FUTURES PLATFORM

Key Success Factors of a Foresight Program

The future holds tremendous possibilities and enormous risks. Yet for organizations of all kinds (private companies, public sector organizations as well as NGOs) many drivers of future change can be mapped out, assessed in terms of impact and monitored. In this eBook, we present a foresight development framework designed to help organizations raise their awareness of possible futures and ensure they are forward looking in their plans and decisions.

Futures Platform eBook

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Executive summary

This eBook introduces and discusses Futures Platform's Foresight Development Framework. The approach is based on the consultative experience of Futures Platform, and it also relies on research into how consulting companies, public organizations and large enterprises conduct foresight activities on a global scale.

The Foresight Framework created by Futures Platform has been developed to help organizations build a systematic foresight capability, i.e. the capability in the organization to understand the alternative future outcomes that reach beyond the immediately visible and imaginable future.

Trends that may in the future have tremendous impact on your sector may first emerge in other areas of society.

Typically, most organizations can rather reliably predict what will happen in their own industry or operative domain over the next 2–3 years. Yet the picture becomes dramatically less predictable after that, and this is also when industries and domains start being notably affected by trends in adjacent or even remote industries.

The Foresight Framework builds on five Key Success Factors that an organization needs to develop in parallel in order to bring their foresight activity to a level where it compares to the most advanced organizations in the world. The Key Success Factors are defined as follows:

1. **Foresight Orientation:** Start small but foster a strong future Orientation in the organization from the beginning
2. **Foresight Process:** Design and implement Foresight Processes that are integrated with decision making
3. **Foresight Deliverables:** Design and produce concrete Foresight Deliverables
4. **Foresight Tool:** Adopt a dedicated Foresight Tool that helps structure the foresight content and enables global sharing of it
5. **Foresight Resources:** Harness the Resources for maintaining and developing the foresight program

Realistically, most organizations first approach foresight capability building from a pragmatic perspective: The need may emerge to understand, say, the evolution of mobile banking over the next 5–10 years, and a foresight project will be conducted around that topic. The organization then concludes that it wants to keep an eye on this topic and others in a more systematic fashion, and a foresight capability program is launched. The softer success factors such as a built-in foresight orientation and organizational culture will emerge over time with a consistent effort.

In an advanced, future oriented organization, foresight is a systematic activity that typically involves an appointed leader, expert contributors that usually only have a part-time role in the foresight activity, and the internal network of foresight users and occasional contributors who are interested in how the future shapes the operations of the organization.

1. Strategic Foresight in a rapidly changing world

The exponential nature of change

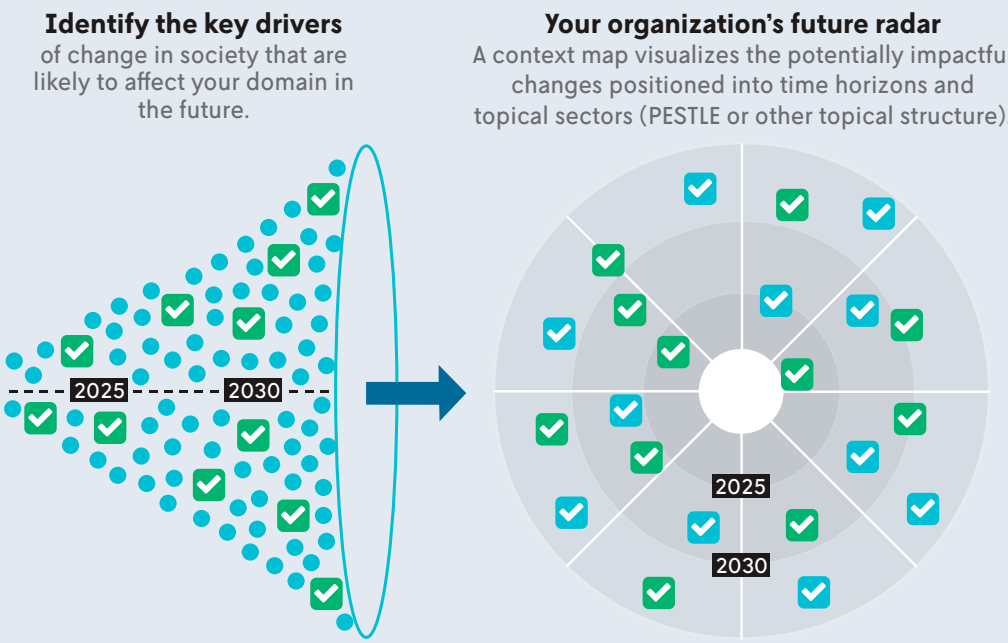
Many people feel that it's possible to foresee developments quite reliably in their industry, or sphere of activity, over the next couple of years. Frequently however, when looking into the future, people focus on developments in their own domain.

Yet the most critical threats and the greatest opportunities may emerge in areas outside of an organization's immediate field of activity. New phenomena in adjacent fields, or trends in society at large, are often the surprising drivers of change that will eventually also impact one's own future – sometimes in dramatic ways.

The further we look into the future, the more the range of possibilities expands beyond the scope we have in mind. The range of **possible futures** is broad when looking further than 2–3 years ahead (Exhibit 1). It is useful to understand what the most **plausible futures** are like and even to seek to identify the most **probable futures**. To do that, one needs to be aware of key drivers of change and monitor them systematically. Ultimately it is possible for us to maintain a dynamic vision of our **preferred future** and do what is in our power to make that happen.

Before we established Futures Platform as a company, during many years of experience as foresight and Market Intelligence professionals, we encountered a large number of organizations in which there was a strong desire to enhance strategic foresight capabilities. In a world that is changing fast, many organizations see great value in being able to do foresight work in a structured and productive fashion to ensure that the organization remains relevant in the years to come and continues to make a positive contribution to society. Futures Platform as a tool grew from our consultative work to help make that possible.

Exhibit 1. The range of possible future developments expands when you look further into the future. Futures Platform helps map out which future developments are most critical to consider in your organization's operative domain.



Futures Platform is a tool that helps organizations map out and understand future trends both within the organization's immediate scope of activity and beyond. With this visual and collaborative digital tool we wanted to make it easier for organizations to create a well-structured picture of key developments in their near-term future and also identify what the more distant future may bring along, including significant changes driven by the large megatrends.

While the future is full of uncertainty, gaining an increased awareness of future possibilities can be a very useful, inspiring and motivating experience for people in organizations of all kinds. In this eBook, we share our thinking on how foresight can be done so that it's easy to get started, it becomes a continuous activity, and helps pave the way for a desirable future.

What is Strategic Foresight?

