# Maturity Levels of Horizon Scanning: Assessing Organisational Future Orientation

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## INTRODUCTION

Horizon scanning has been discussed as a means for early identification of threats and opportunities. Its interest is based on the finding that even large successful organisations can find themselves in life-threatening situations if faced by discontinuous change in their environment (Drucker, 1969; Stubbart & Knight, 2006). One example is Kodak, which when faced with a technological disruption (digital photography), was only able to escape bankruptcy by cutting four-fifths of its workforce and investing $5 billion in 10 years on R&D to catch up with new market entrants (Deutsch, 2008; Lucas & Goh, 2009). One study solicited by the Royal Dutch/Shell company calculated the average life expectancy of a Fortune 500 company to be less than 40 years (de Geus, 1997), emphasising that even large companies can easily find themselves subject to takeovers or bankruptcy.

Under the terms "horizon scanning", "foresight" or "peripheral vision" research has been conducted to identify successful means to detect and anticipate discontinuous or radical change. Such research has produced generic *processes* (Ashton et al., 1996; Reger, 2001), a large set of *methods* for interpretation of weak signals and emerging issues (Gordon & Glenn, 2003; Porter et al., 2004) and multiple *examples* of how horizon scanning systems have been implemented in companies (Rohrbeck & Thom, 2008; Van der Heijden, 2005; Wack, 1985) and by government agencies (Blind et al., 1999; Durand, 2003; Martin, 1995).

In this article I argue that in order to be able to truly help organisations to become more future oriented *we need to change our perspective*.

In past years, researchers as well as foresight consultants busied themselves with enhancing methods and processes. They installed even better horizon scanning systems within companies and government agencies. Although the result was an increased capacity to identify and assess emerging threats, my study of 19 large

multinational companies showed that many of the enhancement projects failed to increase the overall future orientation of the firm.

The primary reason is that even though upgrading horizon scanning systems allowed for the increase of the inflow of future oriented information, much of the potential benefit was lost within internal decision making processes.

In the design of most horizon scanning systems, the consultants and clients focussed extensively on means without focussing sufficiently on ends (Rohrbeck et al., 2009b). Horizon scanning systems support other functions. It should not be considered and managed as ends in their own right. In companies, horizon scanning systems are used to enhance strategic management or increase the innovation capacity of a firm. In government agencies they are used to identify future key technologies—whose development should be supported by government R&D funding—or to identify national security threats, to be countered with specific tactics.

But no matter which ends are targeted, the design of horizon scanning systems should always be guided by a clear understanding of how the overall process can be enhanced. In many cases, this consideration does not take place; although horizon scanning systems may function smoothly, identify and interpret weak signals, they fail to trigger actions and thus fail to generate a return on investment.

In this article I propose a maturity model that allows assessing the strength of the future orientation of an organisation and includes criteria to measure the ability of horizon scanning systems to trigger actions. Thus the model allows organisations to evaluate and improve their ability to identify, assess and react to discontinuous change.

## THE MATURITY MODEL

Benchmarking has been applied to almost all areas of management, including procurement, research and development (R&D) (Dutta et al., 2005), production, marketing and sales (Mittelstaedt, 1992). The usefulness of benchmarking arises from the possibility to (1) gain knowledge about how good one's own management practices are in comparison to others, and (2) to be able to learn from others and enhance one's own management practices.

The result is the Maturity Model of Corporate Foresight. This benchmarking exercise for horizon scanning is structured into three major parts (see Figure 1):

The *context* (or the contingency factors) is used to judge the individual companies' needs for corporate foresight and to derive normative recommendations on designing corporate foresight systems. For the assessment I use the questionnaire developed by Day and Schoemaker, who operationalised the need of peripheral vision in three categories: (1) *nature of strategy*, (2) *complexity of environment*, and (3) *volatility of environment* (Day & Schoemaker, 2005).

The *capabilities* are used to assess the corporate foresight system concerning its strength to identify, interpret and react to discontinuous change. In addition, the maturity level in each capability dimension can be used to guide improvement projects. The capabilities are structured into the five dimensions: (1) *information usage* to describe what kind of information enters the corporate foresight system, (2) *method sophistication* to describe what methods are used to interpret the information, (3) *people & networks* to describe characteristics of individual employees and the networks the company uses to communicate information and foresight insights, (4) *organisation* to describe how information is gathered, interpreted and used in the organisation, and (5) *culture* to describe to what extent the corporate culture is supporting or hindering the foresight effort. Within each dimension there are between three and five criteria with which to assess the maturity of the foresight system. In total the capabilities are measured with 21 criteria.

