

Leveraging knowledge management for organizational innovation and creativity

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In the past industrial era the rate of change was slow and also predictable and competitive environments were not as intense and changed more slowly. At that time innovation was desirable and competitive advantages mainly came from focusing on the regular improvements in the quality and operational efficiency rather than focusing on innovation. Presently, the changes in the business environment are comparatively fast and there is a cut through competition, where innovation has become a need for business organizations to manage their business successfully. Thus, in this type of environment, there is a need to develop a totally new set of corporate skills and managerial attributes. For this, management of innovation in the organization has assumed considerable importance. Such organizations need people who are enterprising, visionary, creative, innovative and also imaginative. They should have insight and foresight. These are the major attributes for any organization upon which organizational innovation depends.

Creativity – The foundation for innovation:

Creativity acts like the foundation or the basis upon which the innovation is based. During the innovation process, first of all, an enquiring mind of an individual gathers some new useful information, creates new knowledge by using that information and develops a new and unique perspective or thought relating to a problem that leads to new and novel ideas for the solution. These ideas then further stimulate the need for more information, creating more knowledge, developing more perspectives and more ideas. Thus, it can be said that these elements are the major foundations on which innovation is based.

Thus, to become more innovative, organizations are required to think in a new way like creative thinking. A thinking that can be considered as a specific thought process that improves the ability to be creative. Creative thinking is all about the *ability to think of original, diverse, elaborate and novel ideas*. It can be better understood in the form of a set of actions, which produce changes and development in thoughts.

“Organizational creativity can be defined as a function of individual abilities, group norms and organizational culture.”¹. Thus, to enhance and develop creativity within an organization, we need to develop creativity skills and techniques into individual, make better group norms and an organizational culture where people get themselves freedom in their jobs, free communication, flexibility and other cultural inputs like – free from routine work and time to think; all that can support in enhancing creativity in an organization. Supporting evaluation, attitude towards risk taking and change, time to experiment, quality of work, creative management (creative executives and managers) and creative problem solving style are some of the other inputs.

In her article ‘Making sense of creativity’, Jane Henry (1991) summarizes different views on the origin of creativity. She identified five sources, which are as follows:

•Grace – This is the view that creativity comes through divine inspiration, it is something that comes to us, or not, something magic which is out of our control; it is this view that believes ‘you either have it or you don’t’, and companies subscribing to this particular view can only enhance their creativity by hiring people who are graced with divine inspiration.

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- Accident – Under this view creativity arises by serendipitous good fortune and various scientific discoveries have been attributed to this kind of creativity (e.g. Penicillin) – a view that is not particularly helpful to an organization striving to become more creative.
- Association – Under this theory creativity occurs through the application of procedures from one area to another. Lateral thinking and brainstorming are methods supporting this approach to creativity. Henry points out that we often miss such opportunities, quoting as an example from Sigmund Freud’s insight that a side effect of cocaine is numbing of the mouth without realizing the resulting potential as a dental anesthetic. Following this view, companies would provide training for their staff with the aim to improve levels of creativity.
- Cognitive – here the belief is that creativity is nothing special but that it relies on normal cognitive process such as recognition, reasoning and understanding. Under this view the role of ‘application’ is crucial, and examples given include the wide range of different filaments Edison used before coming up with a functioning light bulb. The emphasis here is on hard work and productivity, and proponents of this theory such as Weisburg (1986) point out that ten years of intense preparation tend to be necessary to lead to a creative act.
- Personality –Here, creativity is seen as a particular human ability, an intrinsic part of life and growth and Henry points out ‘viewing creativity as a natural talent directs attention towards removing mental barriers to creativity to allow an innate spontaneity to flourish.

Box 1: The Creative Process

The creative process is sensitive to context. Research suggests three factors may determine an individual’s creativity in any situation:

Expertise is ‘the foundation of all creative work’. It provides an individual with the cognitive pathways required for solving complex problems and the knowledge to identify the important elements of any particular problem.

