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Perceived Boundarylessness in Relation to Success Factors: A Descriptive Study of Nine Bangalore Organizations in the IT Sector

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Perceived Boundarylessness in Relation to Success Factors: A Descriptive Study of Nine Bangalore Organizations in the IT Sector

Mary Mathew and Randhir Raghunath Pushpa

The importance of organization boundaries and their nature of permeability is of special concern in a globalized world. The role of systems theorists and that of boundary management intervention theorists show the need to study the peoples sub system more. Managerial perceptions are critical in this context. Sensing and perceiving boundarylessness will lead to a better consciousness of boundary management. This paper describes the way nine HR managers perceive their boundaries in the IT sector of Bangalore. The managers are asked about various types of boundaries namely, vertical, horizontal, external, geographic and psychological boundaries. The boundaries are also understood in terms of success factors namely, innovation, flexibility, speed and integration. Results show variations in managerial perception of organizational boundarylessness in the context of the boundary types. Interestingly innovation remains controversial as none of the Indian managers concur on the influence of boundaries on innovation.

Keywords: *percieved boundarylessness, vertical boundaries, IT sector, Bangalore, human resource*

Introduction

In a world where information technology (IT) is dominating revenues, work patterns, organization designs and performance, the world appears flat to many (Freidman, 2005). The world is also becoming an interdependent community (Stiglitz, 2006). The theory of global market reach arriving at a flat big interdependent family puts the word *boundary*, used as a term in the context of an organization, to be a diffused one. A lot of attention was given

to it in the 1950s under the cover of the term *environment*. Organization boundary management literature can be perceived under two distinct heads, namely the theory of boundary management and the stories about implementation of boundary management solutions. Those attempting to understand the implementation difficulties (Newell et al., 2001) discount the importance of the assumptions of the theory. Those who worked on the theory (Bertalanffy, 1956; Katz and Kahn, 1966; Simon, 1969; Scott, 1961; Ashenkas et

al, 1998) emphasized its importance and nature. Implementation theorists bring in the relevance of boundary management in the context of the technology imperative (Newell et al., 2001). They make a clear and strong case against change interventions high on *only* technology for boundary management. The socio-technical systems philosophy appears to live on and on with a need to understand the people's subsystem in collaboration with the technological, albeit dominant. One way to understand the people's subsystem is through their perceptions. This paper describes perceptions of five HR practitioners in the IT industry. This study is an exploratory one aiming to get a preliminary assessment of how the HR practitioner views the concept of boundaries. It is assumed that the concept of boundaries is not a conscious one. Employees in the organizations are not conscious of discussing it although it plays an overriding role. Hence in this paper we understand if HR professionals understand and relate to various boundaries in their work organization. It is expected that HR professionals interact with employees the most and hence are at the right interface to assess boundary movement.

In their radical departure from the classical organizational theories of closed systems, the popular open systems theorists (Bertalanffy, 1956; Katz and Kahn, 1966; Simon, 1969; Scott, 1961) emphasized the role of the organizational environment in its feedback for performance. Baker (1973) noted that organizations changed in the course of interacting with and adjusting to their environment. Reducing this apparent dependency a bit, Kotter (1979) emphasized that since environmental dependency inhibits the organization's ability to function autonomously, it must manage such dependency to survive as an independent entity. Levine and White (1961) described this management of the environment well. They said "*organizations typically manage*

environmental dependency by establishing and maintaining resource exchanges with other organizations". This provides insight into the relationship between the environment of the organization and environment related competitiveness.

Even as boundaries separate an organization system from its environment, it does the same with its subsystems. Each internal organization subsystem has boundaries for itself. Hence subsystems have their own internal, internal (external to the sub system) organizational environment and external environment. These boundaries delineate individuals, groups and divisions from each other. Compartmentalization happens internally to form internal environments. This may cause the system or sub system to compete or collaborate with its external environment. Hence degrees of differentiation and integration (Lawrence and Lorsch, 1967) essential for organizational efficiency and effectiveness, also occur in boundaries of the various organizational environments.

If managing environments of the organization is critical for performance, then understanding where the environment initiates itself, stops or changes its nature is also critical. Employee perception largely determines these boundaries. These perceptions delineate employee, teams, departments, vendors from each other. These perceptions can therefore influence organizational performance. The demarcation view considers boundary as an invisible wall, which helps to create a distinction between one social entity and the rest, similar to the function performed by national boundaries. Without boundaries, the distinction between a focal organization and its environment would disappear making the organization a flat blob on the environment. According to Yan and Louis (1999) boundaries serve as market places in which transactional activity occurs. The interface and transactional perspectives

focus on the interactive relationships and resource exchanges across systems. These more active and dynamic perspectives are especially useful to intra-organizational systems in which cross-system interdependencies are critical (Ancona, 1990).