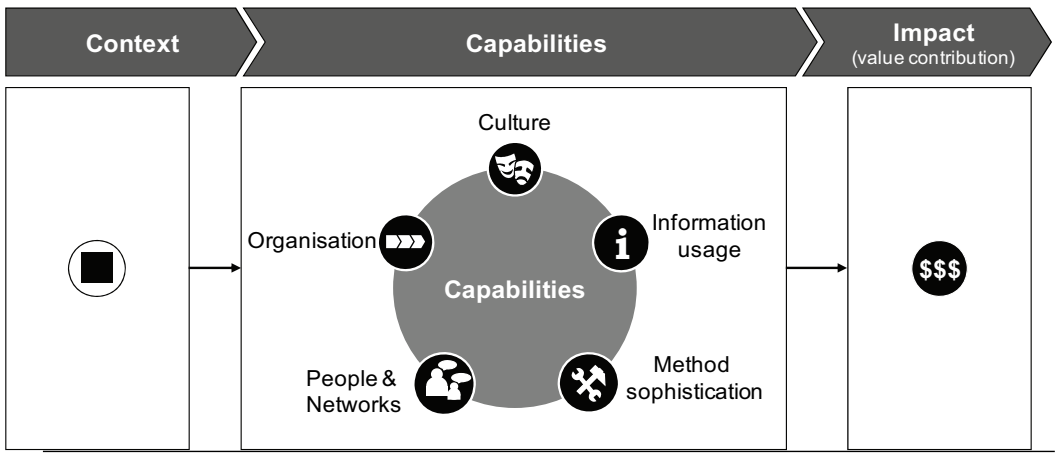


**Figure 1.** Maturity Model—Framework.

The *impact* is used to assess what kind of outcome or value contribution has been created by the corporate foresight activities. The impact is structured into four categories: (1) *reduction of uncertainty*, (2) *triggering actions*, (3) *influencing others to act*, and (4) *secondary benefits*. Within these four categories impact is assessed with 11 criteria.

## 1.1 CONTEXT

When describing and assessing management systems, contingency theory emphasises that it is important to take into account the context in which the management practices are applied (Donaldson, 1999). In this study contingent factors are referred to as the *context*. It is assumed that (1) differences in the context of an organisation will change the need for specific horizon scanning capabilities and (2) that assessing it can help to guide the design of horizon scanning systems.

For the analysis of the *context* we use the model of Day and Shoemaker, which consist of three major constructs: First the *nature of the strategy*, second the *complexity of the environment* and third the *volatility of the environment* (Day & Schoemaker, 2005). In the following tables I invite you to make an assessment of your organisation's (1) need for horizon scanning (context), (2) horizon scanning maturity (capabilities), and (3) its value creation from horizon scanning.

A table of interpretation of your results is given at the end of the document.

| I | NATURE OF YOUR STRATEGY | | |
|---|---|---|---|
| 1 | **Focus of your strategy** | (circle a number) | |
| | Narrow (protected niche) | 1 2 3 4 5 6 7 | Broad (global) |
| 2 | **Growth orientation** | | |
| | Modest | 1 2 3 4 5 6 7 | Aggressive |
| 3 | **Number of business to integrate** | | |
| | Few | 1 2 3 4 5 6 7 | Many |
| 4 | **Focus on reinvention** | | |
| | Minor | 1 2 3 4 5 6 7 | Major (50% revenue must come from new products in three years) |
| | Total (add numbers): | | |

