

# Corporate Foresight in Multinational Business Strategies

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## Abstract

The paper explores corporate foresight as a new important tool within the strategic management system of multinational corporations (MNCs). The author directly connects the recent rise of corporate foresight with MNCs' growing need to fill the gaps in traditional corporate strategic management, which struggles with the challenges of today's global turbulent business-environment (known as VUCA world characterised by unprecedented volatility, uncertainty, complexity and ambiguity). From this perspective, corporate foresight is capable of providing a number of viable responses. They include the significant expansion of the horizon of MNCs' long-term future vision, enhanced capabilities of business-environment scanning (identifying not only clearly visible trends but the so-called weak signals as well) and strengthening intra-firm communications over the course of the strategy development process, thus contributing to the implementation capacity of the multinational corporate team. Within the analysis of the

actual corporate foresight practices of major multinationals, special attention is paid to the common features of foresight organization (standard process phases, the typical set of methods used) and peculiarities related mainly to different MNCs' sector-specific environment characteristics, including the complexity and dynamics of change. An attempt is also made to describe the actual impact of corporate foresight activities on the effectiveness of the key functions of MNCs' strategic management. The author draws the conclusion that corporate foresight is becoming a core element of the strategic management architecture of multinational businesses, striving to protect and strengthen its global market positioning in an increasingly turbulent and unpredictable environment. For MNCs' top management, trying to find the right strategic course in a radically changing competitive landscape, this powerful tool is increasingly playing the same role as a GPS navigator for drivers lost in an unfamiliar city.

**Keywords:** multinational corporations; corporate strategic management; corporate foresight; turbulent global environment; strategic positioning in global markets.

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Until recently, the analysis of long-term market shifts rarely appeared on the top of the agenda for major multinational corporations (MNCs),<sup>1</sup> which dominate practically all key industries of the global economy. It usually took a long time to realise the most significant changes, while their impact rarely spread beyond industry trends, gradually emerging within the global economic environment. Certainly, severe market upheavals did occasionally happen, leading to unexpected trend disruptions at the industry level, or even at the level of the world economy (e.g., the oil shocks of the 1970s). However, on the one hand, such a scale of change was rather an exceptional phenomenon. On the other hand, and more importantly, according to conventional wisdom, those outstanding events were absolutely unpredictable — and that automatically placed them outside the scope of regular corporate forecasts prepared by management practitioners.

A totally different situation in this area emerged during the first decade of the 21<sup>st</sup> century, which heralded the beginning of a new era of turbulence. The widespread use of revolutionary technologies (first and foremost ICT), the rapid acceleration of globalisation processes, the increased interference of geopolitics in global economic activities, the interconnection of all these factors resulted in a much more complex business environment, and in a qualitative transformation of the very nature of its inherent volatility. While in the past such volatility was essentially limited by relatively superficial and quite predictable (in terms of where they were headed) developments, today the radical nature of such changes, their ambiguous directions, and unprecedented speed, create a situation of total uncertainty — not only in terms of future markets' volume and segments, but even regarding their potential shape and general configurations. Even a new acronym has appeared in recent years in management literature — VUCA, which describes the new business environment in terms of Volatility, Uncertainty, Complexity, and Ambiguity (see, for example, [Roland Berger, 2013; Bennett, Lemoine, 2014]).

It should therefore come as no surprise that the first who experienced significant difficulties when doing business in a VUCA environment were precisely MNCs, as global players that are simultaneously present in numerous geographies and diverse industrial markets. Under such conditions, conventional approaches to corporate strategy development, oriented towards the relatively slow emergence of market changes, have become increasingly ineffective. A new strategic management architecture has begun to take shape, based on so-called corporate foresight as a key “uncertainty management” instrument for the new type of external business environment.

## Conceptual framework and methodology

The issue of the business environment's uncertainty affecting the strategic decision-making process has remained an overriding focus of the leading researchers in the area of corporate strategic management. In this case, (as has already happened infrequently in management science) theory has followed practice striving to suggest a theoretical justification of approaches already discovered by practicing managers. The first signs of emerging academic interest in corporate strategic planning issues were noted in the 1950s, when many large US and European corporations started to establish special organisational units responsible for strategy development and monitoring its implementation. The first full-fledged textbooks on strategic planning appeared only in 1965, covering both the process and basic tools for shaping corporate strategy [Learned *et al.*, 1965; Ansoff, 1965]. It is noteworthy that those works had already named achieving a clearer understanding of possible changes in the external environment and building capabilities to influence them as a major strategic management goal, which, as it was argued even then, was increasingly hard to accomplish, given the growing complexity and volatility [Ansoff, 1965].

Further advances of theoretical thinking in the corporate strategy field led to the emergence of two main strategic management schools, which have split precisely because they supported different approaches to dealing with the environmental uncertainty issues. The so-called planning (or “designer”) school, which for a long time enjoyed unrivalled domination over strategic management theory, proposed to deal with environmental uncertainty by applying systemic analysis and integrated planning. Representatives of this school, which include some of the brightest strategic management classics (such as Igor Ansoff, Michael Porter and a number of others) stressed the need to carefully monitor the observable trends, develop forecasts and strategic alternatives, logically assess the collected information, and integrate it into the current operations of a firm [Ansoff, 1979; Porter, 1980]. This approach of course recognised that existing forecasting methodologies (based mainly on extrapolation of observable trends) were imperfect and limited, but also believed that they were the best available techniques for understanding the ever-changing business environment. One of the main conclusions emerging from the “planning” school's logical constructs was the hypothesis of a high correlation between the efficiency of applying strategic planning tools and corporations' competitiveness in an increasingly uncertain world. In other words, in an increasingly uncertain business environment, the firms, which are better organised to analyse and forecast the changing marketplace and other external conditions, should beat the competitors who failed to set up adequate mechanisms of this kind. Though some empirical studies [Goll, Rasheed, 1997; Brews, Hunt, 1999; Dibrell *et al.*, 2013] did confirm this hypothesis, numerous other works have put

<sup>1</sup> In fact, there were some exceptions, but very few. For example, one of the oil supermajors, *Shell*, and the giant conglomerate, *General Electric*, successfully implemented corporate systems of long-term scenario planning as far back as the 1970s.

forward much more controversial results [Pearce *et al.*, 1987; Boyd, 1991]. This was one of the reasons the “planning” school came under increasing criticism in academic literature, primarily for the approaches it suggested to deal with the business environment uncertainty.

The so-called adaptive (or “learning”) strategic management school, which emerged on the wave of these criticisms, completely rejected systemic planning in this area. One of the school’s most prominent representatives, Henry Mintzberg, stated that successful strategies cannot be planned because planning by definition is based on existing mental models, and thus from the start tries to preserve the existing order, at the very best leaving only limited opportunities for some small (incremental) change [Mintzberg, 1994a]. Criticising the planning school, Mintzberg also noted that the main objective of strategic planning was designing one “best” strategy, and this can be accomplished only if the developers can sufficiently clearly foresee future parameters of the business environment. However, in a situation of growing instability, such foresight seems to be practically impossible. Therefore, representatives of the adaptive school urged the abandonment of fruitless attempts to foresee future shifts, and instead concentrate on enhancing corporate potential for effective adaptation, i.e., the ability to react to actual changes as quickly and adequately as possible. In their opinion, the very concept of “strategic planning” is incorrect, and the firms should adopt “strategic thinking” as the basis for their strategic management activities. The latter concept aims at information synthesis (unlike strategic planning’s focus on analysis), and includes such components as intuition, creativity, and learning by doing. According to the “adaptive” school postulates, “strategic thinking” makes it possible for successful strategies “to appear at any time and at any place in the organisation, typically through messy processes of informal learning that must necessarily be carried out by people at various levels ...” [Mintzberg, 1994b, p. 108].

The fierce debates between representatives of the “planning” and “adaptive” strategic management schools contributed to the intensive development of various areas of thought in this field. On the one hand, carefully targeted criticism of the vulnerable aspects of the classic strategic planning theory gave a powerful impetus to numerous efforts to improve its methodological tools. On the other, many researchers started to work on integrating (combining) the most promising ideas of both schools on various theoretical platforms. Evidently, they were not happy with the fierce confrontation between these approaches, which in essence prompted firms to choose one of the alternative behaviour models: “either try harder to predict better (rational strategies advocated by the planning school), or move faster to adapt better (adaptive strategies espoused by the learning school)” [Wiltbank *et al.*, 2006, p. 983].

