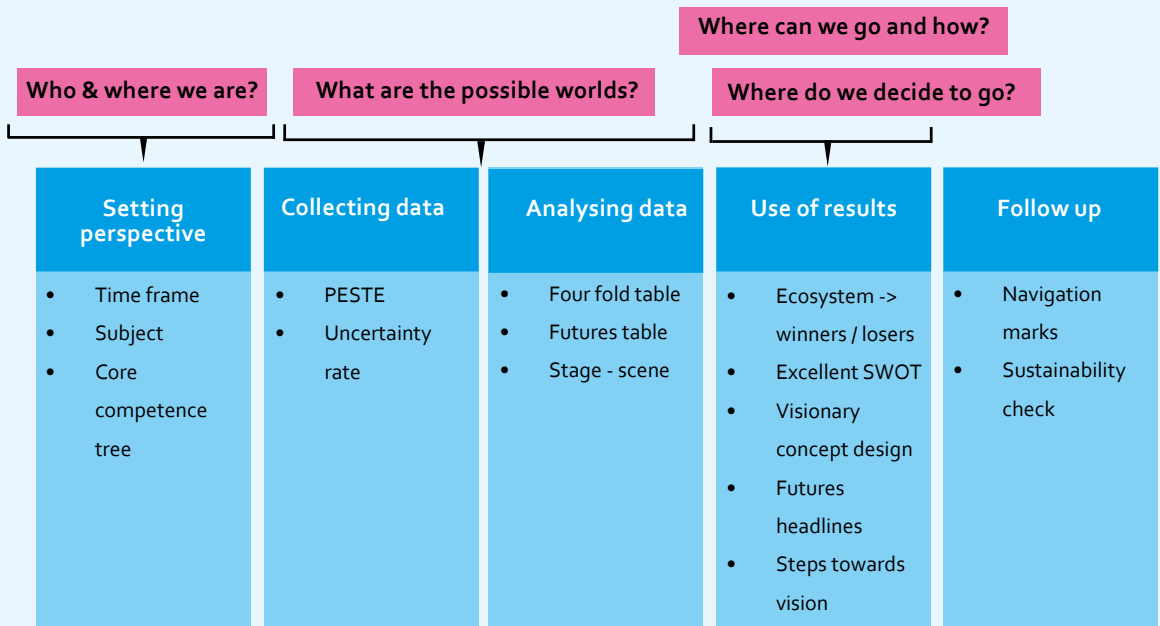


Figure 1. A summary of the foresight process (adapted from Meristö 1991).

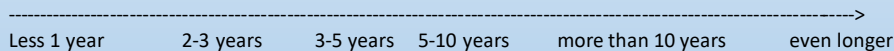
The time frame for the future depends on the theme the foresight is dealing with. In general, in futures research the time frame should be at least twice as long as it is usually in strategic planning. A longer time frame will open the eyes of participants to think the unthinkable, i.e., to pay attention also to those events and issues which are not yet obvious. It will increase the awareness of future threats and opportunities among various trends and signals scanned from the broader operating environment in the long run.

The timeframe for the foresight activity will vary from case to case. Usually it is long, at least 10 years ahead. Long-term thinking is on one hand a tool to help us to imagine unthinkable futures and events which have not happened before, but a longer period will also give some time and opportunity to make decisions beforehand to build a future in the desired direction and to change development paths away from the dystopic ones. It is good for each participant also to recognize his or her everyday time perspective on the future and to discuss the benefits and pitfalls of a longer or shorter time horizon (Worksheet 1).

Worksheet 1. Time frame to the future

Discuss in the small group, what is your usual time frame you think about the future: less than one year, from 2 to 3 years, from 3 to 5 years, more than 5 years but less than 10 years, more than 10 years.

Think and discuss the advantages of a longer perspective to the future, but also the pitfalls, if any.



Worksheet 1. *Time frame for the future.*

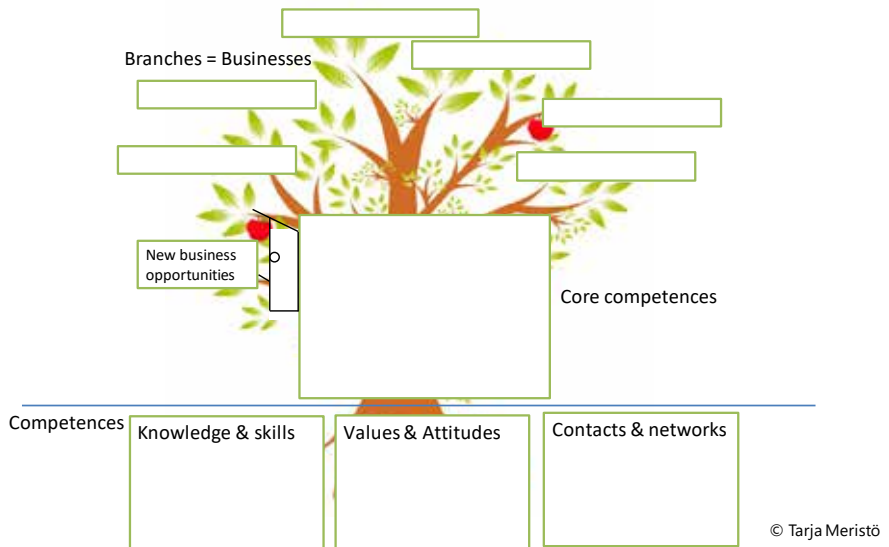
The time frame depends on the field you are working in. For example, in the energy branch it could be 100 years ahead, whereas in the fashion business it may be less than a year. There is no common recommendation for the timeframe, although it is good to have a bit longer than the ordinary timeline in strategic planning in order to cover unexpected changes, too.

Every foresight process needs a subject through whose eyes we will look into the future. The future is created by individual choices and actions, depending on the values and visions of the subject. In our action scenario approach (e.g. Meristö 1991) process we use the concept of a core competence tree to determine who and where we are, when starting the foresight process.

The Core Competence Tree is a tool to help define the strategic tasks and competences of the subject playing the key role in the process. It shows the key business areas and competences to run them successfully for the future. At the beginning of the foresight process this tool will help the participants to create a shared view of the organisation and its key tasks. At the end of the process this tool is a useful test bed for use in alternative scenarios to define which tasks and competences are still valid in alternative scenarios and which of them are harmful if they are not updated.

In Worksheet 2 this concept is described in detail. At the top of the tree there are the business areas or activities the branch in question is operating with, in the trunk there are those competences which are powerful in competition situations, and finally in the roots there are skills and competences divided into three parts, i.e., contacts and networks, values and attitudes as well as traditional skills and competences. There is an opportunity to discover those new starts and options not yet fulfilled as actions in the form of a bird's nest close to the trunk. It is good to start the foresight process with the core competence tree in order to recognize all the dimensions of the field to cover.

Core Competence Tree



Worksheet 2. *The Core Competence Tree.* Tarja Meristö.