The speed and ease with which two-way information flows occur between actors speaks of the degree of permeability that describes the boundary. The crucial role played by boundaries could be understood from Jack Welch's, proposed need to move towards a "boundaryless" organization (Ashkenas et al., 2001). In the 'Letter to Share holders' of General Electric, he outlined the reason for his attempt to become boundaryless. He says, "GE's diversity creates a huge laboratory of innovation and ideas that reside in each of the businesses, and mining them is both our challenge and an awesome opportunity. Boundaryless behavior is what integrates us and turns this opportunity into reality, creating value of a multi-business organization – the big competitive advantage we call integrated diversity" (Falk, 2001). He conceptualized an organizational culture which allowed free flow of knowledge, information, and resources. This culture was developed through workouts where managers from different units of GE came together to share their best practices. GE also has a policy of transferring managers to different units, common to many other organizations today. Managers moved through entirely different business areas on a regular basis also develops a feeling of attachment to the processes of the entire organization. It ensures transfer of learning from different places, applied in varied fields. These are some mechanisms of managing boundaries.

The concept a 'boundaryless' organization effectively covers the philosophy behind organizations having permeable boundaries. The interface and

transactional aspects of boundary characteristics in a 'boundaryless' organization focuses on a transparent, free exchange of ideas and resources across boundaries, as well as collaboration between different actors within and outside the organization. Boundaryless organization focuses on how to get through different boundaries, to move ideas, information, decisions, talent, rewards, and actions where they are most needed rather than using boundaries to separate people, tasks, processes, and places. This objective of the organization is achieved by the presence of permeable boundaries (Ashkenas, 1992). Permeable boundaries allow the free transfer of information, knowledge resources, manpower, giving a sort of fluidity to the structure of the organization (Ashkenas et al., 1992). A boundaryless organization is an organization, whose boundaries are permeable. Ashkenas, et al. (2001) identified four types of boundaries that need to be made permeable by organizations, for transforming them into a 'boundaryless' one. They are horizontal, vertical, external, and geographical boundaries. The variability in influence of the permeability of different boundaries on success factors, namely innovation, speed, flexibility, and integration as identified by Ashkenas et al., (1992) is also addressed.

Most of the concepts proposed over the last decade, like business process reengineering (Hammer and Champy, 1993), virtual organization designs (Markus and Agres, 2000), knowledge management (Holsapple and Joshi, 2001), represent a continued realization that a speedy exchange of knowledge, information and resources within an organization is crucial to manage competition and time to market. Underlying these concepts is the need for having permeable organizational boundaries leading to boundarylessness. Understanding the perceptions managements have with regard to the degree of boundarylessness of

boundaries is hence important. Perceptions can lead to flatter playing fields and better use of globalization's true purpose. When manager's do not even *sense* their boundaries, problems can start. Sensing and perceiving will also lead to better boundary utility and enhance organization performance. Sensing and perceiving permeability will help implement boundary management interventions keeping the peoples sub system in perspective.

Methodology

We are conscious of the fact that organization boundaries exist in an organization. However their existence may or may not be a perceived fact to significant actors of the organization. Significant actors are top management, HR professionals, Business heads and employees in general. However since HR professionals interact directly with employees in the IT industry and are aware of employee behaviour more consciously than other actors, this exploratory study considers only the HR professional. Greater boundary consciousness leads to greater chances of effectively managing their permeability advantages. The nature of the global IT industry makes it a good candidate to study the perceived permeability advantage.

Measurement

Boundary permeability is defined as the degree to which the boundary is open to influences from the environment. It defines the ease with resources, knowledge, information crosses the boundary person to person, verbally, non verbally, formally, unofficially, written or electronically. To assess boundary permeability the perceived boundarylessness of the respective boundaries within an organization must be ascertained. The variety of boundaries types within an organization can have

variations on a boundarylessness estimate. The degree of boundarylessness will also have an influence on success factors such as innovation, flexibility, speed and integration.

Hence in this study the sample is urged to perceive:

- (i) The degree of boundarylessness in different types of boundaries of their organization
- (ii) The degree to which they perceived the boundaries influencing success factors.

Data was collected using a discussion mode. The sample was asked to reflect on a set of questions that guided their thinking on boundarylessness. The questions used to guide the discussion with the sample are provided in Appendix one.

A discussion on boundaries and their definition preceded the formal data collection process. The definitions used are as follows:

Vertical boundaries are formed in an organization as a result of the differences in positional power distribution in an organization. Positional power refers to hierarchical position within an organization. Top-level management, oversee the functioning of the entire organization, subsidiary heads, oversee the goals and manpower below the top management and, this structuring of organization based on positional power ends at the lowest levels of the organization dividing the organization into various subsystems based on overseeing autonomy. The interaction between these subsystems refers to interaction across the various vertical hierarchies and the degree to which data, information and knowledge trickle down from above to lower rungs. This is good vertical boundary permeability.