One of the most popular research areas, which allowed the two strategic management schools to come closer to each other, was the flexible planning concept. According to Sal Kukalis, one of the first proponents of this concept, the ability to quickly modify strategic plans allows firms to take advantage of “unplanned opportunities” emerging due to changes in the business environment [Kukalis, 1989]. Later works by other researchers also stressed the importance of “flexible planning” from the perspective of mitigating emerging external threats [Barringer, Bluedorn, 1999]. Robert Grant introduced the concept of “planned emergence” which implied firms’ ability to combine a structured, centralised strategic planning process with a degree of decentralisation in making decisions in a turbulent business environment [Grant, 2003]. It is noteworthy that supporters of the “flexible planning” concept never doubted the need to maintain the corporate strategic planning system, but only suggested various ways to reduce its rigidity. Stressing the absolute necessity and unquestionable usefulness of such systems, and of plans developed within their framework, Peter Brews and Michelle Hunt, for example, noted that “though these plans must be quite specific, at the same time they must also be flexible, especially in unstable environments. Having once prepared their plans, firms must be willing to adjust them and introduce changes as these plans were implemented. In certain cases it might even be necessary to abandon a plan altogether” [Brews, Hunt, 1999, p. 906].

Another research area striving to combine approaches adopted by major strategic management schools was focused on the integration of scenario planning into the strategic management architecture. The first attempts to introduce a scenario planning concept were made in the 1960s (i.e., approximately at the same time when most advanced MNCs started to systematically apply this approach within their strategic planning activities) [Bradfield *et al.*, 2005]. Over the next 40 years, the theory and practice of scenario planning made serious progress, both in terms of enriching methodologies and testing various tools over the course of their real-life application in corporate practices [Bishop *et al.*, 2007]. However, the ideas to use scenario planning as a platform for integrating “planning” and “adaptive” strategic management schools appeared only in the late 2000s. The proponents of these ideas pointed out such important advantages of scenario planning (in terms of integrating both approaches) as considering several alternative options for the future business environment — and, accordingly, various alternative response strategies, systemic planning processes, and an impressive set of various tools for designing and analysing strategic alternatives [Wulf *et al.*, 2010; Bodwell, Chrermack, 2010].

Probably the most creative, in terms of overcoming conceptual controversies between the major strategic management schools, is the concept of the so-called constructive control over environmental changes. The concept critically reconsidered one of the fundamental theoretical assumptions, common to both schools, that the business environment where firms operate is absolutely exogenous to them, and they cannot control it by definition. According to this approach, it would be possible to create a partially endogenous (controllable) business environment if firms could make deliberate efforts to apply specific

market control tools. Accepting this key premise would “help to overcome this planning vs. learning dichotomy” [Wiltbank *et al.*, 2006, p. 987]. It would be important to stress that the concept meant not so much establishing “constructive control” over the existing business environment (by influencing its structural parameters or market institutional elements, such as distribution channels, quality standards, established business practices, etc.) but rather the deliberate creation of a new, controlled market “space” based on technological and business innovations (introduction of new business models). “Too often”, wrote Gary Hamel and C. K. Prahalad, “strategy is seen as a positioning exercise in which options are tested by how they fit existing industry structure... The strategist’s goal is not to find a niche within the existing industry space but to create new space that is uniquely suited to the company’s own strengths — space that is off the map” [Hamel, Prahalad, 1989, p. 74].

A radically new stage in advancing theoretical thinking on “environmental uncertainty management” integrated into strategic decision-making is connected with the rise of the corporate (or strategic) foresight school, which from the beginning of the current century clearly took a leading role in this field. The school’s theoretical groundwork was laid as early as in the 1950s in the works by Herman Kahn and his colleagues from the famous US Rand Corporation [Kahn, 1962], and in publications by Gaston Berger who, together with his followers, developed the French branch of this discipline called *La Prospective* [Berger *et al.*, 2008]. Subsequently the corporate foresight theory went through a number of evolutionary phases<sup>2</sup> and today seems to have achieved a pretty high maturity level, both in the development of the conceptual core and the sophistication of methodological tools.

Without going into details of the continuing professional debates on corporate foresight definitions,<sup>3</sup> it would be important to note that, in our opinion, this concept implies a coherent system of methods and organisational mechanisms which allow one: (1) to efficiently identify and thoroughly analyse the factors affecting significant (to a firm), and in particular radical, changes in the business environment in the medium to long term, and (2) to plan responsive corporate actions agreed upon by key members of the top management (as a preventive reaction to expected changes), aimed at both preparing the business organisation for such changes and creating favourable future external conditions.

From the perspective of strategic management theory, it would be possible to conclude that corporate foresight absorbed a significant proportion of the most promising elements (in terms of the “environmental uncertainty management”) of the conceptual constructs which have emerged over the course of the decades-long debates between the “planning” and “adapting” strategic management schools. Firstly, a major conceptual postulate of corporate foresight is the thesis about the variability of the future, which implies considering various strategic options to match probable significant changes in the business environment, and to prepare the corporation for very diverse future shifts.

Secondly, a characteristic feature of the corporate foresight concept is the full recognition that influencing future changes of business environment in order to produce desirable effects (i.e., exercising partial control) is both possible and necessary. This is one of the radical differences between foresight and conventional forecasting. As one of the founders of the Russian school of foresight studies, Leonid Gokhberg, has underlined: “Forecasting is about moving from the present to the future. Foresight, on the contrary, is about moving from the future to the present. The difference is really fundamental... The objective of a foresight study is not to guess the future but to build a “target” vision of the future on the basis of achieving consensus among decision-makers and leading experts, and try to develop a prospective action plan to meet key challenges and accomplish relevant goals” (*cit. ex.*: [Gorbatova, 2014]). Thirdly, a specific feature of the approach to develop a foresight toolkit is the combination of expert-based and so-called participative methods, implying that the process of developing and evaluating strategic alternatives of the corporate future should involve not just the traditional narrow circle of the top executives of the firm but also the vast majority of its managers who are participating in decision-making in one way or another. Such an approach not only results in a much more comprehensive analysis of these alternatives but creates a firm foundation for shared corporate understanding of potential strategic challenges and opportunities.

Numerous evident advantages of the corporate foresight concept led to rising expectations regarding its application in strategic management practices. Some researchers even started to argue that strategic foresight should fully replace the obsolete corporate strategic planning systems. As noted for example by highly acclaimed US strategic innovation expert, Idris Mootee, “Traditional strategic planning models cannot produce strategy that can handle the complexity, discontinuities, rapid change, and structural constraints of strategic management systems ... We are entering a new era of strategy. Indeed, we went from strategic planning to strategic management, and now we are transitioning again from strategic management to strategic foresight” [Mootee, 2016].

It should be mentioned, however, that the “sphere of influence” of corporate foresight covers albeit very important, but still quite a limited segment of corporate strategic planning system, namely the one comprising the functions of scanning the business environment, analysing collected information, and

<sup>2</sup> A thorough analysis of this evolution can be found in a recent paper by the group of authors headed by an established authority in the field, Rene Rohrbeck [Rohrbeck *et al.*, 2015].

<sup>3</sup> The definition of corporate foresight remains a subject of lively discussions among Western and Russian researchers (see, e.g., [Slaughter, 1997; Rohrbeck, 2011; Rohrbeck *et al.*, 2015; Ruff, 2006; Ruff, 2015; Vecchiato, Roveda, 2010; Sokolov, 2007; Tretyak, 2007]).

setting strategic priorities in the scope of the corporation's pro-active (preventive) reaction to long-term challenges and opportunities. In other words, strategic foresight cannot “replace” the strategic planning system, but rather it can significantly increase its effectiveness if applied as an important superstructure built over the foundation of this system.

The logic of the study presented in this paper implies three consecutive steps. The first is identifying typical problems in the application of MNCs' conventional strategic planning mechanism — the problems that have been significantly aggravated in an increasingly volatile global business environment. This is followed by defining possible solutions based on foresight techniques. The second step covers an analysis of the general and specific features of the use of the foresight methodology by MNCs operating in global industrial sectors characterised by a different nature and pace of change. Finally, within the third step an attempt is made to define the main effects produced by a working corporate foresight system, first of all from the perspective of the improvement of MNCs' strategic management. In the final section, the main conclusions of the study are summarised, together with a review of the new features that effective foresight functionality could add to global corporations' strategic management systems.