Strategic foresight (sometimes also used interchangeably with for instance "Futures Studies" or "Futures Research") is a discipline by which organizations gather and process information about their future operating environment (such as trends and developments shaping the organization's political, economic, social, technological, legal and environmental context). Strategic foresight is relatively new to businesses and public organizations. Consequently, the terminology that is used to describe the activity of making sense of the future opportunities and threats has not cemented itself quite yet.

However, with popular current topics such as AI, robotics, or emerging new materials dominating conference agendas and coffee table discussions, systematic foresight activity has gained momentum. Organizations want to understand in more detail how the world is changing and how their own organization can make the best of the changes. The purpose of the foresight activity is to ensure informed decision making that is based on carefully analyzed views on the alternative future scenarios.

From Market Intelligence to Foresight

Better known and more established than Foresight activity is its 'sister discipline' Market or Competitive Intelligence (MI or CI, respectively). Organizations operating in a competitive environment have always needed information to stay on top of what customers wants from their products, and how the competitive landscape evolves.

Market Intelligence as a discipline has long promoted the idea that organizations should look ahead and make plans based on their predictions and projections rather than to merely look in the rearview mirror and keep doing what used to work best in the past. Hence there are deliverables and methodologies under the MI domain that are also part of the foresight activity: Trends analysis, scenario planning, and war gaming are some examples.

To make the distinction clear between traditional Market and Competitive Intelligence activities and Foresight, we'll need to look at the time horizon and the analysis methods used. Strategic foresight looks into the future with a minimum time horizon of 2–3 years with the maximum range extending much further beyond that. Many developments that will greatly shape people's behavior in 5 years' time can be anticipated, and alternative evolutionary paths of the demanded products and services can be mapped. This is at the

heart of the foresight activity, and this is also where specific foresight-related methodologies such as horizon scanning, backcasting, or the Delphi method come into play.

Benefits of systematically organized Foresight activity

Foresight activity is critical for organizations for two reasons above others:

1. **The current pace of change** in technologies, service models, the natural environment, and entire societies is so rapid that organizations need to pull together and spend time on making sense of the developments and plan their operations accordingly.
2. There's no shortage of future-related information. However, so much of the information is unstructured and comes from a variety of sources that merely **bringing order and structure to the chaos adds value**. When analysis work is done with professional methods off a structured knowledge base, the odds of successful outcomes for the organization are greatly improved.

Resulting from the above challenges, Foresight operations have been or are now being established in large enterprises, consulting firms and public organizations around the world. However, Foresight leaders still often find it challenging to clearly communicate the hard and soft benefits that the investment in an organizational foresight capability is expected to yield, especially at times when budgets are tight.

Exhibit 2. below pictures the typical outcomes of systematic foresight activities in organizations that include

- **Increased organizational awareness** of future trends and phenomena that are relevant for the organization's future success
- **Holistic and contextualized mapping of key future developments ("foresight radar"):** Making sense of the otherwise random themes in the context of one's own organization and mapping the developments into a logically structured picture
- **Early warnings:** Continuous horizon scanning to alert the orgnization about opportunities and threats that are relevant in the organization's context
- **Future-proof plans and decisions:** Future-oriented deep dives into specific topics to ensure strategic plans and investment decisions are aligned with future changes
- **Thought leadership:** Having educated views of the future developments puts the organization in a natural thought leader's position. This is useful in marketing but also in leading insightful discussions with customers and other interest groups

Exhibit 2. Typical outcomes of systematic foresight activities in organizations

2. Foresight and Future–Oriented Analysis Methods

Foresight envisions alternative futures, attempts to say something about the probabilities of different outcomes, and it also attempts to point out options for actions.

The practice of **strategic foresight** has long been associated with the military and politics. More recently however, public organizations, businesses and industries have started to adopt foresight practices by linking strategy with futurology. The driver for this development is clear: Never before has the pace of change been this rapid on so many fronts in parallel: In technology, business models, ecological environment and entire societies.

One of the Founders of Futures Platform, Dr. Tuomo Kuosa, explains in his book 'The Evolution of Strategic Foresight' (Gower, 2012) that strategic foresight refers to the practice of generating analyses of alternative future outcomes. Based on the available foresight and foreknowledge, the practice of foresight can be applied for instance in companies, business sectors, public organizations and in public policy making.

In an everyday context, strategic foresight is frequently used interchangeably with a number of other future–oriented terms and phrases such as futurology, predictions, future research, insight, foresight, or forecasting. How can we make sense of the maze of terminology?

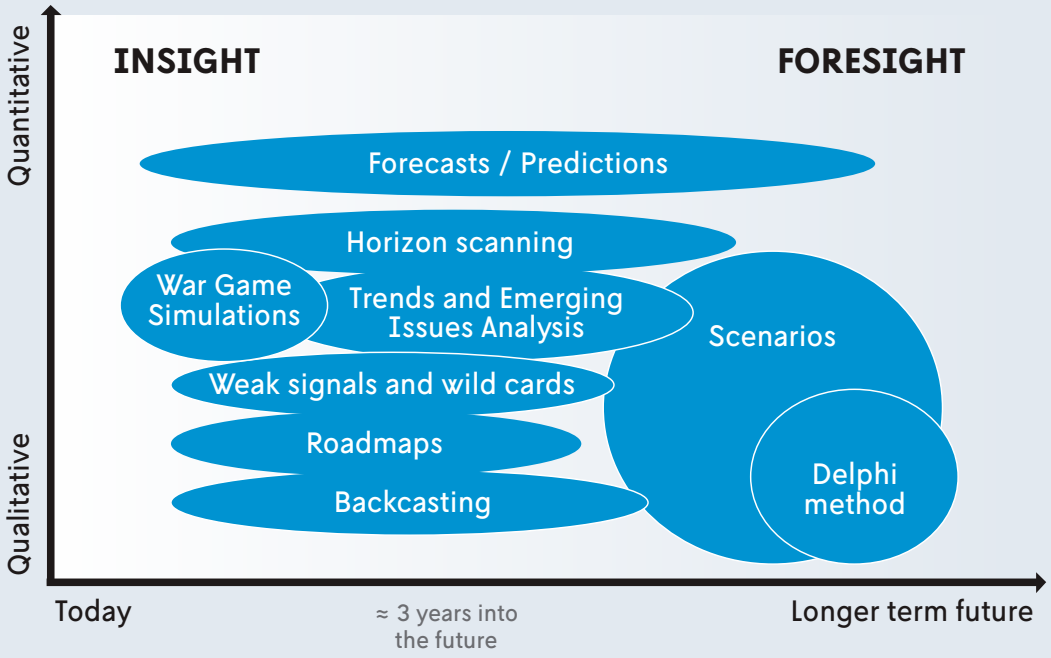
Foresight refers to a process of envisioning alternative futures, combined with hindsight, insight and forecasting. Foresight attempts to say something about the probabilities with which different outcomes may or may not come true, and it also attempts to point out options for actions.

