Decoding Knowledge Economy

Kishor Himane, PMP
Parametric Technology (India) Ltd.

PMI Project Management Institute
PROJECT MANAGEMENT CONFERENCE, INDIA
A PMI Team India Event
MUMBAI 19th, 20th & 21st November 2010
Leveraging project management for excellence, growth and transformation

Contents

1.1	**Abstract**	**3**
1.2	**Keywords**	**3**
1.3	**Introduction**	**3**
1.4	**The Understanding**	**3**
1.4.1	Knowledge	3
1.5	**Knowledge Economy**	**5**
1.6	**The Challenges**	**6**
1.6.1	Managing in the Knowledge Economy	6
1.6.2	Knowledge Elicitation	6
1.7	**The Survival**	**6**
1.7.1	Managing in the Knowledge Economy	6
1.8	**Cultivate knowledge networks and an on-going learning environment**	**7**
1.9	**Implement an efficient innovation and information system**	**7**
1.10	**Knowledge management**	**8**
1.11	**Conclusion**	**8**
1.12	**References:**	**9**
1.13	**Author(s) Profile:**	**10**

1.1 Abstract

Knowledge is the most happening buzz word around the world today. Yet surprisingly it is also the most misinterpreted term across the industry. Hence, it is essential to step back little and ask - What is knowledge? The answer to this very basic question itself will help understand the phenomenon known to us today as “Knowledge” and how it is shaping the new age economy.

The objective of this paper is to decipher the basic concept of the term knowledge. Expand that understanding to decode how it is driving businesses and economies in India and around the world. These insights should help one understand the opportunities and challenges in the knowledge driven economy.

The paper aims to clear the understanding on basic terminology - data, information, knowledge and wisdom – in business context. These terms are so often used loosely and interchangeably in various forums.

Finally, the paper aims to emphasize the need of establishing a knowledge management framework for better business decision making, to survive and grow in the knowledge era.

1.2 Keywords

Data, Information, Knowledge Economy, Knowledge Management

1.3 Introduction

In the last couple of decades knowledge has become the most important factor, in economic context, in determining the standard of living, more than land, tools, and labor. Most advanced economies around the world today are knowledge economies. The new wave of economic growth is coming from knowledge based businesses. However, there is no clear consensus on what knowledge is and what is knowledge economy?

This paper attempts to throw some light on basic terms such as data, information, and knowledge, and their differentiation which are widely used in the context of knowledge economy. It also discusses a few prevailing definitions of knowledge economy. It highlights the key differentiators of knowledge economy in comparison to industrial economy.

The paper highlights the key challenges faced by organizations and managers in the knowledge economy. Finally, it includes a few recommendations on what to focus on and how to manage in the knowledge economy to overcome these challenges and grow.

1.4 The Understanding

1.4.1 Knowledge

We're drowning in information and starving for knowledge.

- Rutherford D. Rogers

What is knowledge? In a digitally wired world when so much information is available at the click of a button or hidden in the million search result pages, how does one make any sense of it to apply it to improve our life. It is imperative in today's competitive and fast changing world that one has to be on top of things, all the time and not be overwhelmed by the information overload[4]. It is worthwhile to take a step back to understand what we are dealing with day in and day out.

Although the term knowledge does not have any single definition, in the context information age concepts it can be logically represented as progressive evolution as shown in Figure 1.

Data -> Information -> Knowledge -> Wisdom

Figure 1

Data – raw data represents facts, transactions, records, etc. which can be stored and retrieved, as required, from a database system. The raw data in itself does not contain any intelligence, but is the main source and starting point on the journey of knowledge. According to Stan Davis and Jim Botkin [2], data are the building blocks of the information economy and of knowledge based business.

Information – information is the outcome of data analysis and/or processing i.e. information is a product of operation by which it becomes such – namely, a shaping or packaging to make it manageable, transmissible and consumable [10].

Knowledge – knowledge is to know what data to capture, how and when to process/analyze data. Knowledge is considered to be something abstract and hidden in people's minds. According to Mario Alexandrau [1], one can categorize knowledge into explicit and tacit. Explicit knowledge is logical, structured and can be captured by various ways. The logic can be coded into building knowledge based or expert systems. Tacit knowledge is more abstract and involves intangibles like experience, judgment and intuition.