Example of the Core Competence Tree in use for the Western Uusimaa region's sustainable business cluster

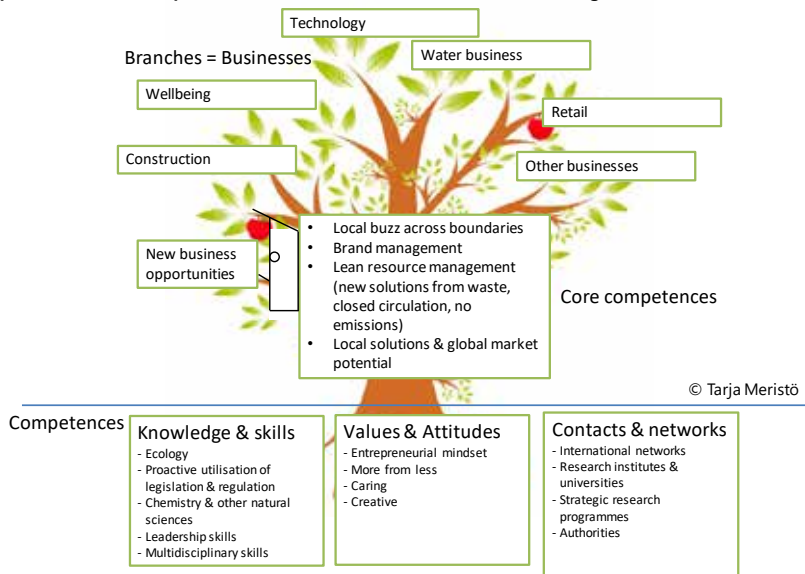
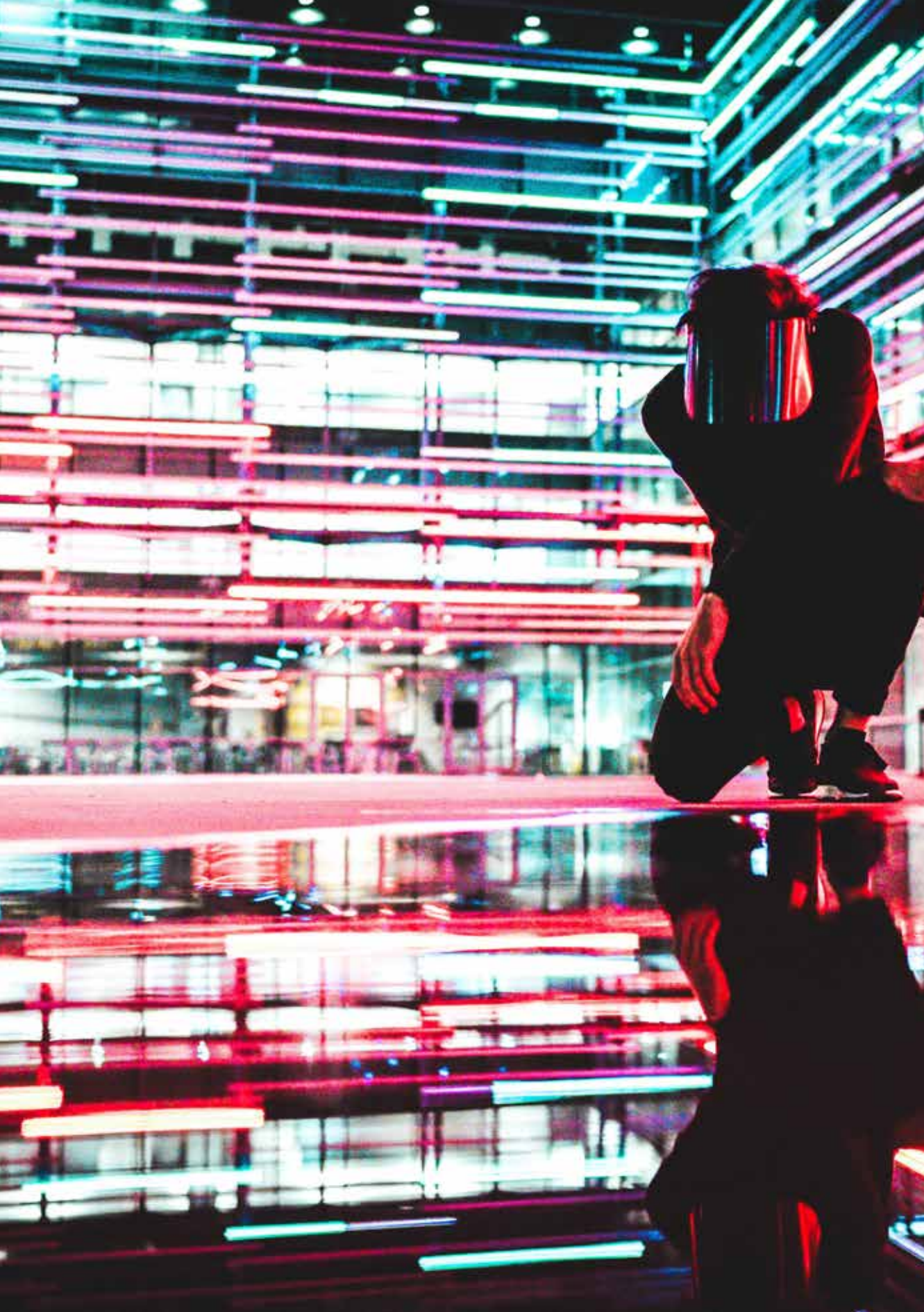


Figure 2. Example of the Core Competence Tree in use for the Western Uusimaa region's sustainable business cluster (Meristö & Laitinen 2014a).

We wish you a fruitful journey into the world of foresight. Use your imagination and enjoy the trip!



2 Data Collection: Gathering Future-Related Information

A **PESTE ANALYSIS** is a simple tool to collect and organize data for the foresight process. It has an interdisciplinary perspective and view to the operational business environment. PESTE stands for Political, Economic, Social, Technological and Ecological aspects concerning actors and factors influencing the future development.

A PESTE analysis is a tool to systemize the data collection for the foresight process from alternative perspectives, i.e., from political, economic, social, technological and ecological viewpoints. It is a good checklist to ensure and not to forget those aspects, which are not so well-known yet. When preparing PESTE analysis at different levels, it will also broaden the scope from present operating environment to the world-wide field possible in the future.

When Meristö presented the PESTE concept for the first time in the foresight symposium in 1982 in Philadelphia, she learned from international futurist colleagues that the word peste refers to the plague in some languages such as Spanish. In spite of that, she did not change the name of the concept, vice versa she found that due to its multidisciplinary nature the name was pretty good. Just think of different faculties at universities with more or less difficult barriers to jump over.

The best way to use the PESTE analysis is to cover not only the five dimensions of different actors and factors from political, economic, social, technological and ecological perspectives, but also to recognize the actors and factors from different levels such as the world level, continent level, country level, region level and business branch level as well as the individual level. Besides, the phenomena should be divided into groups based on their uncertainty rate, i.e., certain, probable and uncertain, which includes surprises we might encounter in long or short run (Worksheet 3).

Discuss and write down possible PESTE factors you can imagine in the long and short run. Think also about imaginable surprises not related to the time frame and put them in the table, too. When considering possible PESTE factors, take the different levels into consideration (world, EU, country, Finland etc.)

	Political	Economic	Social	Technological	Ecological
Long run (more than 10 years)					
Short run					
Surprises					

Worksheet 3. PESTE tables at different levels (world, EU, Finland, etc.). Meristö & Laitinen.

In a PESTE analysis the tasks of futures studies (Roy Amara 1981), i.e., imagination, analysis and participation are fulfilled.

Below is an example of different PESTE factors influencing the future from the perspective of a sustainable community (Tuohimaa et al. 2011a).