Foresight can also be defined over a timeline: When hindsight is about understanding the past and insight refers to understanding the true nature of the present, then, logically, foresight is about systematically understanding the future.

Foresight methodologies

Exhibit 3 below puts some common foresight methodologies into context over a time horizon (horizontal axis) and based on whether the output of the foresight work is qualitative or quantitative by nature (vertical axis). The distinction between qualitative and quantitative is naturally a line drawn in the sand, in that many methodologies combine elements from both.

Exhibit 3. Foresight methodologies cover different time spans and vary in terms of qualitative/quantitative nature.



As a rule in practical contexts, approximately three years is a divider between 'near' and 'distant' future, whereas one year is the most immediate planning horizon for almost any organization.

While the strategic foresight work covers all methodologies presented in the graph, many organizations do include war game simulations, technology roadmaps, weak signals analysis or trends reviews in their normal market intelligence program without bothering to specifically label them under 'foresight'.

Hence, a forward-looking orientation is key to interpreting Exhibit 1. Regardless of whether the organizational activity or function is named 'insight' or 'foresight' – or something else – the methodologies and indeed the output of the activity look into what the future might look like, and what implications it should have on the organization's own strategic planning.

We will briefly explain the methodologies mentioned in the graph, organized along a time line, from the near-term towards the more distant future:

1. **Forecasts / Predictions:** Forecasting is about making more or less linear projections or estimations of future events whose outcomes are uncertain. A 'prediction' refers to precise estimations; e.g. to the precise number of times floods will occur in a certain area over a certain period of time.
2. **War game simulations:** War game is a strategy game that deals with military operations of various types, real or fictional. In a business context, war games simulate different competitive settings and competitor actions and responses.

3. **Roadmaps:** Most often seen in a technical context, roadmaps literally map out projected milestones in the development of a technology (or product)
4. **Backcasting:** Backcasting is a planning method that starts with defining a desirable or possible future and then works backwards to identify actions and programs that will connect that specified future to the present.
5. **Weak signals and wild cards:** In researching the future, wild cards are low-probability, high-impact events. Weak signals observation attempts to point out developments that are linked to the potential occurrence of emerging issues or changes in trends.
6. **Trends and Emerging Issues Analysis:** Trends analysis is the practice of collecting information and attempting to spot patterns in it and their impact over time. Emerging issues are topics that do not directly seem to fit to an existing pattern but may develop new ones.
7. **Horizon scanning:** The systematic gathering of information to detect early signs of potentially important developments that may point towards affirming or discrediting existing trends and developments as well as identify new and emerging trends and developments which are on the margins of one´s current thinking. It is an activity that is often based on desk research, helping to develop the big picture of future changes. A solid horizon scanning process can help develop strategies to align with future developments. It can also be a way to identify trends to feed into a scenario development process.
8. **Scenarios:** Scenario planning helps organizations anticipate change, prepare a response and create more robust strategies. A scenario planning project starts with combining known facts about the operating environment and naming one or more big uncertainties or drivers in the foreseeable future. The role of such uncertainty is to convert the probable path of developments into two or more alternative paths. This scenario work, together with the assessment of the impact of events and mapping out daily events against the projected paths, is done in a group.
9. **The Delphi method:** The Delphi method is a structured, interactive forecasting technique that relies on a panel of experts. The experts answer questionnaires and give their arguments to defend their answers, in two or more rounds. During this process the range of the answers will narrow down, based on re-assessment of the given arguments, and the group will converge towards the "correct" answer in the final round.

3. Key Success Factors of a Foresight Program

In our Foresight Development Framework, we have divided the foresight activities into five different Success Factors that the organization should put effort in: i) Foresight Orientation that relates to leadership and culture, ii) Foresight Process that deals with the processes of conducting both individual foresight projects and a systematic program, iii) Foresight Deliverables that are the program's output, iv) Foresight Tools that are the digital aids that facilitate the foresight work, and finally, v) Foresight Resources; the organization that makes the actual foresight work happen. In the following, we will introduce each Success Factor and describe the best practices related to it in more detail.

KSF 1: Foresight Orientation

Organizations that will benefit from systematic foresight programs are typically those that need to make future-proof plans on a very long term: Many public sector organizations, private companies, NGOs, industry associations, and other special interest groups. Foresight orientation starts from the leadership and puts the focus far into the future; way beyond the nearest two to three years.

"Spend time in the future" goes the saying for someone who wants to be successful in the long term. No matter whether it's an individual or an organization, private or public, it's a good idea to put effort into understanding how different the future might look like than today, and how the changes will impact our operating environment and our very success.

Foresight is essential in a wide range of public organizations. In private companies, typical users of foresight include strategic planning, innovation labs, intelligence programs, and risk management.

Future orientation starts from the leadership and their example. When the management sees the value in spending time on what the alternative futures may look like, their example spreads around and gradually twists the entire organization's culture towards future-orientation. Turned the other way round, few organizations manage to make decisions in a future-oriented fashion if the leadership only lives in the present (or worse, in the past).

Hence, if the leadership does want to meet the future opportunities and threats prepared and plant future-orientation to their organization, how should they go about it? They should launch a foresight program whose scale and scope fits the size and industry they are in.

Typical organizations that will benefit from systematic foresight programs are those that need to make future-proof plans on a very long term: Cities, various councils and public agencies, large companies, non-governmental organizations, and the likes.

Initiating a foresight program brings up basic questions such as whom the activity should serve, what information these target groups will need, and what will be the timeframe of the deliverables produced. Defining the orientation of the foresight program therefore involves listing out organizational functions that will benefit from the deliverables, and topics and themes that each of them are most interested in.

How far into the future the deliverables will look is also important. In foresight programs, the radar spans at least 2–3 years ahead, and typically much more. The time horizon can be several decades especially in sectors where decisions (e.g. investment decisions) will have consequences and results far in the future. Examples include pharmaceuticals development, power plants, construction, and urban planning.

Some of the **most typical user groups to foresight** include the following:

- A large variety of public sector organizations (where the exact organizational functions using foresight vary)
- Various stakeholders within private companies (functions, roles and activities)
    1. Strategic planning
    2. The Market Intelligence function (or similar)
    3. Innovation labs and Chief Technology Officer type of roles
    4. Risk management
    5. Board professionals: While CEO's normally need to focus on the quarterly performance and stock exchange, Board members are expected to focus on longer term. The same applies to strategy and innovation leaders.
    6. Sales and Marketing: To conduct more educated and value-adding discussions with customers (co-creation), and in some cases to promote thought-leadership of the company itself
    7. Human Resources
- NGOs, industry associations and other special interest groups

Regardless of its roots and origins, once the foresight program is up and running, it would be waste of resources not to expand its reach to other organizational functions and processes that have foresight needs. Indeed 'future orientation' shouldn't only limit to parts of the organization but should cover it all so as to foster true 'spending time in the future'.