Wisdom – wisdom translates into making informed and timely decisions, based on available knowledge. A short story:

Once upon a time, three young students went to a distant town for education. They all studied very hard and acquired great knowledge in their respective subjects. On completion of their course, they were returning home and were travelling through a jungle. They spotted a skeleton of a lion under a tree. One of the students said he can transform the skeleton into a body. To demonstrate his learning's, he transformed the lion's remains into a body with blood and flesh, as if the lion had just died. The second student said he can put life into a dead being. The third student suggested it is probably not wise and they should continue with their journey. The second student insisted on demonstrating his learning's and went ahead to put life into the dead lion. The third student climbed on a tree. The lion once alive immediately killed the two students and ate them.

All the terms discussed, in way address chime with basic questions of what, how, when, and why, in that order. The question where is becoming irrelevant given the globalized and connected world we operate in today.

It is important to note that the representation shown in Figure 1 is not a scientific theory and not necessarily a linear progression. It is view developed to build an understanding of the terms we encounter on daily basis, help decipher their meanings and apply this understanding to deal with the information overload.

1.5 Knowledge Economy

A creative economy is the fuel of magnificence.

- Ralph Waldo Emerson

Over the last 200 years economies, in the west and most part of the world, have moved from being based on agriculture to industrial to now knowledge. The change from agricultural economy to industrial economy took around 100 years while the change from industrial to knowledge based economy took just 20 years[10]. What is knowledge economy?

Peter Drucker coined the term "knowledge economy" way back in 1968 in his book *The Age of Discontinuity*[9]. He had predicted that spread of information would cause major changes in economy. U.K. Dept of Trade and Industry[14], captures the essential elements of knowledge economy definition, "A knowledge driven economy is the one in which the generation and exploitation of knowledge play the predominant part in the creation of wealth."

More often than not, knowledge economy is considered to be synonymous with Information Technology revolution. However one should understand that knowledge has always played an important role in agricultural and industrial economies as well. But the degree of incorporation of knowledge and information in economic activity is so profound that it is transforming the basis of competitive advantage[6]. Another misleading notion is that a knowledge economy is a services economy. Actually, information and knowledge add value to the basic products which leads to closer integration between manufacturing and services into complex chains of creation, production and distribution. However industries concerned with creation, production and distribution remain at the heart of the economy.

Some of the key differentiators of knowledge economy[6]:

- Information Technology revolution – is leading to codification of knowledge and facilitating knowledge sharing at minimal cost, thus causing the knowledge to a to acquire properties of a commodity.
- Flexible organizations – utilize human capabilities and knowledge to attain higher productivity levels through *economies of scope* in the production of a diversity of more customized products and services, without sacrificing *economies of scale*[16].
- Knowledge, skills and learning – information and communication technologies have reduced the cost and increased the capacity of organizations to codify explicit knowledge, process and communicate information. This is leading to shortage of tacit knowledge and it has become more important than ever.
- Innovation and knowledge networks – the success of organizations has become more reliant on their effectiveness in gathering, absorbing and utilizing knowledge, along with its creation.

1.6 The Challenges

1.6.1 Managing in the Knowledge Economy

Managers across industries, at every level, are struggling to adapt to unfamiliar circumstances and competition in the knowledge economy. The age old management tools box of total quality management, continuous improvement, outsourcing, downsizing, business process re-engineering and so on, is increasingly falling short to help corporate enterprises to survive in the new economy. The General Motors and IBMs are forced to go through radical changes by the turbulence caused by emergence of new competition in the knowledge economy. It is evidently clear that getting a hold on how to manage in knowledge economy not just requires age old management programs, but a changed mind-set [11].

1.6.2 Knowledge Elicitation

In agricultural economy land was the key resource. In industrial economy raw material and labor were the key resources whereas in the knowledge economy knowledge is the key resource[10]. The knowledge as we understand resides in people's mind. So knowledge elicitation is the key challenge in today's business world – how to identify knowledge that adds value, how to acquire it, how to develop it, and keep it [1]. Also, if knowledge is in people's heads it can walk out of the door and not return, either by attrition or downsizing.