Creative thinking techniques – Some personality traits are useful – such as independence, risk-taking orientation and tolerance for ambiguity – but anyone can learn some useful techniques – e.g. ‘make the familiar strange’, ‘try something counter-intuitive’.

Task motivation – Self-motivation (intrinsic) derived from the pleasure of doing the job is the best motivator for creativity. External motivating factors can encourage one to greater heights, e.g. reward and recognition, but too clearly defined goals and too much external control can hinder creativity.

From Amabile (1997)

Source: www.dti.gov.uk/files/file13654.pdf accessed on 12/04/2007

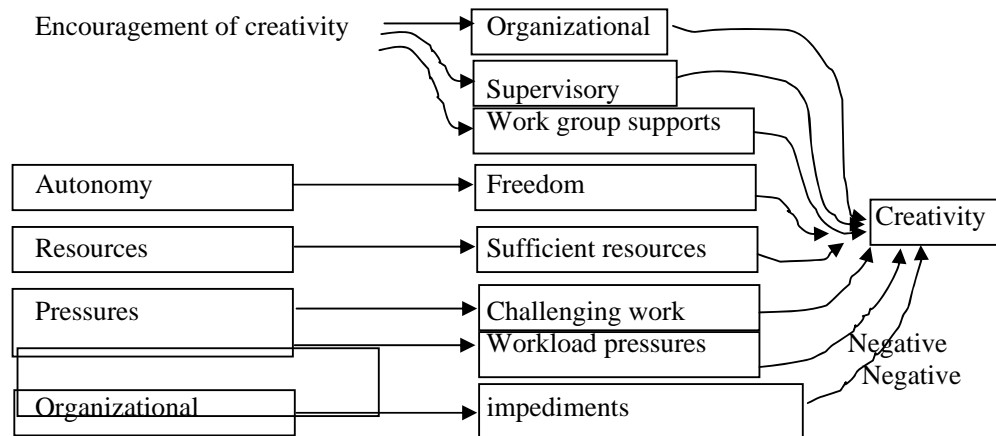


Figure –1 A model for assessing the climate for creativity (KEYS) Amabile et al 1996)
 Source:media.wiley.com/product_data/excerpt/85/04708470/0470847085.pdf accessed on 12/04/2007.

In the figure-1 a model by Amabile has been presented where identification of five environmental components that affect creativity have been shown.

Encouragement of creativity (which encompasses open information flow and also support for a new idea at all levels in the organization)

Autonomy or Freedom: The second component that affects creativity is the autonomy in the day to day conduct of work; a sense of individual ownership and control over work.

Resources: The third component is about the resources in the form of material, information, and other resources available for work.

Pressures: Pressures includes both, i.e., Positive challenge and Negative workload pressures.

Organizational impediments: The fifth component that affects the creativity is the organizational impediments to creativity (including conservatism and internal strife) According to Amabile, the above various components fall in to two categories – they are either stimulants to creativity (tapped by scales assessing organizational and supervisory encouragement , work group support , sufficient resources and challenging work) or obstacles to creativity tapped by scales(assessing organizational impediments and workload pressures).

Thus, the major *characteristics of a creative environment / creative culture* that are generally required to encourage and support creativity within an organization are –

1. Freedom: The freedom in the work is an essential component for imagination and creativity. Here one thing is important that freedom without bounds or direction often results in a loss of sense of purpose and also a resulting loss in creativity. In an organizational context, a creative environment is that which provides an appropriate degree of freedom in the workplace along with clear cut structure and sets rules to provide bounds to this type of freedom.

2. Recognition: Recognition for the development of ideas and creativity is necessary for establishing a creative environment. Because, imaginative people are not always motivated with the financial incentives / rewards, so for such people, the reward includes constructive feedback and the opportunity to develop and share their ideas. Thus it is important to develop such a recognition system in the organization that can encourage the development of creative ideas.

3. Desire to achieve a creative culture: The organizations must have a strong desire to make creativity and imagination as the part of the way in which they work. The organizations can do this by active encouragement of staff for creativity, knowledge and expertise, welcoming the new changes and ideas, open and trusted communications in all directions. Mechanisms for staff to relax and mingle informally allowing the exchange of ideas in different environments are to be provided.