This makes sense also from the cost efficiency point of view: Typically, in many organizations, synergies are missed, and redundant work is done because different functions handle their own information gathering and processing without looking too much left or right.

Moving forward on a traditional intelligence program

Many organizations that are ambitious about understanding the future already have some sort of a market or competitive intelligence program in place, or, in public sector organizations, an economic forecasting unit. The intelligence program may already serve the needs of several user groups and produce highly analytical deliverables, yet the organization may still be looking primarily in the rearview mirror and, when looking into the future, mainly rely on quantitative forecasting models.

Hence the natural next step in the future orientation effort is to expand the focus of the intelligence activity to also cover the anticipated future developments of the operating environment that may have an impact on the organization in the long run.

Simple as it may sound, this initiative will put entirely new requirements to the intelligence team or other department producing the output. They will now have to adopt the role of a futurist, i.e. they will need to start applying new research methods, providing interpretations and adding their own strategic judgment into the analyses. Previously, they perhaps only focused on delivering facts about the current operating environment or used no other than quantitative methods when looking into the future.

In a foresight program, monitoring signals of change from a variety sources is key to detect emerging opportunities and risks.

Anticipating future developments is not straightforward or without debate about probabilities and possible turns of events, hence it often involves groups of people. The traditional intelligence assignments or quantitative forecasts, on the other hand, are quite often done by one or a few individuals at their desks.

Scenario analysis projects, and war gaming or market simulation workshops are good examples of activities that are best conducted in groups, preferably also involving senior management that is responsible for the future success of the organization.

Senior management's involvement in the foresight building process contributes the most to true foresight orientation in an organization, especially as much of the foresight work is done in groups. This is perhaps the single most important factor that distinguishes a foresight program from an 'ordinary' intelligence program: Since the future is uncertain for everyone, it is useful to make sense of what's on the horizon together, and form shared views. From the management, shared views are easier to communicate forward in the organization than more isolated analyses and opinions.

KSF 2: Foresight Process

Collecting information that eventually becomes 'foresight' is a process, whether it relates to a systematic foresight program or a single project. In a foresight program, receiving a rich supply of signals of change from a variety sources is key. The signals are then analyzed and turned into assessments of the alternative future outcomes. With a single foresight project, the process of turning data into analysis follows more like the traditional intelligence cycle.

"Foresight process" refers to the process of collecting, analyzing, and reporting information about specific foresight topics to decision-makers. Ideally, the foresight process is not developed in isolation but should be anchored to the existing processes in the organization that require information.

In practice, the deliverables that the foresight process yields should feed into the strategic planning process, investment decisions, innovation activity and technical roadmaps as a natural part of educated and future-conscious decision-making. The foresight process should also serve to maintain awareness in the organization about the developments in the surrounding world that will have an impact on its own operations.

The foresight process looks different depending on whether the focus is on a foresight program or a single project.

Process for a foresight program

For a systematic foresight program, the foresight process is first and foremost about getting signals and impulses in and processing them.

For the organization, it's important to have the radar out for any signals that indicate change in the future to the current status quo. The change may occur against a predefined scenario, or it may be just any change that may have an impact on the organization's ability to carry out its vision and strategy.

In the early stages of foresight development in the organization, collecting signals from the operating environment typically happens for an individual project, such as a scenario exercise or a trends analysis report. The activity is ad hoc, and hence the information source portfolio has not been thought out with a continuous activity in mind. The foresight process for an individual assignment is described further below.

Once the foresight program matures, and scanning the horizon becomes a systematic activity, 'the radar' develops: The organization works to create a continuous capability of pulling in signals and impulses from the political, economic, social, technological, environmental and legal environment. Those signals are then regularly processed into foresight deliverables.

An ideal foresight program maintains a customized view of probable futures for the organization, alerts of emerging signals of change, and engages stakeholders to conduct deep dives on important future focused topics.

Information sources start to matter: What are the best, most knowledgeable, and most cost-efficient sources for information on specified topics? Who should keep an eye on them, and how? How much does it cost?

Collecting observations about trends and emerging issues internally from within the organization is often an important part of horizon scanning. How to arrange the possibility for people to contribute to the process is a key question to be addressed.

Also, the analysis capability starts to matter. Depending on the size of the organization and its needs, it may make sense to dedicate one or several people to regularly filtering and analyzing the incoming signals that indicate potential changes in the future.

The deliverables of the foresight process also develop and establish themselves: Typical output of a foresight program may include weak signals alerts, trends analyses, early warning systems, and alternative scenarios. It's important to keep in mind that while the actual radar of the organization may span (and typically does) 2–10 years and beyond, early warning signals or horizon scanning reports can be useful immediately.

Process for a foresight project

For a project, the foresight process is a cycle that roughly divides into four phases. In reality, any research process involves going back and forth between phases, yet for the sake of simplicity, we'll describe the phases as a cyclical continuum.

1. **Scoping the research:** A foresight assignment is kicked off with defining the research question(s) related to the situation at hand. The topic to be studied could be for instance "What is the future of traffic like, and how can we position our organization optimally in the future landscape?" Whatever the specific scope of research, mostly the foresight assignments deal with strategic choices, risk identification, or, say, backing up investment decisions. Hence it's crucial to put effort into formulating the research question carefully.
2. **Retrieving information from different sources:** Most research processes start off naturally with going through readily published information, either free or fee-based. Not all information is published though, and gaps in the research should be addressed by interviewing experts that are knowledgeable about the topics under research. In our future of traffic example, the interviews may be for instance Delphi-type of expert interviews.
3. **Analysis and foresight co-creation:** Once the pieces of information have been collected from different sources, it's time to make sense of them in the context of the original research scope. In foresight assignments, this is best done in groups: rather than someone trying to analyze information and draw conclusions alone, co-creation is a useful approach. In practice, those who have collected and structured the pieces of information bring them into a selected working group of experts and stakeholders, and both the information analysis and its 'delivery' happen in parallel. This is in contrast to the more traditional intelligence assignments where analysts process and package the information and then deliver it to decision-makers.
4. **Documentation and feedback:** Typically in foresight assignments, the analysis work takes place in groups of people workshopping and drawing conclusions. Bringing different kinds of expertise and several viewpoints to the table is fruitful for the quality of the results. Equally important, however is to make sure the results don't 'disappear' with the end of the workshop. The discussions should be documented into a structured format that makes it easy to return to the conclusions and utilize the results later on.