| II | COMPLEXITY OF YOUR ENVIRONMENT | | |
|---|---|---|---|
| 1 | **Industry structure** | (circle a number) | |
| | Few, easily identifiable competitors | 1 2 3 4 5 6 7 | Many competitors from unexpected sources |
| 2 | **Channel structure** | | |
| | Simple and direct | 1 2 3 4 5 6 7 | Long and complex |
| 3 | **Market structure** | | |
| | Fixed boundaries and simple segmentation | 1 2 3 4 5 6 7 | Fuzzy boundaries and complex segmentation |
| 4 | **Enabling technologies** | | |
| | Few and mature (simple systems) | 1 2 3 4 5 6 7 | Many converging (complex systems) |
| 5 | **Regulations (federal, state, etc.)** | | |
| | Few or stable | 1 2 3 4 5 6 7 | Many or changing rapidly |
| 6 | **Public visibility of industry** | | |
| | Largely ignored | 1 2 3 4 5 6 7 | Closely watched by media or special-interest groups |
| 7 | **Dependence on government funding and political access** | | |
| | Low: operates largely independent of government | 1 2 3 4 5 6 7 | High: sensitive to politics and the funding climate |
| 8 | **Dependence on global economy** | | |
| | Low: affected principally by domestic conditions | 1 2 3 4 5 6 7 | High: affected by global conditions |
| | Total (add numbers): | | |

| III | VOLATILITY OF YOUR ENVIRONMENT | | |
|---|---|---|---|
| 1 | **Number of surprises by high-impact events in the past three years** | | |
| | None | 1 2 3 4 5 6 7 | Three or more |
| 2 | **Accuracy of past forecasts** | | |
| | High: small deviations from actual forecasts | 1 2 3 4 5 6 7 | Low: results differs greatly from forecasts |
| 3 | **Market growth** | | |
| | Slow and stable | 1 2 3 4 5 6 7 | Rapid and unstable |
| 4 | **Growth opportunities** | | |
| | Have decreased dramatically in the past three years | 1 2 3 4 5 6 7 | Have increased dramatically in the past three years |
| 5 | **Speed and direction of technological change** | | |
| | Very predictable | 1 2 3 4 5 6 7 | Highly unpredictable |
| 6 | **Behaviour of key competitors, suppliers, and partners** | | |
| | Very predictable | 1 2 3 4 5 6 7 | Highly unpredictable |
| 7 | **Posture of key rivals** | | |
| | Live-and-let-live mentality | 1 2 3 4 5 6 7 | Hostile (aggressive) |

| | | | |
|---|---|---|---|
| **8** | **Susceptibility to macroeconomic forces** | | |
| | Low sensitivity to price changes, currencies, business cycle, tariffs, etc | 1 2 3 4 5 6 7 | High sensitivity to price changes, currencies, business cycles, tariffs, etc. |
| **9** | **Dependence on financial markets** | | |
| | Low | 1 2 3 4 5 6 7 | High |
| **10** | **Customer and channel power** | | |
| | Low | 1 2 3 4 5 6 7 | High |
| **11** | **Sensitivity to social changes (fashion and values)** | | |
| | Low: mostly gradual change from the past | 1 2 3 4 5 6 7 | High: good chance of major disruptions and changes in business models |
| **12** | **Potential for major disruptions in the next five years** | | |
| | Low: few surprises expected, mostly things we can handle | 1 2 3 4 5 6 7 | High: several significant business shocks are expected, without knowing which in particular |
| | Total (add numbers): | | |

## 1.2 CAPABILITIES

The cross-case analysis allowed identifying five major areas which allow assessing the overall ability of horizon scanning. You can assess your organisation's future orientation by circling and adding the numbers below.

| IV | INFORMATION USAGE IN SCANNING | | |
|---|---|---|---|
| **1** | **Reach** | (circle a number) | |
| | Scanning only in current business | 1 2 3 4 5 6 7 | Scanning in current, adjacent business and white spaces |
| **2** | **Scope** | | |
| | Focus on one environmental area | 1 2 3 4 5 6 7 | Scanning in all areas (technology, political, competitor, customer and socio-cultural environment) |
| **3** | **Time horizon** | | |
| | Emphasis on short term | 1 2 3 4 5 6 7 | Pro-active scanning in long, medium and short term in place |
| **4** | **Usage of sources** | | |
| | Few open access sources | 1 2 3 4 5 6 7 | Many sources including sources that are difficult to access and yield a competitive advantage |
| | Total (add numbers): | | |

