Collaboration & Innovation In Most Admired Knowledge Enterprise (MAKE): Case Studies Of Knowledge-Based Enterprise

Te Fu Chen, Chang Jung Christian University, Taiwan

ABSTRACT:

In tomorrow's business environment, knowledge and how it is managed for competitive advantage will be the number one corporate priority. Firstly, this study explores sources of knowledge, managing knowledge, managing knowledge workers, Knowledge Management (KM) success factors. Secondly, the study reviews the implementation of intelligent business strategies, the award of most admired knowledge enterprise (MAKE) in knowledge-based enterprise, and how a firm used the infinite resource to creating and leading the knowledge enterprise.

Thirdly, this research adopts the case study method to assess actual sources of knowledge and determinants of KM processes and how they can be leveraged to accumulate innovation capacity to the decision to implement a knowledge innovation in the context of the MAKE. The completed questionnaire, company reports/industry-specific newsletters and an in-depth interview created an established chain of evidence for each company. Fourthly, the study conducts three case studies of MAKE to find out the knowledge management, collaboration innovation and how it is managed for competitive advantage, and how a firm used the infinite resource to creating a platform and leading the knowledge enterprise.

Finally, the study proposed the development trend of collaboration innovation, it emphasizes knowledge sharing should not only been limited in firm’s internal employees but also include firm’s external customers and cooperation partners, the situation also indicated the importance of “Collaboration” under knowledge economy. Furthermore, the study concludes the development trend of collaboration innovation via innovation through global collaboration: a new source of competitive advantage, build collaborative capabilities.

Keywords: *Knowledge-based Enterprise, Collaboration, Innovation, MAKE*

1. Introduction

In the knowledge economy, Metcalf's Law is the operative rule. Metcalf's Law holds that the value of a computer is proportional to the square of the number of connections it makes (Botkin, 2008). In tomorrow's business environment, knowledge and how it is managed for competitive advantage will be the number one corporate priority. In the information economy (1970 to 1995), the best strategy was to over invest in crunching power. Competitive advantage accrued to those who invested more than their competitors to process more data and information more quickly. In the knowledge economy (1995 to date), the best strategy is to invest in connecting power. Competitive advantage accrues to those who invest more than their competitors to connect to more people and share knowledge faster and farther. Thus, knowledge management as a key to sustainable competitive advantage. (Kotelnikov, 2008)

1.1. Sources Of Knowledge

A knowledge-based enterprise derives knowledge from various sources that include:

- Customer knowledge: customer needs, perceptions, and motivations, who to contact, customer buying power, what differentiation strategy and customer services need to be developed to win and retain customers, etc.
- Competitor knowledge: what competitors are selling now and what they are planning to sell in the future, what is their strategic intent, what competitive strategies they use to win in the marketplace.
- Product knowledge: the products in the marketplace, who is buying them and why, what prices they are selling at, and how much money is spent on such products now and may be spent in future.
- Process knowledge: best practices, technology intelligence and forecasting, systemic innovation, cross-functional synergy opportunities, etc.
- Financial knowledge: capital resources, where and how to acquire venture capital and at what cost, and the integrating in financial practices.
- People knowledge: knowing people and what motivates employees, obtaining feedback, the expertise available, and how to go about finding experts.

1.2. Managing Knowledge

While most managers agree that managing knowledge is important, few of the can articulate what the value is or how to become a learning, teaching, or coaching organization. The majority of companies have their knowledge embedded in people and organizations. It is often intuitive, tacit, rather than explicit, and is rarely detailed enough to be especially valuable. Such knowledge often gets lost when someone leaves the company. *All too often, knowledge exists with multiple points of view instead of the collective best thinking. It is occasional but not integral to the business. And, most important, it is available but not used very much.*

1.3. Managing Knowledge Workers

To lead knowledge workers effectively and unlock their true potential, you need to define:

- What knowledge work professionals do?
- How they do it best?
- What drives them to do it?