4. Values and resources: There must be some values of the organization if it desires to become innovative. The values which are important for an innovative organization are –that risk should be taken and managed properly, staff should be supported for their ideas and encouraged to accept responsibility in their work. Sufficient time should be given to undertake idea development activities. Regarding resources the organization must have sufficient resources for the creativity and innovation project.

What is innovation ? Innovation is a process comprising of a series of actions and thoughts through which new ideas are given the shape of a physical object or services. Thus, it can be said that innovation is the successor of the creativity . But both creativity and innovation are important to bring anything new in the marketplace. Without creativity there is little meaning of innovation and in the same way , without innovation there is little meaning of creativity because the idea generated by creativity cannot be used for the purpose of value creation . Hence, innovation is the way through which values are created for both the business and its customers.

Innovation is the value added through applying creative ideas to a problem and implementing these ideas in the market place.²

Creativity versus Innovation:

Though people use creativity and innovation interchangeably, there is a difference between creativity and innovation. The following points provide a clear concept of creativity and innovation:-

Creativity	Innovation
Creativity relates to thinking up new things Novel ideas are generated	Innovation relates to doing new things Ideas are implemented.
Creativity is a personal act or task	Innovation is simply a team effort.
Creativity is an enabler	Innovation relates to value creation.
Creativity may be in the form of new skills/ability	Innovation means new ways to use what one already knows.
Creativity is a process and its outcome is a new idea	The final outcome of innovation is a new product/service/ process or market.
Thus, in creativity, the main emphasis is on idea generation	In innovation, the main emphasis is on implementing and using new ideas to create Value for both business and its customers.

Creativity and Innovation: The main difference between creativity and innovation is that innovation includes intentional introduction and application of new and improved ways of doing things , where as creativity can simply refer to idea generation alone. In fact, creativity is an essential building block for innovation. This is reflected in now the widely accepted definition of

innovation equaling – creativity + successful implementation. Thus, it can be said that creativity alone to come up with ideas is not sufficient. To reap the benefits one requires to do something with it. Thus, there are two essential components of innovation: creativity and implementation.

Creativity can be defined as the ability to bring something new into existence and main focus is on the ability and not the activity of bringing anything new.

While, on the other hand implementation refers to putting ideas into practice so that a new thing (a product/service/process) can be introduced into the market by adding some value in the existing one or completely a new product with great value for its customers. There are mainly three aspects of implementation – idea selection, development and commercialization. But the important thing here is that for innovation creativity is needed.

On the basis of the above discussion it can be considered that creativity is the first stage in the innovation process and both creativity and innovation have been identified as a vital resource for business success.

Environment for Innovation: A conducive environment is always needed to develop something. Similarly, innovation also requires a conducive environment that can support the developing of innovation in the organization. For developing innovation we need an environment which consists of :-

1. A supportive organizational structure that is flexible and helpful in diverse thought, initiative and also new idea development.
2. A mechanism that not only ensures continuous stream of information from various sources but also retention of that information or storage of that information.
3. Free flow of communication between various levels of employees and managers.
4. An environment where individual can get time to think independently.
5. A suitable network that may be helpful to make new contacts that can be helpful to gain access of new information and knowledge quickly.
6. A strategy that can encourage people to think creatively to produce new ideas.
7. A motivational system that can motivate peoples to think in creative manner.
8. An effective knowledge management system that can continuously increase and update the organizational knowledge and wisdom.

If such type of environment is developed within the organization, no doubt the organization will move towards innovation continuously.

A culture to develop innovation within the organization: To create an innovative organization, there is a need to develop a suitable culture for innovation development. In this regard it is important to say that staff selection criteria must include the *innovative attitude and personality*. The *reward structure* for staff is also equally important and there should be some provisions to provide incentives for their innovative behavior. Sometimes managers complain that all staff are not working in the same way as they themselves do. Since profit is the major goal of the shareholders and managers, now it is being recognized that *to achieve this goal throughout the organization it is imperative that all staff should be allowed to participate in profit sharing*. This is necessary due to the reason that if staff will share the same reward, they will also think for the organization like an owner.

