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Corporate Foresight Benchmarking Report

Strategic Foresight
Research Network

How leading firms build a superior position in markets of the future

Strategic Foresight Research Network
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Executive summary

Future Preparedness is shown to be a factor strongly influencing mid-term future firm performance, and such preparedness can be achieved via the systematic application of future preparation activities, particularly Perceiving, Prospecting, and Probing, as part of the strategic leadership function.

Corporate Foresight is the capability to develop insights into future alternatives and use this to create or renew businesses to be relevant for the future and ensure long term competitive advantage. Firms use corporate foresight to identify factors that drive environmental change, foresee future market changes, and define a superior course of action as their industries evolve and change. Corporate foresight offers the possibility of guiding firms away from outdated models and path dependency in changing industries, helping its decision makers define courses of action that are robust to new threats and opportunities. This enables firms to attain superior positions in markets of the future, which allows them to survive and achieve consistent returns, despite change.

Up to this point, evidence of corporate foresight benefit on firm performance has been anecdotal, with difficulties associated in measuring it and separating the role of foresight from other beneficial activities. However, researchers at the Aarhus BSS Strategic Foresight Research Network (SFRN) have now developed a model that empirically evaluates a firm's future preparedness. This is achieved via a longitudinal study in which SFRN measured future preparedness in 2008 and its impact on firm performance in 2015. The results indicate future preparedness as defined in the study is a powerful predictor for a firm attaining superior profitability and becoming an outperformer in its industry.

The study shows that future-prepared “vigilant” firms enjoy above-average profitability and market capitalization growth. Where corporate foresight proficiency falls short by one level with reference to vigilant firms, “vulnerable” firms have 37% lower profitability and 39% lower market capitalisation growth. “In-danger” firms fall short by two or more levels. Compared with vigilant firms, these firms have 44% lower profitability and negative growth.

The study indicates that to reach vigilant future-prepared status, firms need to build three core skills:

- » PERCEIVE continuously, by building sensors that allow it to detect change across a broad scope, and deeply analyse the drivers of change
- » PROSPECT systematically to anticipate tipping points of important or revolutionary change in their industry. Here firms may for example use scenarios and build systems dynamics models to anticipate unexpected changes or sizes of future markets.
- » PROBE into new markets with dedicated budgets and accelerator units to learn and, where possible, shape the rules of the game in future industries.

Future preparedness: what it is, why it matters

Research on the long-term survival of established firms in the 1980s shows that average company life expectancy was around 42 years (De Geus, 1997). Since then, longevity of well-established, market-leading firms has fallen even further, to 20 years on average (Foster & Kaplan, 2001). How can firms, that are financially so powerful and often dominant in their industry, fail so fast? During the time that worldwide human life expectancy has risen considerably due to improvements in medicine, nutrition, safety and exercise, firms have descended further into an unhealthy lifestyle of short-termism, and lack or do not implement mechanisms to put them on a path to mid- and long-term survival. At SFRN, our findings suggest that, on average, firms' management spends too much time competing against their current rivals within current industry conditions, enacting near-term wins. This comes at the cost of failing to build superior positions in markets of the future, and with this, superior performance and firm longevity over the longer term.

Past success breeds future failure, and firms operating a highly profitable business are at most risk of future obsolescence, for various reasons. Currently successful managers have

significant personal and reputational investments in current solutions and are the cohort least likely to question them, even if the face of imminent industry change. Their focus is on maximization of the status quo, but this crowds out willingness to cannibalise current models in time to assume necessary positions for when the industry changes, and new products, service, and business models are required. Second, future opportunities require investment and take time to mature, and therefore look unattractive when compared to present successes. For example, if management has profit margins of 50% in an energy business, it will be very difficult to find future growth opportunities that have the same short-term profitability outlook. By their nature future business opportunities initially appear less attractive than established lines of business.

Among the explanations that executives gave for endemic short-termism in SFRN research interviews was the lack of tangibility of the factors that threaten their survival. Consider the case of a car company that currently enjoys healthy profits. The metric by which managers and their boards judge company performance are quarterly or annual financial figures. But these are at best backward-facing indicators, a

representation of how well the firm fit with its market environment in the past. They are not forward indicators and do not provide any mechanism to foresee the potential impact of industry shifts, in this example perhaps resulting from autonomous driving, battery powered cars, or shared mobility. Without processes and indicators of corporate foresight, a company has inadequate forward indicators by which to judge its health, as is acutely required in times of industry evolution and change.

Part of this lack can be seen in how firms very rarely track missed opportunities, and the loss of congruence with a changing industry that these imply. When our researchers asked whether a manager was more likely to lose his or her job, if (a) sales numbers were missed, or (b) if the opportunity to enter a new market was missed, the answer is overwhelmingly (a)! But missed opportunities are the canary in the mine—early indicators of non-adaptation to changing industry conditions, and a harbinger of inferior performance and possibly premature corporate death.