POLITICAL

- world politics
- EU regulations
- decision-making at national and regional levels
- timeframe in political decision-making in Finland
- restrictions concerning traffic

ECONOMIC

- economic growth
- fluctuations in the economy
- purchasing power development
- role of entrepreneurs in economy and society
- business activity in society

SOCIAL

- living styles in urban/rural areas
- role of ownership in people's life
- polarization
- cultural activities and their role in society/life
- working life and leisure time
- activity rate of citizens

TECHNOLOGICAL

- digitalisation in society
- robotics
- entertainment vs. education content in apps
- energy solutions
- transportations and logistics

ECOLOGICAL

- international agreements and their coverage in the world
- climate change issues
- pollution situation in the world (air, sea, other)
- corporate social responsibility and responsible investment criteria
- consumer behaviour and environmental awareness

A good PESTE analysis is based on relevant and reliable data. If you are running a foresight process in a short time period in one day, it will be necessary to prepare the data collection activity beforehand by using web-surveys and other sources to ensure enough background data for the process. Literature reviews and statistics are an important part of this phase, but do not forget your own imagination.

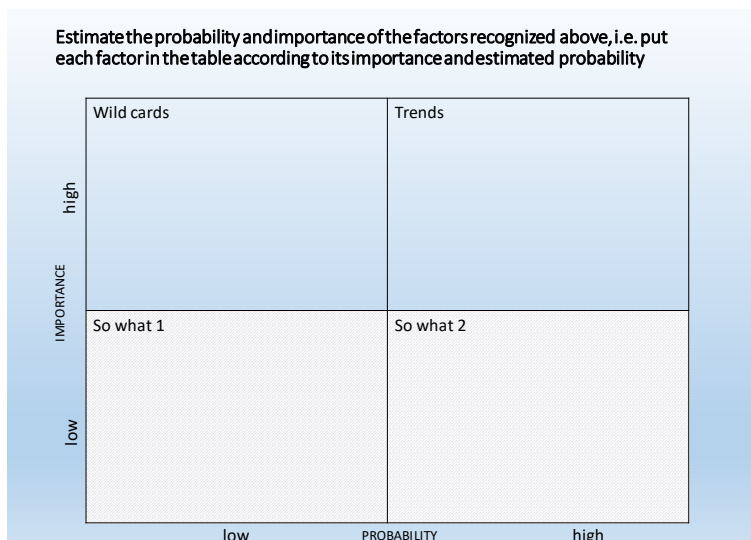
The results of the PESTE analysis will form the basis for the foresight work. Of course, this is an iterative process and during the work, you can complete the database continuously.

3 Analysis: Information Interpretation

THE DATA COLLECTED for the foresight work includes large phenomena from different sources and fields. Before starting to build scenario alternatives, we need to estimate and analyze this data from our viewpoint: how important the scenarios might be in the future and how probable they are. Through this analysis we will find so called key drivers for the future, i.e., those actors and factors with the most influence on the future, although they might not necessarily be the most probable ones. This means that also drivers for unexpected futures should be considered in order to prepare ourselves to face surprises.

A probability/importance matrix is a tool to interpret the data collected during a PESTE analysis. This tool on one hand identifies those important factors with a strong influence and high probability on the future (so called trends), and on the other hand those with a large impact with lower probability (so called surprises). This tool will help us to recognize the key actors shaping the alternative futures, both based on trends and even megatrends, but also those based on wild cards and surprises, i.e., at the end of this phase we will have the representative set of alternative key drivers forming the future paths.

Analysis of the data is a systematic process, where each of the recognized change phenomena is estimated according to its importance and probability of occurrence as the matrix tool below will show (Worksheet 3).



Worksheet 4. Estimating probability and importance.

There is no common future for all. That is why estimating the importance of a scenario requires a subject through whose eyes we can estimate it. In the next figure, we present an example of sustainable community scenario work. The scenario work is based on the prior PESTE analysis.

Top sum up, we can pick from this table those actors and factors, which are both important and improbable. These are surprises which might take place in the future. Here we call them wild cards. These wild cards can suddenly change our assumptions of the future and question our basic beliefs of the entire business. On the other hand, we can also pick more probable change phenomena that have a high level of importance. These are the trends we can rely on in the future.

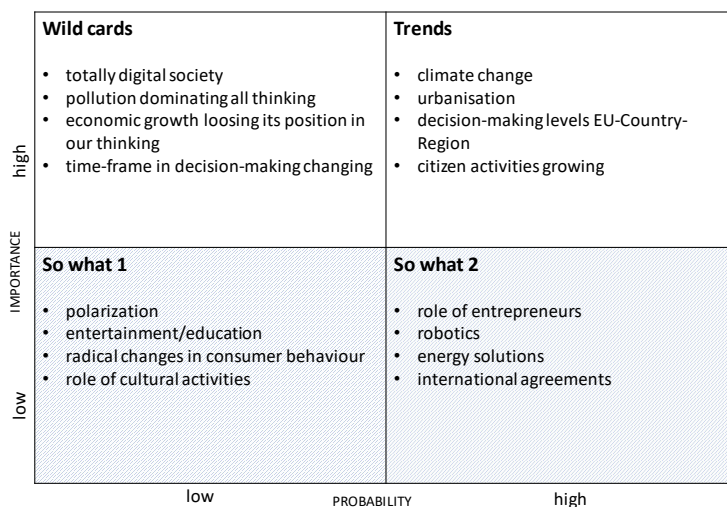


Figure 3. Example: Estimation matrix for importance and probability (based on PESTE above).

Both wild cards and trends have to be taken into consideration in the preparation of future scenarios. Additionally, we also need to examine the lower part of the matrix: what should we do with the recognized actors and factors that are of low importance? If we have been careful enough with the analysis, we can sometimes leave them without much attention. However, sometimes we must check their importance in relation to the key actors and to the main subject of the work. We need to ask ourselves whether we have underestimated something or whether this really belongs to the “so what” category.

As result of the analysis phase, we will have couple of important actors and factors. These actors and factors are the key drivers for our futures work. These will form x- and y-axes in the synthesis phase, where we draft alternative scenarios with the help of a fourfold table. This process is described in the next chapter.



4 Synthesis: Preparing Scenario Drafts

S **CENARIO BUILDING IS** the key phase in the foresight process. It will produce future alternatives from different viewpoints. The scenario building phase includes 1) selecting the key drivers, 2) building scenario axes, 3) setting the extreme values for each driver, 4) describing assumptions and consequences for each scenario, and finally 5) defining the names for each scenario. It is important to select the key drivers not only among trends, but also among the wild cards, in order to cover a wide range of scenario alternatives with various uncertainty and surprise rates (worksheet 5).

The fourfold table and scenario building helps to develop scenario alternatives for the future. It provides a test bed for various combinations of key drivers to imagine all the possible future worlds. It is important to accept that there is no exact rule to make a choice for the x- and y-axes among the key variables, rather it requires curiosity and enthusiasm to test it with different variables with their extreme end values among trends and wild cards. This tool is often a useful fast track to the final scenarios if the time for the foresight process is limited.

Scenario building by using the factors estimated as important, both probable and uncertain: select the key drivers, define their extreme end values and prepare four scenario drafts, one for each quarter. Name each scenario.

Drivers x: _____
 y: _____

Scenario 4 _____ Assumptions: Consequences: Driver x: _____	Scenario 1 _____ Assumptions: Consequences: Driver y: _____
Scenario 3 _____ Assumptions: Consequences:	Scenario 2 _____ Assumptions: Consequences:

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Worksheet 5. Fourfold table to scenario building.

In Figures 4 and 5, examples of sustainable community scenarios (figure 4) and sustainable business scenarios in Western Uusimaa (figure 5) are presented.