## Challenges of Strategic Planning in Turbulent Environment

Even at the end of the last century, major MNCs, which have succeeded in capturing leadership positions across global industrial markets, could confidently look forward into the quite long-term future, today this confidence no longer exists. In demographic terms, one can safely assume that the “life expectancy” of large corporations, the members of the global business elite, has become much shorter. This is particularly evident in the increasingly rapid changes in the list of the top 1,000 corporations regularly published by the US-based *Fortune* magazine. Specifically, in 1973–1983 the rate of change of the *Fortune 1,000* ranking was only 35%; in 1983–1993 it increased to 45%, in 1993–2003 — to 60%, and in 2003–2013 — to more than 70% [Nicholls, 2013]. Securing a large market share in a particular industry no longer gives viable guarantees of maintaining a leading position for any considerable period of time. Besides, the traditionally high correlation between corporations' market shares and profit margins in many industries is becoming rather insignificant.<sup>4</sup> Finally, the borders of industries are getting increasingly vague, leaving the biggest players' top management practically no opportunity to clearly identify their rivals or even the industrial sectors in which they actually compete.

All these changes create serious barriers to conventional approaches in the area of corporate strategy development. After all, this approach, despite seeing the strategy as a way to respond to the uncertainty of the changing environment, in essence is based upon the assumption of a relatively stable and predictable world. Indeed, in most cases the main objective of corporate strategies traditionally consists in creating a sustainable (and usually by default static) competitive advantage through creative market positioning (achieving dominant positions, or capturing some attractive market niche), or by acquiring resources and competences needed to produce and market a unique product or service. Within the conventional strategic management cycle, corporations periodically review their strategies, adjust (or define new) strategic directions for development, and put in place appropriate organisational structures based upon the analysis of current situation on certain industrial markets and their growth forecasts for some not very long period of time.

Adopting such an approach in a VUCA business environment is becoming increasingly unproductive. Under the conditions of radically new uncertainty, conventional competitive advantages based upon economies of scale and resource efficiency are obviously losing their long-term importance. Fuzzy borders between industries make even a rough assessment of the company's current (and much less prospective) market position an increasingly difficult task. But most importantly, unpredictable changes of the external environment reduce the value of conventional forecasts (which used to be the starting platform for corporate strategies) to a minimum, while the unusually high rate of such changes makes the five-year strategic planning cycle (routinely applied by most MNCs) meaningless. In such situations, corporate strategies often become obsolete before they are formally approved, and employees (including management personnel) are losing confidence in the rationale behind strategy development procedures<sup>5</sup>.

Diving into the VUCA business environment had seriously aggravated a whole host of problems inherent to the conventional strategic planning systems of the largest MNCs. One of these issues relates to a quite short horizon of strategic planning, which (given the significant inertia common to large businesses) severely limits the possibilities for a timely adjustment of the chosen course (let alone making radical turns). As BCG experts have noted, “If a company's strategy-development process is focused only on

<sup>4</sup> According to US economists, M. Reeves and M. Deimler, the percentage of companies falling out of the top three rankings in their industry between 1960–2008 increased seven-fold (from 2 to 14%), and the probability of a company with the largest market share also being the industry leader in terms of profit rate, fell from 34% in 1950 to just 7% in 2007 [Reeves, Deimler, 2011].

<sup>5</sup> One of the managers of a big US corporation, when asked to give a general assessment of the strategic planning process at his firm, was very sincere to respond as follows: “Our planning process is like a primitive tribal ritual — there is a lot of dancing, waving of feathers and beating of drums. No one is exactly sure why we do it, but there is an almost mystical hope that something good will come out of it” (cit. ex: [Kaplan, Beinbocker, 2003]).

short-term imperatives, there's a danger of myopia. A chance of missing a strategic turn because no one sees an important sign in the distance increases" [Kachaner et al., 2008, p. 2].

Another major issue, which significantly reduces the effectiveness of strategic planning systems employed by today's largest MNCs in an increasingly turbulent world, relates to their limited potential for identifying and effective processing signals of changes in the environment. Such systems are traditionally designed to track only clearly visible trends (the so-called strong signals), recognisable only within a limited horizon. But they entirely miss weak signals which often can give some good idea (for decision-making purposes) of the changing parameters within the future competitive environment. Furthermore, such weak signals may be forerunners of strategic surprises (so-called jokers, according to foresight studies' terminology), i.e., events with a low probability of occurrence but potentially capable of bringing about large-scale radical changes in the industry (or even in the whole economy). In recent years, such events occur increasingly often, while corporations adopting a conventional approach to strategic planning feel themselves increasingly disoriented. As noted by the prominent Italian researchers, Riccardo Vecchiato and Claudio Roveda, "In the case of a discontinuous driver of change, thinking the future through the lens of the previous experience and strategic beliefs about the business environment and the business models that were successful in that environment may be considered as driving a car in proximity of a bend by just looking at the rear mirrors. By doing so managers will inevitably fail when it most matters, i.e., when the rules of competition are going to shift sharply" [Vecchiato, Roveda, 2010, p. 1532].

Closely connected with this serious issue is the notoriously strong commitment of large corporations to their existing business models and related inability to adequately assess the strategic potential of new "disruptive" technologies. As shown in numerous recent studies, the strategic planning systems of most today's multinationals, even those with advanced R&D organisations, often appear unable to comprehend so-called disruptive innovations, which radically change the rules of the game in their industries by rapidly replacing conventional business models with completely new ones [Christensen, 1997; Kaplan, 2012]. The standard corporate procedures for screening innovation proposals, when making decisions on subsequent investments, usually reject the projects that do not fit in with their current business model, sometimes neglecting even very promising inventions. Clearly, such practices became, among other things, one of the main reasons for the recent bankruptcy of Kodak, the long-standing leader of global photo industry (ironically, it was one of the Kodak's engineers who invented digital cameras, and it was exactly digital camera that in the end ruined Kodak's traditional business model). At another eminent US multinational, Xerox, this approach also prevented the introduction of a whole range of unique technical innovations (including the first personal computer) developed by its own engineers but implemented subsequently by other companies (see: [Bereznoy, 2015]).

Finally, there is one more long-standing problem, very typical for corporate strategic planning mechanism, which has been dramatically aggravated with multinationals' diving into the VUCA business environment. That is the widening of the so-called communication gap in the corporate strategy development process. This gap is primarily due to the traditionally low level of communications within corporate management (divided by hierarchical administrative barriers and bureaucratic walls between organisational units) over the course of strategy development. Quite common to many large corporations (and especially to MNCs with their globally distributed networks of production and sales subsidiaries), this lack of communications within strategic planning systems becomes particularly evident under the conditions of sharply increasing turbulence, when even the existing (very limited) communication channels can no longer cope with "digesting" contradictory data coming from internal stakeholders, and in effect block the multilateral dialogue on strategic development priorities. Meanwhile, it is exactly the insufficient involvement of stakeholders from various MNC divisions in corporate strategy development that appears to be a key factor leading to poor implementation of such strategies.<sup>6</sup>

The evident inability of conventional strategy planning systems to meet the increased requirements of a much more turbulent business environment forced many global corporations to actively seek new mechanisms and instruments that would help them to respond to emerging challenges in this area. One of such instruments is corporate (or strategic) foresight, which has already occupied prominent positions in the strategic management architecture of dozens of the largest MNCs operating in a wide range of global industries.

First of all, foresight allows for significantly extending the strategic vision horizon. It is important to realise that in this capacity, corporate foresight does not possess any more advanced "anticipation" techniques, but rather suggests a radically different approach in this area. Unlike conventional forecasts, which strive to draw a picture of the future based on the visible trends of the present, the foresight methodology by default assumes the variability of the future, and aims at providing proactive support for implementing the most desirable option out of all possible alternatives of the emerging economic order. In this regard a recent statement by a representative of the German car manufacturing MNC's top management seems

<sup>6</sup> A quite thorough review of several dozens of empirical studies on various factors influencing corporate strategy performance, prepared by a group of researchers at the Swiss-based Institute for Corporate Communication (Lugano), clearly revealed the extremely high importance of establishing effective dialogue among different management levels and business units (including, in the case of MNCs, mandatory participation of international subsidiaries' managers) as an integral part of the corporate strategy development process, to ensure the subsequent successful implementation of such strategies [Li et al., 2008].

to be very instructive: “At BMW we believe that the best way to predict the future is to create it” (*cit. ex: [Tendulkar, 2016]*).