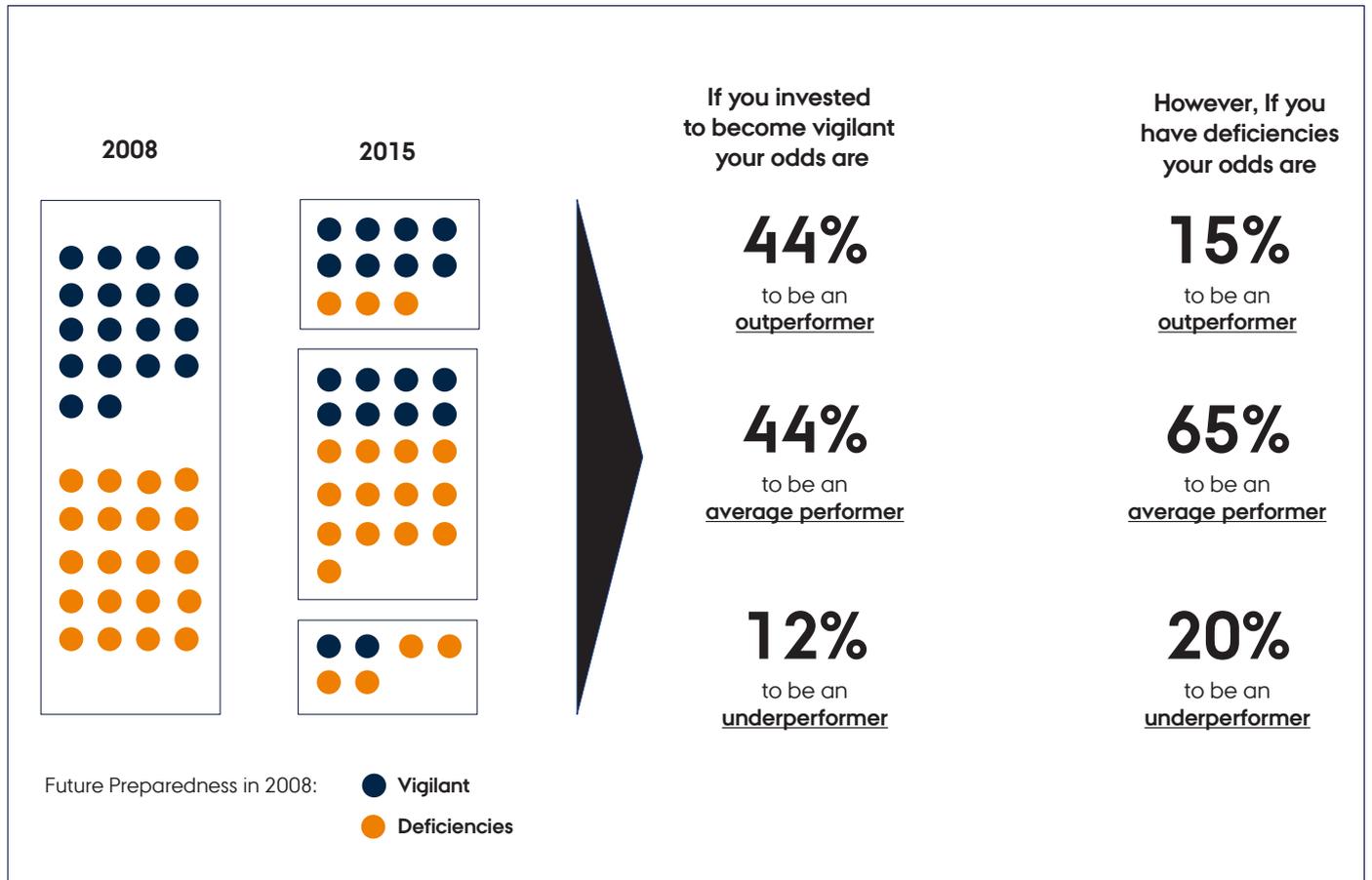


FIGURE 1: BENEFITS FROM A HIGH FUTURE PREPAREDNESS (ROHRBECK & KUM, 2018)

Research study and findings

Corporate foresight is the set of practices that enables firms to attain a superior position in markets of the future by identifying, interpreting, and acting in understanding of factors that are driving industry and market change.

However, when measuring the impact of corporate foresight on firm performance, we need also to account for and assess it against level of its need. In faster-changing more uncertain environments, more foresight is needed. In other words, the research moves beyond measuring absolute levels of corporate foresight to assessing their presence as fulfilment of need.

To describe this contextual presence we apply a novel indicator we call “future preparedness,” which is constructed by assessing the presence of foresight maturity in fulfilment of need for corporate foresight (triggered by levels of environmental volatility and change). Maturity of corporate foresight practices is measured through Rohrbeck’s Maturity Model which is described in the sections that follow.

This section summarises the research trajectory, findings and insights of the study.

The research conducted by the Strategic Foresight Research Network at Aarhus BSS analysed future preparedness practices in more than 300 multinational companies, based on longitudinal data collected between 2008 and 2016 (Rohrbeck & Kum, 2018). To broaden findings beyond quantitative benchmark research,

the SFRN executed more than 120 interviews with different companies’ top and middle management, strengthening our hypotheses and findings (Rohrbeck, 2010a). We further enriched and validated our findings, executing more than 20 case studies with companies featuring various profiles.