There should also be a good motivation system for the staff. It has been accepted that not all of the staff are motivated by money. Some require job satisfaction, healthy working environment, good leadership and safe and happy workplace and good culture with freedom. So, if we have to develop an innovative culture, we have to think about a motivation system that can support the innovation within the organization.

There must be a good leadership for organizational culture. This we need to develop. This is because if the person at the most senior level of the organization fails to support the building of an innovative environment in the form of innovative culture, the

innovation project will definitely fail. So, good leadership is also important for the organization to become innovative.

Barriers to innovation: There are various barriers to innovation that generally hinder innovation activity within an organization. Some of them are as follows:

1. Inadequate funding
2. Risk avoidance
3. Incorrect measures
4. Time commitments

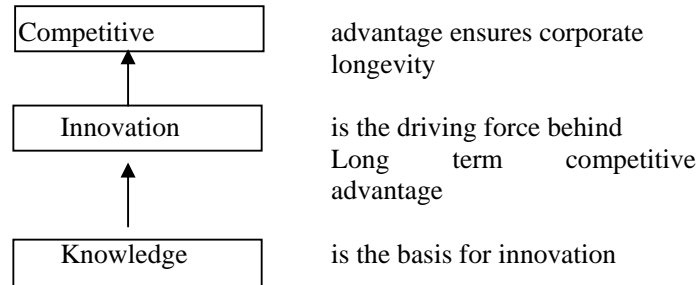


Figure-2 Knowledge as basis for competitive advantage

Adopted from: An illustrated guide to knowledge management available at www.wm-forum.org accessed on 05/01/2007

In the above figure it has been mentioned that knowledge is the basis for innovation and finally innovation is the basis for competitive advantage. Hence, knowledge becomes an essential organizational driver and a key factor in the value creation process. The important aspect is that an organization must focus on expanding the organizational knowledge base either by learning from others or by creating new knowledge.

Before we discuss about knowledge, *knowledge management and use of knowledge management in innovation*, it is necessary to know these terms. Basically, knowledge can be defined as a set of data and information, a combination of know how, experience, emotion, believes, values, ideas intuition, attitude, learning style and the ability to deal with complexity which can be used to improve the capacity to act and support decision making. A definition of knowledge is being provided which tells us that knowledge is

“A fluid mix of framed experience, values, contextual information, expert insights and intuition that provides an environment and framework for evaluating and incorporating new experiences and information. It originates in individual minds but is often embedded in organizational routines, process, practices, systems, software and norms.”³

Generally, knowledge management can be termed as an integrated approach for the purpose of achieving organizational objectives. For this, organizations require to focus on knowledge. In other words, knowledge management can be considered as a systematic and integrated approach comprising of creation, transfer and application of individual’s knowledge in value creation process within an organization.

Knowledge management is a process relating to the management of organizational knowledge base for creating business value and generating a competitive advantage. Knowledge management basically deals with the ways and means of capturing and making available knowledge of experts to others to obtain the competitive advantage.

Thus, knowledge management is a planned and ongoing management of activities and processes for leveraging knowledge to enhance competitiveness through better use and creation of individual and collective knowledge resources.