Regardless of whether the foresight activity is a project or a program, it serves organizational decision-making. What foresight results eventually are "best" is determined by how well the foresight output matches the needs of the organization.

Importantly, being able to best utilize the produced foresight information also requires that the organizational processes that the foresight information serves are in shape. If the processes are barely defined or don't even exist, even the best foresight output may fall through the cracks in decision-making situations.

KSF 3: Foresight Deliverables

Foresight deliverables are often mere signals of change that an organization constantly gathers from its surroundings. That plenty of signals are coming in from a variety of sources is a 'deliverable' in itself; it indicates that the organization has the radar out for future developments. Yet the signals also need to be processed into more structured formats: regular reviews, deep dive analyses, or workshops. These are program deliverables that should have a defined purpose, owner, and format.

For the rest of the organization, what the foresight program delivers is usually the most visible part of the foresight work. And since the deliverables are visible, they are marketing tools for the entire foresight activity. Hence it makes sense to try and productize the foresight deliverables to the extent that is feasible in each organization's context.

That said, foresight content often also serves as raw material for other content deliverables, without being very tangible in its format. For instance, scanning the horizon for weak signals of change, or scouting for emerging trends may be regarded as 'foresight deliverables', yet they are by no means productized at all.

Ad hoc type of 'question and answer' deliverables are demanding to produce and hard to manage or measure systematically. On the other hand, many pieces of content eventually feeding into the foresight process are just – pieces. Balancing between the two ends, the organization should aim at productizing the deliverables that are clearly regular and analytical packages, such as repeated analyses on certain topics, or for instance regular updates of early warning and opportunity signals.

With the productized deliverables, standardizing the format is one thing but it may also make sense to work on the production process. Things to address in designing foresight products include:

- Building an understanding of the foresight needs that the deliverable will be used for
- Appointing a 'product manager' to be responsible for the production. Since foresight deliverables are often produced jointly – co-created – in for instance in a workshop, the product manager may in this case be the facilitator of the discussions.
- Defining the possible documentation format of the product

The more sophisticated the foresight deliverables are, the more they should aim at providing analytical conclusions, since plain information will not be impactful enough to drive strategic and operative decisions. Deeply analytical deliverables combine the research results with anticipated implications and will help make fact-based decisions for the benefit of the organization.

Earlier in chapter 2, Exhibit 3 illustrated a methods-driven approach to organizing the foresight work. Some of the methods, such as War Game simulations, Scenario planning, or Trends analyses, may even end up being used as the names of the eventual deliverables. Yet we want to make a distinction between methods and the productized output of the foresight program.

No matter how the foresight deliverables are named, and which methods are used, they fall into three broad categories:

1. **Alerts on emerging signals and other foresight content**
2. **Customized view of the future**
3. **Occasional deep dive analysis for different purposes**

The role of information taxonomy

The backbone of many of the foresight deliverables is the information taxonomy through which the organization looks at its operating environment. To conduct the foresight work in a structured fashion, it makes sense to start with a joint effort involving decision-makers to go over the important broad topics that will influence the organization's future. The broad topics will then be split into more granular sub-topics and then possibly sub-divided further still.

The topics to keep under radar will evolve over time, so it's necessary to regularly go back to the taxonomy and update it to match with the latest views of what is relevant for the organization.

Software tools are an effective means to engage people to work together on the important trends and themes.

As the end result, the important topics and themes shaping the organization's future are listed out in a neatly structured way. Once this structuring exercise is done, the resulting taxonomy serves as an important input to formulating the foresight deliverables.

Not all foresight deliverables are based on a taxonomy, though. Frequently, the first effort towards better understanding the future is an ad hoc project: In conjunction with the strategic planning process, the organization needs to look five or so years ahead, and this may be the very first time it puts a concerted effort into doing so. Mapping out the factors shaping the organization's present and future operating environment may rather be the next step in starting to build a more systematic foresight capability.

Three types of deliverables

The structured foresight deliverables typically fall into three broad categories:

1. **Alerts on emerging signals and other foresight content.** Typically in the foresight context, one processed signal, or for instance a trend card, forms 'a piece of news' that's interesting to decision-makers. Hence the foresight work often kicks off with the organization starting to monitor and analyze trends and signals that are documented and distributed to stakeholders. People have different preferences as to how frequently and on which topics they want to be alerted, and the alerts should be customized to the user's individual needs.
2. **Customized view of the future.** While the future trends and phenomena are the same for everyone, they have different infuences on different organizations. For an organization that wants to turn the monitoring of single trends into a more holistic view of the future, it makes sense to map out relevant trends and phenomena, and to bring them into a visualized format that's easily shared among internal stakeholders.

One way to visualize which trends will have an impact on the organization's future is to position them into a foresight radar.

3. **Deep dive analysis for different purposes.** In addition to keeping the radar out for trends and signals in a structured fashion, a future-oriented organization occasionally needs to produce deep dive analyses about important topics. Typical use cases for deep dives include:

   a. **Analysis to support strategy.** This is the most obvious one. All organizations make plans and gamebooks for their future, and the plans should be backed with educated views of the future development having an impact on the organization's ability to survive and thrive. Foresight deliverables serving as input to strategy may be produced and updated once a year, less frequently or more frequently depending on the specific requirements of the organization. An example of foresight input to strategy could be a report on mapping the organization's core capabilities against future scenarios, or a trend analysis pinpointing the accelerating and inhibiting forces on the chosen strategy over the next three years.

   b. **Scanning for new ideas.** Many organizations look to 'design thinking' for a source of enhanced innovativeness and disruptive ideas that should emerge from within. Deep dives into specific future-related topics are great input to design thinking: They provide material for joint idea creation that might end up becoming new products, services, and concepts.

   c. **Investment decision support.** Making significant investments involves a lot of future-oriented thinking by definition, as the expected payback of the invested money will necessarily happen in the future. Backing up all investment decisions with a one-off foresight deep dive therefore makes perfect sense. The detailed structure of the eventual deliverable will vary depending on the specific situation each time, yet here, too the future-oriented taxonomy of the organization will be helpful.

   d. **Risk analysis.** The future is risky by definition, and organizations generally prefer certainty over uncertainty. One of the common purposes for scanning the future developments is to identify and mitigate risks on time rather than being caught by negative surprises. Again, mapping out potential risks may be conducted for instance once every year or more frequently given the rapid digital developments. An example of risk analysis could be for instance a deep dive into the influences of the blockchain technology on the future of banking.

   e. **Scenario planning.** The future will arrive anyway; the only question is how it will look like and what its impact will be on our organization. Scenarios are projections of alternative future developments. The essential thing about scenarios is that the organization deliberately prepares itself for different alternative outcomes and continuously monitors the probability of the alternative scenarios becoming a reality. Here, too the taxonomy will be helpful; it will list out the essential topics around the organization that should be considered when building the different scenarios.