The ability to extend the strategic planning horizon is closely connected with another key corporate foresight characteristic: significantly enhanced opportunities for scanning signals coming from the external environment. In addition to clearly visible trends (or strong signals) which are usually monitored by conventional strategic planning systems, the corporate foresight mechanism for tracking and analysis is designed to identify weak signals, as well as strategic surprises (jokers), which could generate a final outcome with absolutely new qualities. It is this new capability of corporate “radar”, which is much more sensitive to changes in the external environment that allow one to anticipate potential challenges and threats related to radical industry-specific shifts, disruptive technologies and innovative business models. One of the most important distinctive features of the corporate foresight methodology is also a set of clearly defined procedures for multi-phase discussions of a company’s strategic challenges and priorities within its management team, including managers of all levels and all organisational units responsible for making relevant decisions, and frequently also involving external experts and consultants to provide an independent view on prospective development trends in the business environment. This approach largely eliminates the communication gap between major corporate stakeholders that arise over the course of developing a strategic vision, and ensures the necessary consensus regarding a firm’s strategic goals and objectives, a key prerequisite for successfully mobilising a corporate team to implement the formulated strategy.

Overall, corporate foresight adds new important elements to the conventional strategic management mechanism employed by major MNCs, capable of significantly increasing its effectiveness in an increasingly turbulent world. It serves as an important superstructure based on the established strategic management architecture and is primarily aimed both at implementing a powerful “early warning” system, capturing signals about forthcoming shifts in the business environment, and at shaping effective and timely responses that a company should initiate as a preventive measure to such changes.

### **Characteristic features of the corporate foresight mechanism applied by major multinationals**

Given the very sensitive information generated by corporate foresight studies, it is not surprising that the specifics of these activities and the details of how foresight outcomes are practically used by MNCs’ management remain largely unavailable to external observers. However, a few empirical studies have appeared in recent years, which allow one to have a look into the “holy of holies” of these activities and to get some idea of their organisation at a number of major MNCs operating in various sectors (industries) of the global economy. These studies reveal, on the one hand, the quite similar basic characteristics of the general organisation of corporate foresight activities, and on the other — a number of very specific features mainly determined by the nature of industrial sectors where individual MNCs operate and, not infrequently, by their corporate culture.

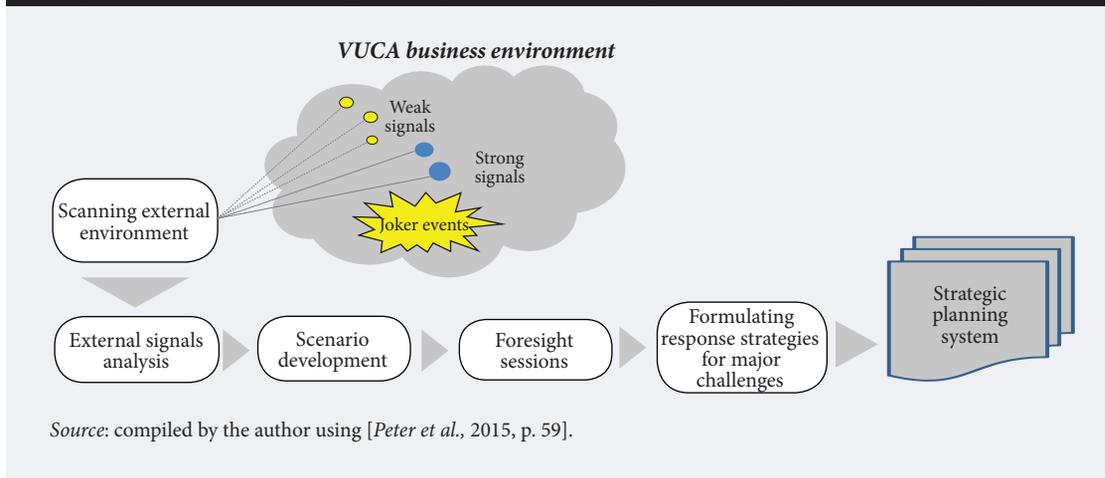
The common features of corporate foresight organisation become evident, first and foremost, when foresight activities are institutionalised as a specific function (in various forms) responsible for this work at the corporate level. Other dimensions, showing a number of similarities, could be found in the general logic of corporate foresight process design (including the sequence of its main phases), and in the mix of key tools (methods) applied. If we turn to the formal institutionalisation of foresight activities, today already a good number of major MNCs have special organisational units responsible for directing this work (usually located at the corporate headquarters), and their population is growing every year. The most recent large-scale survey of major European MNCs operating in various industries (conducted in 2014) revealed that out of 145 surveyed corporations, 89% had had a special corporate foresight division for at least one year, and 65% had such function for more than six years [*Danielson, 2014, p. 38*]. Other empirical studies also disclose that separating the corporate foresight function also became quite common in multinationals based in the US and Japan (see: [*Nash, 2013; Yoda, 2013*]).

As for the corporate foresight process, at the vast majority of MNCs, which do have relevant experience, it was organised along a more or less common five-phase general scheme (see Figure 1).

The first phase implies scanning the external environment and creating databases of trends (strong signals) and weak signals. The second phase includes an in-depth analysis of all identified signals, the definition of possible radical shifts, potential threats and market opportunities that these shifts could bring about. The main focus of the third phase is the formulation of several long-term future development scenarios for the external environment basing on an analysis of collected data and taking into account possible strategic surprises. The fourth phase involves a series of foresight sessions where managers of various levels discuss draft scenarios, adjust them in accordance with their vision, and ultimately agree upon the final versions. Finally, long-term strategic priorities are set during the last phase of the foresight process, together with specific milestones to ensure the company’s adequate response to strategic challenges and map the optimal course to secure the desired position on future markets.

MNCs foresight practices also indicate that the key prerequisite for the whole process success lies in ensuring efficient cooperation with the existing corporate strategic planning system. As the head of

Figure 1. High-level map of corporate foresight process: Sequence of main phases



foresight studies group at Daimler AG, Frank Ruff, has rightly noted, “Overall corporate foresight fulfils a mission to detect changes and signals that are outside the reach of standard corporate sensors and thus takes a *complementary* role to existing strategy and innovation functions. But this complementary function also implies that a close alignment and collaboration with strategy and innovation departments is a decisive role to create impact” [Ruff, 2015, pp. 39–40].

Though the specific mix of foresight techniques used by major MNCs often significantly varies, the basic (rather limited) toolset usually remains essentially the same. Out of the quite diverse range of foresight techniques applied by various public and private sector organisations (according to UNIDO estimates, there are more than 40 of such tools available)<sup>7</sup>, major MNCs use less than 15. As to the techniques most actively used in corporate foresight projects, experts usually name no more than 5–6, including the following: scenarios, brainstorming, literature reviews, cost-benefit analysis, patent analysis. Such methods as trend identification and analysis, roadmaps, relevance trees, and stakeholder analysis are also quite popular in corporate foresight studies. Bibliometrics, historical analogy forecasting, and Delphi methods are applied less often (Figure 2).