A. THE CHALLENGE OF MEASURING THE IMPACT OF CORPORATE FORESIGHT

In strategic foresight research, up to this point, evidence of the beneficial impact of corporate foresight on firm performance has been anecdotal (Rohrbeck, 2012; Rohrbeck & Schwarz, 2013; Ruff, 2015). The main reason for the scarcity of conclusive evidence of beneficial impact is the difficulties associated with measuring benefits. In its research SFRN used a longitudinal 2008-2015 study to account for impact of foresight on firm performance, beyond the vagaries of short-term positive or negative events. The time frame is also judged as sufficient for the impact of corporate foresight to play out.

Past research has found case-based and anecdotal evidence suggesting a link of corporate foresight activities (sometimes individual projects) to local outcomes (for example, the repositioning of a product portfolio, which leads to higher sales) (Battistella, 2014; Rohrbeck, 2012; Ruff, 2015). However, it has also pointed at the challenge of complex causal links that may confound the relationship between corporate foresight and firm performance. In particular, competitor actions and industry-level factors have been reported to play an important role in determining firm performance.

In our study (Rohrbeck & Kum, 2018), we addressed this in two ways. First, we controlled for potentially confounding environmental factors by connecting foresight maturity to foresight need and using only the combined construct 'future preparedness' as the independent variable. Second, we used the 'outperformer' and 'underperformer' clusters, which are populated at industry level, to cross-check the whole-sample analyses.

The second main challenge is that corporate foresight cannot be expected to pay off in the short term. The first consequence is that scholars willing to study the impact of corporate foresight need to adopt a longitudinal research design (Eberhart, Maxwell, Siddique, Eberhart, & Maxwell, 2016), as we did. In our study

we assessed future preparedness data from 2008, which we matched with firm performance data from 2015.

B. SAMPLE AND DATA COLLECTION

In total, 467 firms were invited to take part in the study, of which 135 participated. Of the participants, 52 firms provided either incomplete or inconsistent data, which reduced the field to 83 participants.

To collect the future preparedness data, we relied on a questionnaire that measured corporate foresight maturity with 35 items and corporate foresight need with 10 items. The questionnaire was created both in English and German to boost the response rate from German companies. An online survey page was distributed. As an incentive, potential participants were offered a tailored benchmarking report.

To collect the firm-performance data, we used the S&P Capital IQ database. As a first step, for each firm, we collected the profitability and average profitability of the respective industry in our future preparedness database. Here, we were able to retrieve data from 70 firms. Next, we matched the market capitalization date from 2008 and 2015 for all publicly listed firms to determine the market capitalization growth. In this search, we retrieved the market capitalization data of 42 firms.

C. MEASURING THE NEED FOR CORPORATE FORESIGHT

To take into account that firms in, for example, a very stable environment would have a lower need for building corporate foresight practices, we proposed introducing a relative measure that compared the need for and maturity of corporate foresight practices. For our study, we created a 10-item 'CF need' scale that uses environmental complexity (four items) and environmental volatility (six items) as subscales, to a large extent inspired by Day and Schoemaker's (2005) scales.

D. MEASURING CORPORATE FORESIGHT MATURITY

Foresight maturity in this study uses the frameworks of firm future maturity developed by Rohrbeck (2010a) where, based on empirical evidence from 19 case studies of large multinational enterprises and 107 management interviews, a model with five dimensions and 20 elements for measuring, benchmarking, and enhancing organizational future orientation was obtained.

The study isolated five capability dimensions:

1. information usage—the information which is collected
2. method sophistication—methods used to interpret the information
3. people & networks—characteristics of individual employees and networks used by the organization to acquire and disseminate information on change (Subsequent iterations of the maturity model split these items.)
4. organization—how information is gathered, interpreted and used in the organization
5. culture — the extent to which the corporate culture is supportive of organization foresight.

Within each dimension, there are three to five elements by which the maturity of the foresight system can be assessed. For each element, four maturity levels have been identified, as the following diagram shows. Taken together evaluating these elements make it possible to assess the proficiency of the organisation in each foresight capability element. They also guide improvement of foresight maturity, as explained in following section, building future preparedness.