| V | METHOD SOPHISTICATION | | |
|---|---|---|---|
| **1** | **Integration capacity of method portfolio** | | |
| | Weak | 1 2 3 4 5 6 7 | Strong (we utilise methods such as scenario analysis, which allow to integrate weak signals from different environmental areas and time horizons) |
| **2** | **Communication capacity of methods** | | |
| | Weak | 1 2 3 4 5 6 7 | Strong (we utilise methods such as roadmapping and future conferences that trigger and facilitate an organisation-wide strategic discussion) |
| **3** | **Deliberate choosing of methods to fit specific problems** | | |
| | We mostly utilise methods that have been used in the past | 1 2 3 4 5 6 7 | We choose methods to fit the task at hand |
| **4** | **Deliberate choosing of methods to fit our context** | | |
| | We mostly utilise methods that have been used in the past | 1 2 3 4 5 6 7 | We choose methods to fit our context |
| | Total (add numbers): | | |

| VI | PEOPLE & NETWORKS | | |
|---|---|---|---|
| **1** | **External network** | (circle a number) | |
| | Weak<br>(Some employees have external personal networks) | 1 2 3 4 5 6 7 | Strong<br>(Building and maintaining a network of external partners is encouraged and perceived as important for every employee) |
| **2** | **Internal network** | | |
| | Weak<br>(Some employees have formal and informal contacts to other units within the organisation) | 1 2 3 4 5 6 7 | Strong<br>(Every employee is expected to build and maintain formal and informal networks to other units) |
| **3** | **Traits of horizon scanning personnel** | | |
| | Weak<br>(e.g., Analysts have only deep knowledge in their domain) | 1 2 3 4 5 6 7 | Strong<br>(Analysts have strong internal and external networks, deep and broad knowledge, and are passionate, curious and open minded) |
| | Total (add numbers): | | |

| VII | ORGANISATION | | |
|---|---|---|---|
| **1** | **Mode** | (circle a number) | |
| | Mostly triggered top-down and issue-driven | 1 2 3 4 5 6 7 | Both continuous and issue-driven scanning and triggered bottom-up and top-down |
| **2** | **Integration with other processes** | | |
| | Weak | 1 2 3 4 5 6 7 | Strong (horizon scanning is linked to other processes in the organisation) |

| | | | |
|---|---|---|---|
| **3** | **Formal diffusion of insights** | | |
| | Emerging issues are occasionally presented at dedicated meetings | 1 2 3 4 5 6 7 | Discussion of emerging issues is part of routine meetings in all relevant units |
| **4** | **Accountability** | | |
| | No defined responsibility for detecting emerging issues | 1 2 3 4 5 6 7 | Every employee is responsible to detect emerging issues, horizon scanning units serve as hubs |
| **5** | **Incentives to reward wider vision** | | |
| | No incentives in place | 1 2 3 4 5 6 7 | Incentives include recognition by senior management and financial rewards |
| | Total (add numbers): | | |

| | | | |
|---|---|---|---|
| **VIII** | **CULTURE** | | |
| **1** | **Willingness to share across functions** | | |
| | Poor (Information is ignored and hoarded) | 1 2 3 4 5 6 7 | Excellent (Ongoing information sharing on multiple levels) |
| **2** | **Readiness to listen to scouts and external sources** | | |
| | The organisation is closes (Contacts to the outside are discouraged) | 1 2 3 4 5 6 7 | The organisation is open (Brining external information into the company and maintaining an external network is encouraged) |
| **3** | **Organisation's attitude towards the environment** | | |
| | Limited and myopic (Few people care) | 1 2 3 4 5 6 7 | Active and curious (Scanning the periphery is commonplace) |
| **4** | **Willingness to test and challenge basic assumptions** | | |
| | The basic assumptions are neither known nor made transparent | 1 2 3 4 5 6 7 | Basis assumptions are explicit, much talked about and frequently challenged |
| | Total (add numbers): | | |

## 1.3 VALUE CREATION

From the assessment of the value creation you are able to judge if your company gets sufficient return on investment out of the horizon scanning effort.

