



Editorial

Peripheral vision: sensing and acting on weak signals

Introduction to the Special Issue

In business, we are confronted with a complex and shifting panorama of global events. New wonders spring from the laboratory. New international markets rapidly open wide or are disrupted by crises such as the SARS outbreak or sudden financial downturns. Companies reinvent themselves, transforming the structure and dynamics of industries. Your own business has many moving parts and is operating in a fast-moving environment. As a manager, what do you pay attention to? How do you become better at paying attention to the *right things* in the periphery without distracting yourself too much from the task at hand? What is the optimal allocation of attention at a given point in time as well as over time?

When we announced a conference at the Wharton School on the topic of ‘peripheral vision’, we were overwhelmed by the response. The conference, in May 2003, attracted nearly 100 participants in addition to an outstanding group of presenters and panellists. This packed room was a testament to the deep interest in this topic, as well as to the many fundamental questions we all have about it. The periphery is important, but what is it? What is the core and what is the periphery? Is it possible to balance our attention optimally? How can new technology help? The wide-ranging conference discussions stretched from how teenagers playing computer games actually can help shape military strategy to the way a novelty lollipop became the foundation for P&G’s SpinBrush. In seeking insights from the periphery, we examined IBM’s high-tech systems that scan for emerging patterns across the internet and explored the insights from low-tech biological adaptations of moths and flowers.

The periphery is ever elusive. Each time you turn your head to look at it, you create a new ‘periphery’. When you shift your business model in a new direction, you create new blind spots in other directions. We saw this with the dot-com bubble and its collapse, as some managers first ignored this peripheral activity and then became so focused on it that they overlooked traditional fundamentals. Remember the days when eyeballs and pop-ups were more important than hard cash and profit? Whenever we change focus, we pay a price by not seeing the new periphery clearly. If only we could zoom in and out, look right and left in rapid succession to see it all. But it is hard for organisations to change their focus (more so than for individuals) and also watch the periphery. Yet, in a world in which changes come from many different directions, the ability to balance organisational focus with the wide-angle view may be the most important ability for long-term survival and success.

The periphery is always a bit blurry. Ophthalmologic research shows that our peripheral vision is less rich than our focal vision. Colours cannot be distinguished in the periphery of our physical vision, nor refined levels of detail. Developing a ‘clear view of the periphery’ may not be possible. But this does not mean that we should fall into the trap of the man who searched for his lost keys near the street light, ‘because he could see better there’. We should of course look where the keys may be found, even if it is unpleasantly dark there. Mastering the art of

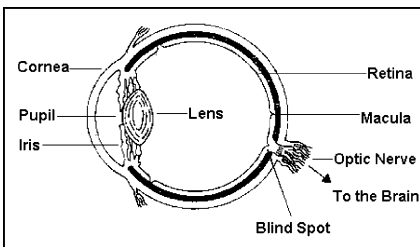
peripheral vision is essential to succeeding in a world of high uncertainty, even if it is difficult to explore the darker shadows.

The design of the human eye reflects its evolutionary need for flexibility and defense. The eye devotes many more resources to the periphery than most organisations (see Box 1). Most companies are much more concerned with efficiency than evolutionary flexibility and hence are more narrowly focused. In fact, the mantra of strategy from many quarters has been: ‘focus, focus, focus’. This focus often comes at the sacrifice of peripheral vision. In a world of complexity and rapid change, focus creates the risk of surprise. This risk can be mitigated by devoting more attention and other resources to peripheral vision, even while the actions of our organisations remain focused on the core.

Insights into the Periphery

The following pages offer insights into the organisational periphery and how to manage it more effectively. There is no handbook yet, nor a simple recipe, on how to do this well. We are in the early stages of understanding the best approaches; our knowledge is embryonic. Indeed, the very insights we present here are themselves drawn from the peripheries of the best business practice and leading academic thought. It became clear to us, during our conference, that managing the periphery has not yet become a focal area of management. However, it is fast becoming the next frontier of competition because in many businesses, the greatest opportunities and risks lurk in the shadow of the periphery.

Box 1. More Rods than Cones



The neural retina of the human eye contains two types of cells: rods and cones. The cone cells are concentrated near the centre and are responsible for seeing colour and detail in good lighting conditions. This is where focal vision is concentrated and these are the cells used to read, for example. The rod cells, on the other hand, are located around the edges of the retina and are used in poor light or to see items from the side of your vision, such as a car overtaking you in the next lane on the highway.

What is surprising is that the retina of the human eye has many more of the peripheral rod cells than the more central cone cells – about 120 million rod cells compared with only 6 million cone cells.¹¹ This doesn't make sense if one were designing an instrument to read books, but the human eye is also designed to help sense weak signals and sense potential attack.

The design of the human eye poses an interesting question: How many of our organisations devote resources to peripheral versus focal vision at anywhere near a ratio of 20:1? In general, most organisations probably have the reverse ratio and it is even rare to find an organisation that devotes as much attention to peripheral vision as it does to its areas of central focus. If we want to see things coming from the side, shouldn't the sensing in our organisations be more like the sensing of the human eye, with many more resources devoted to peripheral vision?