Involve everyone, empower and trust employees. Talented and empowered human capital is the prime ingredient of organizational success. A critical feature of successful teams, especially in knowledge-driven enterprises, is that they are invested with a significant degree of empowerment, or decision-making authority. Formulate stretch goals, provide resources, and empower your people. Find a delicate balance between laissez-faire and overly controlling styles.

1.4. KM Success Factors

Knowledge, without a doubt, plays an important role in the success of any organization. In fact, in order to maintain a competitive advantage, modern organizations incorporate knowledge creation, knowledge sharing, and knowledge management into their business processes. The mere survival of many organizations hinges on the strength of their capabilities; moreover, companies form decisions based on their relevant knowledge of their business landscapes. Thanks to developments in information and communication technologies, it is now easier to develop, store, and transfer knowledge. This capability is particularly true among organizations with global workforces. After all, international competition and globalization are the driving forces behind most technological innovations, and companies quickly take advantage of these developments when it comes to managing the creation and flow of information.

To be successful, knowledge management programs require more than simply conducting training sessions or transferring knowledge. Practitioners must always remember that KM's explicit end-goal is profitability - while KM's implicit purpose is to empower participants by providing them with the intellectual platforms and processes that promote learning and practical knowledge. Here are a few factors that contribute to successful knowledge management initiatives:

- Linkage between knowledge and economic performance
- Setting and communicating clear objectives for specific organizational or project levels
- Having the appropriate systems and infrastructure
- Having the right champions
- Having management support can result in the freeing up of resources (Technology Marketing Corporation, 2009)

2. The Knowledge-Based Enterprise: Implementation Of Intelligent Business Strategies

In the years to come, competitive advantage will be determined increasingly by the way in which firms deal with the knowledge factor. Price and quality have become preconditions for market entry. The future of firms will depend more and more on the ability to convert knowledge into good currency. Firms will have to evolve in this process into a "knowledge enterprise". The paper of Hertog and Huizenga (2000) concentrates on the risks of their preoccupation with quality, cost and market focus. It addresses the factors that contribute to the increasing knowledge intensity of business management. Finally, it sketches the challenge that is ahead of us: competition on the basis of knowledge.

2.1. A Most Admired Knowledge Enterprise (MAKE)

About the MAKE research program Teleos, an independent knowledge management and intellectual capital research firm, administers the Most Admired Knowledge Enterprises (MAKE) program. The KNOW Network is a web-based global community of organizations dedicated to achieving superior performance through benchmarking, networking and best practice knowledge sharing. The MAKE research program consists of the annual Global MAKE study — the international benchmark for best practice knowledge organizations — and regional/national studies, including Asia, Europe, India, Indonesia, Japan and North

America (Figure 1). Started in 1998, the annual MAKE survey is now the leading benchmark for the world's best knowledge-based organizations. Each year, the survey identifies organizations that stand above the crowd in the knowledge economy.