| | | | |
|---|---|---|---|
| **A** | **REDUCTION OF UNCERTAINTY** | | |
| **1** | **Early warning** | | |
| | Poor (in the past three years we failed to identify major discontinuous change) | 1 2 3 4 5 6 7 | Excellent (in the past three years we identified most major discontinuous change) |

| | | | |
|---|---|---|---|
| **2** | **Challenge basic assumptions and dominant business logic** | | |
| | Poor (Horizon scanning does not cover internal basic assumptions) | 1 2 3 4 5 6 7 | Excellent (Through our horizon scanning system we frequently identify and challenge basic assumptions) |
| **3** | **Trend identification, interpretation and prediction** | | |
| | Poor (Horizon scanning failed to identify new trends) | 1 2 3 4 5 6 7 | Excellent (Scanning for weak signals allowed us to identify and interpret new trends) |
| **4** | **Improve decision making** | | |
| | Poor (Horizon scanning results do not contribute to decision making) | 1 2 3 4 5 6 7 | Excellent (Horizon scanning results are used to backup decisions regularly and have contributed to improve decision making) |
| | Total (add numbers): | | |

| | | | |
|---|---|---|---|
| **B** | **TRIGGERING OWN ACTIONS** | | |
| **1** | **Trigger innovation initiatives (R&D)** | | |
| | Poor (in the past three years we failed to start new innovation initiatives) | 1 2 3 4 5 6 7 | Excellent (in the past three years we started multiple innovation initiatives) |
| **2** | **React to external threats** | | |
| | Poor (in the past three years horizon scanning failed to trigger reactions to external threats) | 1 2 3 4 5 6 7 | Excellent (in the past three years multiple threats were discovered early and led to projects designed to identify countermeasures) |
| **3** | **Support strategic decision making** | | |
| | Poor (horizon scanning failed influence the strategic discussion in the organisation) | 1 2 3 4 5 6 7 | Excellent (horizon scanning influenced the strategic policies of the organisation) |
| | Total (add numbers): | | |

| | | | |
|---|---|---|---|
| **C** | **INFLUENCE OTHERS TO ACT** | | |
| **1** | **Influence other organisations** | | |
| | Poor (in the past three years we failed to influence other organisations) | 1 2 3 4 5 6 7 | Excellent (in the past three years we achieved to influence other organisations on multiple occasions) |
| **2** | **Influence other national governments** | | |
| | Poor (in the past three years we failed to influence other national governments) | 1 2 3 4 5 6 7 | Excellent (in the past three years we achieved to influence other organisations on multiple occasions) |
| | Total (add numbers): | | |

| D | SECONDARY BENEFITS | | |
|---|---|---|---|
| 1 | **Effect on public relations, investors relations, marketing and sales** | | |
| | Weak<br>(Horizon scanning failed to contribute to the external image of the organisation) | 1 2 3 4 5 6 7 | Strong<br>(Horizon scanning contributed to enhancing the image of the organisation towards its stakeholders) |
| 2 | **Influence other national governments** | | |
| | Weak<br>(Horizon scanning results failed to influence other national governments) | 1 2 3 4 5 6 7 | Strong<br>(Horizon scanning allowed to influence other national governments on key issues) |
| | Total (add numbers): | | |

## EVALUATION

If you complete the questionnaire you are able to make two evaluations. The first evaluation matrix will tell you if your horizon scanning capabilities are sufficient (see Figure 2). The second will tell you if you are able to get a sufficient return on investment from your horizon scanning effort.