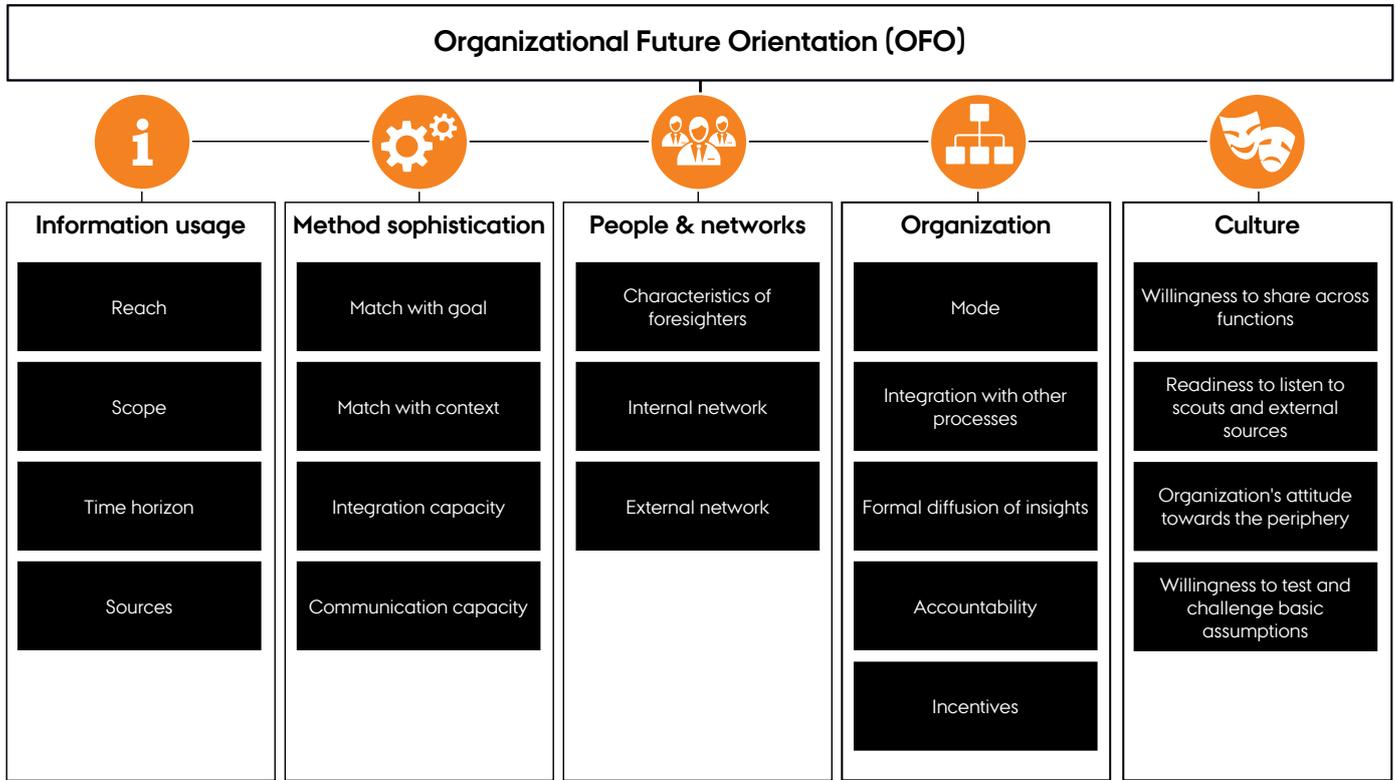


FIGURE 2: CORPORATE FORESIGHT MATURITY MODEL (ROHRBECK, 2010A)

E. MEASURING FIRM PERFORMANCE

The best indicator for measuring firm performance has long been a subject of debate. All measures have advantages and disadvantages related to their measurement, comparability across industries and interpretation. Rohrbeck has proposed that measures such as survival, growth, value creation, competitive sustained advantage and profit can all be used to assess the impact of CF practices.

For our study, we applied a portfolio of measures to reduce biases and weaknesses. We hence used two measures to assess firm performance:

- » Profitability (EBITDA): We looked at the impact of future preparedness on profitability, at EBITDA level.
- » Market capitalization growth: To cross-check the impact of future preparedness on profitability, we also evaluated its impact on market capitalisation growth.

To further boost robustness, we built industry-specific performance clusters. This helped to avoid confounding effects, as market capitalisation and profitability are known to be homogeneous within in-

dustries but heterogeneous across them. We thus built the first industry cluster by identifying the ‘outperformers’ (top 20%) and ‘underperformers’ (bottom 20%) of each industry. This measure was not confounded by strong intra-industry differences, and it was a robust measure allowing for the differentiation of the winners from the losers in their respective industries. With this portfolio of measures, we reduced our exposure to confounding effects, in particular from across-industry heterogeneity, and gained the ability to confirm the impact of CF across different indicators.