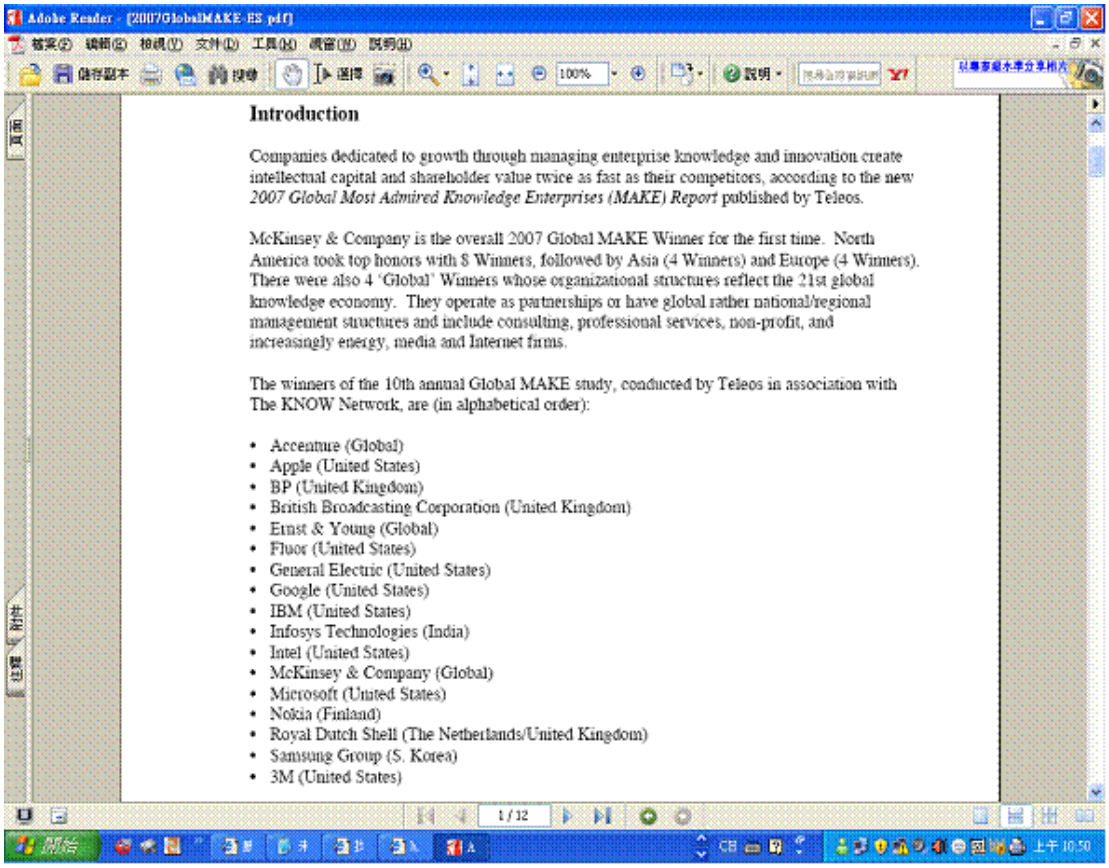

Figure 1: The MAKE Research Program Consists Of The Annual Global MAKE Study - International Benchmark For Best Practice Knowledge Organizations (Source: MAKE, 2008)

2.2. The Infinite Resource: Creating And Leading The Knowledge Enterprise

William E. Halal (1998) brings together the views of prominent leaders in the trenches of the Information Revolution to examine the revolutionary new principles for managing knowledge. There are three principles as follows:

i. *Complexity Is Managed Through Freedom*: Success is no longer achieved by planning and control-but through entrepreneurial freedom among people at the bottom.

ii. *Cooperation Is Economically Efficient*: Economic strength does not come from power and firmness-but out of the cooperative flow of information within a corporate community.

iii. *Progress Is Guided by Knowledge and Spirit*: Abundance is not the result of material riches-but of understanding the subtle workings of an infinitely complex world.

These are the new laws governing institutions today, the economic imperatives that determine who succeeds and who fails, the keys to pioneering an unexplored frontier of boundless knowledge – "The Infinite Resource" (Halal, 1998).

In this context, Halal organizes this invaluable collection into three parts that each focuses on the principles outlined as below:

1. "Part I shows that today's hierarchical structures are being replaced by an emerging foundation of management based on enterprise. The complexity of a knowledge era has made our old command-and-control systems obsolete, and so entrepreneurial freedom is now crucial, not only in economic systems but also to permit free enterprise in organizational systems." Thus, authors of this part, S.Goldsmith, R.L.Ackoff, J.P.Starr, W.Gable, and M.Lehrer mainly focus on decentralized structures, self-supporting units, entrepreneurial freedom, internal competition, and accountability to clients.

2. "Part II illustrates how entrepreneurial organizations must also use cooperation to form collaborative communities. Knowledge differs from physical resources because it increases when shared, making collaborative working relations productive not only in strategic alliances but between buyer and seller, employee and employer, business and government, and other stakeholders." Thus, authors of this part, G.H.Taylor, R.E.Miles, J.Lipnack and J.Stamps, T.Holbrooke, and R.Oklewize mainly focus on

virtues of teamwork, networking among internal units, shared knowledge, spherical organization, collaborative alliances, and corporate communities.