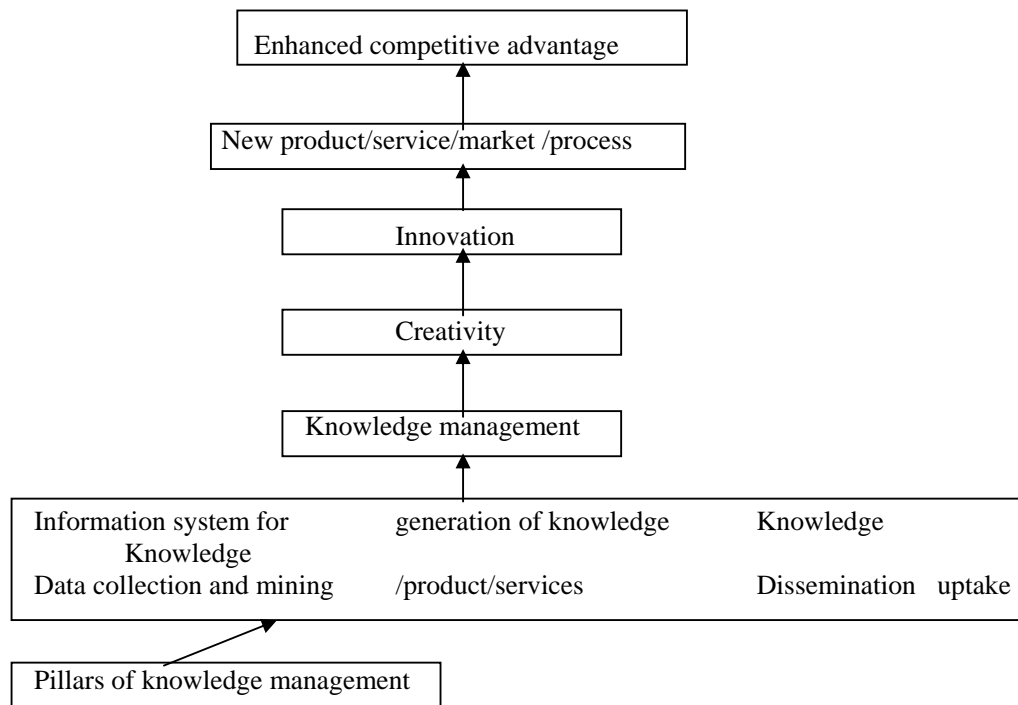


Figure –3 A model depicting the way to increase competitiveness through knowledge management, creativity and innovation

In the above figure-3, a simple model providing the way to enhance competitiveness has been discussed. Through the model it is clear that the pillars of knowledge management work as the base for knowledge management and creativity depends on knowledge management, while the innovation is based on creativity. The outcome of the innovation results in the form of new products and services resulting in enhanced competitive advantage for the organization.

