Ongoing Discussion "Thought Piece"

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New Frontiers in a *Knowledge-Based Economy*: The Influence of Innovation, Design Thinking, and Social Computing

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Introduction

The knowledge-based economy has changed everything. The next wave of economic growth is going to come from knowledge-based businesses.

The economy is shifting from an era of competitive advantage based on data and information, fixed assets and financial capital, to one based on knowledge and new idea creation. Thus, organizations must find the means to dramatically accelerate learning and enhance their own processes of intellectual capital formation – i.e., via innovation.

This shift calls on business leaders to put great emphasis on innovation. New strategies will have to be employed – processes will have to be developed that tap into the tacit knowledge of stakeholders, especially, employees and customers. In sum, intellectual capital will have to be shared, both inside and outside the organization.

Firms will need to emphasize the process of design thinking – a method of creative and critical thought that allows information and ideas to be organized, decisions to be made, situations to be improved, and knowledge to be gained.

In order to compete globally, organizations will not only be required to develop a process of innovation that is open and deploys design thinking processes, but one that also leverages the power of social computing.

Unfortunately, today's executives are very much in the dark about the value of the management of intellectual capital. Meanwhile, the need to develop processes for creating, transferring, and deploying knowledge is crucial. Learning to nurture and manage the flow of knowledge may be the most distinctive challenge – and competence - of our times.

Evolution of Knowledge Management

Many important knowledge management issues – such as knowledge discovery and creation and knowledge assimilation, have not been solved, or even addressed, but they've resurfaced as important topics, focusing on explicit rather than tacit knowledge.

Many organizations' interests focus on esoteric details of what constitutes expertise, and how that expertise should theoretically be used, rather than on actually finding and employing real experts' unique knowledge through process of knowledge management.

Countless organizations struggle to define best practices, make them available, use them as part of a learning cycle, and determine lessons learned – but these "lessons learned" often differ from lessons applied.

Actually, there are many lessons yet to be learned about knowledge management.

Why Innovation?

Innovation is the key idea shaping corporate life, helping leaders conceive previously unimagined strategic options – for example, considering potential acquisitions as providing platforms for future development. Innovation puts companies on the offensive. Innovative companies are on the path to growth; others are on the road to obsolescence.

Innovation provides an edge in being able to enter new markets faster and deeper. Innovation can be used to create new customers – by observing unique needs.

A culture of innovation is fundamentally different from one that emphasizes mergers and acquisitions or cost cutting. Putting innovation at the center of the business, from top to bottom, promotes a much more creative – and effective - way of doing things -- more productive, responsive, inclusive, fun.

Such a culture requires innovation leaders who are successful at evoking the competencies of others, towards the goal of collaboration and co-creation. These leaders possess the quality of open-mindedness; they are comfortable with uncertainty, have cognitive capacity to pinpoint and manage risks inherent in innovation, and can organize innovation into a disciplined process.

Knowledge Innovation

The recognition that knowledge is the fundamental driver of sustainable competitive and collaborative advantage has been a major breakthrough in management thinking. Such knowledge creation requires innovation. Indeed, the heart of a company's business model should be game-changing innovation.

Business innovation is defined as the creation of substantial new value for customers and the firm by creatively changing one or more dimensions of the business system.

When innovating, a company must consider all dimensions of its system, for innovation can actually take place in any dimension of a business system.

Open Innovation

Open innovation is a concept, promoted by Henry Chenbrough, which states that firms can and should use both internal *and* external ideas in their efforts to advance their business. The business model of the particular firm determines what internal information is taken outside, and what external information is brought inside.

The idea behind open innovation is that in a world of widely distributed knowledge, companies cannot afford to rely entirely on their own research, but should instead buy or license processes or inventions (i.e., patents) from other companies. In addition, internal inventions not being used in a firm's business should be taken outside the company (e.g., through licensing, joint ventures, spin-offs).

Major advances in technology and society (such as the Internet) have facilitated the diffusion of information, and transfer of information is simply impossible to prevent. Since firms cannot stop this phenomenon, they must learn to take advantage of it.

The model of open innovation is increasingly being employed by organizations throughout the world. It is a must for small enterprises, but larger organizations are also moving away from their traditional (R & D) approach toward a more collaborative connect and develop (C & D) process.

Myths About Innovation

Contrary to popular belief, innovation is not just about new products, but also about new functions, logistics, business models, and processes.

Furthermore, innovation is not just a random occurrence brought about by an inventive genius – although we're aware of examples of that. Innovation is usually a social process, involving the brainstorming of many people, a process of making connections again and again.

Innovation must be seen as something that can become routine and methodical. Generating ideas is important, but it's pointless unless there is a repeatable process in place to turn inspiration into financial performance.

Managing these interactions and creating these systems is the crux of building an innovation organization. The process of innovation takes time and steady leadership, and can require a variety of changes involving the likes of budget and strategy, capital allocation, and promotions.

