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Opening the organizational thinking for new breakthroughs

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"The latitude for innovation has never been broader – if only our minds can stretch to it."

From Gary Hamel: Leading the Revolution, Harvard Business press.

Introduction

Why do mature companies sometimes seem to be blind to both upcoming opportunities and new threats? Why, for instance, didn't Microsoft at first see the potential of the Internet? Since mature organizations possess vast knowledge and competencies within their field of business, could their blindness then come from mental barriers, which limit the "stretch of mind" in the organization? Questions like these have caused me to explore the role of organizational consciousness or 'mental models' as a barrier for breakthrough thinking, and to look for some possible ways for opening up the creative thinking of a mature company.

My study falls in 4 parts:

1. The puzzle of organizational consciousness: Concepts and background
2. The problem: The blind eye of consciousness - or mental models as barriers for new thinking
3. Attacking the problem: How do we open the eyes of the organization?
4. Conclusion.

1. The puzzle of organizational consciousness: Concepts and background

About models

If you enter the subway system of any large city, you'll find boards on the walls displaying the infrastructure of the subway system, most often illustrated as colored lines with the stations marked as dots or circles along the network of lines. Now, what would you call the illustration displayed on such a board? -You might answer "a map". However, if we compare with a real map, the illustration doesn't

meet the characteristics of such, since the simplifications regarding distances and directions are so rude that it would not serve us well, if we tried to find our way walking around in the city. A normal map has consistence in the scale, mirroring reality, whereas the illustration of the subway infrastructure is rather made after principles of pedagogical and graphical clarity, which make it an efficient tool for finding our way from station to station within the subway system. Instead of a map, we could then describe such illustration as a *model*, and we have already discovered one important feature of models: They are neither true nor false; it is the way we use them or what we use them for that can be true or false. Models are crucial for us in our attempt to perceive and understand the world around us – we use them, so to speak, to find our way in the complexity of input, our senses and thoughts provide. As the cognitive psychologist Dean Keith Simonton says: *“A tight analog or model permits us to know more about the world with less work”*. The ‘less work’ comes from the simplifications within the model; imagine we had a city map without simplifications of any kind – it would have to be in 1:1 scale, so running our way through the map would be just as time-consuming and complicated as doing it for real. Only the simplifications make the ‘less work’, and since simplification means leaving out something, we could claim that any model is partly a lie, because it never can describe reality in total. As Einstein once stated: *“Man seeks for himself a simplified and lucid image of the world”*.

Consciousness as a model of the world

In his book, “The origin of consciousness in the breakdown of the bicameral mind”, the American psychologist Julian Jaynes describes human consciousness as an *analog model* of the world:

- *“An analog is a model, but a model of a special kind. ... an analog is at every point generated by the thing it is an analog of. A map is a good example.”*
- *“Subjective conscious mind is an analog of what is called the real world.”*
- *“It allows us to shortcut behavioral processes and arrive at more adequate decisions.”*
- *“Consciousness operates by way of analogy, by way of constructing an analog space with an analog ‘I’ that can observe that space, and move metaphorically in it.”*

So, in Jaynes’ understanding, consciousness is like a mental map, which allows us to make “shortcuts” in the problem solving of the “real world”, without having to try every possible way out for real. As Simonton worded it: *“A tight analog or model permits us to know more about the world with less work”*.

Kuhn’s paradigms as models

In his famous book, “The structure of scientific revolutions”, Thomas Kuhn describes the role of scientific paradigms very similar to the role of consciousness, as understood above: A paradigm provides the scientist with a map: *“And since nature is too complex and varied to be explored at random, the map is*

essential". The similarity to the understanding of models and of conscious mind as an analog model is clear – and again, the benefits of paradigms have to do with simplification ("*nature is too complex and varied to be explored at random*"), like in every map and every model.

2. The problem: The blind eye of consciousness - or mental models as barriers for new thinking

The concept of 'Mental Models'

The Scottish psychologist Kenneth Craik is said to be the originator of the concept of 'mental models', which he explains in this quotation:

"If the organism carries a "small-scale model" of external reality and of its own possible actions within its head, it is able to try out various alternatives, conclude which is the best of them, react to future situations before they arise, utilize the knowledge of the past events in dealing with the present and future, and in every way to react in a much fuller, safer, and more competent manner to the emergencies which face it."

Again, the similarity to Julian Jaynes' understanding of consciousness is clear, and not surprising, since both are psychologists. I have not read Craik myself; I found the quote in Foster & Kaplan's "Creative Destruction". In this book, the concept of Mental Models is lifted from the field of psychology into the field of managing innovation within organizations. The authors describe their interpretation of 'mental models' thus:

"Mental models are the core concepts of the corporation, the beliefs and assumptions, the cause-and-effect relationships, the guidelines for interpreting language and signals, the stories repeated within the corporate walls."

And they add about the role of mental models:

- *"Why does cultural lock-in occur? The heart of the problem is the formation of hidden sets of rules, or mental models, that once formed are extremely difficult to change."*
- *"Mental models are invisible in the corporation. They are neither explicit nor examined, but they are pervasive...But once constructed, mental models become self-reinforcing, self-sustaining, and self-limiting. And when mental models are out of sync with reality, they cause management to make forecasting errors and poor decisions."*

Here we come to the core of the problem: Although mental models, like all models, are tools for understanding the world around us, they can inhibit the same understanding, if they are allowed to establish 'lock-in'. As mentioned earlier, any model is a simplification; it excerpts a 'lucid image' by choosing one specific way of looking at the world - so to speak like a pair of colored glasses, leaving out any other color. If you choose blue glasses, the world will look blue, so you leave out some of the complexity, and this can serve a purpose; but if the glasses stay put so long that you forget *why* the world

looks blue, you have a problem. Foster & Kaplan write: *"The evidence is overwhelming that mental models, built to assist in decision making, once constructed often become the single most important barrier to change"*. In fact, not only can you forget that you wear 'blue glasses', you can develop a blindness or even hostility towards other 'glasses':

- *"Studies show that decision makers seek data that confirms existing mental models, rather than data that contradicts such models. There is a natural human bias toward confirmation"*.
- *"This, in fact, is a classic characteristic of mature organizations. They fail to innovate because they fail to recognize the fact that they have been rejecting data that does not support the company's mental models"*.