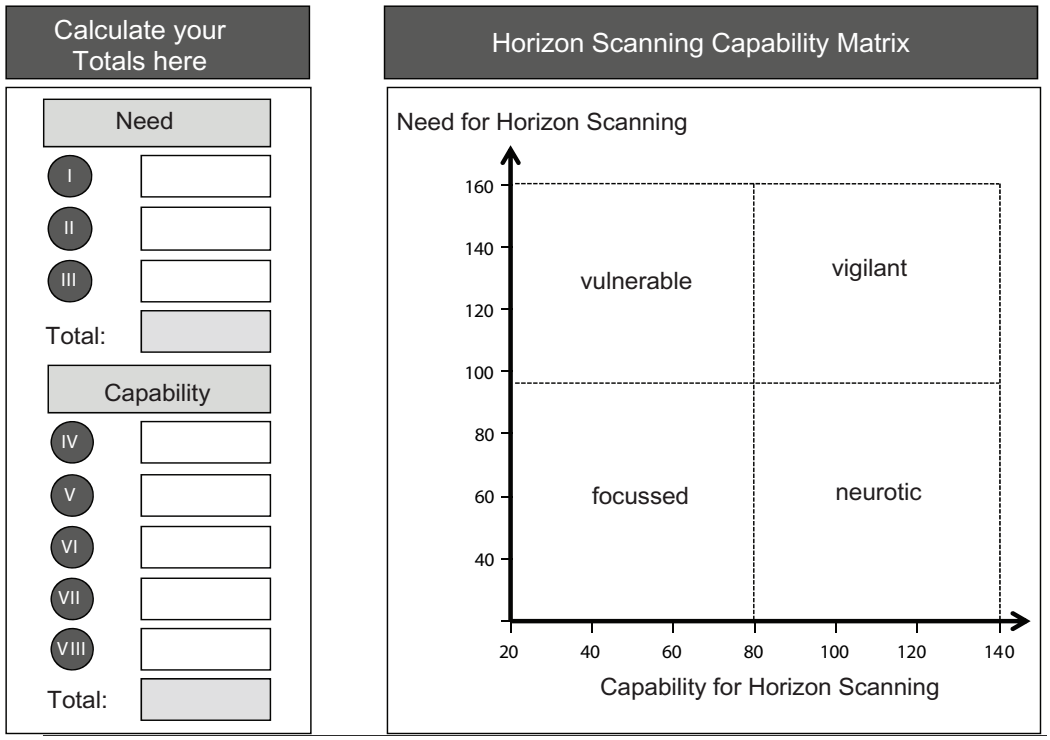


**Figure 2.** Your Horizon Scanning Scores: Need and Capability.

To use the first evaluation you need to copy the totals from the tables above. Use the matrix to locate your total need on the vertical axes and your total capability on the horizontal axis. Plot a point in the quadrant where the need and capability score intersect. If your organisation is vigilant or focussed, no change is needed in your horizon scanning system. If your organisation is neurotic, you should check if all the horizon scanning activities are needed. If your organisation scores as vulnerable, you should use the capability dimensions to identify ways to improve your horizon scanning system. The individual questions can be used as guidance where and how you can extend your horizon scanning activities.

Having a sufficient horizon scanning capability gives you confidence that you will not miss relevant changes in the environment and will be able to trigger reactions to change. But even with sufficient capabilities you might still be able to optimise the benefit from your horizon scanning effort.

The second evaluation allows you to assess how much value you get from your horizon scanning system. By calculating the total of all four value creation categories, you can see how much from the total potential you are currently getting out of your effort. Figure 3 allows you to calculate the totals and gives recommendations on what you can to increase the return on the investment on your foresight system.

Most organisations in our sample, even the ones with high horizon scanning capabilities, scored weak on value creation. This emphasises the importance of aligning

| Calculate your Totals here | |
|---|---|
| **Value creation** | |
| A | |
| B | |
| C | |
| D | |
| **Total:** | |

| Recommendations | |
|---|---|
| **77 to 55 points:** | You get an impressive amount of value from you horizon scanning system. You don't need to change anything. |
| **54 to 30 points:** | The utilization of horizon scanning results could be improved. Check if you can increase the alignment to other units. |
| **Below 30 points:** | The value creation from your corporate foresight systems is poor. You should check the benefit categories and explore more usage possibilities for your horizon scanning results. |

**Figure 3.** Your Horizon Scanning Scores: Value Creation.

the horizon scanning activities with other organisational units and the importance of disseminating the results to other organisations or to the public.

## CONCLUSION

In this article I showed how horizon scanning practices can only be effectively advanced when the design of appropriate systems is based on a deep understanding of the organisational functions they feed into. Organisations willing to enhance their future orientation should first create a thorough understanding on how reactions to discontinuous change can be triggered within and outside the organisation. Only when the potential utilisation of horizon scanning results is clear, should the planning of the improvement of the system begin.

With the introduction of the maturity model, I hope to contribute to an increasing transparency on what future orientation is built-upon. In addition, the maturity model should create its usefulness by being a common framework, which can be used for benchmarking. This would allow identifying best practices and making them easier to transfer from one organisation to another. The categories within the maturity model can also be used to guide the design and improvement of horizon scanning systems. It will also be used for the second round of our benchmarking study which will be conducted in mid 2010 at www.euroCF.org.