Along with the similarities, foresight mechanisms operating at individual MNCs often have very specific characteristics. These specific features are primarily due to different major drivers of change affecting corresponding sectors of the global economy. Such differences become particularly evident if one compares the foresight systems of MNCs operating in mature sectors (like the mining and processing of natural resources), on the one hand, and in the so-called modern industries displaying very dynamic qualitative and quantitative shifts in market demand (e.g., telecommunications, consumer electronics), on the other. In the first case, corporate foresight mechanisms are usually designed to identify and find solutions for potential issues originating from the extraordinarily complex external environment, whose development is affected by numerous very diverse and hardly predictable factors. In the second case, the priority objective of corporate foresight is the quick development of adequate responses to threats emerging in an extremely volatile external environment.<sup>8</sup>

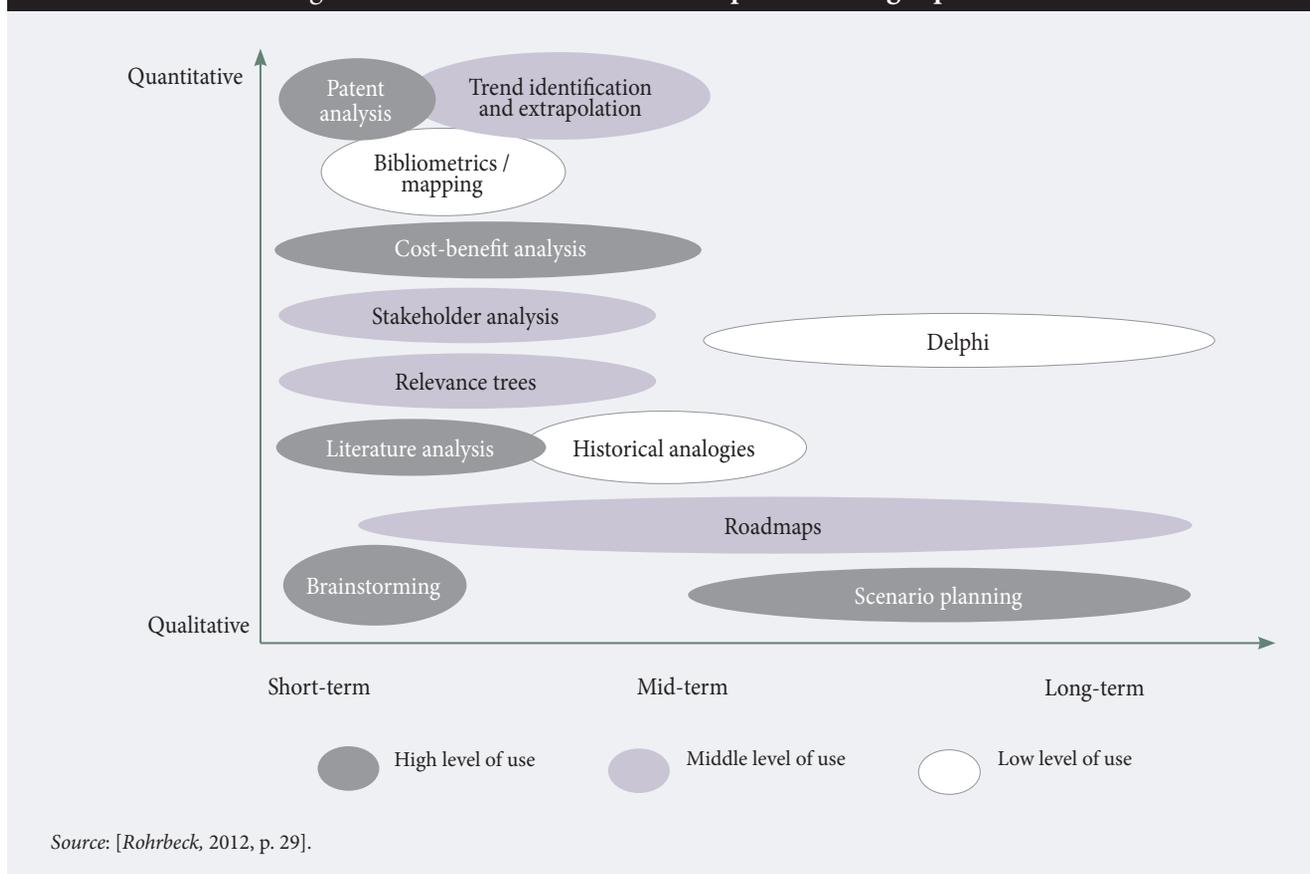
Corporate foresight systems used for many years by the oil supermajor, Shell, and global chemical giant, BASF, are specifically designed to help company management in dealing with the challenges presented by an increasingly complex macro-environment. To that end, both corporations put in place very robust, scenario-based, multiple-level strategic management systems, where all main organisational units constantly receive information required for their constructive participation in strategy development at the corporate, business segment, and operational levels. Targeted efforts at all these corporate levels launch a quite lengthy multi-step process dictated by the particularly complex external environment. Time horizons of scenarios developed by these companies usually exceed 15–20 years (a period comparable with the payoff period of capital investment projects in relevant industries), while the analysis of the main drivers of change covers as wide a range as possible, including not only economic and technological factors but also social, political (together with geopolitical), environmental, and values-related factors (Table 1).

MNCs operating in industrial sectors characterised by a more volatile external environment adopt quite different corporate foresight systems. For example, the foresight systems of Philips and Deutsche

<sup>7</sup> See [UNIDO, 2005]. A more recent and fairly detailed description of specific foresight techniques can be also found in a number of works by Russian researchers (see, e.g., [Miles et al., 2016]).

<sup>8</sup> Certainly, the above classification is conditional and does not imply that mature sectors (oil and gas or chemicals) do not occasionally experience very radical changes, or that factors affecting the so-called modern industries are not very complex in nature. However, comparative analysis makes the abovementioned differences between these groups of industries (sectors) very tangible.

Figure 2. Main methods used in corporate foresight practices



Telecom AG (the first is a leader on the global home appliances and consumer electronics market, and the second — a leading European telecommunication services operator) demonstrated extremely high flexibility and rapid response rates. Their foresight mechanisms are designed primarily to identify drivers of radical changes capable of breaking the “rules of the game” and the industry’s competitive landscape in a very short period of time. All techniques and tools used in such systems are primarily focused on defining the potential effects of such changes on the company’s market position, and the new market opportunities they may open. Another distinctive feature of such systems is combining the scenario-based approach with the design of technology and product roadmaps, which could help to establish links of the identified potential technological shifts and related emerging market opportunities with specific prospective products that the company could offer.<sup>9</sup> Accordingly, time horizons of scenarios and technology roadmaps developed by corporate foresight systems of these companies usually do not exceed 5–10 years.

The actual competitive behaviour of MNCs operating in global industries which in recent years have experienced the most radical changes (usually referred to as “disruptive”) also provide evidence of certain limitations of corporate foresight capabilities, especially when traditional industry borders are being quickly eroded by the so-called digital revolution taking place right in front of our eyes. The recent story of Nokia, the former global mobile phones market leader, which failed to maintain competitive positions in the radically changing industry, could serve here as an illustrative case. Despite having one of the most advanced corporate foresight systems in Europe, this Finnish MNC made a number of serious strategic mistakes and in the mid-2000s clearly lost the competitive battle for leadership in the personal mobile communication devices market to US-based Apple.

Many experts believe that one of the main reasons for this strategic disaster was the company’s inability to set appropriate objectives for their corporate foresight function, because they (managers) failed to comprehend the fundamental shift in the boundaries of their business. Indeed, the digital revolution has led to convergence of a number of different markets, including those for mobile phones, photo cameras, sound recording devices and personal mini-computers. Against this background, the global sales of the iPhone, a new type of mobile device (which integrated the functionality of all the aforementioned

<sup>9</sup> A good example in this respect is Deutsche Telecom AG (DTAG). As the authors of a special study of corporate foresight practices noted, “DTAG’s strategic roadmaps system combines strategic vision provided by the scenario-based approach with benefits of planning provided by technology roadmaps” [Rohrbeck, Thom, 2008, p. 5].

**Table 1. Specific features of MNCs' corporate foresight mechanisms: impact of external environment complexity and rate of change**

Main areas of differences	Key characteristics of the industry's external environment that determines the specific features of the foresight mechanism	
	High complexity of business environment (e.g. oil & gas sector, chemical industry)	High dynamics of change in business environment (e.g. consumer electronics, telecom services)
Process organization	Relatively long-term multi-level process, involving all main organizational units of the company	Flexible process with quite short overall duration, aimed at securing timely (proactive) company response to dynamic changes of external environment
Focus of methods and tools	Methods and tools are focused on the analysis of main trends and interaction of numerous drivers of macroeconomic changes (intensive use of STEEPV-analysis) Development of hierarchical system of complex development scenarios for long-, medium-, and operative perspectives Time horizon of scenario planning — more than 15-20 years	Methods and tools are focused on the identification of limited number of factors driving radical changes, able to quickly transform competitive landscape of the industry Wide use of technology roadmaps to establish links of forecasted technological shifts with emerging market opportunities for prospective company products Time horizon of scenario planning and technology roadmaps — usually not more than 5-10 years
Integration of results in strategic decision-making	Used primarily as the instrument to support investment decision-making, including changes in portfolio of key assets, entering new foreign markets, financing of major capital projects etc.	Used primarily as the instrument to identify new market opportunities and to support implementation of serious organizational changes

\* STEEPV is an acronym created by combining *social, technological, economical, environmental, political, and values* issues related to the evolution of the object under consideration [Miles et al., 2016].  
Source: compiled by the author using [Vecchiato, 2012; Rohrbeck, Thom, 2008].

products), launched by Apple, very quickly reached a huge scale. However, Nokia stubbornly kept trying to promote its own obsolete technological platform, even despite the company's rapidly falling global market share. As Riccardo Vecchiato has stressed in his analysis of the unsuccessful application of the foresight methodology by the management of the Finnish giant, "in the case of discontinuous drivers of change — early predictions about the future components of the business are likely to become the source of inertia rather than adaptation. Under boundary uncertainty, decision-makers should emphasize thereby strategic flexibility and quick learning instead of planning and foresight... Decision-makers might then start using and relying on foresight techniques once boundary uncertainty has been solved..." [Vecchiato, 2015, p. 268].

