Reflections on the Adoption of Learning Organization Principles – The Makino Experience

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ABSTRACT: *Businesses are faced with turbulent, ever-changing environments and are faced with the need to find ways of coping with such changes. One concept that has recently emerged as a way of dealing with them is the learning organization. The objective of this paper is to examine the processes and structures of the learning organization in an industrial environment. Using a case study of a Japanese firm based in Singapore that designs and manufactures machine tools, it discusses the reflections of the leadership in implementing learning organization (LO) principles. The case is framed within the context of the interplay between individual, team and organizational learning. It demonstrates that the learning organization model can be used in planning processes, leveraging the organization's knowledge towards business advantage.*

I. INTRODUCTION

Businesses are struggling to build and maintain sustainable competitive advantage in today's global marketplace. They are confronted with increasing environmental turbulence. Global competition, frequent changes in competitive dynamics, and simply accelerating change, all contribute to this turbulence. The advent of advanced technologies, shortened product lifecycles, political and social pressures hasten the need to respond to challenges. Organizations have to anticipate changes and respond rapidly and decisively if they are going to succeed and survive over the long term. They need to learn from their experiences and learn how to respond to change. If they do not learn to respond effectively to environmental shifts, they run the risk of losing their market and ultimately their existence. The question is how to build organizations in which continuous learning can occur. Can the leaders of an organization promote continuous learning as a planning approach?

The current business environment is characterised by a change from a world of predictable, incremental and linear change to that of radical and discontinuous change (Bolman & Deal 1997).

Managing cost, globalization and a talent management emphasis are changing the learning organization. To put in perspective, today's industry leaders propel their organization to achieving business excellence through Balance Score Card (BSC), Six-Sigma, Business Continuity Management (BCM), Organizational Development & Change Management, Quality framework, and targeted sectorial certification. While learning organizations continue to struggle with business excellence priorities have somewhat shifted to e-Learning. Talent management, Big Data, analytics are promising solutions in high-performance learning organization but the importance of learning culture in organization holds preeminence.

Szabo (2010) also echoes that change can be both continuous and incremental too. Nonetheless, there is increasing realization that sustainable organizational competence depends upon the organization's capacity for creating new knowledge through an ongoing and continuous process of learning. All the more, the imperative reason for this is to keep the organization vital by having it learn how to better serve its markets and the customers that constitute those markets.

Senge (1990) points out that it is not just organizational change that needs attention but how we think and how we interact. Only by changing the way we think can we really have shared visions, shared understandings within the organization which are fundamental ingredients for the organization to succeed. This inevitably involves the ability to coordinate an action plan that is understood and agreeable by all members within the organization. Senge (1990, p.238) says learning is the key. It is not just talking about change but its implementation, execution and the ability to learn.

Champy (1997, p.10) points out that learning leads to change. He suggests that as learning occurs processes will be redesigned, new opportunities and new strategies will emerge,

organizational structures and relationships will shift both inside and outside the company. He suggests further that new information technology infrastructures will be required, the work of managers will change, and that we will require new behaviours from our people. Many will find it hard to disagree with him when he describes organizational change today as a "journey" (Champy 1997, p.9). Garratt is another who suggests that to ensure corporate survival, the organizational rate of learning has to be equal to, or greater than, the rate of change in our external environment (Garratt 2000, p.3). Otherwise, it would be difficult to confront environmental turbulence. In the management of organizational change and organizational learning, Bawden and Zuber-Skerrit (1991) argue that managers have to provide strategic vision, set clear goalposts for employees and provide an environment such that each person in the organization sees themselves as self- initiating managers of change. Hence, to achieve continuous change and continuous improvement, continuous learning in the organization has to occur (Bawden and Zuber-Skerrit 1991, Pedler et al 1991, Schwandt 1995, Thompson 1995).

Learning becomes a key to survival and success with the challenges presented in such an ever-changing environment.

Amidst all this, the notion of the learning organization has emerged to offer promise as a way for organizations to cope with change and cope in a positive way that allows the organization to identify and set np its competitive advantage. With globalization and intensified competition, every organization must find new ways to gain competitive advantage (Pedler et al 1991, Senge and Sternman 1992, Brewer 1995, Gephart et al 1996). A number of organizational leaders recognise that a critical success factor can be a need to create a learning organization culture, particularly in the way we conduct our business (Malhotra 1998, Fulmer et al 1998).