Paradigms as mental models

If we return to Kuhn, the statements above reflect the ways Kuhn describes scientific paradigms. Kuhn states that without a paradigm, research has no direction, since the paradigm indicates which problems researchers seek answers to: *"...a paradigm is a criterion for choosing problems that, while the paradigm is taken for granted, can be assumed to have solutions"*.

Thus, the lock-in of a mental model in an organization corresponds well to the establishment of a paradigm in science. The rejection of data, which is inconsistent with the established model, we could call "the blindness of maturity". Indeed, the breakdown of either a paradigm or an established mental model is most likely to occur from the side of new researchers or new organizations.

Kuhn states: *"Almost always the men who achieve these fundamental inventions of a new paradigm have been either very young or very new to the field whose paradigm they change"*. And Foster & Kaplan note: *"Unlike older companies, newer companies, steered by different mental models, use different information sets, decision-making approaches, and systems of measurement and control. When those mental models are more accurate than older models, newer companies gain a huge competitive advantage"*.

In his famous book, "The Innovator's Dilemma", Clayton Christensen also describes this conflict between established and new mental models: *"Perhaps the most powerful protection that small entrant firms enjoy as they build the emerging markets for disruptive technologies is that they are doing something that it simply does not make sense for the established leaders to do."* *"... successful companies populated by good managers have a genuinely hard time doing what does not fit their model for how to make money"*.

Allow me to recap this part:

- What consciousness is to the mind, paradigms are to science and mental models to corporations.
- The mental models give a framework for understanding the activities of the company, but also limit the field of vision into what confirms the established models.

3. Attacking the problem: How do we open the eyes of the organization?

The breakthrough of new mental models

In “Creative Destruction”, Foster & Kaplan quote the novelist and political writer, Arthur Koestler, for saying: *“The act of discovery has a disruptive and a constructive aspect. It must disrupt rigid patterns of mental organization to achieve the new synthesis.”*

This mental process of “creative destruction” actually is well described by Thomas Kuhn. Kuhn sees the periods of ‘normal science’ (i.e. scientific research that unfolds within an established paradigm) as mere ‘puzzle-solving’: *“Normal science does not aim at novelties of fact or theory and, when successful, finds none.”* The origin of a new paradigm comes from a crisis due to observed abnormalities, which cannot be explained by the use of the existing paradigm. Kuhn writes: *“Paradigm-testing occurs only after persistent failure to solve a noteworthy puzzle has given rise to crisis”,* and *“It is, I think, particular in periods of acknowledged crisis that scientists have turned to philosophical analysis...Indeed, normal science usually holds creative philosophy at arm’s length”.* After the crisis and its ‘creative philosophy’, new understanding crystallizes in the minds of searching researchers. And this crystallization happens suddenly, as intuitive flashes of enlightenment. *“No ordinary sense of the term ‘interpretation’ fits these flashes of intuition through which a new paradigm is born”,* as Kuhn states. And he also describes the new state of enlightenment:

- *“...the scientist who embraces a new paradigm is like the man wearing inverting lenses”*
- *“Led by a new paradigm...It is rather as if the professional community has been suddenly transported to another planet where familiar objects are seen in a different light and are joined by unfamiliar ones as well”.*

Could one think of any better description of the creative process?

Managing the organizational dialogue as a creative process

Foster & Kaplan give some directions for how to conduct such creative process within the context of a corporation: *“Companies seeking to foster creation must support multiple mental models—representing fundamentally different approaches to business— because such models are always present in the marketplace”.* *“The goal is to mimic the real-life processes of creativity ... In carrying out this responsibility, the management committee has to provide sufficient time in the process to allow alternative mental models of the business to be conceptualized, for voices of opposition to be developed and constructively heard, and for a search for new solutions.”*

Foster & Kaplan identify **divergent thinking** as a key to the dialogue within the organization, which in the end can lead to creation of new mental models. Their recommendations for managing this process can be summed up as follows:

- Pick the right people - Not everyone is capable of divergent thinking
- Allow adequate preparation time - Time required for the divergent thinking process to reach fruition is unpredictable
- Set high aspirations - Divergent thinkers seek tough and important problems to solve
- Provide resources, flexibility and deadlines
- Provide senior coverage.

These recommendations may seem quite obvious; however, I think it will be difficult to find real-life organizations, in which they are followed consequently.

4. Conclusion

The nature of breakthroughs in the organizational 'thinking process' can be outlined in some basic principles:

1. Breakthrough of fundamentally new thinking require the creative destruction of established mental models
2. After such breakthrough, the world is perceived differently - existing activities are seen in another perspective and new actions are called upon
3. To reach new breakthroughs, the organizational dialogue must deliberately open up for multiple mental models
4. The role of management is to set the context of this dialogue and to apply divergent thinking in the organization.

These principles could guide the search of new breakthroughs in organizational thinking by means of a deliberate and creative management effort.

"Our collective selves – our organizations – must also learn to dream. In many organizations there has been a massive failure of collective imagination."

Gary Hamel in *"Leading the revolution"*

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