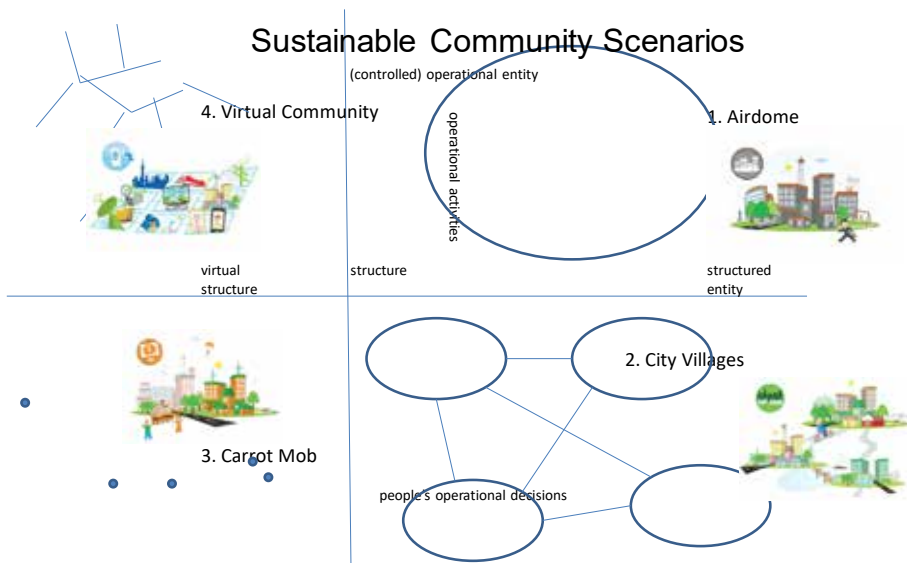


Figure 4. Example of a fourfold table in use for scenario building: sustainable community scenarios (Tuohimaa et al. 2011a & b).

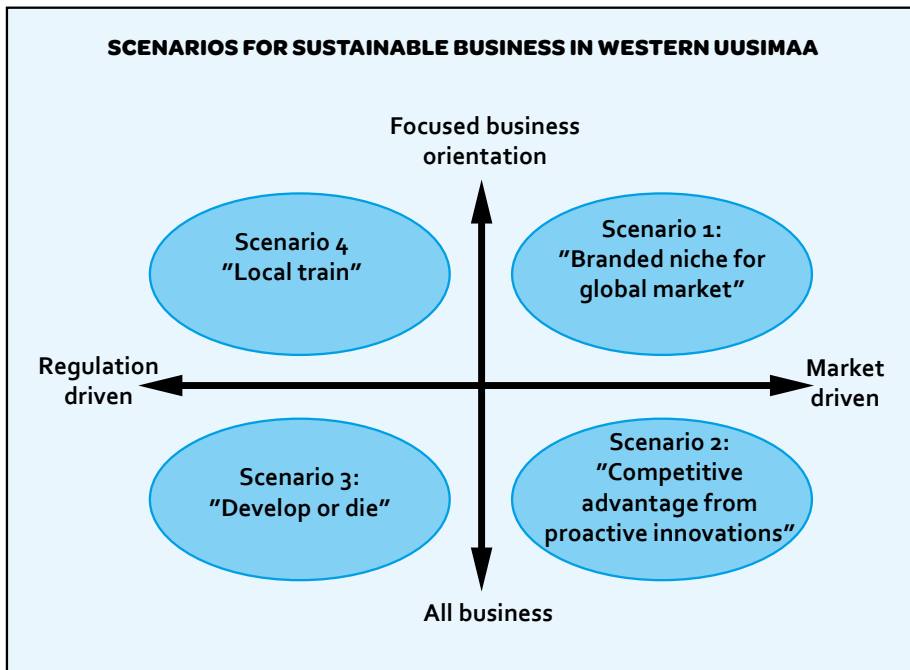


Figure 5. Example of a fourfold table for scenario building, sustainable business scenarios for Western Uusimaa (Meristö & Laitinen 2014b).

When developing the content for scenarios by using an assumptions-consequences scheme, remember to keep in mind the specific quarter, i.e., the scenario, you are in. Sometimes it happens, that you think of your preferred development path, instead of the ones described in the fourfold table.

Names for the scenarios are important. The names form a language for discussing the future. It is good to keep them short, so that they are easy to remember. It is also useful, if you find a metaphor, for example from the movies or literature to make them more concrete and emotionally touching.

Next, we describe two practical tools for deepening the understanding of scenarios as follows: 1) the futures table, and 2) the stage scene description.

The futures table is a systematic way to combine the results of the PESTE analysis, probability/importance matrix and the fourfold table at the same time for a holistic and detailed view of the future. The futures table includes all the actors and factors with their alternative, possible outcomes at different levels. The rows represent different variables and the columns their individual alternative values. The futures table includes all the possible and even impossible combinations for the future. Usually, we use it to deepen those scenarios developed based on the fourfold table and draw those four scenarios by following the assumptions and consequences shown there. This part of the process is time-consuming and quite often it is prepared by researchers and presenting the results to the larger foresight team to go through and improve, if necessary. The futures

table often provides a base line for the futures stories in alternative scenarios, i.e., the estimated assumptions and consequences will be written in the form of story lines.

The futures table includes all the possible factors and actors recognized during the foresight process at different levels (e.g. world, continent, country, industry branch, individual) and from various perspectives such as from a PESTE perspective or according to the uncertainty rate. In the futures table the change factors form the rows whereas the possible alternative values for each change factor are the columns. There are no exact rules for arranging actors and factors to the futures table, but it is easier to follow PESTE factors from level to level, i.e., from a global to individual level. Worksheet 6 illustrates the futures table and an example of it is shown in Figure 6.

Futurestable

Alternative values for change factors					
Change factor					

Worksheet 6. *Futures table.*

CHANGE FACTOR	ALTERNATIVE VALUES FOR CHANGE FACTORS			
Economic growth	High	Moderate	Low	Which growth?
Economic fluctuations	Small	Large	Changing in the course of time	
Time frame	Long	Mid-term	Short	No attention
Transition costs	First high, then lower	High all the time	Moderate, slow realization	Development costs high, but use costs low
Participation rate of citizens	Part of the decision-making process	Quasi-participation without real impact	Based on citizen activism	No role at all
Role of municipalities in decision-making	No independent role	Remarkable independence	No role at all	Which municipality?
Share of rural areas of households	Very small	Small	Large	Very large
Means of producing electrical energy	Large units	Smaller units with optimal locations	Smaller units close to end-use	Energy imports
Ways to restrict traffic	Via tax regulations	Road-custom fees for cars	No restrictions	Structural changes with less need for logistics
Number of growth companies	Large	Moderate	Small	Moderate, but growing
Access to commodities	Ownership	Leasing	Sharing economy	Changing consumer behaviour, less need for commodities
Social and health care responsibilities	Large regional units	Municipality groups with the main responsibility	NGO alliances with responsibilities	No regional solutions
Management of environmental impacts	Based on full recycling	Only attention to energy impacts	Suffering from the other regions' impacts	Moving from own area to other regions
Cultural supply	Only necessary	Necessary plus market-driven theatres and cinemas	Supply only in net	Based on citizens' activities

Figure 6. An example of the futures table (adapted from Tuohimaa et al. 2011a).