To many, this concept is neither new nor revolutionary. However, it presents a reality that many have known: that an organization committed to learning has the capacity for adjustment and adaptation when there is a change in the environment. Learning supports the capabilities of an organization to achieve certain results they really want to be able to achieve, in light of change, and to enhance those capabilities over time (Jantsch and Waddington 1976, Pankow 1976, Bass 1990). However, while many might intuitively understand that, it would appear that few truly believe in the ability to realise it.

In reality, the learning and change process is often complex and is continuously evolving (Senge 1990, p.364). The successful creation of a learning culture may bring about great satisfaction but may become a source of anguish and tension when it fails. The challenge for management is to be aware of the interaction of culture and learning, and to ascertain the elements of the culture within the workforce that would enhance learning.

Bolman and Deal argue that "an environment filled with complexity, surprise, deception and ambiguity makes it easier to go crazy than to learn. Yet, an increasingly turbulent, rapidly changing environment requires contemporary organizations to learn better and faster just to survive" (Bolman and Deal 1997, p.24). Some writers have suggested that the key to developing this culture of learning seems to rest with the leaders in the organization. The prerequisite to change entails clear directions from leaders, ability and willingness of individuals or groups, and effective communication (Senge 1990, Clemson 1991). Senge reminds us that leaders have to play an active role in actually implementing the change and not just identifying them (Senge 1990).

The phenomenon of leadership essentially deals with how people in the organization collectively shape new realities, how various people in the organization influence each other through social interactions and their awareness and participation (Nonaka 1991, Webster 1992). The particular focus of this study is on the roles and functions of leaders in building organizations more capable of continual learning. It investigates how the notion of the learning organization contributes to strategic planning using the example of a leadership team in a precision engineering firm. It is an exploration of the experiences of a senior management group in deciding to adopt the principles of the learning organization to their business environment. It focuses around four questions:
- what are the key components emphasized operationally in seeking to apply learning organization principles?
- how are those principles reflected in planning?
- is it a dynamic process?
- what is the role of leadership?

II. ORGANIZATIONAL LEARNING IN THE LITERATURE

Organizational learning has received increasing attention in the literature as an area of growing importance. Organizational learning is also about people matter and investing in people (attributed to Jack Welch, cited in Crainer, 2007).

And this growth in interest has been especially prevalent over the last decade (Liu et al 1990, Ventriss 1990, Field and Ford 1995, Karpin 1995, Chawla and Renesch 1995, French and Bazalgette 1996, Gephart et al 1996; Crainer, 2007). One of the most prominent writers has been Peter Senge (1990, 1992, 1996) and it is worth highlighting his picture of the learning organizations as a "stage-setter" to identifying main themes in the literature.

In Senge's vision, the basic meaning of a learning organization is where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together (Senge 1990, p.3). He views organizational learning as the key to long term organizational survival (Senge 1990 p.14).

Sentiments such as these were contained in the earlier work of Argyris and Schon (1978). They argued that radical learning is the only way an organization can create new knowledge and thence anticipate, rather than respond to, fundamental and quantum change in its environment. Radical learning changes the organization's core values and beliefs, to bring about a fundamental change in its corporate vision in response to environmental changes.

Indeed with the continued pace of change and increasingly complex turbulent environments, the shift in focus acknowledging the need for on-going change is evident has been well recognised in the literature (e.g. Hamel 1988, Liu 1990, Ulrich 1991, Pedler et al 1991, Schwandt 1995, Thompson 1995). This literature suggests it is not just incremental adjustments but an ability to develop organizational capabilities and competencies which allow for continuous transformational change.

Senge also argues that the central theme of the learning organization is one of relationships (Senge 1990, p.xiv). It is the relationships that are the driving force to move the organization to a higher level of understanding and bring the application of knowledge to achieve organizational goals. Alongside of this, another key component is the sincerity or openness of the organization to external "learning partners" vis-a- vis customers, distributors and suppliers (Senge 1990, p.xiv). The development of long-term relationships (Glazer 1991, Miles & Snow 1992, Mohr & Spekrnan 1994) with "learning partners" leads to information sharing that benefits both partners. This contributes to a learning community which develops the core competencies of individuals whereby they have the capacity to build learning relationships with others and ultimately

help change a company into a learning organization.