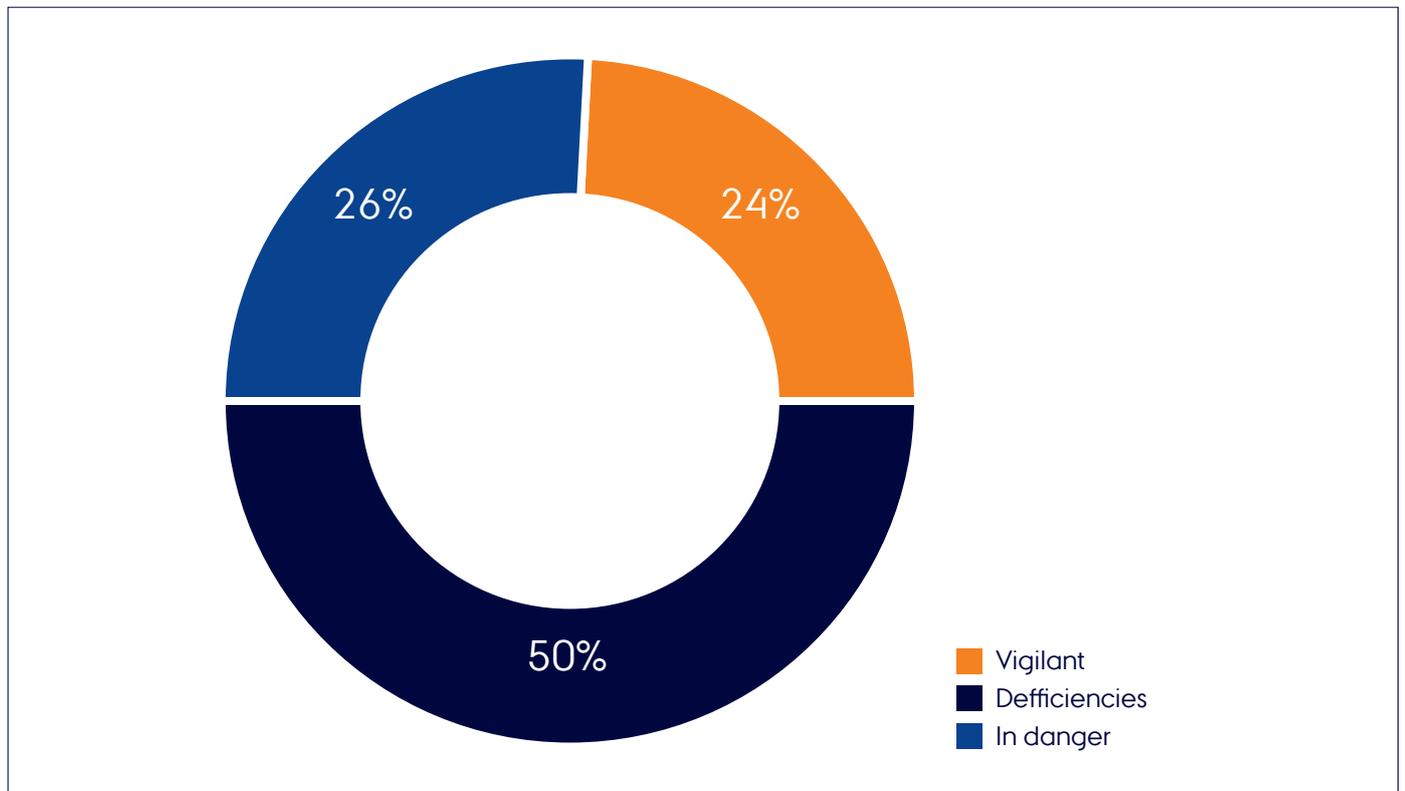


FIGURE 3: LEVEL OF FUTURE PREPAREDNESS IN OUR SAMPLE

F. CONSTRUCTING THE FUTURE PREPAREDNESS INDICATOR

To determine future preparedness, we proposed that a firm reaches the optimum level of future preparedness if its corporate foresight need level (NLCF) is matched by its corporate foresight maturity level (MLCF). Deviation from this optimum occurs either when firms have a maturity level below the corporate foresight need level or when firms have a maturity level above the CF need level.

We define the following states:

- » NLCF = MLCF: Vigilant, a firm has CF practices adequate for its given environment.
- » NLCF < MLCF: Neurotic, a firm has CF practices exceeding what it needs for a given environment. This condition may endanger mid- to long-term success by losing, for example, the competition in the short term or not focusing sufficiently on running the current business.
- » NLCF > MLCF (by one level): Vulnerable, a firm that has CF practices that fall one level short of what is needed to match the need.

- » NLCF > MLCF (by more than one level): In danger, a firm that has CF practices that fall more than one level short of what would be needed to match the need. Such a condition can be compared to driving too fast in the fog. Firms might still stay successful for a while but only until an overlooked strategic obstacle hit them.

By introducing the future preparedness construct, we believe to have found a way to control for industry differences that may have confounded earlier findings on the impact of corporate foresight. Results are diagrammed as follows:



FIGURE 4: EFFECTS OF FUTURE PREPAREDNESS ON FIRM PERFORMANCE WITH A 7-YEAR TIME LAG (ROHRBECK & KUM, 2018)

Summary findings

Our findings show that vigilant firms achieved, on average, 16% profitability, which surpassed the overall industry average profitability of 12%, and made vigilant firms 33% more profitable than the average. The value of future preparedness became even more obvious when looking at the discounts that the firms with deficiencies needed to assume. Neurotic and vulnerable firms had 37% lower profitability when compared to the profitability of vigilant firms. In-danger firms realized a 44% lower profitability.

In general, our findings suggest future preparedness leads to performance improvements, and that many firms are not future-prepared to the right level for the pace of change in and around their industry, and therefore fail to systematically build superior positions in markets of the future, as demonstrated by lower results. Implications of the findings for improving future preparedness are elaborated in the next section.



Building future preparedness

The research shows the benefits managers acquire as leaders of future-prepared “vigilant” firms which are ready to maximize their positions in markets of the future, and thereby ensure growth and longevity. Building such preparedness involves raising corporate foresight maturity to the its level of need, given industry and external conditions. The steps to doing this as suggested here and below, rest on Rohrbeck’s foresight maturity model described above, which adapts and develops Daft & Weick (1984) who proposed a 3-step model: (1) scanning, or data gathering; (2) interpretation, in which data are given meaning; and (3) learning, in which the organization takes action. By following these steps, organisations can translate weak signals on emerging change into managerial actions.