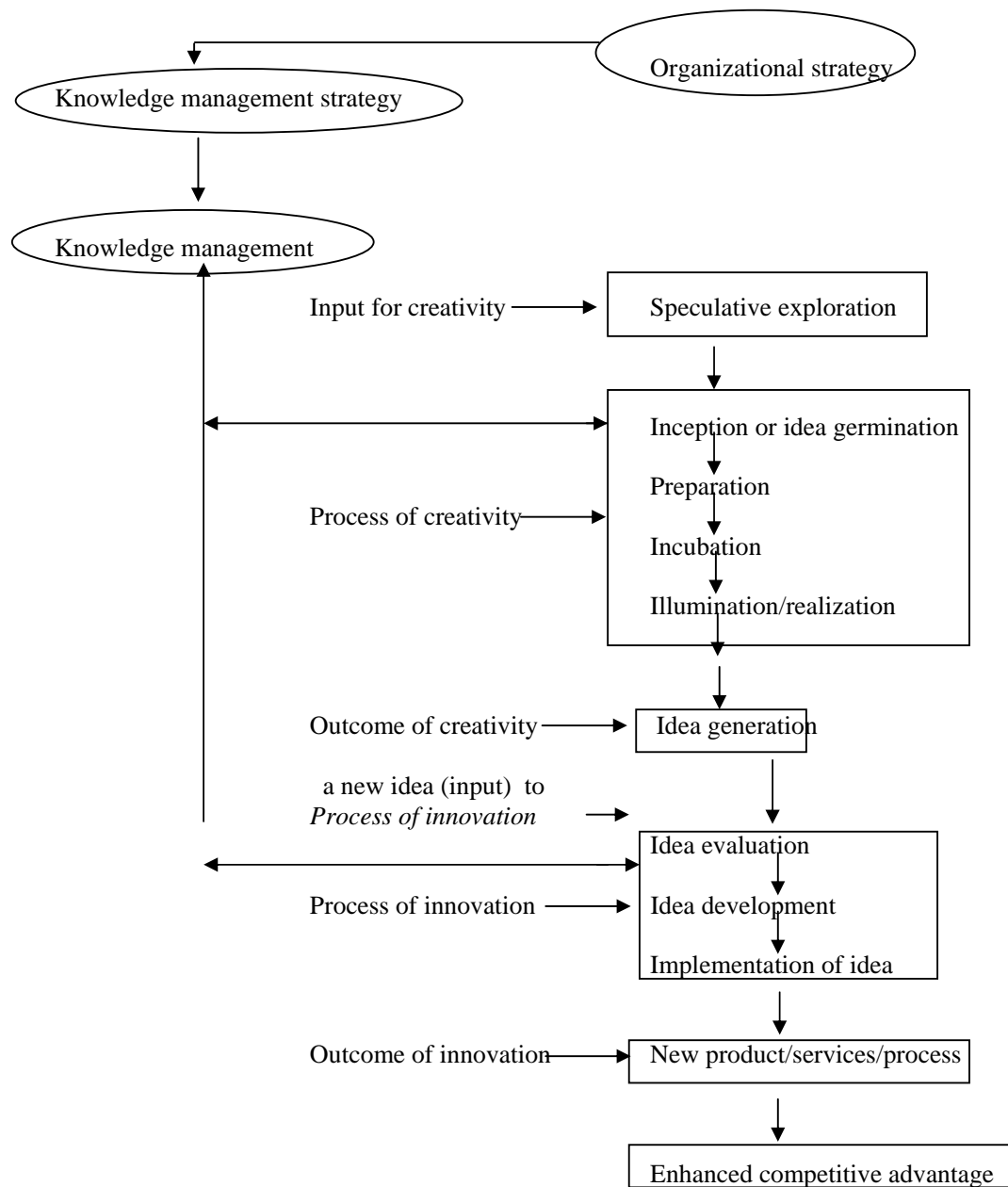


Figure –4 A detailed model describing the interrelationship of organizational strategy, knowledge management strategy, creativity and innovation

Speculative exploration is necessary in order to produce something new to be imagined. For example for long years, the birds flew in the sky and nobody acknowledged this, birds just did it. One day someone looked up and acknowledged this.

“I wish I could fly like the birds; that looks really great, I wonder how they do that?”

Someone has to speculate like this to provide a view into a possible future so you can have an idea and engage in some idea development.

“I see they flap their wings. I will flap my arms and see if I can fly. That did not work. I know, I will tie banana leaves to my arms, they are rather like feathers. Hmmm,

that does not work but I feel some resistance against the air, let me think about this some more.....”

Source: Jonne Ceserani & Peter greatwood, *Innovation and Creativity*, Crest Publishing House, New Delhi , 2001, pp. 28-29

The model presented in figure-4 discusses about the organizational strategy that has been placed as the originator for knowledge management strategy. It depicts that knowledge management strategy has been designed to meet the organizational business strategy. The knowledge management strategy leads to knowledge management. It in turn, affects both the creativity and innovation and is also affected by creativity and innovation processes going on in the organization. Thus, the model represents an interrelationship of business strategy, knowledge management strategy and also the role of knowledge management in creativity and innovation.

The process of creativity generally, involves four stages like inception, preparation, and incubation, Illumination/realization.

The first stage is concerned with the inception of an idea like germination of a seed. Creative ideas do not emerge from vacuum but they always emerge from a deep interest and curiosity to know about something.

The second stage of preparation tells about the need for preparation dealing with the conscious search for a solution, once an idea has germinated. At this stage we try to collect the information regarding the problem and also expected solutions. Effort is made to know about how others have tried to solve the problem. It may be helpful to find out a unique solution or idea for a problem resolution.

The third stage, relates to incubation. At this stage, knowledge and information is subconsciously assimilated leading to the next stage. Here, the subconscious intellect assumes the control of the creative process and the limitations of human logic do not affect the solutions.

At the fourth stage, the illumination/realization takes place.

After the fourth stage, an idea is developed as the solution and is actually generated and is recognized as being feasible. To check the feasibility, we use our experiences, insights and various types of fears regarding those ideas.