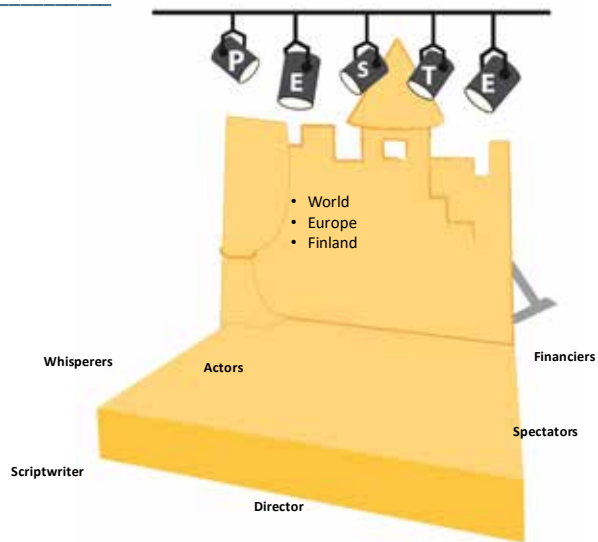
Furthermore, we can deepen the scenarios with a metaphor from the theatre, where a scenario is likened to a description of the scene and stage as well as the actors moving and speaking there. From the foresight perspective, we use this metaphor as a tool to illustrate the scenarios more precisely, including all the actors not only in key roles, but also actors such as financial supporters, regisseurs or as scenario writers.

Worksheet 7 illustrates this metaphor as a tool to deepen the scenarios and in Figure 7 scenarios for a sustainable community (Tuohimaa et al 2011a) are presented with the help of this tool.

The stage-scene tool deepens the analysis of actors involved each scenario. The word 'scenario' comes from the theatre and this tool uses the analogy from the theatre world by formulating the actors in key roles on the stage for each scenario as well as also describing the scriptwriters and directors guiding the story. This tool is an illustrative metaphor, which helps others to imagine future alternatives in practice in their own business environments.

Stage-Scene

Scenario: _____



© Tarja Meristö 1995

Worksheet 7. Stage-scene tool for scenario building.

Scenario: Carrot mob

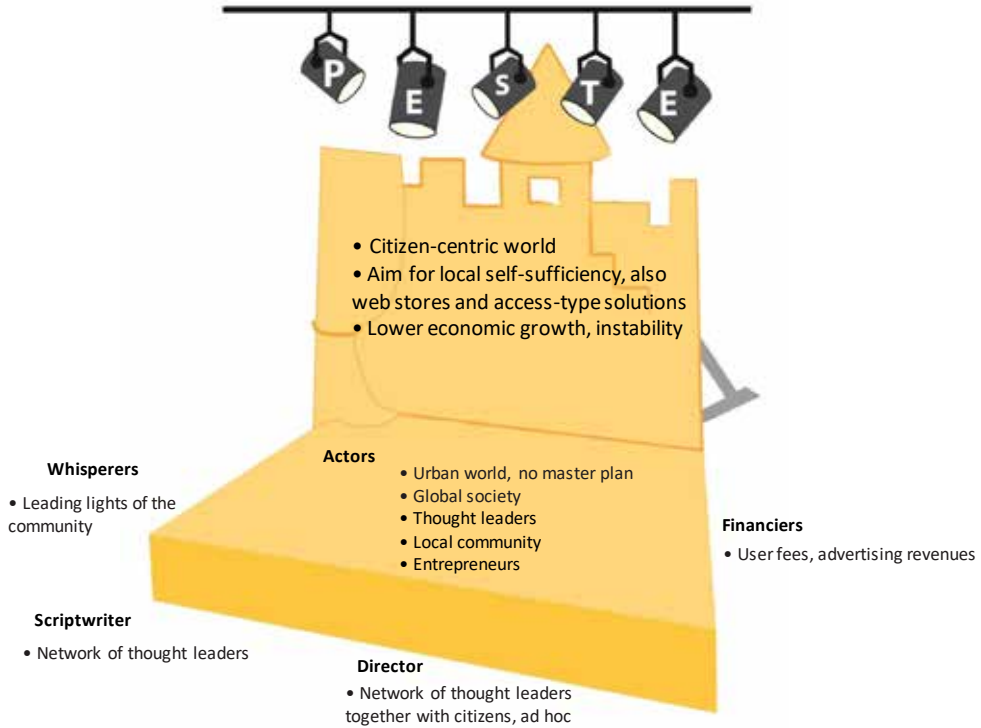


Figure 7. Example of the stage scene tool, Carrot mob scenario (Tuohimaa et al. 2011a).



5 The Use of Scenarios: Deepening and Concretizing the Scenarios

A **N EXCELLENT SWOT** stands for traditional SWOT analysis, recognizing strengths and weaknesses, but also opportunities and threats in each scenario. An excellent SWOT combines the results of each individual SWOT and makes a comparison in order to find things that are opportunities in each scenario, for example, or a threat only in one alternative. The excellence comes from this combination, paying attention to the things that must be done in each case and to those that can probably take a risk.

An excellent SWOT is the first step in using the scenarios, which means first preparing a SWOT analysis for each scenario and then analyzing the results: a comparison of alternative SWOT analyses leading to a conclusion on what needs to be done in every case, in spite of the scenario. What are the key themes threatening or providing opportunities in some scenarios to develop the business further? An important part of the excellent SWOT analysis is also to recognize the actors who are interested in different scenarios, exploiting them or fighting against them (Worksheet 8). An example of an excellent SWOT analysis is shown in Figure 8.

ExcellentSWOT

Scenario: _____

S	W
O	T

In whose interest is this scenario? _____

Worksheet 8. Excellent SWOT for a scenario.

Scenario: City Villages

S	W
effective; possible with small structural changes; socially sustainable	not easy to find those who are responsible decision-makers or risk-takers, also need for rule-makers
O	T
strengthening regional culture and identity	cherry picking (me first thinking); present civil servants may not accept it

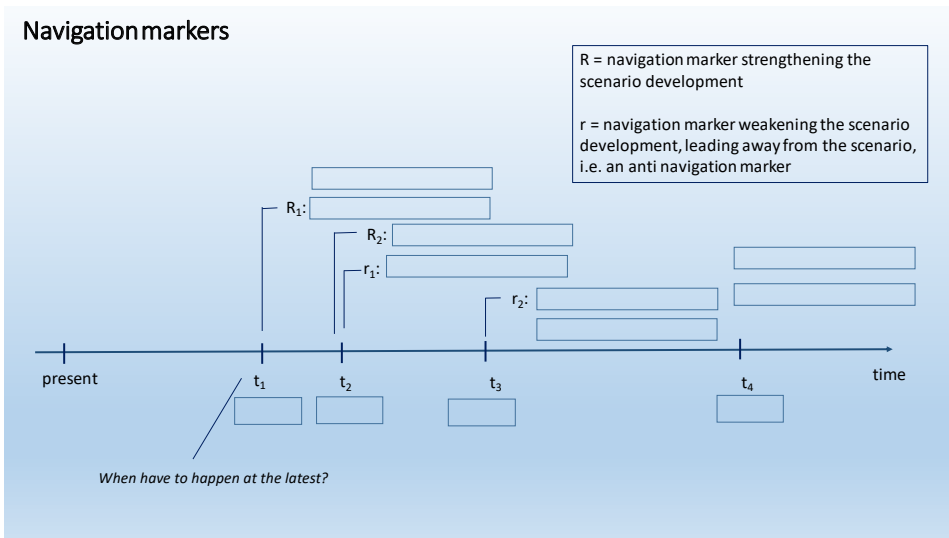
In whose interest is this scenario? Active citizens

Figure 8. An example of an excellent SWOT analysis: the City Villages Scenario (Tuohimaa et al. 2011a).