Horizontal boundaries exist between the different functions/departments/teams of an organization. The different

actors, of a given horizontal boundary belong to the same level in the hierarchy of the organization or vertical boundary. Horizontal differentiation of activities takes place in organizations irrespective of the structure of the organization. Functions, process based structures, cross-functional teams are examples of horizontal grouping of activities. Interaction cross the horizontal level in the same position speaks of good horizontal permeability.

External boundaries are formed between the organization and the different external entities present in its environment. These external entities can be suppliers, customers, subsidiaries, competitors, government, regulators, or any other external organization that can directly or indirectly influence the performance the organization. The degree of interaction between these actors in the external environment and the internal organization speaks of the degree of external boundary permeability in an organization. For this study the external boundaries comprises of actors in the domestic market of the organization.

Geographical boundaries are defined in terms of the ease with which an organization crosses national borders. Global external boundaries or geographic boundaries have similar as actors in the domestic external boundaries however, there are large differences too. Cultural, economic, technology differences make geographic boundaries more difficult to permeate into than the external domestic boundary. The degree of interaction between actors in the global geographic arena and the internal organization (or organization mentioned at hand) speaks of the degree of geographic boundary permeability in an organization. GE is a good example of an organization that has achieved geographic boundary permeability.

Psychological boundaries become relevant to organizations since human beings are involved. These boundaries are

seen from behaviors of people. They are not visible from an organizational chart but exist in the minds of employees. Hirschhorn and Gilmore's definition of this boundary is similar to cultural boundaries defined by some other authors (Brown, 1983). Hence employees can use their mind to create boundaries within an organization that is beyond the ones mentioned above.

The Success Factors Considered in This Study

Innovation as a success factor refers to the introduction of new products or services in the market, improvement in production technique, new management techniques, new sources of supply. Newness was defined in terms of newness to whom as well as how new. Newness to whom defined innovation as any process/product or service new to the organization or market. How new considered innovations that occurred in the past three years.

Flexibility as a success factor refers to the organizations capacity to adjust itself. A flexible organization is defined as one, which adjusts to changes in the market at a faster pace. Flexibility is termed as the organizations response to the uncertainty, especially in the form of fluctuation in demand and market imperfections. Flexible organizations exhibit an ability to change in response to market changes (Carlsson, 1988). Flexibility includes, among other things, building dynamic capabilities, maintaining multiple options, and supporting horizontal communication and teamwork among employees (Englehardt and Simmons, 2002).

Speed as a success factor refers to the response of an organization to changes in the needs of internal and external environments of the organization. These environments include customers, vendors, markets and employees. This response must be faster than that of their competitors. Successful

organizations today are increasingly characterized by speed in everything they do. They respond to customers more quickly, bring new products to market faster, and change strategies more rapidly than ever before.

Integration as a success factor refers to synthesizing expertise towards a goal. In a well-integrated organization multilevel teams tackle key problems using members drawn from different levels and expertise in the hierarchy. For example suppliers and customers come together to tackle key problems. There are shared centres of experience along the organization and its sister concerns (Ashkenas, et al., 1992). An integrated organization brings together competencies lying in different corners of the organizational as well as outside the organization effortlessly and synthesizes them together to bring out better solutions to challenges.

Subsequent to the discussion, the sample were asked to rate the boundaries on their level of permeability within their respective organizations. This was translated into a three-point scale. The ratings used were bounded, moderately bounded and boundaryless. This was done for each of the boundaries. Subsequently, the respondents were also asked to relate each boundary to each success factor. This they did by individually ranking the importance of each boundary on each success factor. Their data was graphically analysed per boundary type. The concordance of ranking test was used to assess for similarity in the views of the Senior HR Managers. Further the influence of each boundary on each success factor is presented.

Sample

A randomly selected sample of 9 IT organizations were used in this study. No biased on the part of the researchers played a role in selection. However in field research

the challenge lies in obtaining data from busy professionals and hence we accepted organizations that cooperated for the study. These were organizations that engaged in software development activity. These organizations had more than one unit outside Bangalore, and had an organizational age of five years or more.

The HR managers were chosen to discuss their organization's boundarylessness with the researchers. Since HR managers are conscious of behavioural patterns and response styles in people based on their organization behaviour training, senior HR Managers of the nine IT organizations participated in this study. Unlike top management who are business focused and deeply concerned with their business units, HR professionals are aware of behavioural patterns, tasks, departments people work for and are also organizational focused. These senior HR professionals were in the age group of 35-45 years and hence experienced in their HR role.