While we hope that the articles in this special issue offer a ‘sharper view’ of peripheral vision, this oxymoronic statement itself captures some of the inherent difficulties in understanding the periphery. By way of preview, here are some of the insights drawn from the articles that follow:

- ***The periphery reflects our area of focus:*** We limit our sight in many ways to better fulfill our current task. From Sid Winter’s discussions of moths and other animals that have narrowed their range of vision for survival to C.K. Prahalad’s discussion of the ‘dominant logic’ of companies, both organisms and organisations develop a focus that allows them to concentrate on mission-critical issues in their environments. This dominant logic constitutes ‘the lenses through which we see the world, the standard operating procedures inside the company. The dominant logic is embedded in the DNA of the organisation.’ For example, the company that built its business around its own internal operations (like a ‘bus driver’ in the words of Stephan Haeckel) has trouble creating an organisation that is centred on the customer (like a ‘taxi driver’). First and foremost, it is important to recognise that the periphery is a byproduct of our focus on what we deem important.
- ***Our focal area can create blindspots:*** Normally, we strike a decent balance between the area of focus and the periphery where we know that blindspots may occur. But what happens when the environment changes so much that the blindspots become danger areas? Consider the plight of the moth who suddenly faces the threat of a rolled-up newspaper instead of a blind bat, or a soft drink maker who faces competition from new age beverages and water instead of traditional colas. The highly specialised vision for one world may become a deadly liability in a new world. C.K. Prahalad points out that emerging economies have an advantage over developed economies precisely because they don’t have a highly specialised focus yet. They ‘have no legacy systems and nothing to forget’ as they reorient to the opportunities of tomorrow. In contrast, many western companies may be blindsided by new technologies, markets and competitors from countries such as India and China.
- ***The periphery becomes more important with change:*** Instead of gurus and other individual experts who know everything, there is increasingly a need and an opportunity through new technology to look more broadly. John Seely Brown contends that expertise will become less centralised since it is often contained in ‘smart mobs’ or networks, and harnessed through approaches such as wikis and blogs. While experts usually operate at the centre of focus, these networks lie more at the periphery. The experts are speaking on CNN, while the diffused expertise is being felt in online newsgroups, weblogs or video games. Seely Brown discusses strategies organisations use to tap into the ideas from this periphery. Anil Menon and Andrew Tompkins’ examine how IBM’s WebFountain uses technology to help to make sense of the diffused expertise of the Internet. And Larry Huston from P&G describes how breakthrough ideas such as SpinBrush can come from exploring the expertise that resides outside the company. Tapping into this rapidly changing pool of knowledge and emerging trends requires a greater focus on the periphery.

Given these challenges, how do we improve our peripheral vision? The articles that follow suggest a variety of approaches, including:

- ***Expand your focus:*** The IBM WebFountain looks everywhere for insights, gulping down huge quantities of internet information to create a platform for active scanning and questioning. It is, according to Menon and Tompkins of IBM, a way to detect trends, extract patterns, and detect relationships. Stephan Haeckel outlines four ways of knowing earlier: more and better probes, superior analysis of existing data, superior pattern recognition and faster frame-switching.
- ***Ask the right questions:*** The problem in seeking answers from the periphery is to come up with the right questions. Even with a powerful tool such as the WebFountain, the quality of the results still depend on asking the right questions. These questions provide a focus for exploring the periphery and help keep it from becoming overwhelming. Larry Huston discusses the process of ‘targeted hunting’, scanning innovation fairs and other sources of new ideas, and looking to the external world to find innovations such as SpinBrush. Similarly John Seely Brown talks about how US intelligence has used its In-Q-Tel venture capital company to seek out new technology that it could apply to specific internal challenges.

- **Experimentation and immersion in the periphery:** John Seely Brown also relates how he spent a year immersed in gaming, an experience that changed his perspective on it. He originally focused on its content, but realised the true significance was its context. Sometimes we cannot understand the periphery without experiencing it, so experiments and immersion are critical. 118
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- **Use technology to become more agile:** Stephan Haeckel notes that while pilots cannot manually fly planes using hydraulics at 280 mph, with the help of technology they can fly a jet at mach 6. These supersonic pilots use ‘fly-by-wire’ systems where technology intermediates between the pilot and the plane. We need to look for ways organisations can use such systems to sense and respond, even when moving forward at very high speeds. (Box 2) 122
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Our initial foray into the periphery is just a start. The Wharton conference made us realise that there are few straightforward answers to anything as slippery as the periphery. And sometimes even getting our hands around the questions is difficult. As part of a closing panel, Richard Foster from McKinsey, observed: 127
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I came away very well informed about how confused I am about understanding the periphery. I could support with what I’ve heard today any point of view on it and I found myself in sympathy with every point of view expressed today, even if exactly the opposite of the view in the preceding presentation. 131
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We hope this special issue will give managers a better appreciation of the importance of the periphery as well as better ways to explore it. We also hope that these preliminary ideas will stimulate other practitioners and scholars to devote more research attention to this vital aspect 135
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Normal Vision Retinitis Pigmentosa

The narrowing of vision in Retinitis Pigmentosa

Box 2.
Treating Poor Peripheral Vision

Among the treatments for Retinitis Pigmentosa and other retinal diseases that reduce peripheral vision (with their business parallels noted in parentheses):

- Transplanting good retinal cells from donors (hiring individual employees or consultants to offer new insights)
- Transplanting whole eyes (bringing in a new CEO or initiating a substantial restructuring to change perspectives)
- Using stem cells to encourage growth of ocular tissue (creating internal educational programs and initiatives to build broader perspectives in the existing organisation)

of organisational learning and the many open questions that remain to be addressed. We invite you to join the dialogue—to offer the insights from your own part of our periphery to expand our view of the subject. In the spirit of mining the periphery, we have created a website and 139
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blog for those wishing to join the communal conversation, and we offer our personal e-mails
 below. We look forward to discussing these questions with you in order to all learn more about
 the nature, challenges and treasures of the periphery.

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