Foresight deliverables serve as input to different decision-making situations or organizational processes. Generally the deliverables are the more valuable, the more people are involved in producing and using them (co-creation). Also, when the deliverables clearly serve a purpose, like the most typical ones listed above, they are most likely used in conjunction with a distinct decision.

KSF 4: Foresight Tools

Organizations should involve their people in creating a vision that's shared by everyone. Great foresight tools invite employees to participate in and get inspired by foresight work. Technology alone doesn't ensure participation, but easy-to-use tools certainly help in fostering engagement, especially if people are sitting in scattered locations.

Developing the foresight activities, organizations quickly realize the need to take tools into use to help with the collection, processing, storage, and delivery of the future-related information content.

Similarly to Market Intelligence programs, the frequently used tools and techniques in foresight work include needs analysis questionnaires, information collection templates, and a wide range of analysis frameworks.

However, in the age of software, the central tool for organizations in running a high-quality foresight program is a software product that has been designed to support the foresight activity both at the production end (information collection and processing), and at the receiving end (in accessing and utilizing the content). Hence, we will limit the focus in this chapter to foresight software only.

Many organizations establishing a foresight program already have software tools existing that are dedicated to storing and delivering content related to the market and competitive environment. If this is the case, the foresight deliverables make up a specifically future-oriented part of the entire information content in the software tool.

Revisiting the future radar and evaluating latest developments should be done on a regular basis.

Establishing a foresight program may also be the first step that the organization takes towards systematic market information management. In this case there's probably no software existing in the organization that would specifically support the management of foresight-related content. Hence, we will first look into the best practices in the storage and distribution of the foresight deliverables.

Tools for storing and distributing foresight content

A foresight software tool provides a single user interface to screened and organized information content from both external and internal sources. The best foresight tools have been specifically designed and developed to support the requirements of the foresight process, bringing structure and engagement to the foresight work:

- Making it possible to easily select and study key trends that will have an impact on the initiatives the organization is working on
- Engaging teams: Basic knowledge about probable, plausible and possible future developments is one thing, yet how each organization utilizes that knowledge is key – and it's teamwork
    - Assessing the key opportunities and risks together
    - Drawing conclusions and making educated decisions

Software – the tangible centerpiece of a foresight program

A foresight software tool is one of the most tangible elements of a foresight program, and as such serves as the natural centerpiece of a foresight program, even though people are doing most of the value-adding foresight work.

Unlike the foresight process or culture, or other abstract concepts such as 'needs analyses' or 'workshops', a foresight software has a concrete look and feel, and this makes it a great marketing vehicle for the foresight deliverables and indeed the entire foresight program. While no single foresight tool will contain all information that decision-makers may want at their fingertips at a given point in time, the efficiency of a foresight program is greatly enhanced by people simply knowing where to start looking for high quality future information when the need arises, and whom to turn to, when the readily available information will not suffice.

Also, efficiencies are achieved by decision-makers gaining continuous exposure to relevant future-related information through automated and personalized alert services about new and updated information that is being stored and delivered through the foresight software.

A foresight software tool will help enhance the efficiency of storing and delivering foresight information and providing a tangible platform for marketing the foresight activity to its internal audience. The software will also help maintain the continuity of the foresight activity at times when either the producers or users of the foresight deliverables change.

The future interests a lot of people, so it shouldn't be too difficult to engage an internal network around the topic.

Finally, a foresight tool facilitates the gradual build-up of a foresight orientation in the organization by enabling a two-way flow of information among the users of the foresight deliverables. "The wisdom of crowds" applies in that no foresight team will be able to deliver all relevant business information to the organization in a one-way fashion, but the wisdom of the entire organization should be tapped into for the best results.

Again, a foresight software will not do this on behalf of the organization, but the best tools will facilitate the process. Once the future radar is in place, the organization will operate on a new level of future awareness. Actions will be inspired by future foresight, and the organization can continue to monitor the key trends that will have an impact on their operations.

Revisiting the future radar and evaluating latest developments should be done on a regular basis. It's easy to update the foresight radar view as key trends develop further or new drivers of change emerge.

Ideal features in a foresight software tool

There are a variety of technical features and functionalities in software tools that can assist the foresight team to provide great services and the end users to add their own contribution. We have compiled a list of features below that have generally proved most valuable and appreciated in foresight user organizations, and may help the reader assess the options when considering the implementation of foresight software.

Content management features:

- Storing content in a database and adding metadata
- Categorization of content (taxonomy)
- Searching and indexing
- Usage monitoring and statistics

Data sourcing and input features:

- Web crawling or monitoring
- RSS feed management
- Input through a web interface (for instance to enable internal trend observations)
- Input through a mobile interface
- Integration with external data sources (e.g. API that enables importing data from other sources)

Security and user rights management:

- Secure authentication and authorization
- Encrypted data storage and/or transfer
- Granular access rights of users
- Single sign-on to save the user from the trouble of logging in separately to the foresight tool

Dissemination ("push" from the foresight team to the users):

- Automated email alerts to the users
- Integration of external user interfaces (API, XML, RSS, SharePoint)
- Self-service access ("pull" by the foresight users)
- Sophisticated search tools
- Fully functional mobile interface

Collaboration and engagement:

- Commenting and rating of content items
- Discussion forums and/or threads
- User groups and facilitation of networking and co-creation of content

Another angle to the features and functionalities of foresight software is the interest group perspective: there are three distinct groups of stakeholders to a foresight portal in any organization:

- **The foresight lead** is most interested in internal marketing and branding of the foresight activity, usage statistics, managing data sourcing, and making sure that the content will reach the users in an optimal way.
- **The analysts and/or part-time contributors** need to consider how to best make available the content to the end users, manage the content in the system, and collaborate among the contributor team and with the end users.
- **The foresight users** will appreciate features that make the tool easy and engaging to use and to collaborate with the foresight team and other users.

Many organizations are also looking to add similar features to their foresight tools as seen in social media platforms in the interest of increasing collaboration and knowledge sharing among their internal community.

Bringing structure to future-oriented content

The future is uncertain for everyone, yet it can be structured under broad and narrower topics. This brings us back to the taxonomy discussed in conjunction with Foresight Deliverables; It makes sense for an organization to map out the relevant megatrends and their sub-trends to bring structure to the continuous foresight work. If there's software to help in the process, even better.