1.7 The Survival

1.7.1 Managing in the Knowledge Economy

The first problem for all of us, men and women,
is not to learn, but to unlearn.

- Gloria Steinem

Managing in knowledge economy demands a qualitative shift in the way manager's manage, companies compete and business is conducted. The revolution in information and communication technologies has made knowledge competitive resource. As the knowledge resides in people's mind, the manager's primary job is to create an environment that allows knowledge workers to learn from their own and others experience, and from internal and external environment.

As people become central to organizations survival, people management has gained significance like never before. Critical Chain project management [3] becomes more and more important than traditional Critical Path approach. In the knowledge economy, the manager's most important job is creating trust [11]. W. Chan Kim and Renee Mauborgne recommend a Fair Process management tool [8] for companies struggling to transition from production-based to knowledge-based economy in which they emphasize on ideas and innovation leading to value creation for organizations. The central finding of their research is that employee's will commit to a manager's decision – even one they disagree with – if they believe that the process the manager used to make the decision was fair.

1.8 Cultivate knowledge networks and an on-going learning environment

Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it.

- Samuel Johnson

Generation of knowledge is typically thought to be a process internal to a single entity, but it is increasingly a product of networked entities, often differently situated yet motivated to find new solutions to specific problems, needs and circumstances [12]. In the highly globalised and interconnected world, know-why and know-who matters more than know-what [15]. Know-what or the explicit knowledge, which can be codified, is diminishing in relevance. Know-why or the tacit knowledge gained from experience and Know-who or social relations/networks are increasingly becoming important. Knowledge of who knows what and who can do what is at times more important to innovation than the scientific principles. Knowledge networking can help speed up and improve new product development, educate customers, brand building, etc. Sharing best practices across the organization can cut costs and raise quality.

On-going learning is vital for organizations and individuals alike. Learning means not only using new technologies but also using them to communicate and share with other people to foster innovation. The findings of Al Jacobson and Laurence Prusak's research on costs of knowledge interactions [7] suggest that IT investments and search technologies work, but can yield only marginal benefits in comparison to some employees who are more adept than others at gathering knowledge and customizing it for their own use. The focus of learning's should be on acquiring and disseminate this tacit knowledge and techniques, which cannot be acquired by formal education and training.

1.9 Implement an efficient innovation and information system

Intuition becomes increasingly valuable in the new information society precisely because there is so much data.

- John Naisbitt

Economic theory indicates that technical progress is a major source of productivity growth and an effective innovation system is key for such technical advancement [4]. An innovation system refers to the network of individuals, rules and procedures that influence the way by which an organization acquires, creates, disseminates and uses knowledge. Traditionally it is believed that innovation can happen only in R&D labs with years of scientific research. Although this is still true in some industries such as pharmaceuticals, but emergence and advancement of new technologies and industries in the knowledge economy proves that innovation is not confined to a select few. It can happen anywhere. Innovation occurs at all stages of the design and delivery of a product, service or system and is closely aligned to the management of knowledge and the ability of an organization to learn. It is an open secret that Google allows its employees to spend 20% of their time on things that they like to do. The employees spend this time developing their skills and knowledge, and experimentation. A lot of offerings and innovations at Google have sprung up in this time. Although,

implementing such a practice might not be possible in all industries, but it is essential that organizations and managers provide people with a platform and environment to try out new things and encourage them to improve and innovate. The sense of purpose and accomplishment also goes a long way in employee satisfaction and retention of talent.

Innovative tools and techniques along with Information and communication technology seem to help managers tide over the overwhelming flood of information. However, quite often these means themselves become an end if not implemented properly. One of the studies indicates that it took people on an average nearly 25 minutes to return to work task after an e-mail interruption [5]. This not only affects personal well being, but also decision making, innovation, and productivity. Hence, it is critical to implement robust information and communication systems and optimize the information flow in an organization.

1.10 Knowledge management

A decision is the action an executive must take when he has information so incomplete that the answer does not suggest itself.