3. "Part III describes the intelligent infrastructures now being built to guide this corporate community in creating powerful forms of knowledge." Thus, authors of this part, R.W.Smith, D.Walters, M.Malone, G. and E.Pinchot, R.Kuperman, and W.A.Owens mainly focus on global information networks, free flow of information, knowledge society, employee training, virtual organizations, strategic direction, and vision.

Finally, Halal writes, “The message my colleagues and I want to stress is that the world is entering such an uncharted new frontier, an epoch so fundamentally different that the old rules no longer apply. The conventional wisdom of the past must be replaced by concepts that conform with the new realities of infinite knowledge”:

- Order can be best achieved-not through control and planning-but through entrepreneurial freedom.
- Strength comes-not out of power and firmness-but through cooperative community.
- Abundance flows out of - not material riches - but a subtle frontier of boundless understanding, meaning, and spirit.

This stimulating work consists of nineteen insightful and engrossing essays that convey perspectives on the emerging forms of strategy and organization in the information age, focusing on knowledge as the competitive advantage. The contributors present thinking that is truly big picture, regarding the shape of today's and tomorrow's enterprises in a world that is changing at an exponentially increasing rate. This work delves into the new and emerging realities of the internal enterprise, corporate cooperation, and leveraging knowledge. In many cases the contributors talk about the experiences of their own organization; an enlightening and enlivening approach to gaining an understanding of this new, networked world driven by knowledge - the infinite resource. An enjoyable and informative collection of thoughtful writings.

3. Methodology

3.1. The Study Design

This study involves a two-phased design, and each phase with its distinct methodology. First, an initial questionnaire guide to the interview was sent to the list of MAKE, in order to select three companies as case studies for this research. Second, in-depth interviews with senior managers from three selected knowledge enterprises were used to collect data. Interviews are one of the most intensively used methods of data collection (Bryman and Burgess, 1999). The individual in-depth interviews that the study conducted were face-to-face via webcam and Skype phone call of a semi-structured nature, which is one of the most common approaches to interviewing in qualitative research (Bryman and Burgess, 1999). This type of interview involves the implementation of a number of predetermined questions and/or special topics. That allows the respondents to determine the direction and content of the interview within a broader framework provided by the interviewer. After each company’s interviews, the results were assembled, transcribed and e-mailed to the respondents for their review and approval,

eliminating any misinterpretation. This was expected to provide a richer and more holistic appreciation of the problems regarding the knowledge-based enterprise model.

This research adopts the case study method to assess actual sources of knowledge and determinants of KM processes and how they can be leveraged to accumulate innovation capacity to the decision to implement a knowledge innovation in the context of the MAKE. The completed questionnaire, company reports/industry-specific newsletters and an in-depth interview created an established chain of evidence for each company.

3.2. Data Collection

This research deals with the two stages of the interviewing methodology. Data was collected from questionnaires of interviews in the first stage, in-depth interviews with the directors or managers of three selected case companies were conducted in the second stage. Before sending questionnaires of interviews, an information sheet has been sent to the MAKE first, no confidential or classified information were asked. The study implemented the in-depth interview with directors or managers who are related to innovation and knowledge management in three selected MAKE organisations. About 20 interview questionnaires were sent out. The interview questionnaires were designed as informal and semi-structured. In addition, the study implemented the in-depth interview after the interview questionnaires were retrieved. Written notes were used in this phase. The record of the interviews is represented by notes taken during four informal interviews with the directors or managers in the Management, HRM, R&D, IT, Marketing and Manufacturing departments. This involved follow-up tracking of innovation management in the three case companies via e-mail, and conversations through MSN Messenger, Internet phone and telephone for in-depth discussions. Typically, the subjects represented in the interviews represented directors or managers of the three case companies in the following departments:

- Management
- HRM
- R&D
- IT
- Marketing/Distribution
- Manufacturing

3.3. The Method Of Data Analysis

All interviews undertaken were recorded and transcribed. The transcripts were then coded with concepts and transformed and simplified in order to facilitate display, analysis and comparison along the lines recommended by Miles and Huberman (1994). The coding was revised and developed as the research progressed. Displays were developed for the different concepts, summarising the response of each respondent and allowing for cross-case analysis.