Since foresight topics are strategic by definition, the foresight program ownership should be among the top decision-makers of the organization.

Oftentimes, 'future' is seen as a chaotic and abstract concept that's exciting and intimidating at the same time. Any tools that help people assign labels, descriptions, probabilities and interpretations to potential future developments will be helpful in producing and communicating future-oriented content deliverables to the organization.

A future-oriented 'navigation software' can serve as a component to a wider content management software, or it may be a standalone tool that supports the foresight work specifically and nothing else.

KSF 5: Foresight Resources

A foresight program will be established, so someone needs to do the work. In a typical scenario, one person will be appointed as the leader of the function, and they will involve subject matter experts to perform occasional or regular deep dives on selected future-related topics. Since the future in the age of everything digital tends to interest a lot of people, it shouldn't be too difficult to involve a sizable internal network, too.

'Foresight resources' refers to the people and information sources that make the foresight process a reality. Appointing someone as the owner of the foresight activity typically is the starting point of forming a foresight organization, but the person may need a team. They will also definitely need information sources, and an internal network to support the foresight work. We will briefly introduce the roles involved in the foresight work in a typical organization.

1. At the heart of a foresight organization is the owner of the activity and the one(s) responsible for steering and managing the regular operations. Organizing the leadership of the foresight program is the natural first step on the foresight development path. Typically, the foresight owner is the head of strategy or innovation, or a corresponding role in a public organization.
2. The foresight leadership forms a foresight team of one or several persons. In many organizations, this does not mean increasing headcount, and not even appointing full time foresight specialists. Instead, a typical organization involves part-time subject matter experts that will be able to help on specific projects either on a continuous basis or in one-off deep dives. External experts may also be used on a needs basis.
3. The 'foresight team' will have to set up a portfolio of external information sources that will be used in producing the deliverables the foresight users need. This source network refers to standard, regularly used sources for which there is typically also a preset budget.
4. The foresight users in the organization make up an internal network that, in addition to being at the receiving end of information delivery, will also contribute to the foresight process by sharing their own insight. Future is an inspiring topic, and once the foresight activity has something tangible to show to the internal network, it's usually not difficult to get people engaged.
5. Each foresight user will have a network of own contacts outside the organization that makes up their personal information source network, even if a very informal one.

Putting the resources to work

Managing a foresight program and conducting the regular work is often performed by the same individuals, yet their roles vary. While the foresight owner only occasionally takes part in conducting the foresight deliverables, the foresight lead, in addition to leading the program, may also be hands-on, doing analysis work and producing reports. How the roles and responsibilities will be divided in the foresight team typically depends on:

- the size and industry of the organization
- its geographical locations
- the degree of centralization versus decentralization of the foresight program
- the degree of outsourcing the work
- the budget allocated to the foresight work

Managing the Foresight Program

We will now look into the roles and resources involved with the foresight activity in more detail.

The owner/sponsor

By the time the foresight resources are defined, the scope and internal customers of the activity should be clear. With the purpose, primary target groups, and key topics of the foresight program determined, the owner and budget holder of the activity should be rather easy to determine. If the primary goal of the foresight activity is to serve strategic decision-making, the head of strategic planning may be a natural owner for the program. On the other hand, if the key driver of the foresight activity is to spot emerging technological trends, the head of Innovation or CTO might be best positioned to own the foresight program and its budget.

Along with the organizational function that will own the foresight program, the seniority of the person who owns the program will also have an influence on its eventual impact. A management team member as the foresight program owner can take the foresight topics straight to the top, influencing strategic decision-making without intermediaries. Since foresight topics are strategic in nature almost by definition, bringing the program ownership to the management team should be the goal of all organizations bothering to set up a foresight program in the first place.

The foresight lead

The role of the foresight lead is to fulfill and manage the expectations of the foresight users and to gather feedback from them, inspire and engage people in the organization, manage the content production in-house and by external resources, and own the foresight tools.

Ideally, the foresight lead should have leadership qualities: a networked person who generally enjoys the trust of people around them and has the credibility to lead an educated discussion about a variety of strategic topics. The person is preferably knowledgeable enough about foresight as a topic, yet does not need to have hands on experience about all details involved in carrying out the regular foresight work. Many successful foresight leaders have even been appointed to their roles without any prior experience in foresight at all.

The right type of person has a persuasive style and uses it to drive forward the foresight program both towards top executives and to interest groups around the organization. Managing the foresight program also involves engaging a network of external service providers, which is where negotiation skills will be useful. General knowledge about the information industry and strategic thinking will be valuable as well. Lastly, as the foresight program will only be successful if it manages to help the organization succeed, the leader will need to see that the program delivers on its promises.

A steering group may be appointed to the foresight activity that prioritizes the identified foresight needs, confirms the resourcing, and tracks the program's progress against targets. The steering group should involve the foresight owner and the hands-on leader, plus potentially some representatives from the functions that are using the eventual foresight deliverables. The steering group may only be meeting one or a few times per year, depending on what's meaningful in the organization.

The foresight team, i.e. the regular contributors

Typically, the core foresight team members are either full-time business analysts or, in fact more typically, they are subject matter experts in different fields and devote a part of their work time to serving the organization's foresight needs.

External information sources

Few organizations only utilize in-house analysts to carry out foresight assignments, as there is plenty of expertise available through foresight consulting companies. A modern foresight team is often a combination of internal and external resources. The external resources may consist of fixed elements such as long-term partnership contracts and continuous subscriptions to information services. In addition, flexible resources may exist to respond to seasonal peaks in the foresight assignments.

Whatever the division of work will be between the internal foresight team and the external network, active management of the information source portfolio and the work of the external partners is an important part of the foresight team's work.

No parts of the foresight work should be outsourced without the internal team being involved in managing the outsourced work: offering guidance, arranging check points and giving feedback.

The internal foresight network

The internal network of foresight users and contributors consists of everyone who has something to gain from the foresight program. Even though future as a general topic interests and inspires people, an internal network rarely emerges spontaneously. Hence, the foresight lead and their potential team will need to actively build connections prove that their work benefits the organization.

The internal foresight network should ideally build on the existing structures of the organization. An "inner circle" of the foresight network is typically formed by those performing the regular foresight work and those involved from the different organizational units. Dedicated expert groups may provide additional contribution to the foresight activity.

As the foresight program advances, the internal foresight network may form focus groups of experts around specific topics that may cross unit boundaries: some people might start focusing on for instance certain alternative scenarios, and others on emerging customer segments, or the development of strategically relevant technologies.

4. Foresight Development Framework

The Foresight Development Framework outlines four stages of maturity for a foresight capability in an organization. The framework is useful for identifying the typical stages of developing the foresight activity, constructing a clear roadmap for making progress, and benchmarking own foresight capability against peers.