Organizations too may become extinct if little attention is paid to rapidly changing consumer behaviour. Many organizations are not doing well today because they do not change quickly enough to respond to their rapidly changing markets. This may stern from fundamental flaws in design and management, deficiencies in the way people in those organizations think and interact. Senge terms this as an "organizational learning disability" (Senge 1990, p.17) and advocates the process of higher-order of generative learning (p.142.). This notion emphasises continuous experimentation and feedback in an ongoing examination of the way organizations go about defining and solving problems. The critical challenge for any enterprise then is to create a combination of culture and climate that maximises organizational learning. This requires leadership.

Senge (1990) argues that the leader's role in the learning organization is that of a designer, teacher, and steward, who can build shared vision and challenge prevailing mental models. Leadership is responsible for building organizations where people are continually expanding their capabilities to shape their future; leadership is responsible for learning (p.340). This then leads to the area of planning as it is often through the planning process that leadership is most apparent.

III. THE PLANNING DIMENSION

A special edition of Business Week (1992) emphasised that change can no longer be an occasional episode in the life of a corporation. It was suggested that companies with tight inflexible structures are likely to be swept away. Corporate cultures that can adapt will survive and thrive. Flexibility as well as the related constructs of speed, adaptability, and change, has been lauded as an essential tenet of the "paradigm for the postmodern manager" (Byrne 1992, p.62). For companies to achieve positive results, change and flexibility require prior strategic planning.

The literature is flooded with the apparent advantages of planning, namely, its ability to improve the fit between the organization and its external environment (Godiwalla et al 1981). Writers argue that planning aids the identification of future marketing threats and opportunities, helps forward thinking and encourages a favourable attitude to change. It evokes an objective view of managerial problems and brings into being a framework for internal communication (Wilson 1979). Moreover, there are intrinsic benefits that

increase as a result of the planning process, including the emphatic effects of planning on local employment and the economy (Greenley 1986).

Steiner (1979) provides a comprehensive conceptualization of strategic plam1ing. Planning is an attitude and a process concerned with the future consequences of current decisions. Formal strategic planning weaves short, intermediate and long-term plans into cohesion. However, strategic planning does not necessarily attempt to make future decisions or forecast future events.

The strategic planning process often is seen as the product of the best minds inside and outside the corporation. The process considers future implications of current decisions by revising plans to the emerging business environment and developing pragmatic management systems to manage complex enterprise (Roach and Allen 1983). Cartwright (1987) however suggests that effective planning is not as rational and analytical as it has been portrayed in the literature. He argues for the lost art [rather than science] of planning. He contends that planning is both a generic activity whose success determinants are partially independent of the area in which it is applied and reside in an area where judgement, intuition and creativity are still important.

In summary, these writers suggest that strategic planning can improve an organization's capacity to develop by inducing healthy changes within a company. But regardless of the potential benefits or success that strategic planning may bring, there is no assurance that success can be maintained. Planning must be evaluated in order to assess its effectiveness and efficiency in a continuous manner.

IV. LEARNING AS A DYNAMIC PROCESS

The model of the learning organization reflects more than just a new, complex structural framework and a more disciplined management approach. In this environment of control and coordination, and of proliferation in plans and policies, a new and different relationship develops between companies and their employees (Ghoshal & Bartlett 1998). Huber (1991) considers four constructs as integrally linked to organizational learning: knowledge acquisition, information distribution, information interpretation, and organizational memory. Senge (1990) suggests that the learning organization be such that you cannot *not* learn because learning is so insinuated into the fabric of life. Moreover, he also defines the learning organization as "a group of people who continually expand their capacity to create the

results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p.3).

In a rapidly changing environment, companies have to be capable of discerning environmental shifts and swiftly realigning their strategies and internal capabilities consistent with the environmental changes (Veliyath and Shortell 1993, Day 1994a, Fishman 1996). This requires companies to continually learn to re-interpret and respond effectively to shifts in the marketplace. Hence, to succeed in shaping an organization's future, it must develop its capability to learn well, efficiently and constantly (Senge 1990, Clemson 1991, Fishman 1996). Such learning is critical, because competing in today's rapidly changing environment means that companies must be able to track the environment in which it is competing, have the ability to identify changes and adjust quickly to these changes (Veliyath and Shortell 1993, Day 1994a). Management must attempt new ways of doing things and subsequently identify the best and most appropriate way of achieving its goals and objectives. The emphasis on learning offers the potential.