Once an idea has been generated and is considered as feasible, it goes to the innovation process. Here first of all, it is evaluated from various point of view like, the resources required in terms of physical and human alongwith knowledge, cost to implement the idea, profitability aspects and time required. Technical feasibility, commercial feasibility and acceptability at all levels of the organization are also evaluated.

After this, the idea development gets started. In the idea development stage ideas are tested so that it may be decided whether the idea can be implemented now into practical and tangible form.

When the idea development is complete, the implementation of idea occurs where the idea comes in to a new tangible form of a product/service or process that adds value for both business and customer. Thus, the outcome of innovation enhances the competitiveness of an organization.

Strategic mechanisms for organizational survival can be based on the identification of those critical factors, which will lead to success of the organization. Critical Success Factors (or CSFs), sometimes referred to as Key Factors for success, are those which are crucial for organizational success. Ohmae suggests identification of CSFs in an industry for competing wisely. Which relevant CSFs operate in a particular competitive environment can be based on external expert opinion, organizational success stories and strategist’s statement on them. They can be generated internally from within the organization through creative techniques.

Once a short list of CSFs has been identified, a matching knowledge management system can be devised to warn the organizational managers about the possible weaknesses in these areas of Key Factors. Such a mechanism will provide organizations a base for developing a possible preventive strategy.

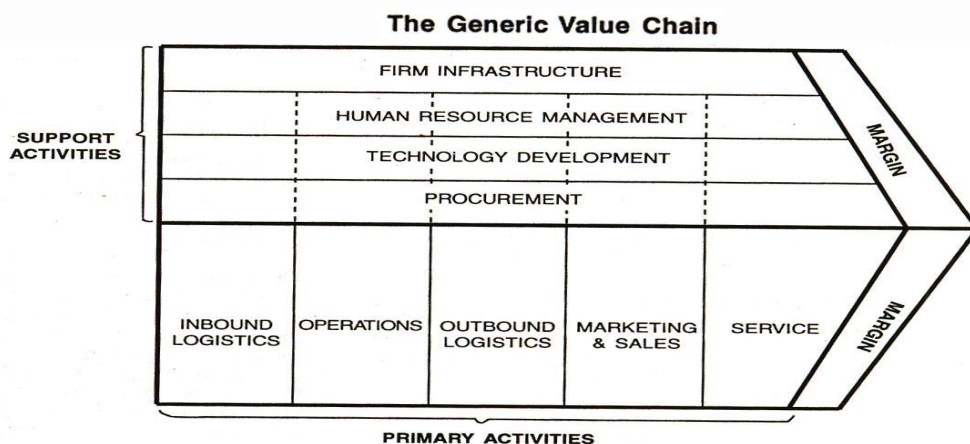
Another strategic survival technique can be developed by organizations by using the “Value Chain” approach. This “Value Chain” concept as proposed by Michael Porter will help firms in identifying and building their competitive advantages. As a basic tool it can identify ways in which value can be created/enhanced by a firm within an industry. Comparing the Value Chain of a particular organization with those of its competitors through a proper knowledge management system will ensure survival of the identified organization.

Nine distinct activities making up the Generic Value Chain are shown in Figure-5. They comprise of five primary activities, namely,

- Inbound Logistics
- Operations
- Outbound Logistics
- Marketing and Sales
- Services.

Four support activities backing up the primary activities are:

- 1) Firm’s Infrastructure
- 2) Human Resources
- 3) Technology Development



Source: Porter, Michael E., *Competitive advantage*, Free Press, New York, 1985, p. 37.

- 4) Procurement.

Buyers patronize firms that offer highest delivered value. The long term survival can be ensured through knowledge systems geared up to create and innovate in these nine crucial activities.

Knowledge Systems can be utilized for generating maximum possible value in each of these core areas. An onward Value Creation Programme through Creativity and Innovation via organizational Knowledge Management will ensure competitive advantage over rival firms. Such a mechanism will protect the firm from surprises and sudden misfortune.

Endnotes:

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