4. Analysis Of Global Most Admired Knowledge Enterprise

4.1. Schlumberger

Schlumberger is the leading oilfield services provider, trusted to deliver superior results and improved E&P performance for oil and gas companies around the world. Through their well site operations and in their research and engineering facilities, they are working to develop products, services and solutions that optimize customer performance in a safe and environmentally sound manner. Schlumberger has been recognized in the annual Global Most Admired Knowledge Enterprises (MAKE) study, an international benchmark for best practice knowledge organizations. This marks the third time Schlumberger has been included since the study's inception 11 years ago. This year, Schlumberger ranked 13th overall, up from 23rd last year.

"Schlumberger views knowledge as an asset that we combine with the quality of our people and our technology to produce superior results for our clients," said Chairman and CEO Andrew Gould. "We are proud of this Global MAKE Award, which specifically recognizes how we empower our communities to create, share, and leverage knowledge." (MAKE, 2008)

The Global MAKE study is sponsored by Teleos, an independent knowledge management and intellectual capital research company. This year's winners were chosen by a panel of Fortune 500 senior executives and internationally recognized knowledge management and intellectual capital experts. The panel rated organizations against the MAKE framework of eight key knowledge performance criteria that are the visible driver of competitive advantage and intellectual capital growth. Schlumberger made the top 10 in four criteria—earning first place in the "creating an environment for collaborative knowledge sharing" category.

Chosen from 49 finalists, Schlumberger was one of 20 winning organizations. According to the study, the winning organizations are those dedicated to innovation and knowledge management. The companies using this approach create intellectual capital and shareholder value twice as fast as their competitors.

"These organizations have been recognized as leaders in effectively transforming enterprise knowledge into wealth-creating ideas, products, and solutions," said Rory Chase, managing director of Teleos. "They are building portfolios of intellectual capital and intangible assets that will enable them to out-perform their competitors now and in the future."

Schlumberger's rankings in the 2008 study criteria were:

- Creating an environment for collaborative knowledge sharing (1st place)
- Creating a corporate knowledge-driven culture (6th place)
- Maximizing enterprise intellectual capital (8th place)
- Transforming enterprise knowledge into stakeholder value (10th place)
- Creating a learning organization (15th place)
- Developing knowledge workers through senior management leadership (18th place)
- Delivering value based on stakeholder knowledge (23rd place)
- Delivering knowledge-based products and solutions (30th place).

4.2. MindTree

MindTree (2009) conferred Indian Most Admired Knowledge Enterprise (MAKE) award, recognized for knowledge management excellence for third consecutive year. MindTree Limited, a global IT and R&D services company, announced today that it has been conferred the Indian Most Admired Knowledge Enterprise (MAKE) award by Teleos (1998), in association with The KNOW Network. This was announced at KM India 2008, in Mumbai, where the award was presented to MindTree. The Indian MAKE Award recognizes Indian organizations that are leaders in effectively transforming enterprise knowledge into wealth-creating ideas, products and solutions. A panel of senior Indian business executives and leading India-based knowledge management/intellectual capital experts found MindTree excelling in the area of Knowledge Management. In the MAKE study performance dimensions, MindTree was the top-ranked company in India in the following five performance dimensions:

- creating a corporate knowledge-driven culture
- developing knowledge workers through senior management leadership
- delivering knowledge-based products/solutions
- maximizing enterprise intellectual capital
- creating an environment for collaborative knowledge sharing

"We are delighted to be the Indian MAKE Award winner for the third consecutive year. We are particularly honored to be the top ranked in 5 out of 8 performance dimensions. The award underscores our strategic vision in building a strong knowledge-based environment that nurtures innovation and optimizes the value of intellectual capital," said MindTree Chairman & Managing Director Ashok Soota (MindTree Limited, 2009).