### Corporate foresight effectiveness

Setting up a viable corporate foresight function involves significant financial costs, time spent and organisational efforts needed for putting together a professional team of highly skilled experts and arranging their smooth cooperation with other key company divisions. It is no surprise that only relatively large corporations could afford building such function. In this context, legitimate questions arise regarding the actual effect of corporate foresight on MNCs' strategic development, especially from the perspective of the improvement of their strategic management systems.

One of the most common approaches to answering such questions is to refer to the most significant (and sometimes vitally important) strategic decisions made by specific MNCs based on their foresight function analysis. Probably the most striking, and by now almost paradigmatic, example in this area relates to very rational strategic decisions made by Shell over the course of the oil shocks of the early 1970s. Unlike other oil and gas supermajors, Shell appeared to be ready for the four-fold increase in oil prices, just because it had a well-developed scenario describing such developments prepared by their in-house foresight team. Less well-known (though possibly no less important) were Shell scenarios which ensured the company's high readiness for the subsequent radical structural shifts in the global oil and gas industry caused by the collapse of the Soviet Union, and by the transfer of major global energy consumption centres (and thus the bulk of demand for hydrocarbons) from the West to the East, first of all to China and India. These particular scenarios served as a basis for a number of strategic investment decisions to enter long-term production projects, including the huge *Sakhalin-2* project, which focused on Asian markets and already boasts more than \$10 billion in Shell investments.<sup>10</sup>

A number of examples of corporate foresight studies significantly affecting the strategic decision-making process were also noted at other major MNCs, including those operating in the so-called modern industries. For instance, Philips' recent decision to shift its strategic focus from consumer electronics to medical equipment was based on the conclusions made by its in-house corporate foresight team. Trend

<sup>10</sup> This is Shell's largest investment project in the company's 120-year history.

analysis, undertaken by this team, allowed the company to conclude that such global trends as the ageing of the population and the wide proliferation of healthy lifestyle values, should provide a firm ground for changing its strategic priorities in favour of the health sector, while the ongoing commoditisation processes (product standardisation accompanied by sharply decreasing profit margins) would inevitably result in the stagnation or decline of the conventional consumer electronics industry. This vision of the future was adopted as a foundation upon which to mobilise the company to take a new strategic course.

At the same time, it is quite clear that even having very serious corporate foresight capabilities is not a panacea against making big strategic errors. The evidence supporting this conclusion is provided not only by Nokia's much-publicised disaster on the global mobile phones market, but also by the preceding and largely similar failure of another corporate giant, Ericsson. This Swedish MNC, initially one of the top-five global mobile phone market leaders, also failed to maintain competitive positions and finally was pushed out of the market at the end of 1990s.<sup>11</sup> Though both of these firms had very qualified and experienced foresight teams, they failed to prevent their chief executives from making very expensive strategic mistakes.

On the other hand, a number of observers believe that the main reason for the failure had nothing to do with the insufficient qualifications or experience of the corporate foresight experts, but rather was directly connected with the irrelevant objectives set for them by company management. According to a former head of the Shell scenario planning division, "Managers must look out for the right conditions for using predictive techniques like scenarios by weighing what these tools allow one to learn about the future against what they require as their own input. If the key issues and challenges to be faced by the organization have not been properly defined yet, scenarios will lack focus, and executives will be involved in a blinding process which actually misleads them and reduces their understanding of the future" (*cit. ex: [Vecchiato, 2015, p. 268]*).

In any case, though such examples are undoubtedly interesting for identifying best practices, or on the contrary typical mistakes, in applying corporate foresight outcomes in strategic decision-making, they suggest too little to define key areas of such activities' impact on strategic processes at the respective companies. From this perspective, it would be much more relevant to analyse the results of MNCs' special surveys, which allow one to make certain conclusions regarding corporate foresight's actual contribution to enhancing the specific functionality of their strategic management systems.

Thus, one of such surveys, undertaken among 77 large European multinationals, revealed that more than 75% of CEO respondents were quite positive in their assessment of the value added by corporate foresight to the performance of strategic management. More than 80% of these respondents agreed (fully or partially) that corporate foresight made a tangible contribution to enhancing such strategic functionality as environment scanning (by gaining insights into changes of the environment and contributing to the reduction of uncertainty regarding its future parameters); the development and implementation of corporate strategy (by fostering an internal conversation about overall corporate strategy, creating the ability to adopt alternative perspectives, supporting the adjustment of the company in case of uncertainty); the development and implementation of market entry strategies (by enhancing the understanding of target markets, the identification of opportunities and threats for company products and the technology portfolio); and influencing the parameters of the future environment (see Table 2).

A particularly revealing finding of this survey seems to be the high share of respondents who consider corporate foresight a powerful instrument for shaping future external conditions of their company's business. Indeed, the activities of corporate foresight divisions, especially in the case of major multinationals, are not usually limited to providing support for internal strategic decision-making processes. The external component of their work is clearly growing in importance, aiming at systematically "putting pressure" upon the minds of key stakeholders, those who in one way or another could influence the global business environment. One obvious channel to do so is through the regular publication of global industry forecasts, future development scenarios of key technology areas and markets, etc. Since such studies are usually conducted by highly skilled experts, who use the most advanced methodologies and have access to practically all existing data, and the results they obtain are published under the auspices of major players in relevant global industries, the influence of such publications is difficult to overestimate. Thus, the three largest oil and gas supermajors (ExxonMobil, Shell, and BP) annually publish their long-term forecasts for global energy industry development, whose influence is essentially on par with the forecasts published by the leading multilateral organisation in this industrial sector, the International Energy Agency.

Certainly, multinationals do not limit their influence to only the massive dissemination of their corporate foresight studies. They allocate significant funds to their corporate experts who are delegated to "support" such publications by working with the target stakeholder audiences, including the organisation of various conferences, workshops and meetings with public authorities, business partners, consulting firms, etc. It

<sup>11</sup> As noted in Bloomberg special review, "With the \$7.2 billion sale of its mobile-phone business to Microsoft Corp., Nokia Oyj is following a path trodden by Ericsson AB of Sweden in abandoning handset manufacturing ... Nokia, struggling to regain relevance in smartphones after Apple Inc.'s iPhone was introduced in 2007, is getting out of the business almost a decade after Nordic rival Ericsson split off mobile phones into a separate venture with Sony Corp. [*Web, Baigorri, 2013*]."