When applying scenarios in practice, it is important to follow their course in time in real life. For this purpose, we have developed a concept called navigation markers. This means that for each scenario there are various milestones or signs, which are placed on a timeline. These can be used to recognize whether the scenario is running as expected or whether it is running slower or faster. Sometimes the timeframe prescribed to the scenario runs out, and the scenario is no longer possible during the prescribed time period.

Navigation markers are milestones in the scenarios, indicating in the course of time if the scenario will come true in real life during the expected time frame or not. They bind the development path to real life and the events happening there. This means, that although we might have a time frame of 20 years, for example, the navigation markers force us to be awake all the time on the way to the future.

A good navigation marker is concrete and somehow measurable in order to be useful before things actually happen. At least the basic assumptions from the futures table and from the fourfold scenario table should be clarified in the form of navigation markers so we can perceive which scenario we are approaching. See Worksheet 9 and Figure 9 where this tool and an example of it are presented.



Worksheet 9. Navigation markers.

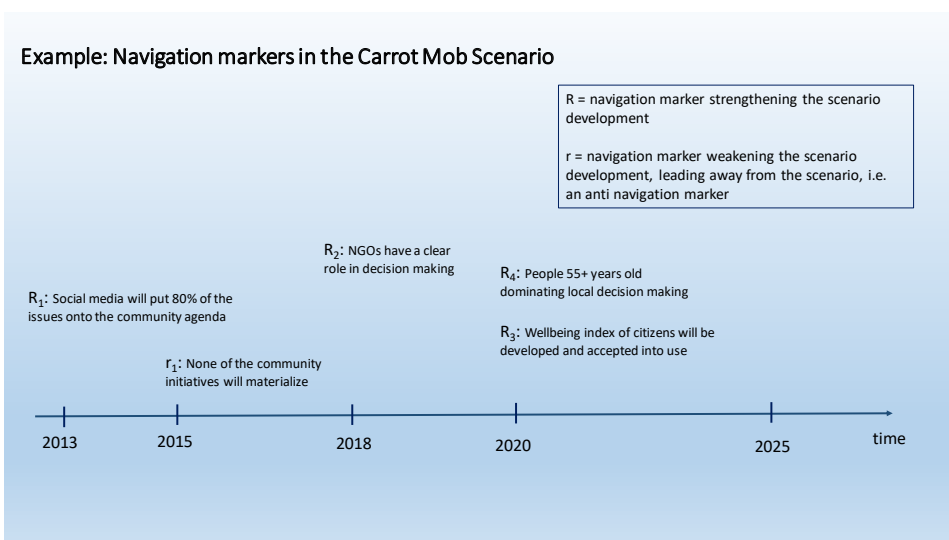


Figure 9. Example of navigation markers: the Carrot Mob Scenario (Tuohimaa et al. 2011a).

Visionary concept design Worksheets 10 and 11 are tools to determine the largest challenges concerning the future alternatives from the viewpoint of the decision maker or the organisation, whose work we are supporting with this foresight process. Visionary concepts are the preliminary solutions to tackle the challenges recognized in the alternative futures. These concepts are both products and services, but also new business models to deal with the future challenges. Multidisciplinary co-working between designers, technology experts, customers and consumers is useful for this phase.

Select the most important themes and issues in order to continue the use of scenarios with the help of visionary concept design tools (Worksheets 10 and 11).

Visionary concept design		
Theme and viewpoint:		
Scenario	Biggest challenges	Visionary concepts to solve the challenges
1. Scenario:		
2. Scenario:		
3. Scenario:		
4. Scenario:		

Worksheet 10. Visionary concept design: The biggest challenges and visionary concepts to solve the challenges.

Specifying the visionary concept

1. Chosen scenario: 1. _____
2. To whom (target group of the concept): _____
3. Describe the concept: _____
4. Name of the concept: _____

5. What novel features does the concept offer?

6. Why the concept suits this certain scenario?

7. Who implements things? Who finances things?

8. Is there demand?

Worksheet 11. Specifying the visionary concept.

Case by case you will recognize and select the biggest challenges and important themes for each scenario and prepare some preliminary drafts to solve the challenges. These will then form the basis for the first visionary concepts (see Figure 10). These concepts can be specified in more detail by asking questions such as: for whom, by which novel features, or who will finance things?

THEME AND VIEWPOINT: SUSTAINABLE COMMUNITY, INNOVATION MANAGEMENT IN PUBLIC SECTOR		
Scenario	Biggest Challenges	Visionary concepts to solve the challenges
Scenario 1. Air dome	Centralized authority	Decision-making process with participatory elements to increase the citizens' roles
Scenario 2. City Villages	Risk of double bureaucracy	Ability to co-operate also difficult at local and national level, need a concept of building trust
Scenario 3. Carrot Mob	Risk of fragmentation	Concept to orchestrate network with different informal actors
Scenario 4. Virtual Community	Risk of technological determinism	Possibilities for all citizens to participate has to be considered -> access to virtual services, including skills and motivation to use them

Figure 10. Examples of visionary concepts in sustainable community scenarios (Tuohimaa et al. 2011b).

Future news sheets are an important part of the foresight process to disseminate the results of work. Sometimes all the scenario alternatives can be described in the form of futures headlines, but sometimes also the visionary concepts can form the basis for good or bad news for the future. Futures news is a simple and quick way to share the results and to get people think of the unthinkable in a short form, like a tweet on social media.

Communication of the results is important to get the actors involved and to direct energy in the same direction. Visionary concepts (and scenarios) can be clarified with future headlines, i.e., good or bad news about the future (Worksheet 12).

Futures headlines

FUTURE NEWS
Create positive and negative futures headlines

A) Good news

B) Bad news

Worksheet 12. Future headlines.

FUTURE NEWS

**Finland no. 1 in the world
- Green transition the most successful within EU**

FUTURE NEWS

More plastic than ever in the seas

Figure 11. Example of future headlines.

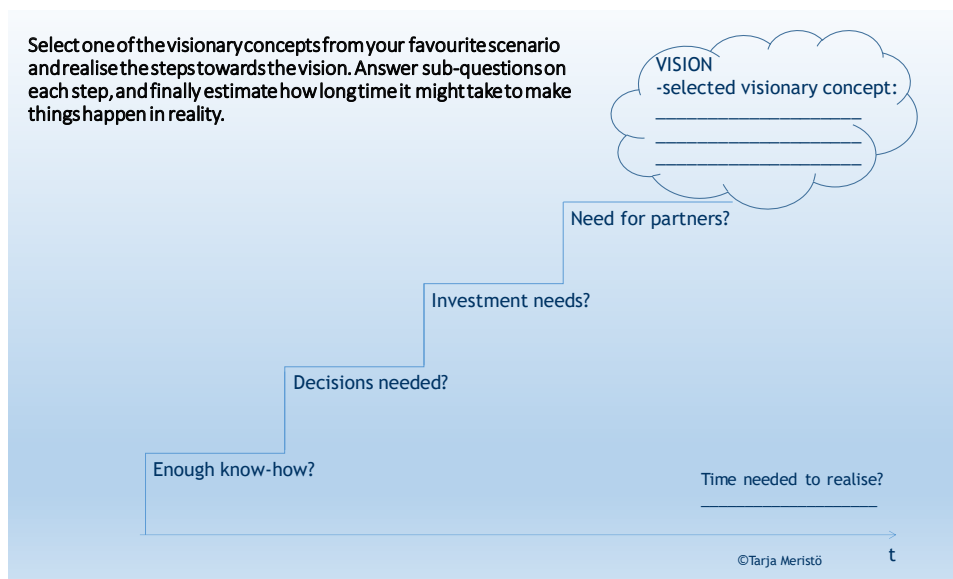
The action scenario approach (Meristö 1991) aims to produce action based on scenarios. In other words, the final results are not the scenarios, but the action plans that are put into practice in the course of time. The final selection of the scenarios will depend on the risk-profile of the decision-maker, but also on the resources there are to make things happen.