The model suggests building future preparedness based on steps we define as follows:

- **Perceiving:** When a company identifies factors that have affected its environment in the past and affect it today and anticipates factors that will be relevant for the future (Hofmann, 2015). In this phase, the firm’s aim is to build a lead-time advantage by which it lays the foundation to act ahead of its competitors (Tsoukas & Shepherd, 2004; van der Duin & den Hartigh, 2009; Vecchiato, 2015).
- **Prospecting:** When a company engages in sense making and strategizing. Practices include working with analogies, scenario analysis, systems-dynamics mapping and back casting (Bezold, 2010; Boe-Lillegraven & Monterde, 2014;

Rhisiart, Miller, & Brooks, 2015). The aim of this phase is to gain an insight advantage, including to interpret the right time to act by identifying tipping points.

- **Probing:** This is a move from “cognitive search” to “experimental search” that is, engaging in experimentation and market tests, triggering strategic decision-making, which is particularly important in high-speed environments (Costanzo, 2004; Gavetti & Rivkin, 2007). In probing, the aim is to begin iterative practical experiments towards attaining a superior position in the market of the future.

The ability to execute on the three steps rest on 6 groups of practices, that are discussed further in the following sections.



Key initiative 1: Build a strategic radar

Vigilant firms build continuous scanning capabilities and trend monitoring systems

In this phase, which we call “perceiving,” the firm aims to build a lead-time advantage by which it lays the foundation to perceive and understand change earlier and better than its competitors, and therein to successfully act ahead of its competitors. In perceiving, often also called “scanning”, the company seeks to identify factors that are affecting its industry and operating environment today and anticipate new factors that may affect it in the future.

Perceiving addresses company leadership to forces outside of the company which may change its environment, presenting threats or opportunities. It (a) first seeks to identify the factors and forces of change, usually via a structured “radar” to detect and register standout events (which alert attention to the presence of underlying forces). Second (b) it begins a process of evaluation and creation of deeper insight into the amalgam of forces and factors that will affect the firm’s current models or which may offer it new future opportunities, as well as critically assessing sources of foresight (Gordon, 2009). This integrates with prospecting and probing, responding to change and leading adaptations to change, discussed in the following sections.

In the past two decades, the availability of both free and privileged information has grown dramatically, in large part due to ubiquitous online sources. In our sample, 77% of all firms have mature scanning systems and capabilities, (a) above. Paradoxically, we see at the same time a decreased ability to (b) interpret and understand key drivers of change. Perceiving includes both detecting change and making sense of the change, and we have found that firms don’t scan broadly enough and fail to analyse sufficiently deeply to gain an insight advantage.

The solution has four parts:

- Scan broadly, across a large variety of both qualitative and quantitative sources
- Build a continuous scanning process to analyse deeper than what is possible if answering each strategic issue separately
- Build scouting networks or create specific learning journeys that allow the company to generate first-hand information and collect exclusive insights
- Involve the entire organisation in the scanning and interpretation function via corporate foresight platforms.

Fast moving industries such as telecommunications generally manifest good examples of companies building and profiting from perceiving networks (Rohrbeck, 2010b). Cisco, for example, has built a corporate foresight platform to harness the knowledge and insights from its global engineers, to inform technology and business strategy. Its highly-distributed radar provided a platform to collaboratively perceive and work towards future opportunities at a time where Cisco was facing major disruptions in its environment (Rohrbeck & Bøe-Lillegraven, 2017). Such radar systems are increasingly also implemented as online platforms on the Intranet to facilitate strategic discussions and/or trigger innovation initiatives (Rohrbeck, Thom, & Arnold, 2015).

Deutsche Telekom leverages an international network of scouts based in the Silicon Valley, Israel, China, India and Berlin to perceive change drivers ahead of competitors (Rohrbeck, 2007). Such scouting networks generate first-hand and exclusive insights and in addition allow the company to reach to the source of the insight.

More information at:

<http://futureorientation.net/2010/09/04/technology-scouting-from-insight-to-action/>