MindTree's Knowledge Management Function allows the firm to harness the knowledge and ideas of its people towards innovation, better service delivery, and organizational learning. MindTree's approach to Knowledge Management is holistic and focused on building a knowledge ecosystem, which MindTree defines as four 'spaces' within which people interact to create value: physical space, virtual space, social space, and mind space. The key thrust areas of Knowledge Management in MindTree are innovation, collaboration and reuse. All these have been realized by deploying multiple platforms that impact people's behavior, creativity and productivity

"Our knowledge strategy is differentiated in the industry by its completeness of vision and scope," said MindTree Vice President and Chief Knowledge Officer Raj Datta. "In addition to deploying feature-rich technical platforms, we are differentiated by our focus on softer enablers like social networking, culture-building and creative thinking." (MindTree Limited, 2009)

This Award comes on the heels of MindTree winning the Asian MAKE Award 2008. MindTree was also given the NASSCOM Innovation Award 2007 for its knowledge ecosystem earlier in the year. Teleos, an independent knowledge management and intellectual capital research firm, administers the Most Admired Knowledge Enterprises (MAKE) program. The KNOW Network is a Web-based global community of organizations dedicated to achieving superior performance through benchmarking, networking and best practice knowledge sharing.

4.3. Ernst & Young

Ernst & Young is one of the few organizations to have been awarded every year since 1998, and in 2000 Ernst & Young was inducted into the MAKE Hall of Fame. Ernst & Young receives global knowledge award, London, 27 November 2007 — Ernst & Young has been recognized as a Most Admired Knowledge Enterprise (MAKE) for the tenth consecutive year and was ranked first in the categories: 'Developing knowledge workers through senior management leadership', and 'Delivering knowledge-based products and services' (Ernst & Young, 2008). Ernst & Young was the only Big Four professional services organization to be awarded. About Ernst & Young, it is a global leader in assurance, tax, transaction and advisory services. Worldwide, its 130,000 people are united by its shared values and an unwavering commitment to quality. Ernst & Young refers to the global organization of member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young refers to one or more of the member firms of Ernst & Young Global Limited (EYG), a UK private company limited by guarantee. EYG is the principal governance entity of the global Ernst & Young organization and does not provide any service to clients. Services are provided by EYG member firms. Each of EYG and its member firms is a separate legal entity and has no liability for another such entity's acts or omissions.

John Harley (2008), Ernst & Young's Global Vice Chair, Global Accounts, Industries, and Business Development, said: "I am delighted that we have been recognized as one of the global organizations most focused on knowledge. This award demonstrates that our focus on the future state of knowledge at Ernst & Young is working, and that we are level with the best-in-class global knowledge organizations."

"Knowledge has always been a key enabler for our business and its importance has been further enhanced as we strengthen our focus on our accounts and the principal industry sectors in which they operate. By focusing on the quality, depth, and global reach of our knowledge resources, our people are able to provide key insights and points of view on matters of critical importance to our clients," said John Harley (2008)

5. The Development Trend Of Collaboration Innovation

OECD report in 2004, "Innovation in the Knowledge Economy" proposed the idea of "The innovation tank and four pumps", in the article, it supposes innovation is an automobile, the four gasoline pumps which proceed to advance the innovation automobile are: (1) science-based innovation; (2) Collaboration between user and performer; (3) modeling structure - innovation process is free, but the innovation result is integration; (4) the application of information and communication technology. Explained in the knowledge innovation process, the importance of collaboration among science, information, technical and cross organization/cross professional.

5.1. Innovation Through Global Collaboration: A New Source Of Competitive Advantage

Collaboration is becoming a new and important source of competitive advantage. No longer is the creation and pursuit of new ideas the bastion of large, central R&D departments within vertically integrated organizations. Instead, innovations are increasingly brought to the market by networks of firms, selected according to their comparative advantages, and operating in a coordinated manner. This paper reports on a study of the strategies and practices used by firms that achieve greater success in terms of business value in their collaborative innovation efforts. Key concepts include:

Consider the strategic role of collaboration, organize effectively for collaboration, and make long-term investments to develop collaborative capabilities. Successful firms found that attention to these 3 critical areas generated new options to create value that competitors could not replicate. Successful firms went beyond simple wage arbitrage, asking global partners to contribute knowledge and skills to projects, with a focus on improving their top line. They redesigned their organizations to increase the effectiveness of these efforts. Managing collaboration the same way a firm handles the outsourcing of production is a flawed approach. Production and innovation are fundamentally different activities and have different objectives.