Without a vision, it is difficult to make a choice between scenarios. When there is a clear vision, the selection of preferable scenarios is easier. Attention can be focused on following the development paths leading towards the desired vision and avoiding those that do not lead the right way.

The chosen scenario forms a basis for the action plans, and the one not selected provides estimates for flexibility in case the other scenarios come true. At the same time, when preparing actions for the selected scenario, we must consider the navigation markers for the scenarios that were not selected. This can be done by following those actors, for example, who would benefit from those alternatives.

The steps towards vision are a tool that concretizes the path from the present to the desired future vision. In this tool, there are some sub-questions to help find the necessary actions to reach the goal, but there is also the timeframe to the future, where we can then estimate the time required before things happen in real life.

Concrete action plans and their timeframe can be prepared with the help of the Steps Towards the Vision -Worksheet (Worksheet 13).



Worksheet 13. Steps towards the vision.

The vision could be a holistic view of the business in the future or a concept for products to serve customers in the future, for example. The steps towards the vision show the concrete actions required to move in the right direction and to reach those goals.

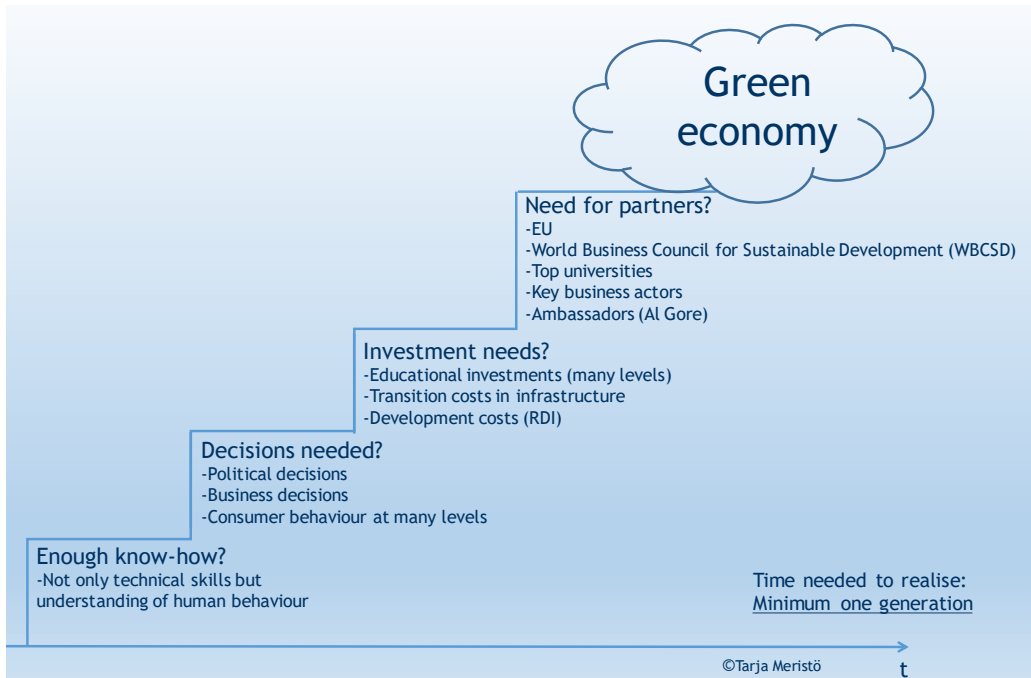


Figure 12. Example: steps towards the vision (illustrative figure in the eyes of sustainable community).

On the steps there are some sub-questions that help us to find the areas and themes that require actions and improvements in order to be able to create the desirable future. We must answer the following questions: Are our skills on the optimal level? Who will make the required decisions? How much do we need in terms of investments? Can we do this alone or do we need new partners in our network? Finally, we shift our focus to the time required to make things happen in real life and in order to successfully reach our vision.



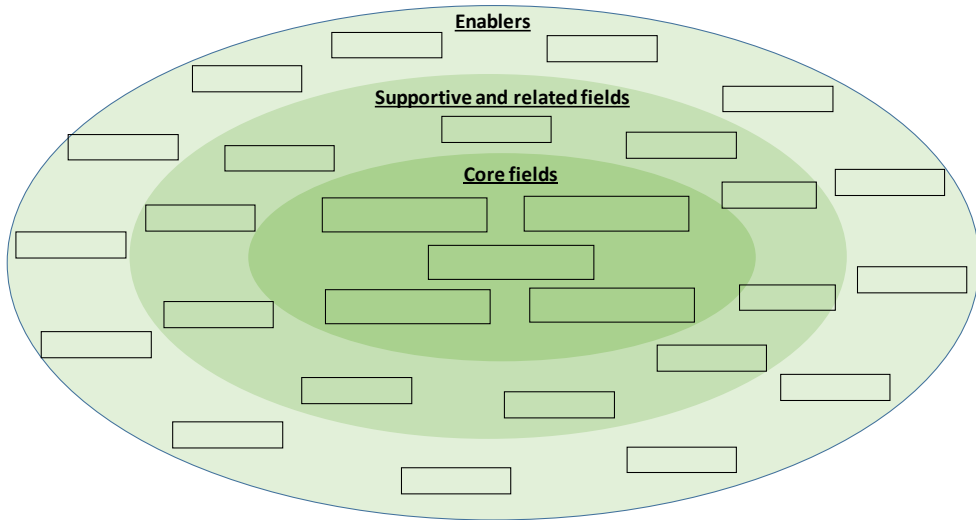
6 From Vision into Action: Actors and their Roles

THE FUTURE IS created by individual choices and actions based on the decisions made. The ecosystem as a whole will help us to recognize all the possible actors, individuals, organizations and institutions, but also informal networks and different movements. Additionally, the role of each actor can be defined with the help of the ecosystem, for example whether they are key actors, supporting actors or enablers (Worksheet 15).

The ecosystem tool helps to systematically recognize the actors related to the field we are operating in and developing foresight to support the decision making there. The ecosystem tool also shows the role and position of each actor in the field, i.e., core actors, supportive and related actors or enablers. This part helps the decision makers to rethink their networks and competitive advantages once again.

You can use your ecosystem picture to define the most important actors! Think also about actors outside your ecosystem to recognize possible partners to strengthen your power and influence in the scenario, but also to be aware of threats coming from actors with something against that scenario.

Ecosystem: Core fields, supportive and related fields and enablers



Worksheet 14. Ecosystem: core fields, supportive and related fields and enablers.