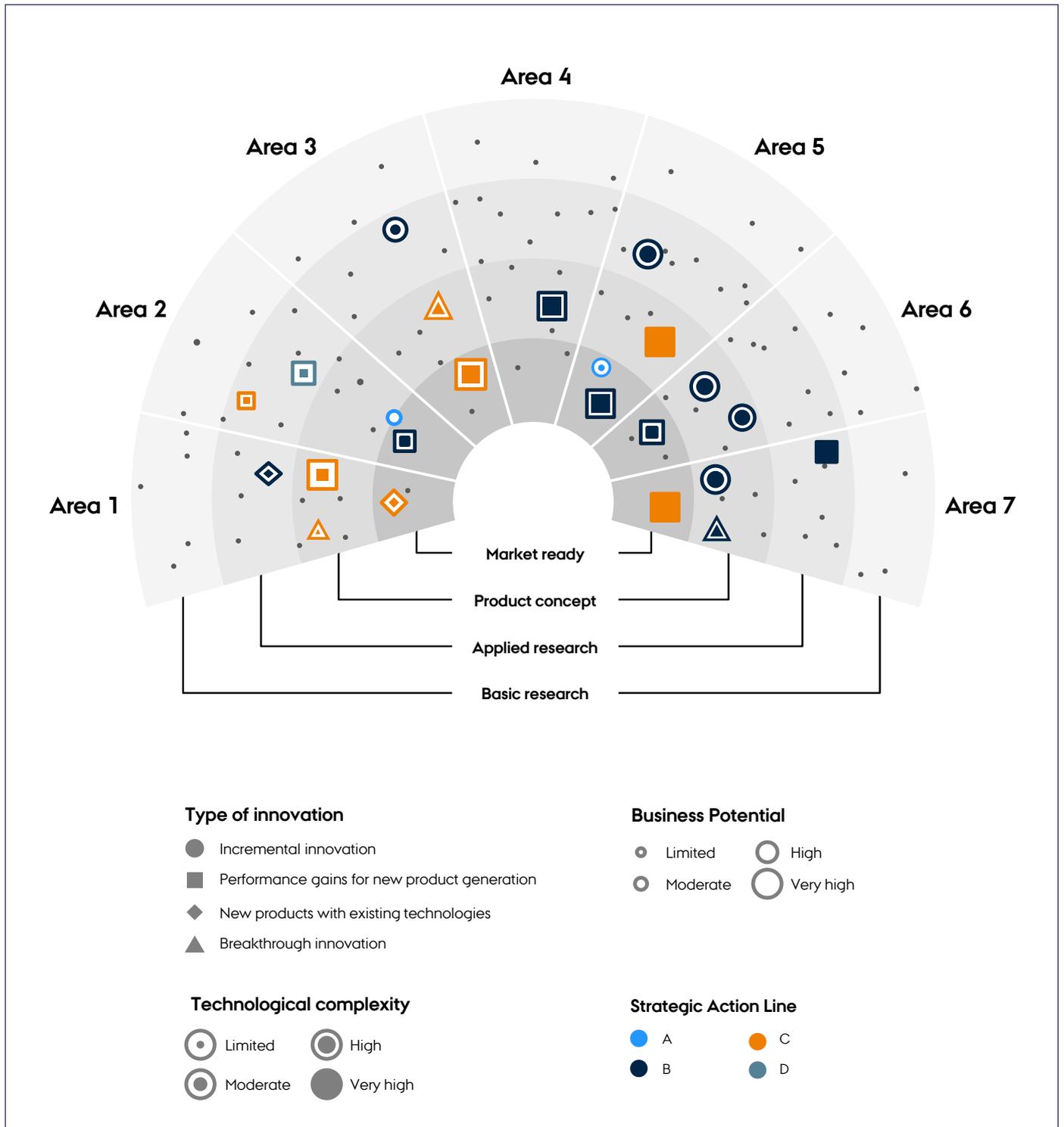


FIGURE 5: GENERIC CORPORATE FORESIGHT RADAR, A DASHBOARD FOR WORKING WITH ACTIONABLE SCANNING INSIGHTS

Key initiative 2: Create future insight

Vigilant firms continuously make sense of their environment and renewed opportunities within it.

In this phase, which we call “prospecting,” the company engages in ongoing sense-making and strategic thinking with reference to the changing industry and external landscape. This builds on the interpretation of scanning, started in Initiative 1. The aim of this phase is to gain an insight advantage, which permits the company to identify a superior course of action. In addition, firms aim to foresee the right time to act.

Practices of sensemaking include scenario thinking and systems-dynamics mapping, as the most prominent among various options (Ramirez & Wilkinson, 2016; Schoemaker, 1993; van der Heijden, Bradfield, Burt, Cairns, & Wright, 2002). Scenario thinking puts changes in the environment into larger perspective, and provides decision-makers with alternative forward scopes of plausible external conditions, each of which

forces consideration of how well current products or solutions would hold up, or what changes will provide advantage. This also builds a shared future outlook among decision-makers which permits unified strategic action. Systems dynamics allows decision-makers to better see unexpected effects or unintended consequences of their own or others’ actions. It also helps define best point of entry or innovation, to most profitably harness systemic effects.

Prospecting may eventually lead company management to consider its current approaches and strategies as well-robust to change (Lehr, Lorenz, Willert, & Rohrbeck, 2017). However, in fast-moving relatively uncertain industries, it is more likely that prospecting points to the need for, and pathways for, renewal of products, services or business models. Strategic leaps are only sometimes necessary, but when they are,

the confidence to comprehensively renew strategy and business models, is in this way built on a comprehensive investigation of the future market environment.

The diagram below explains how prospecting based strategy differs from traditional strategic analysis. The traditional model is typically applied as a one-off exercise. These exercises are often largely outsourced to management consultancies who execute a data-driven, hypothesis testing project. Such an exercise is typically directed at confirming or rejecting a pre-conceived strategy and therein incapacitates the management in dealing with comprehensive industry and market change. In contrast, prospective strategy takes the management on a journey that ensures sufficient foresight thinking to form initiatives that are appropriate to the future industry conditions they will face.