Many recent studies highlight the need to rethink the way we manage innovation. Traditional approaches, based on the assumption that the creation and pursuit of new ideas is best accomplished by a centralized and collocated R&D team, are rapidly becoming outdated. Instead, innovations are increasingly brought to the market by networks of firms, selected for their unique capabilities, and operating in a coordinated manner. This new model demands that firms develop different skills, in particular, the ability to collaborate with partners to achieve superior innovation performance. Yet despite this need, there is little guidance on how to develop or deploy this ability.

This paper describes the results of three case studies to understand the strategies and practices used by firms that achieve greater success in their collaborative innovation efforts. Successful firms, developed an explicit strategy for collaboration and made organizational changes to aid performance in these efforts. Ultimately, these actions allowed them to identify and exploit new business opportunities. In sum, collaboration is becoming a new and important source of competitive advantage. The study propose several theories and practices to help firms develop and exploit this new ability.

In contrast to organizations that viewed collaboration only as a tool for reducing cost, these firms considered a variety of more strategic benefits, in particular, assessing how collaboration could improve their top line through increased product differentiation. Successful organizations achieved this in two ways: first, by leveraging a partner's superior capabilities (i.e., know-how that the firm did not possess internally); and second, by accessing a partner's contextual knowledge (i.e., knowledge that the partner possessed by virtue of its local position). In combination, these benefits of a global collaboration strategy (see Table 1).

Lower Costs	Superior Capabilities	Contextual Knowledge
Low cost labor	Rapid access to capacity	Market access
Low cost materials	Technical know-how	Supplier relationships
Low cost suppliers	Process expertise	Institutional ties
Low cost infrastructure	Domain knowledge	Government connections

Table 1: The Benefits From Collaboration (Source: MacCormack et al , 2007)

5.2. Build Collaborative Capabilities

The leading firms were willing to invest in developing "collaborative capabilities." All too often, firms assumed that their existing employees, processes and infrastructure were capable of meeting the challenge of collaboration. But successful collaboration doesn't just happen – it is a skill that must be learned. Rarely do firms get it "right first time." Leading firms recognized this reality, and made investments to enhance their performance over time.

Successful firms targeted investments in four areas: people, process, platforms and programs. These are called as “Four Pillars” of collaborative capability (see Figure 2). These investments were typically funded outside the budgets of individual projects, given few projects can justify the levels of infrastructure needed to perform well on their own.

In essence, leading firms made a strategic decision to invest in collaborative capabilities, and sought to leverage these investments across projects and over time.

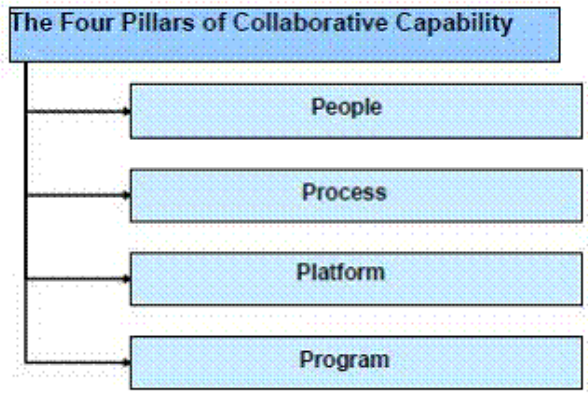

Figure 2: The Four Pillars Of Collaborative Capabilities
Source: MacCormack et al (2007)

Developing People

Superior performance in collaboration requires people with different skills, given team members often lie outside the boundaries of the firm, are located in far flung countries and have vastly different cultures. The emphasis was on “softer” skills, such as communication and motivation, as opposed to discipline-based content. Increasingly, firms invited partners to these sessions, to develop a shared understanding of how best to work together. Leading firms recognized the need to assess this aspect of performance, developed metrics to make it visible and rewarded those who excelled. They viewed collaboration as a skill to be learned and took actions to develop it in staff. (MacCormack et al, 2007)

Designing Processes

Most projects we observed employed a formal product development methodology based upon a modified “stage-gate” or “waterfall” type process. These processes are increasingly popular ways to ensure greater control and consistency in the execution of projects. Leading firms designed processes to address these activities, taking into account the experiences and preferences of partners. A stage-gate process consists of a series of standard phases separated by ago/no go decision points called gates (Cooper and Emory, 1995).