Design Thinking and Innovation

Design thinking is a system of thought that produces transformative innovation.

It is not an intellectual exercise, but a process of creating strategy through experience. Design thinking is a way of creating and capturing value.

It's been increasingly difficult for businesses to find ways to compete. But the success of businesses, which have built design thinking cultures, has begun to be noticed. Many large and diverse companies are making huge investments in the creation of new strategies and the restructuring of their companies in order to take advantage of design thinking.

Design thinking cultures promote play, giving up ownership, listening, forming diverse teams, doing real-world testing – trying and failing. They contend that many thinkers and ideas are better than one, and strive to find multiple solutions to problems.

We must now deal with more complexity within shorter, faster time frames. Design thinking is a strategy for action in this modern environment.

Enterprise 2.0 and Social Computing

Social computing refers to any sort of social behavior in or through computational systems – software and technology that include blogs, email, instant messaging, and wikis.

In a larger sense, social computing has to do with supporting "computations" that are carried out by groups of people. Examples include collaborative filtering, online auctions, prediction markets, reputation systems, computational social choice, tagging, and verification games.

A February 13, 2006 paper by market research company Forrester Research stated: "To thrive in an era of social computing, companies must abandon top-down management and communication tactics, weave communities into their products and services, use employees and partners as marketers, and become part of a living fabric of brand loyalists." Various systems support the use of information that is in turn distributed across social collectives such as teams, communities, organizations, and markets.

New web-based platforms that allow for self-expression are being used to achieve a high degree of participation in a collaborative design effort. Such digital platforms for generating, sharing, and refining information are already popular on the Internet, where they're collectively labeled "Web 2.0" technologies. Therefore, the Internet does a great job of facilitating knowledge sharing and knowledge creation through a variety of tools such as wikis and forums.

Of particular interest in the realm of social computing is social software intended for enterprise, sometimes referred to as "Enterprise 2.0" (a term derived from Web 2.0). The term is often used to focus only on those platforms that organizations can buy or build (e.g., blogs) in order to make visible the practices and outputs of their knowledge workers and to help collective intelligence emerge more effectively – e.g., in corporate intranets and other medium- and large-scale business environments. Many companies have now accepted the importance of innovation, and are putting in such sophisticated systems to help translate good ideas to commercially successful products.

Conclusion

The knowledge-based economy offers organizations and society an unprecedented opportunity to create the future. At the center of this phenomenon is the process of innovation. Innovation is simply critical to corporate success. Many companies have now accepted its importance, and are using tools such as design thinking and social computing to enhance their competitive advantage.

Innovation serves many purposes, all prompting a firm's growth. New markets can be entered faster and deeper. New customers can be created. New corporate culture can be established which motivates employee productivity.

Open innovation is turning the traditional business model upside down by encouraging the sharing of information between companies. This model is increasingly being used with great success by both small and large organizations worldwide.

Design thinking is serving as the approach for achieving use from creativity. Social computing practices are facilitating knowledge sharing and knowledge creation and collaboration via web-based services.

In sum, the knowledge-based economy centers on innovation. Thus, management of the flow of knowledge and the process of innovation poses a great challenge for business leaders -- a challenge that will prove both difficult and exciting in the years to come.

Biography

John is Affiliated Faculty, Organizational Dynamics at the University of Pennsylvania. He is also Associate Director, [Ackoff Collaboratory for Advancement of Systems Approaches](#) and Adjunct Professor, Systems Engineering, in the School of Engineering and Applied Science. John is engaged in the field of organizational management, using systems thinking as a world view and communicating its implications for management. As a scholar-practitioner, he has been involved with numerous projects helping management teams with the resolution of complex problems. He has taught at the undergraduate and graduate level, worked as an educator/consultant with for-profit and not-for-profit organizations and government agencies, and has also been a co-principal investigator in a number of research programs.

John's primary areas of interest include implications of systems thinking in complex problem formulation (including complex project management) and systems redesign. He is a member of the Editorial Board of the journal, Systems Research and Behavioral Science; a member of the Academy of Management; and an honorary member of the Society for Organizational Excellent in Bulgaria. His applied scholarship also includes knowledge development in the creation of new products and services, and the development of socio-technical systems for learning and knowledge-to-wisdom management in complex adaptive systems. He has also been integrating a series of thematic concepts such as idealized design, business model design, open innovation and Enterprise 2.0 into an integrated workable whole.

John is a leader in "design thinking," as well as a Fellow of the Da Vinci Institute for Technology and Management in Rivonia Gauteng, South Africa. In February 2008, he was awarded a Fulbright Scholarship to visit the New Bulgarian University in Sophia, Bulgaria to help create the "Design Institute" for the practice of design thinking using trans-disciplinary teams to cope with complex and intractable problems. In Bulgaria and globally, he has presented lectures, mostly on systems thinking, in various educational, corporate and government institutions.

Dr. Pourdehnad received his Ph.D. in Systems Sciences from the Wharton School at the University of Pennsylvania.