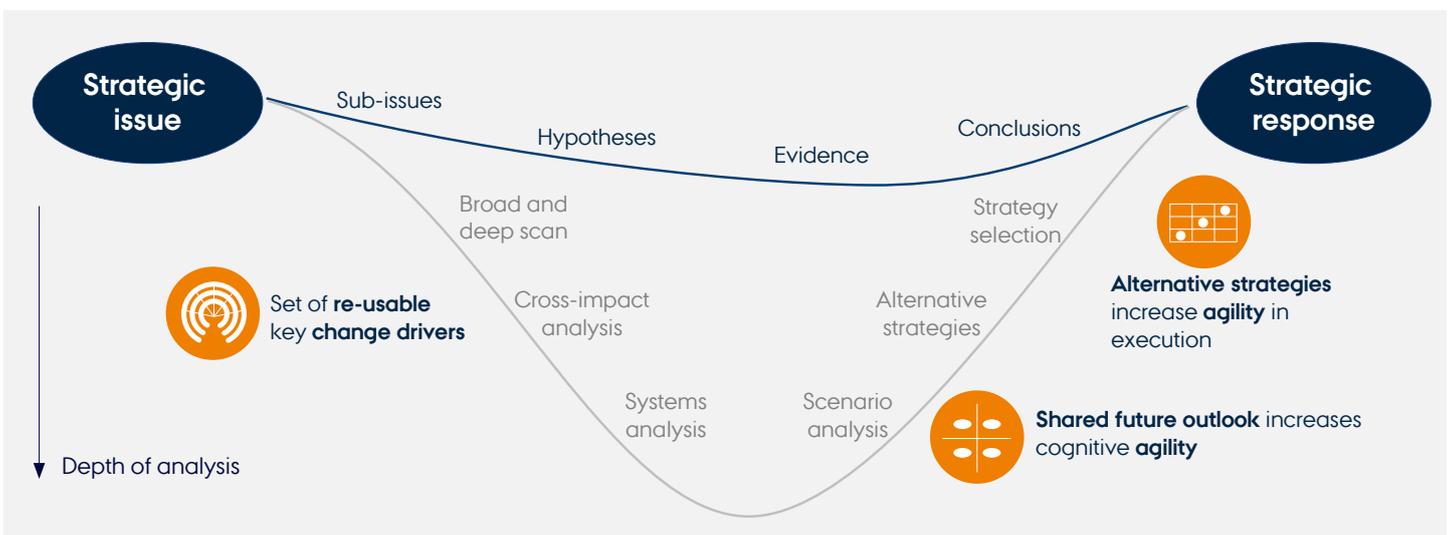


FIGURE 6: COMPARISON OF PATHWAYS, TRADITIONAL STRATEGY PROCESS VS. PROSPECTIVE STRATEGY

Key initiative 3: Bridge the growth chasm with accelerators and venturing

Vigilant firms use probing to validate prospective understanding and overcome the chasms towards future business growth.

In this phase, which we call “probing,” the aim is to take the fruits of prospective understanding forward and work towards attaining competitive advantage in markets of the future. Probing particularly implies experimentation and iterative learning to sharpen general future insight into specific new products or services or models that capture value for the firm.

Probing may include developing or acquiring a key technology, experimenting with new solutions in trial markets, creating intrapreneurship units or internal venture funds etc., so as to take company management past identifying and understanding future solutions (perceiving and probing) and into real-world testing of these solutions. In this it provides experimental but tangible proof of the potential of new markets, ahead of rivals. It bridges between

merely conceptualising a future path and full rollout of the solutions that fully commits the company to the solution.

Examples are Daimler, BASF and Evonic, which have built units dedicated to testing and accelerating new initiatives. Daimler has used his business innovation unit to start new businesses such as CAR2GO, its car sharing service. BASF uses its New Business GmbH to enter such as E-Power Management, while the Evonic Creavis unit incubates science-based innovation in dedicated project houses. Teams hosted in these houses may consist of internal employees and external partners, and get 3-5 years to bring an idea from the lab to the market

In some cases, probing functions also feed into the perceiving function: for example, companies like Cisco, Deutsche

Telekom or Robert Bosch GmbH have built venturing funds (up to 1.5% of annual revenue) which are designated in part as strategic “listening posts,” to gather early market feedback.

AXEL SPRINGER PROBES INTO NEW BUSINESSES TO DEVELOP FUTURE MARKETS

The media industry is highly affected by digitalization because information shared via the Web undermines its business model.

Therefore many media companies have been searching for new business possibilities to create revenue in this new and still-changing environment. The Axel Springer compa

ny is using various approaches to probe future possibilities. One of these is the “Media Entrepreneurs Program.”

This program organizes a team of people who are motivated to work as creative entrepreneurs within the company, specifically to work with the latest trends and organize events such as:

- » Media Hack Day
- » Gadget Day
- » Media Entrepreneurs Day
- » The Golden Hundred

which are designed to gather new inputs for the team to expand the business horizon of the main company.

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