**Table 2. Assessing corporate foresight's contribution to enhancing various functions of strategic management (based on the results of a survey of 77 European MNCs)**

Functions of strategic management influenced by corporate foresight	Share of respondents reported high assessment (%)
<b>Environment scanning</b>	
Gaining insights into changes in the environment	95
Contributing to a reduction of uncertainty (e.g. through identification of disruptions)	83
<b>Development and implementation of corporate strategy</b>	
Fostering conversation about overall strategy of the company	85
Creating the ability to adopt alternative perspectives	84
Supporting adjustment of the company in case of uncertainty	75
<b>Development and implementation of market entry strategies</b>	
Enhancing the understanding of the market	92
Identification of opportunities and threats for our product and technology portfolio	84
<b>Influencing parameters of future environment</b>	
Shaping the future (e.g. through influencing other players such as politicians or other companies)	81

*Source:* compiled by the author using [Rohrbeck, Schwarz, 2013, pp. 1599–1603].

goes without saying that not all the findings of corporate foresight studies are made available to the general public. Furthermore, these studies, designed to influence an external target audience, by definition imply certain interpretations of their main conclusions in order to induce major stakeholders to accept the vision of the world (industry, market, etc.) that the sponsoring corporations would like them to have.<sup>12</sup>

Another quite effective channel to exert influence on the future parameters of rapidly developing global high-tech industries, that has been increasingly used by major MNCs, is their active participation in the development of international foresight studies and sectoral technology roadmaps, usually sponsored by inter-governmental institutions or industrial associations. These multilateral engagements became a quite popular mechanism used for the coordination of efforts of national governments and multinational businesses in the area of indicative planning where there is a common interest in cultivating new industry sectors with significant potential for a global economic impact. One of the first successful attempts to create such a mechanism was the development and continuous updating of the International Technology Roadmap for Semiconductors (ITRS) on the basis of the Semiconductor Industry Association (SIA), which involved practically all global industry players, including Intel, IBM, Texas Instruments, Intersil, Rochester Electronics, Micron, Landsdale Semiconductor Inc. and others (see, for example, [Rosso, 2016]). A more recent example of the powerful international sectoral future study is the interdisciplinary foresight project “The Bioeconomy to 2030” (undertaken in 2007–2008 under the auspices of OECD). The steering group, created to supervise this work, included representatives of such global industry leaders as Organon, Ciba, Novo Nordisk, Novozymes, Evonik and others [OECD, 2009, p. 18].

Finally, it would be important to note one more, very significant effect of the creation of a working corporate foresight function at MNCs, which strictly speaking goes beyond the scope of a strategic management system. We mean the actual transformation of the overall corporate culture, its radical shift to absorb the ongoing change as a new, normal environment for the firm's operations. Indeed, by involving a wide range of managers in regular discussions on future challenges (threats and opportunities) engendered by a changing business environment, and on possible responses to such challenges, the corporate foresight mechanism inevitably makes a very important contribution to building such competencies as adaptability, flexibility, and the ability to quickly (or even preventively) transform itself (a specific competency which has recently got a special management term “agility”), i.e., exactly those organisational features that MNCs increasingly need as they are diving into the VUCA business environment. As noted by Yvette Salvatico, one of the founders of the foresight division at the largest US media MNC, Walt Disney, “The power of strategic foresight lies not primarily in its tools and methodologies but in its ability to alter minds and perspectives. With an integrated, holistic approach, firms can create a foresight competency that has the ability to truly alter their organizational culture” [Salvatico, 2013].

## Conclusion

The fundamental reason for setting up a corporate foresight function at major multinationals lies in their objective need to have an in-house “early warning” system, which is able to identify potential

<sup>12</sup> It is quite indicative that one of the conclusions made in a special study of long-term energy forecasting practices in the US reads as follows: “More often than we would like to believe, forecasts are unduly influenced by the particular perspective of the sponsoring institution, and perspectives alien to that organization are downplayed, misrepresented or ignored” [Craig et al., 2002].

threats and emerging market opportunities. Large companies' inherent inability to recognise dangerous changes in the external environment was noted as early as in the 1970s by a classic of strategic corporate management theory, Igor Ansoff, who suggested using special tools to scan external weak signals [Ansoff *et al.*, 1976, p. 69]. However, only at the beginning of the current century, with the arrival of a new era of turbulence, MNCs started to introduce corporate foresight on a truly significant scale. Compared with conventional corporate strategic management mechanisms, the same systems equipped with effective foresight functionality acquired a number of crucially important new features: the time horizon of the vision of the future becomes significantly more extensive; the processes of scanning and analysing the external environment begin to proceed in a much broader, cross-industry and multidisciplinary context; intensive ongoing intra-corporate dialogue on the future development scenarios is launched and maintained; significant opportunities appear for influencing the development of the future business environment in the desired way. Finally, a new corporate culture emerges, leading to increased flexibility, adaptability, and transformative agility. Overall, it would be natural to conclude that foresight is becoming a key element of today's corporate strategic management architecture. In the toolset of MNCs' managers, who are striving to identify landmarks for positioning in rapidly changing global markets, under the conditions of permanent shifts occurring in the competitive landscape, the corporate foresight mechanism is increasingly playing the role of a GPS navigator helping drivers who are lost in the maze of an unfamiliar city.

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## References

- Ansoff I. (1965) *Corporate Strategy*, New York: McGraw-Hill.
- Ansoff I. (1979) *Strategic Management*, London: Macmillan.
- Ansoff I., Declerck R.P., Hayes R.L. (1976) *From Strategic Planning to Strategic Management*. London, New York: Wiley.
- Barringer B.R., Bluedorn A.C. (1999) The Relationship between Corporate Entrepreneurship and Strategic Management // *Strategic Management Journal*, vol. 20, no 5, pp. 421–444.
- Bennett N., Lemoine G.J. (2014) What VUCA Really Means for You? *Harvard Business Review*, vol. 92, no 1/2, pp. 27–35.
- Berezhnoy A. (2015) Changing Competitive Landscape Through Business Model Innovation: The New Imperative for Corporate Market Strategy. *Journal of the Knowledge Economy*, 27.10.2015, pp. 1–22. Available at: <http://link.springer.com/article/10.1007/s13132-015-0324-x>, accessed 20.07.2016.
- Berger G., Bourbon-Busset J.D., Masse P. (2008) *De la Prospective: Textes Fondamentaux de la Prospective Française 1955–1966*, Paris: L'Harmattan.
- Bishop P., Hines A., Collins T. (2007) The Current State of Scenario Development: An Overview of Techniques. *Foresight*, vol. 9, no 1, pp. 5–25.
- Bodwell W., Chermack T. (2010) Organizational Ambidexterity: Integrating Deliberate and Emergent Strategy with Scenario Planning. *Technological Forecasting & Social Change*, vol. 77, no 1, pp. 193–202.
- Boyd D.K. (1991) Strategic Planning and Financial Performance: A Meta-Analytic Review. *Journal of Management Studies*, vol. 28, no 4, pp. 353–374.
- Bradfield R., Wright G., Burt G., Cairns G., Heijden K. (2005) The Origins and Evolution of Scenario Techniques in Long Range Business Planning. *Futures*, vol. 37, pp. 795–812.
- Brews P.J., Hunt M.R. (1999) Learning to Plan and Planning to Learn: Resolving the Planning School / Learning School Debate. *Strategic Management Journal*, vol. 20, no 10, pp. 889–913.
- Christensen C.M. (1997) *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*, Boston: Harvard Business School Press.
- Craig P., Gadgil A., Koomey J. (2002) What Can History Teach Us? A Retrospective Examination of Long-Term Energy Forecasts for the United States. *Annual Review of Energy and the Environment*, vol. 27, pp. 83–118.
- Danielson M.R. (2014) *The Impact of Corporate Foresight and Strategic Orientation on Performance*, Aarhus: Aarhus University.
- Dibrell C., Craig J.B., Neubaum D.O. (2013) Linking the Formal Strategic Planning Process, Planning Flexibility, and Innovativeness to Firm Performance. *Journal of Business Research*, vol. 67, no 9, pp. 2000–2007.
- Goll I., Rasheed A.M. (1997) Rational Decision-Making and Firm Performance: The Moderating Role of Environment. *Strategic Management Journal*, vol. 18, no 7, pp. 583–591.
- Gorbatova A. (2014) Dvizhenie ot budushchego k nastoyashchemu [Moving from Future towards Present]. *STRF.ru*, 23.07.2014. Available at: [http://www.strf.ru/material.aspx?CatalogId=221&d\\_no=82051#.V2pNg2df2Uk](http://www.strf.ru/material.aspx?CatalogId=221&d_no=82051#.V2pNg2df2Uk), accessed 19.07.2016 (in Russian).
- Grant R.M. (2003) Strategic Planning in a Turbulent Environment: Evidence from the Oil Majors. *Strategic Management Journal*, vol. 24, no 6, pp. 491–518.
- Hamel G., Prahalad C.K. (1989) Strategic Intent. *Harvard Business Review*, vol. 67, no 3, pp. 63–76.
- Kachaner N., Deimler M.S., Saussois C. (2008) *Does Your Strategy Need Stretching? Adapting Your Strategy-Development Approach to Fit Today's Rapidly Changing Competitive Environment*, Boston: The Boston Consulting Group Inc.
- Kahn H. (1962) *Thinking about the Unthinkable*, New York: Horizon Press.
- Kaplan S. (2012) *The Business Model Innovation Factory: How to Stay Relevant When the World is Changing*, Hoboken, NJ: Wiley.
- Kaplan S., Beinhocker E.D. (2003) The Real Value of Strategic Planning. *MIT Sloan Management Review*, Winter, 15.01.2016. Available at: <http://sloanreview.mit.edu/article/the-real-value-of-strategic-planning/>, accessed 19.07.2016.