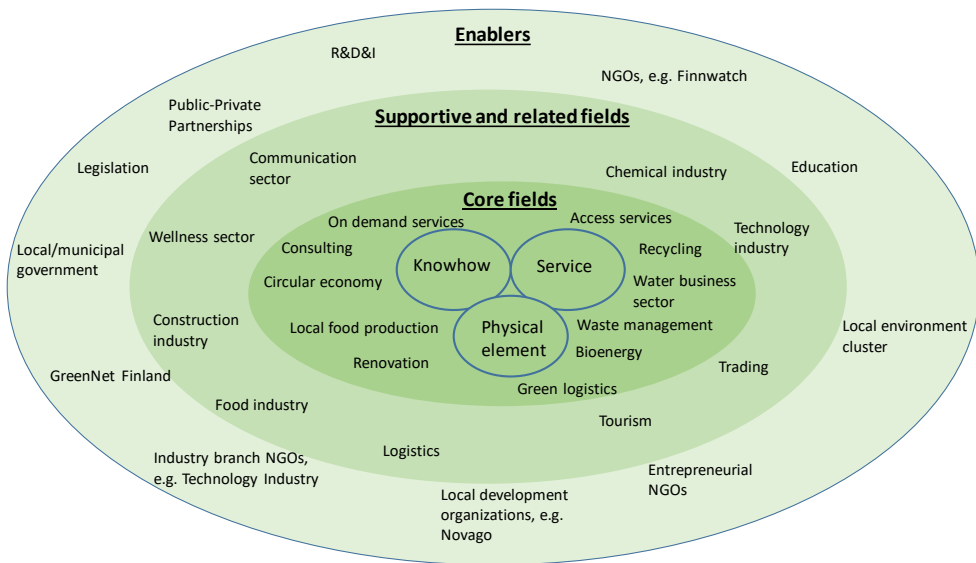


Figure 13. Example. An ecosystem for the sustainable business sector in Western Uusimaa (Meristö & Laitinen 2014a).

The winners/losers table will help us to think further from scenario to scenario about who will benefit and who not in various cases, which is useful when seeking partners for cooperation.

Worksheet 15 will help to systemize the analysis of the actors by dividing them into winners and losers in each scenario. It is good to take the benefits from the ecosystem and try to imagine the changing roles within the ecosystem in alternative scenarios.

Think forward to each scenario and the different actors there. Who are the winners, who are the possible losers?

Recognizing the actors and their position in each scenario		
	Possible winners	Possible losers
Scenario 1:		
Scenario 2:		
Scenario 3:		
Scenario 4:		

Worksheet 15. *Winners and losers in each scenario.*

In futures research sustainable development is an overlapping theme everywhere. The sustainability test is a simple tool to check if economic, ecological and social sustainability are taken into consideration and if yes, whether they are equally important in each scenario or not.

The desired development path towards the vision in the optimal case will be sustainable in all three dimensions of sustainable development, i.e., economic, social and ecological sustainability at the same time. It is also important to estimate the balance of these three dimensions: are they equal or does one of them dominate, or has another been totally forgotten (Worksheet 16)? Recommendations for the different actor groups should take these dimensions and the balance requirement in consideration, too.

Mark for each scenario, if the dimensions of sustainable development, i.e. economic, social and environmental/ecological sustainability are true (+) or not (-) . Is their equal importance possible in all scenarios, if not, why?

	Economic	Social	Ecological
Scenario 1			
Scenario 2			
Scenario 3			
Scenario 4			
Summary			

Worksheet 16. Sustainability check for alternative scenarios.

Finally, based on the principles of the action scenario approach, we must guarantee that the foresight process will lead from visions into action, i.e., the key actors need to get involved. A recommendation sheet for different actors in various scenarios is important at least to show which roles and responsibilities in the actions belong to the government, business and universities.

When developing recommendations for different actors it is useful to consider the earlier analyses of winners & losers and the sustainability check. These help to discover the actors needed to promote actions to support the development towards the desired future in a sustainable way (Worksheet 17). An example of recommendations for different actor groups is presented in Figure 14.

Make recommendations for different actors, e.g. consumers, business companies, government actors, RDI actors or universities.

Actor:	
Scenario 1:	
Scenario 2:	
Scenario 3:	
Scenario 4:	

Worksheet 17. Recommendations for different actors.

**THEME AND VIEWPOINT:
SUSTAINABLE COMMUNITY, INNOVATION MANAGEMENT IN PUBLIC SECTOR**

Scenario	Biggest Challenges	Visionary concepts to solve the challenges
Scenario 1. Air dome	Centralized authority	Decision-making process with participatory elements to increase the citizens' roles
Scenario 2. City Villages	Risk of double bureaucracy	Ability to co-operate also difficult at local and national level, need a concept of building trust
Scenario 3. Carrot Mob	Risk of fragmentation	Concept to orchestrate network with different informal actors
Scenario 4. Virtual Community	Risk of technological determinism	Possibilities for all citizens to participate has to be considered -> access to virtual services, including skills and motivation to use them

Figure 14. An example of recommendations for different actors in sustainable business scenarios for Western Uusimaa (Meristö & Laitinen 2014b).

Foresight is a time consuming activity, which requires clear process phases and tools for each phase, including enthusiastic participants and facilitators. Documentation during the process is important, because often we must return iteratively to the earlier phases to complete scenario drafts, a PESTE analysis or any other sub-results of the work.

An action scenario approach means action based on scenarios. Recommendations can help in this respect, as well as the dissemination of the results in the form of the future headlines as described in Worksheet 12, for example. This will make people aware of the important future issues. You can use also videos, tweets, reports and other dissemination material to spread this information widely in order to build the awareness of the future among the whole ecosystem.

7 Conclusion: Preconditions for Successful Foresight

Foresight is an activity based on various phases from data collection to analysis and the use of the results. It requires a subject responsible for the process, giving viewpoints for the interpretations of the importance and impacts of the foresight. There is no general foresight process which is suitable for all. The foresight theme will define the content of variables and the purpose of the process will define the scope and scale of monitoring levels.

A successful foresight process will fulfil the criteria as follows:

- More diversity!
- Facilitated process
- TOP management commitment
- A toolbox with several alternatives
- Long-term thinking
- Connection to the decision-making process
- Goal-orientation but still fun (Laugh!)
- No hierarchical structures in the team, people as individuals with their skills and competences

We encourage all the readers to practice their foresight skills and run the foresight process several times with various themes and actors. There are no right answers for the future, but several possible alternatives to discuss and analyse and finally to take into consideration, when making decisions. "The best is the enemy for the good" means here, that it is better to run through the process with estimated results in every phase instead of totally completing each phase, in other words, time is important in foresight and the early bird will get the worm.

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Appendix: Worksheets



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THE FUTURE IS NOT PREDICTABLE BUT IS CREATED by individual choices and actions. There is no single future, but there are many possible alternatives depending on the circumstances and the interests of those who are working for the future, consciously or unconsciously.

THIS WORKBOOK SUMMARIZES THE FORESIGHT PROCESS and the tools that are useful in different phases of it. For the readers we point out that foresight is a multisided process and offers lot of opportunities for application in practice. This workbook is a result and a summary of the long-lasting development work which Corporate Futurist Tarja Meristö started in the late 1970s and developed it further during six decades both in theory and in practise. The writers of the book have worked together with dozens of foresight projects during last 20 years in different business fields.

THIS BOOK PROVIDES A SET OF WORKING SHEETS with practical examples from sustainable business to apply foresight in practise. It is good to have a team to discuss things and views together to get a broader view to the future. Working as the team will also bring commitment to use the results when having decision makers responsible for the actions as team members, too. We wish you a fruitful journey into the future!

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