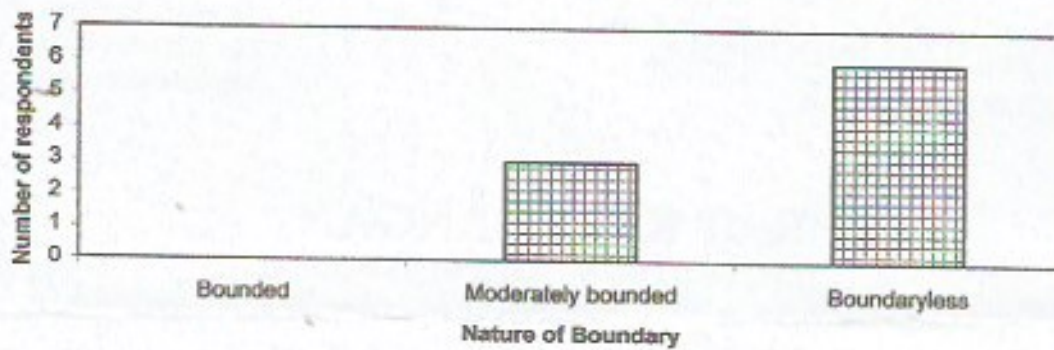
Results

We attempted to illustrate the perception of boundarylessness through the perception of senior HR managers of IT organizations. We noticed variations on perceived organizational boundarylessness. The managers had no problem in understanding the concept of boundaries and could relate their organisations to these boundaries very well. Their perceptions on each boundary will now be discussed.

Degree of 'boundarylessness' of vertical boundaries

Management researchers have long understood importance of boundaryless vertical boundaries. This is the case more with IT organizations, which are new age organizations with structures which

Figure 1. Perceived 'boundarylessness' of vertical boundaries (n=9)



allow for faster communication between the different levels. The application of communication technologies in itself has also resulted in creating permeable vertical boundaries.

Six of the HR managers considered their boundaries to be boundaryless. Figure 1 shows the perceived nature of vertical boundaries across nine managers, who responded to this boundary. None of the managers considered their boundaries to be bounded. This indicates that the managers perceive their vertical boundaries as functional positional demarcations that breathe communication that is two way. This is expected of IT organizations that are flat in structure.

During the discussion based data collection, managers were also asked how a bounded vertical boundary influenced organizational performance. It was understood that organizations with bounded

vertical boundaries were perceived to have high levels of manpower turnover. Bounded vertical boundaries were also considered to result in low satisfaction levels as problems and issues remain where they are and do not go up when seen through the employees' eyes. Some managers felt that an entrepreneurial culture would help in breaking vertical boundaries if they exist. Entrepreneurial cultures provide abundant levels of freedom and empowerment.

Degree of 'boundarylessness' of horizontal boundaries

Management researchers have hinted the need for peer-to-peer communication for a very long time. The entry of Knowledge Management (KM) concepts into the industry accelerated this further. KM is popular in IT organizations for many reasons enhancing horizontal boundary

Figure 2. Perceived 'boundarylessness' of horizontal boundaries (n=9)

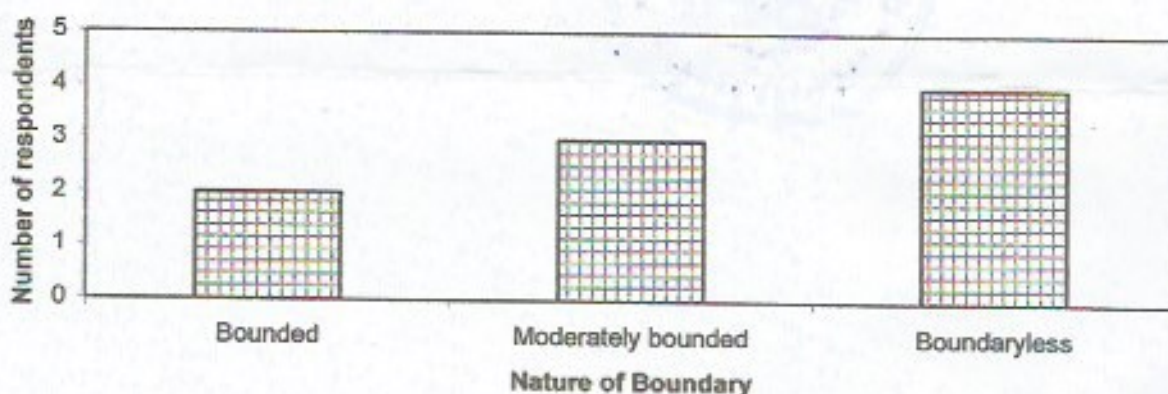
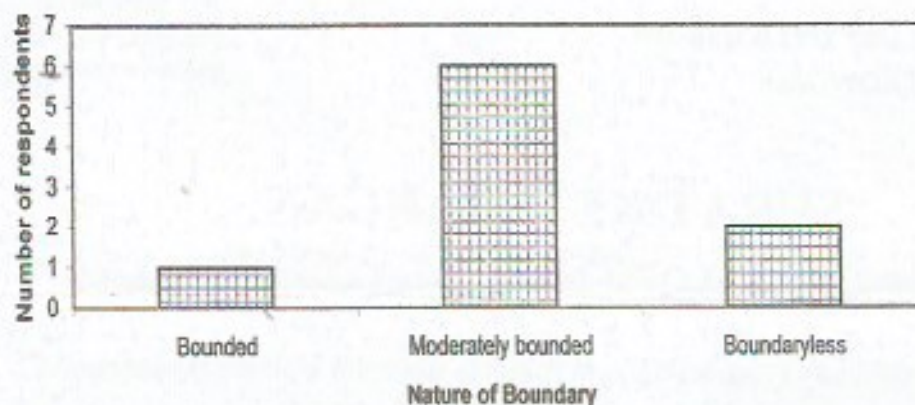