- Kukalis S. (1989) The Relationship among Firm Characteristics and Design of Strategic Planning Systems in Large Organizations. *Journal of Management*, vol. 15, no 4, pp. 565–579.
- Learned E.P., Christensen C.R., Andrews K.R., Guth W.D. (1965) *Business Policy: Text and Cases*, Irvin: Homewood.
- Li Y., Guohui S., Eppler M.J. (2008) *Making Strategy Work: A Literature Review on the Factors Influencing Strategy Implementation*, Lugano: Institute for Corporate Communication, University of Lugano. Available at: <http://www.knowledge-communication.org/pdf/making-strategy-work.pdf>, accessed 18.07.2016.
- Miles I., Saritas O., Sokolov A. (2016) *Foresight for Science, Technology and Innovation*, Heidelberg/ New York/ Dordrecht/ London: Springer.
- Mintzberg H. (1994a) *The Rise and Fall of Strategic Planning: Reconceiving Roles for Planning, Plans, Planners*, New York: Free Press.
- Mintzberg H. (1994b) The Fall and Rise of Strategic Planning. *Harvard Business Review*, vol. 72, no 1, pp. 107–114.
- Mootee I. (2016) *The End of Strategic Planning and the Rise of Strategic Foresight*. Available at: <http://idr.is/the-end-of-strategic-planning-and-the-rise-of-strategic-foresight/>, accessed 20.07.2016.
- Nash D. (2013) *Case Studies: Identifying Foresight Methods and Practices in American Corporate Planning*, Prescott Valley, AZ: Northcentral University.
- Nicholls N. (2013) *Future of Business*. Available at: <http://www.nicknicholls.com/no-business-is-too-big-to-fail-or-too-small-to-succeed/future-of-business/>, accessed 19.07.2016.
- OECD (2009) *The Bioeconomy to 2030: Designing a Policy Agenda. Main Findings and Policy Conclusions*, Paris: OECD.
- Pearce J.A., Freeman E.B., Robinson R.B. (1987) The Tenuous Link between Formal Strategic Planning and Performance. *Academy of Management Review*, vol. 12, no 4, pp. 658–675.
- Porter M.E. (1980) *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, New York: Free Press.
- Reeves M., Deimler M. (2011) Adaptability: The New Competitive Advantage. *Harvard Business Review*, vol. 89, no 7/8, pp. 134–141.
- Rohrbeck R. (2011) Corporate Foresight: Its Three Roles in Enhancing the Innovation Capacity of a Firm. *Technological Forecasting & Social Change*, vol. 78, no 2, pp. 231–243.
- Rohrbeck R. (2012) *Trend Analysis and Corporate Foresight*, Aarhus: European Innovation Academy.
- Rohrbeck R., Battistella C., Huizingh E. (2015) Corporate Foresight: An Emerging Field with a Rich Tradition. *Technological Forecasting & Social Change*, vol. 101, no 1, pp. 1–9.
- Rohrbeck R., Schwarz J.O. (2013) The Value Contribution of Strategic Foresight: Insights from an Empirical Study of Large European Companies. *Technological Forecasting & Social Change*, vol. 80, no 5, pp. 1593–1606.
- Rohrbeck R., Thom N. (2008) *Strategic Foresight at Deutsche Telekom AG*, Aarhus: Aarhus University. Available at: [https://www.researchgate.net/publication/251861048\\_Strategic\\_Foresight\\_at\\_Deutsche\\_Telekom\\_AG](https://www.researchgate.net/publication/251861048_Strategic_Foresight_at_Deutsche_Telekom_AG), accessed 18.07.2016.
- Roland Berger (2013) *How to Survive in the VUCA World*, Hamburg: Roland Berger.
- Rosso D. (2016) *International Technology Roadmap for Semiconductors Examines Next 15 Years of Chip Innovation*. Available at: [http://www.semiconductors.org/news/2016/07/08/press\\_releases\\_2015/international\\_technology\\_roadmap\\_for\\_semiconductors\\_examines\\_next\\_15\\_years\\_of\\_chip\\_innovation/](http://www.semiconductors.org/news/2016/07/08/press_releases_2015/international_technology_roadmap_for_semiconductors_examines_next_15_years_of_chip_innovation/), accessed 18.07.2016.
- Ruff F. (2006) Corporate Foresight: Integrating the Future of Business Environment into Innovation and Strategy. *International Journal of Technology Management*, vol. 34, no 3–4, pp. 278–295.
- Ruff F. (2015) The Advanced Role of Corporate Foresight in Innovation and Strategic Management — Reflections on Practical Experiences from Automotive Industry. *Technological Forecasting & Social Change*, vol. 101, no 1, pp. 37–48.
- Salvatico Y.M. (2013) Addressing the GAP: Developing Corporate Foresight Through Competency Building. *Kedge*, 30.07.2013. Available at: <http://www.kedgefutures.com/addressing-the-gap-developing-corporate-foresight-through-competency-building/>, accessed 20.07.2016.
- Slaughter R. (1997) Developing and Applying Strategic Foresight. ABN Report, vol. 5, no 10, pp. 13–27. Available at: [http://www.forschungsnetzwerk.at/downloadpub/2002slaughter\\_Strategic\\_Foresight.pdf](http://www.forschungsnetzwerk.at/downloadpub/2002slaughter_Strategic_Foresight.pdf), accessed 18.07.2016.
- Sokolov A. (2007) Forsait: vzglyad v budushchee [Foresight: A Look Into the Future]. *Foresight-Russia*, vol. 1, no 1, pp. 8–15 (in Russian).
- Tendulkar S. (2016) The Best Way to Predict the Future is to Create It: BMW Group Redefines Automotive Excellence at Auto Expo 2016. *BusinessWire India*, 03.02.2016. Available at: <http://businesswireindia.com/news/news-details/the-best-way-predict-future-is-create-it-bmw-group-redefines-automotive-excellence-at-auto-expo-2016/47157>, accessed 20.07.2016.
- Tretyak V. (2012) Konkurentosposobnost' otechestvennykh kompanii i korporativnyi forsait [Competitiveness of National Companies and Corporate Foresight]. *Ekonomicheskie Strategii* [Economic Strategies], no 10, pp. 16–21 (in Russian).
- UNIDO (2005) *Technology Foresight Manual. Vol. 1. Organization and Methods*, Vienna: UNIDO.
- Vecchiato R. (2012) Environmental Uncertainty, Foresight and Strategic Decision Making. *Technological Forecasting & Social Change*, vol. 79, no 3, pp. 436–447.
- Vecchiato R. (2015) Strategic Planning and Organizational Flexibility in Turbulent Environments. *Foresight*, vol. 17, no 3, pp. 257–273.
- Vecchiato R., Roveda C. (2010) Strategic Foresight in Corporate Organizations: Handling the Effect and Response Uncertainty of Technology and Social Drivers of Change. *Technological Forecasting & Social Change*, vol. 77, no 9, pp. 1527–1539.
- Webb A., Baigorri M. (2013) Nokia without Handsets Follows Ericsson in Networks Focus. *Bloomberg Technology*, 05.09.2013. Available at: <http://www.bloomberg.com/news/articles/2013-09-03/nokia-without-handsets-follows-ericsson-in-networks-focus>, accessed 18.07.2016.
- Wiltbank R., Dew N., Read S., Sarasvathy S.D. (2006) What to Do Next? The Case for non-Predictive Strategy. *Strategic Management Journal*, vol. 27, no 10, pp. 981–998.
- Wulf T., Meissner P., Stubner S. (2010) *A Scenario-Based Approach to Strategic Planning — Integrating Planning and Process Perspective of Strategy*, Leipzig: Leipzig Graduate School of Management.
- Yoda T. (2013) *Corporate Foresight in Japan*, Nomi: JAIST. Available at: [https://dSPACE.jaist.ac.jp/dSPACE/bitstream/10119/11745/1/kouen28\\_407.pdf](https://dSPACE.jaist.ac.jp/dSPACE/bitstream/10119/11745/1/kouen28_407.pdf), accessed 20.07.2016.