This did not mean that each partner used the same process; rather the aim was to decide how much standardization was needed. Ultimately, successful firms used a learning-driven approach to process design given their understanding of how to collaborate was in its infancy. (MacCormack et al, 2007)

Building Platforms

Leading firms developed technology "platforms" to improve the coordination of work. These platforms comprised four main parts: First, development tools and technologies to improve the efficiency of distributed work; second, technical standards and interfaces to ensure the seamless integration of partner outputs; third, rules to govern the sharing of intellectual property among partners; and fourth, knowledge management systems to capture the firm's experience on how distributed work is best performed. This collaboration "infrastructure" was leveraged across multiple projects over time. The goal was to promote a long-term view of the assets needed for effective collaboration. (MacCormack et al, 2007)

Managing "Programs"

Successful firms managed their collaboration efforts as a coherent "program," in contrast to organizations which ran each project on a stand-alone basis. A program view was critical given collaboration projects rarely met expectations early on, and performance often deteriorated when the scope of efforts was increased. Leading firms did not differ from others in this respect; but they did differ in the rate at which they improved. Top performers put in place mechanisms to help improve their collaboration skills over time. The most progressive firms managed the "trajectory" through which they developed skills by carefully selecting the projects that used collaboration. Early efforts were chosen to minimize complexity, with an emphasis on "learning the basics;" more ambitious projects were tackled as skills increased. The focus was on assembling a pool of knowledge to aid future efforts, through post-mortems conducted with partners. Hence top performers set up systems to codify lessons learnt from past collaborations; and often linked partners into these systems to benefit from their broader collaboration experience. (MacCormack et al, 2007)

6. Conclusions

Since 1998, Teleos, the research firm of knowledge management and intellectual capital in UK. Each year, the survey identifies global organizations that stand above the crowd in the knowledge economy (Most Admired Knowledge Enterprise, MAKE), one of the eight index of evaluation is "Effectiveness in creating an environment of knowledge sharing". However, since 2002, the index has been changed as "Creating an environment for collaborative knowledge sharing", it emphasizes knowledge sharing should not only been limited in firm's internal employees but also include firm's external customers and cooperation partners, the situation also indicated the importance of "Collaboration" under knowledge economy.

According to the study, the winning organizations are those dedicated to innovation and knowledge management. The companies using this approach create intellectual capital and shareholder value twice as fast as their competitors. They effectively transform enterprise knowledge into wealth-creating ideas, products and solutions. The award underscores their strategic vision in building a strong knowledge-based environment that nurtures innovation and optimizes the value of intellectual capital. The firms harness the knowledge and ideas of their people towards innovation, better service delivery, and organizational learning. Their approaches to Knowledge Management is holistic and focused on building a knowledge ecosystem, which is defined as four 'spaces' within which people interact to create value: physical space, virtual space, social space, and mind space. The key thrust areas of Knowledge Management in the three case companies are innovation, collaboration and reuse. All these have been realized by deploying multiple platforms that impact people's behavior, creativity and productivity. The other two important approaches are developing knowledge workers through senior management leadership, and delivering knowledge-based products and services.

In summary, the study conducts three case studies of MAKE to find out the knowledge management, collaboration innovation and how it is managed for competitive advantage, and how a firm used the infinite resource to creating a platform and leading the knowledge enterprise.

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Contact the Author:

Dr Te Fu Chen, Assistant professor, Department of Information Management, Chang Jung Christian University, Taiwan; Email: phd2003@gmail.com