Figure 3. Perceived 'boundarylessness' of external boundaries (n=9)



permeability. Horizontal boundaries were considered to be 'boundaryless' by four of the managers. Three of them considered it as moderately bounded. From Figure 2 we can observe that compared to vertical boundaries, horizontal boundaries were found to have more variance with respect to permeability. Two managers considered their boundaries to be bounded. Even though there is a realisation that the importance of closer coordination, communication, information and resource sharing across departments is needed, some organizations find it difficult to share due to competition between the departments. Greater competition within internal business units will create bounded horizontal boundaries.

During the discussion some managers felt that bounded horizontal boundaries would slow down organizational processing and create blind spots, as a result of which there will be lot of duplication in work, low rate of information sharing, resistance towards internal mobility, high cost of resources, low level utilization of employees, and low employee/customer satisfaction.

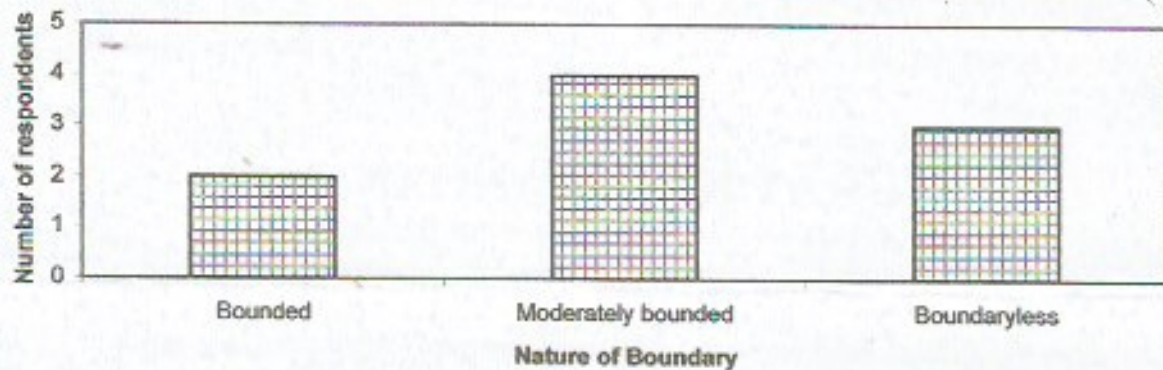
Some managers felt organizational culture was an important factor influencing the permeability of horizontal boundaries. Also interesting were statements from managers relating to where the boundarylessness was more. Some felt horizontal boundaries in the lower rungs of the organization were considered to be

more bounded compared to upper levels or senior management.

Degree of 'boundarylessness' of external boundaries

The variance is apparent and managers are unclear about external boundaries necessarily being boundaryless. The external boundaries appear to be moderately bounded as shown in Figure 3. External boundaries are formed mainly between suppliers and customers. These actors play a strategic role in the competitiveness of the organization. Additionally, competitors play a role in external boundaries. Even though permeability of external boundaries is important, it is also important that organizations safeguard their competitiveness against dilution or being copied. If external boundarylessness with competitors is high then organizations lose information that is critical to their success. On the other hand if it is high amongst customers and vendors it may prove beneficial. Hence we notice this high variance amongst the managers, since the boundary is not clearly defined and external boundaries must not be defined in a generic sense. It is in this context that the value chain boundary (Ashkenas, 1992a,b) is appropriate to use implying the organizational subsystems with the vendors, suppliers, customers and collaborators

Figure 4. Perceived 'boundarylessness' of geographical boundaries (n=9)



rather than external boundary in general.

Degree of 'boundarylessness' of geographical boundaries

Being competitive results in growth. With globalisation and liberalisation as solutions organizations are forced to source their raw materials from different geographical regions and have manufacturing shops in different parts of the world. This they often do to capitalise on low costs of production. This results in the geographical distribution of the organization across different national and international borders. Boundaryless geographical boundaries imply external boundary characteristics in trans-national settings. Free flow of information, resources, skills and solutions across nations for a

given organization requires increased virtual teams, virtual communication languages and ICT network technology systems to enable this.

Even though majority of the managers felt that the geographical boundaries are moderately bounded; Figure 4 shows that there is no clear indication if the boundary is boundaryless or bounded.