- Arthur William Radford

A knowledge management framework is increasingly becoming a recognized priority in organizations as diverse as A&D, Automotive, High Tech, Medical, IT and in virtually every industry in the knowledge economy. With the rapid changes in information and communication technologies, globalization, shorter product lifecycles and cost reduction pressures, etc. the need for them has never been stronger before. Today, more and more companies are appointing chief knowledge (information) officers. The primary objective of this role is management of knowledge as a strategic asset and a focus on encouraging the sharing of knowledge [13]. However, it is essential that we start looking at every employee as a knowledge manager as each employee is involved in creation and maintenance of knowledge repositories, influencing the culture of an organization toward improved knowledge sharing, reuse, learning, collaboration and innovation.

In an increasingly competitive environment, where new business practices are regularly introduced, organizations have to be innovative to survive. Such innovation is dependent upon companies developing effective knowledge management internally as well through external interaction. In order to exploit the potential of the 'knowledge base' organizations need to engage and develop specialists with the ability to implement knowledge management practice to aid the survival and growth of organizations [13].

1.11 Conclusion

In conclusion, this paper has provided an insight on what does data, information and knowledge mean in the context of knowledge economy. This understanding can be mapped onto businesses in any industry to identify where do they lie in the spectrum from data to wisdom. This understanding can be leveraged to make strategic decisions for that business.

This paper also discussed key challenges of managing in knowledge economy and knowledge elicitation. The key message is that age old management practices are not

good enough to deal with challenges in knowledge economy. Robust information and communication systems, effective innovation systems, on-going learning, building internal and external knowledge networks and a strong knowledge management framework are vital for survival in knowledge economy. Above all, as we understand that knowledge resides in people's mind, honing people management skills to keep them motivated and encouraging them to innovate is the key to success going forward.

1.12 References:

1. Alexandrau Mario, "The knowledge Economy", http://www.mariosalexandrou.com/business-management/the-knowledge-economy.asp
2. Botkin Jim, and Davis Stan, "The Coming of Knowledge Based Business", Harvard Business Review, 1994
3. Barnes Robert, "A Critical Look at Critical Chain Project Management,", Project Management Journal, December 2003
4. Derek H. C. Chen, and Carl J. Dahlam, "The Knowledge Economy, the KAM Methodology and World Bank Operations", World Bank Institute, 2006
5. Hemp John, "Death by Information Overload", Harvard Business Review, 2009
6. Houghton John, and Sheehan Peter, "A Primer on the Knowledge Economy, Centre for Strategic Economic Studies", Victoria University, 2000
7. Jacobson Al, and Prusak Laurence, "The Cost of Knowledge", Harvard Business Review, 2006
8. Mauborgne Renee, and W. Chan Kim, "Fair Process: Managing in the Knowledge Economy, Harvard Business Review, 1997
9. Powell Tim, "Competing in Knowledge Economy", http://www.knowledgevaluechain.com/2010/01/03/competing-in-the-knowledge-economy/
10. Prof. Emeritus Harold Ramkissoon, "Challenges Facing the University in a Knowledge Economy", TWAS 19th General Meeting, Mexico, 2008
11. Weber Alan, "What's so new about the New Economy?", Harvard Business Review,1993
12. "Advancing Knowledge and Knowledge Economy", National Conference, 2005 www.advancingknowledge.com
13. "Knowledge Management for Innovation", Masters Course Description, Cranfield University
14. "Our Competitive Future: Building the Knowledge Driven Economy", Department of Trade and Industry, London, 1998
15. "The Knowledge Economy", Ernst &Young,1999 http://www.med.govt.nz/templates/MultipageDocumentTOC____17256.aspx
16. "The Policy Challenges of Globalization and Regionalization", Policy Brief No. 11, OECD Development Centre, Paris, 1996

1.13 Author(s) Profile:

Kishor Himane, PMP, MSc (Cranfield University, UK), B.E. (Pune University, India) is an adept techno-manager with proven track record of successfully delivering solutions globally. He has managed range of projects including new product development, cost optimization, product data management (PLM, including SaaS model) and intellectual property management for MNCs.

E-mail: hkishor@hotmail.com; hkishor@gmail.com