We have divided the development of a strategic foresight capability into five Key Success Factors described earlier in this eBook. We now pull the success factors together in our Foresight Development Framework (Exhibit 4). The framework serves three main purposes:

1. It describes the typical stages of developing a foresight capability in an organization, public or private. The stages are by no means carved in stone, nor are they identical across organizations, yet in our experience they describe quite accurately what a typical organization will encounter on its path towards a built-in foresight capability.
2. It helps an organization construct a target-oriented roadmap for the foresight development effort. For most organizations, building a deeply rooted foresight capability is no small task and it certainly will not happen overnight. Hence it makes sense to divide the effort into set milestones and celebrate progress along the way.
3. It makes benchmarking possible across organizations. Many foresight developers are interested in how other companies and public institutions are looking into the future together. Dividing the foresight development effort into stages provides a yardstick, even if an approximate one, for progress and helps put one's own organization on the map as compared to for instance competitors or similar types of public organizations.

The foresight development framework identifies four different stages of foresight development:

1. Beginners
2. Doers
3. Experts
4. Black-belts

We will discuss below how the stages of foresight development typically evolve over time.

Beginners

A Beginner organization typically looks like this: The awareness exists among management that the organization should look into the future in order to stay valid and competitive, and to spot new opportunities. So much so that there's a person who is tasked with taking the initiative forward, perhaps as a part-time responsibility.

No foresight reports or projects are being conducted in-house quite yet (who would be preparing them anyway?). There's some budget for purchases, though, and typically it is spent on reports by relevant research houses or consultants.

Similarly, there are no specified processes or organization related to the foresight work, and the few 'tools' that exist are mainly reports and basic documents.

Doers

Doers are already hands-on with foresight development, and the ball is rolling. The actual foresight content is no longer only purchased from external sources, but there are internal resources to conduct the first projects inside the organization, from its own unique perspective. The foresight deliverables are not productized yet, however. The typical reports and deliverables are one-off things born out of case-specific demands.

There is regularity in the work, however. The foresight activity is cemented in the organization through a clear decision to invest time and effort into looking into the future. It's demonstrated by an allocated budget for purchased projects. Tools are also starting to emerge: Specific foresight methods may be used, along with templates and for example collaboration software products for teaming up and sharing insights.

Exhibit 4.

	Beginners Becoming aware of the necessity of foresight activity	**Doers** Conducting regular foresight projects	**Experts** Running a structured and continuous foresight program	**Black-belts** Having a built-in foresight capability in the organization
Orientation	The value of future-orientedness has been recognized, and the awareness exists that something should be done about it.	The decision has been made to invest in foresight work, and the first concrete one-off projects have been conducted.	Leadership has assessed the future prospects of the organization, and a committed group of foresight-minded people runs a continuous foresight program.	The organization has a true foresight capability. Its entire culture is future-oriented, and there's a wide-spread understanding among employees that future-orientation requires everyone's contribution.
Deliverables	No self-made foresight deliverables exist, yet analyses from secondary sources have been used and circulated.	Some own customized foresight deliverables exists, however they are still one-off and not systematized.	Along with one-off deep dives and other analyses, repetitive and continuous deliverables emerge.	Several foresight deliverables have established themselves as tools to aid decision-making, and the 'portfolio' contains both continuous monitoring and ad hoc analyses.
Process	The foresight activity is in its infancy, and no process has been established.	A foresight process emerges for conducting ad hoc projects with high quality. A small group of people is involved.	The foresight process shifts from describing ad hoc research projects to outlining how continuous foresight activity works.	With increasing amounts of dialogue and collaboration in the analysis, the level of insight rises. Looking actively to the future becomes an embedded element in people's everyday work.
Tools	The tools involved in foresight projects are research reports, powerpoint documents, etc.	The organization starts to adopt tools that support the foresight work, such as templates, questionnaires, specific methodologies, and collaboration software.	A dedicated tool is adopted to serve the foresight work, with continuous monitoring, alerts, internal collaboration, and visualization.	A sizable and active group of employees uses the foresight tool. Users receive regular alerts, the deep dive analyses are distributed through the tool, and it's actively used for collaboration.
Resources	There's an appointed person to drive the foresight activity, with set goals.	While there's no internal team (yet), the organization may rely on consultants and other external resources in producing foresight deliverables.	The decision is made to invest in internal foresight capability in the form of dedicated people resources.	A large and active internal network of people takes part in the foresight work. External consultants are no longer needed for running the foresight process, but they may serve in expert roles on a needs basis.

Experts

'Expert' organizations already have an established program for foresight, with the leaders engaged and a group of professionals running the show. At least one extensive project has been conducted where the leadership has thoroughly evaluated the future prospects and threats that the organization may be facing.

The foresight deliverables are no longer merely one-off projects, but the activity has moved into a continuous and repetitive mode. The same applies to the foresight process: Instead of describing how an individual deep dive project is conducted, the process refers to how the continuous foresight activity is run in the organization.

A dedicated foresight tool is also adopted that serves as a nodal point for collaboration and the visualization of alternative future topics that are relevant for the organization. The foresight tool makes it easy to engage increasingly many people in the organization, which is in line with the goal: to have an embedded foresight capability that involves more or less everyone.

The foresight program is no longer a one-person show, but the leadership decides to allocate at least part time resources from different parts of the organization to the foresight work.

Black-belts

As an ideal outcome of the foresight development path, the organization becomes 'foresight-capable'. Foresight is no longer 'some people's professional responsibility' but is built in to the culture and feels like everyone's priority.

Needless to say, a true foresight capability does not develop in isolation but is deeply rooted in the organization's operating culture and the leaders' principles and example. It's only this way that the organization's long-term future will be interesting and worth caring about for its employees.

From the deliverables point of view, the organization now has an established portfolio of foresight output that contains both ad hoc deep dive analyses and repetitive deliverables, such as monthly trends reports and signal alerts actively raised by employees.

Collaboration, co-creation and sharing of thoughts dominates in the foresight activity. No matter whether it's software tools, resourcing of the team, or running the foresight process, there are many people actively involved as opposed to the early stages, where individual people are tasked with looking into the future alone. Yes, consultants may still be involved case by case, yet their role is no longer to assist in running the foresight activity, but they may be used in projects that require very specific expertise and insight.

As stated earlier, none of the development stages described above should be interpreted literally; organizations differ and so do their foresight development paths. Yet we hope the Foresight Development Framework will be useful for those who have decided to take the future in their own hands, in an engaging fashion. Align your organization with the future!

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Align your organization with the future! Futures Platform is a collaborative web-based platform that turns dynamic strategic foresight into an agile always-on activity.