Degree of 'boundarylessness' of psychological boundaries

Psychological boundaries are complex and individualistic boundaries, largely reflecting the culture of the organization. From Figure 5 it can be seen that majority of them considered the organizations to be moderately bounded with variance showing indications of both bounded and

Figure 5. Perceived 'boundarylessness' of psychological boundaries (n=9)

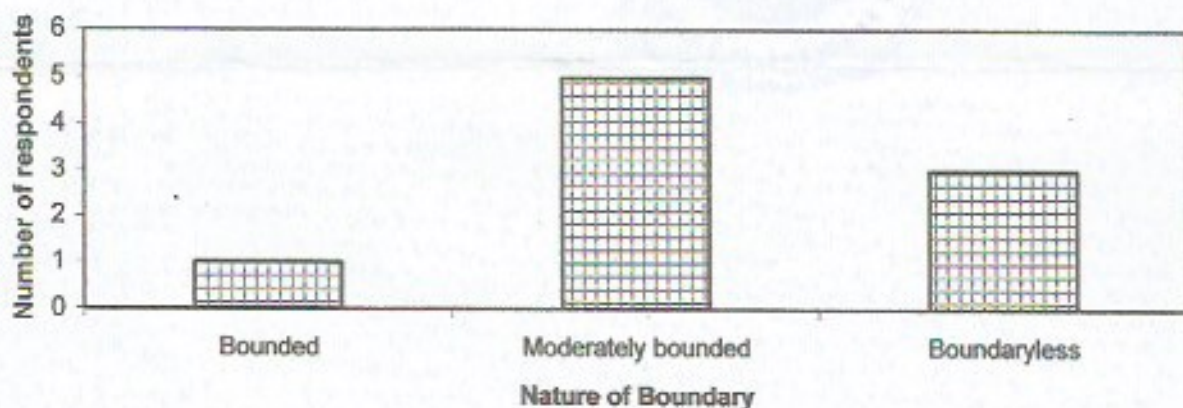


Table 1. Concordance in ranking of Senior HR managers on success factors
(Managers=9, boundaries=5)

	Speed	Flexibility	Integration	Innovation
Kendall's W	0.53*	0.39*	0.31*	0.26
<i>p</i>	0.02	0.03	0.04	0.08

* = $p=0.05$, ** = $p=0.01$

boundaryless psychological boundaries. This is expected as employees will have very unique ways to demarcate boundaries and it will be difficult for HR managers to point their fingers on this type of boundary and classify them generically. This gives interesting insights into the measurement of psychological boundaries.

The managers identified a few reasons which led to the formation of psychological boundaries. Difference in exposure to different types of technologies between employees in onsite and offshore projects were considered to result in the development of psychological boundaries. Additionally, psychological boundaries were also said to develop between employees based on their earlier industrial experience. For e.g. employees coming from manufacturing/production sectors are said to show more bounded behavior in IT sector jobs. Regional and social differences between employees also were considered to lead to the

development of psychological boundaries. Educational qualification was also identified as another important factor influencing the development of psychological boundaries.

Unlike other boundaries, which are formed due to the business rules and regulations of an organization, psychological boundaries are formed as a result of the individual's perception, personality, values, self-concept and attitudes. They can be trained too.

Influence of boundaries on success factors

Even though it was clear that permeability of boundaries influence the organizational performance, the effect of individual boundaries on organizational success factors is not well understood. We now understand the influence of individual boundaries on the success factors identified

Figure 7. Perceived Influence of different boundaries on speediness of an organization (n=9)

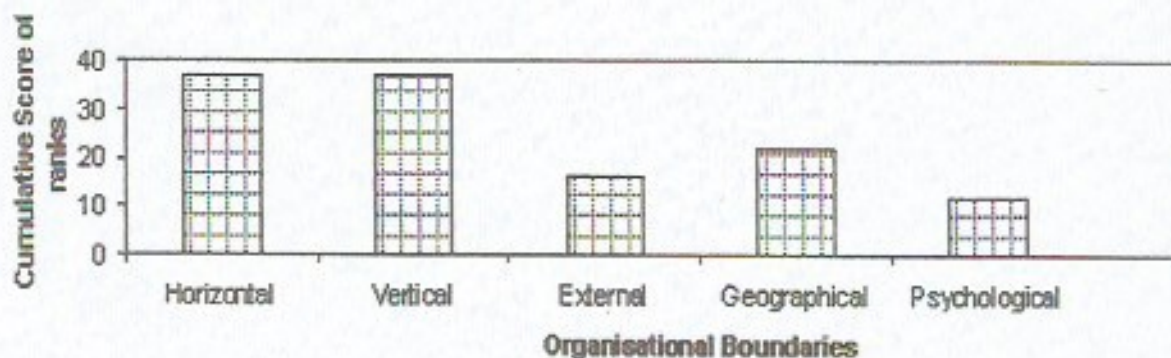
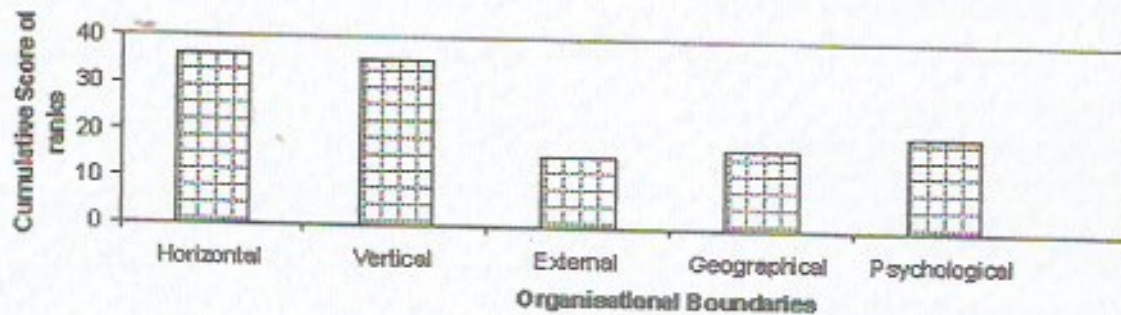


Figure 8. Perceived Influence of different boundaries on flexibility of an organization (n=9)



by Ashkenas et al., (1992).

The managers ranked the success factors on the boundaries. The responses are statistically tested to understand whether the ranks given by the managers were correlated or not. To test this, Kendall's Coefficient of Concordance test was done. Kendall's Coefficient of Concordance test is an important non-parametric measure of relationship. It is used for determining the degree of association among several sets of ranking of N objects or individuals. The basis of Kendall's Coefficient of Concordance test is to imagine how the given data would look if there were no agreement amongst the several set of rankings.

From Kendall's Coefficient of Concordance test, it was found that there was concordance between respondents on their rankings with respect to speed,

flexibility, and integration. No concordance was found between respondents for their ranking given to innovation.

Boundaries that affect speed

With the changing market scenario, speed has become inevitable for organizations. Organizations try their best to bring out products at a faster pace, adopt new technologies at a faster pace, and transform information amongst partners at a faster pace (Vinton, 1992).

The comparative ranking of the managers showed the importance of horizontal and vertical boundaries in increasing the speed of an organization. From the cumulative scores as given in Figure 7, it can be seen that the speed of an organization is influenced by the permeability of the horizontal and

Figure 9. Perceived Influence of different boundaries on integration of an organization (n=9)

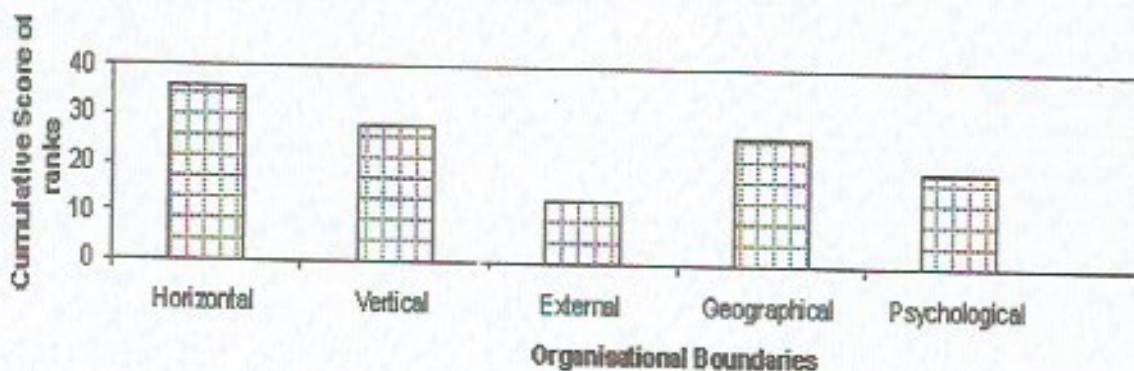
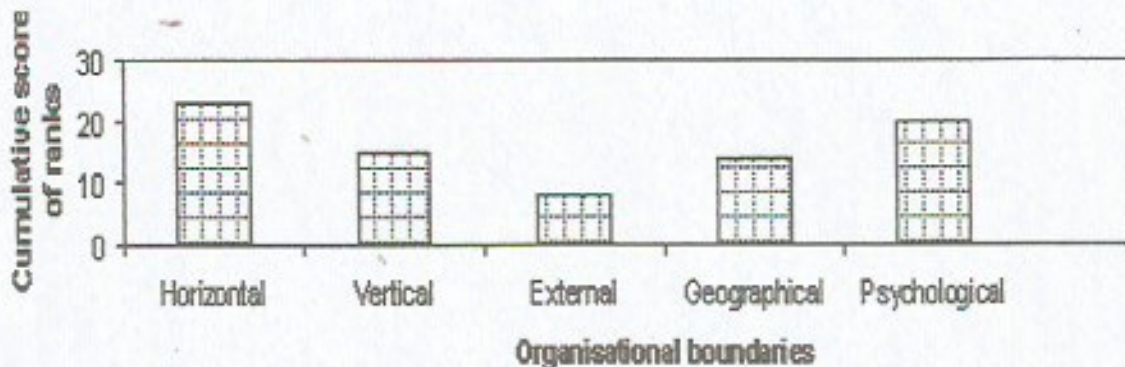


Figure 10. Perceived Influence of different boundaries on innovation of an organization (n=9)



vertical boundaries. The vertical boundaries were considered as having more influence compared to horizontal boundaries.

Boundaries that affect flexibility

In flexible organizations resources quickly, frequently and effortlessly shift between centers of expertise and operating units (Ashkenas et. al. 1992). Flexible organizations develop new strategies and adapt to new market realities and then shift all aspects of the organization so that they are congruent with the new strategies (Overholt, 1997).

From Figure 8 it could be seen that respondents considered the horizontal and vertical boundaries influencing the flexibility of the organization compared to all the other boundaries.

Boundaries that affect integration

In integrated environments employees from different departments come together as and when required. The level of coordination must be high. From the Figure 9 it can be understood that horizontal boundary plays an important role in the organization with regards integration. Geographical boundary, vertical boundary and psychological boundary also played

significant roles in the integration of the organization, but not as much.

Boundaries that affect innovation

There was no concordance in the rankings given by the different respondents on the influence of boundaries on innovation. Hence it could be inferred that boundaries influenced innovation. Figure 10 shows horizontal boundaries to be having more influence on innovation compared to other boundaries. Psychological boundaries were also found to influence innovation. But since the concordance test failed, it can be said that boundaries affecting innovation vary from organization to organization. Innovation is largely influenced by internal, external and geographic boundaries of the organization. The level of technology in the organization, the R&D intensity, the freedom to innovate and own will determines innovation more. This requires further research.

Conclusion

Boundaries delineate an organization from its environment to give a separate identity in the external environment, controlling the flow of inputs and. Boundaries internally divide the organization

based on positional level to form top level and middle level and lower management as well as form different groups, teams and departments to ensure the smooth functioning of the organization. In today's global world geographic boundaries are also critical to manage. Even though boundaries in organizations play an important role in giving it a shape, structure and identity, inefficient boundary management will block the flow of vital inputs like information, knowledge resources as well as block collaboration across internal groups. The present work attempted to understand the nature of boundaries in IT organizations as well as the influence they have on speed, integration, flexibility and innovation in an organization. It was found that managers relate to various organizational boundaries and are able to guesstimate their degree of boundarylessness. The HR managers found vertical boundaries comparatively more boundaryless in comparison to other boundaries in the IT organizations. Horizontal boundary and vertical boundary were considered to influence speed, flexibility, and integration of an organization. Other boundaries like external, geographic and psychological boundaries have higher variances when the degree of boundarylessness is estimated. Interestingly, innovation lacked concurrence. This may be because the perception of innovation does vary across Indian IT companies. Studies have shown that the definition of innovation itself (Goswami and Mathew, 2005) varies in IT organizations. An organization with permeable vertical and horizontal boundary would lie closer to and/or beyond the organic structure popularized by Burns and Stalker as early as 1961. Redesigned structures

today are networked modular organic structures that are geographically and spatially differentiated, today often referred to as the virtual organization. Implementing permeable boundaries in such organization designs, needs high external, geographic and psychological boundarylessness too.

This is achieved through IT support systems. However as Newell et al. (2001) have found such a situation must address the peoples sub system also if the technology support system must be successful. The failure of which makes the boundarylessness concept a myth. Vertical and horizontal boundaries, which form the internal boundaries along with the psychological boundaries needs to be given more importance to create a culture of 'boundarylessness'. By way of caution in ending this paper it is important to say that strategic information needs special mention. Information related to R&D, competitive edge organizational processes and strategy requires a complex model of boundarylessness. In such situations information non-disclosure will be the rule. Again this refers back to Johari Window, (Luft, 1961) and the release of information relevant to performance into the arena.

The present study used a small size. A larger sample size in the context of organizational functions, domains of business, competitive environments and multi-actor rankings will further help strengthen the score on organizational boundary permeability. This exploratory study is a precursor to a larger causal study. Empirical research that assesses boundaries is lacking and hence this study is a preliminary one but it sets directions for large causal studies.

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Appendix

Please identify the nature of various boundaries in your organization?

Do you feel that boundarylessness of an organization helps it in being more flexible, integrated and enabling it to react with greater speed?

Rank the boundaries on the importance of their influence on flexibility, integration, speed of reaction and innovation of the organization?

In what all ways does the 'boundedness' of the different boundaries affect the functioning of the organization?