Learning occurs when error detection and correction lead to changes in organizational strategies, and assumptions within a constant framework of the norms established for optimal performance (Bateson 1992). When there is a fundamental shift in the organization's competitive environment, learning takes place to rectify the process by which decisions are made. Argyris and Schon (1978) label this as double loop learning emphasising continuous experimentation and feedback. There has to be a paradigm shift of thinking in order to build a new cycle of learning and foster flexibility. This paradigm shift invites managers to explore their models, their values, beliefs and experiences, and see how they use their mental models to make assumptions and then react to the situation, as they have perceived it. This challenges managers to let go of their old model of the world and to become flexible and accepting of the reality of change (Senge 1990, p.xv).

Hence, to maintain adaptability, companies need to develop themselves as experimenting or self-designing organizations. This is a dynamic process, continuous learning alongside constant change. As Kingsley (2000) points out, the dynamic between learning and change may well relate to survival, a competitive edge and power for the company.

V. THE ROLE OF LEADERSHIP

What then is the role of the leader? Senge (1990) remarks that the leader's role in the learning organization is that of a designer, teacher, and steward who can frame the purpose for existence, build shared vision and lead by example (p.340). The leader is responsible for building organizations where people are continually expanding their capabilities to shape their future; leaders are responsible for learning (Senge, p.340).

Bennis and Nanus (1985) argue that corporate vision is vitally important in choosing a direction, a leader must have developed a mental image of a possible and desirable future state of the organization. Whether this vision, be it as vague as a dream or as precise as a goal or mission statement, the critical point is that a vision articulates a view of a realistic, credible, attractive future for the organization, a condition that is better in some important ways than what now exists (Bennis and Nanus, p.89).

Tichy and Cohen (1997) argue that leadership is not about an all-knowing individual but a quality that can be developed in everyone. Maxwell (1993) talks about investing in and developing people. Leadership is influencing people (Low, 2013) and it is the capacity to get things done through others by changing people's mindsets and energizing them to action (Tichy and Cohen, p.44). Hickman (1998) argues that leadership and followership in organizations are predicated less on positional authority and more on interdependent work relationships centred on common purposes. He distinguishes between leader, the formal position of authority, and leadership, the process of engaging participants in the adaptive work of identifying, developing and employing organizational values and ethics (Hickman, p.xiii).

According to Bass (1998), "leadership is charismatic such that the followers seek to identify with the leaders and emulate them. This leadership inspires the follower with challenge and persuasion providing meaning and understanding. It is intellectually stimulating, expanding the followers use of their abilities. It is individually considerate, providing the follower with support, mentoring and coaching" (Bass, p.5).

Leadership and management have major roles in encouraging and facilitating the learning process, as much responsible for catalysing learning as for improved organizational performance (Prokesch 1997). The competitive organization of the future is likely to focus on the development of the learning organization rather than upon structure, forms and rules (Bolman and Deal 1997, p.24). Leadership is likely to be an important theme in turning the idea of the learning organization into a reality of organizations operating this way.

Overall then, the literature reveals several themes critical to the idea of the learning organization, namely, the place of planning, learning as a dynamic process and the role of leadership. This paper sets out to explore how these themes might be operationalised.

VI. METHODOLOGY

This study explores how the notion of the learning organization might be adopted. It is a case study of one Singaporean firm, Makino Asia Pte Ltd. It examines the preliminary indications of an actual workplace setting in which new perceptions of skill formation were emerging and which gave indications of directions for new ways of thinking about management. That this was happening provided an opportunity to engage in a descriptive – exploratory study of the change process. The researcher was one of the participants and had access to information and observation of the process.

The learning organization concept was discussed with the senior management team in early January 2000. The focus was on the overall scope of the organization's experience as it addressed the adoption of the concept. The researcher was a participant in this management team and as such was both a participant observer, and then later, a research interviewer. The scope of the research project was agreed by Makino Asia's senior executives to cover the meaning of a learning organization in practice and try to clarify:

- core skills that were actually used in the leadership of change in the workplace;
- how these skills were identified and enhanced as the organization introduced the "learning organization" concept; and
- the implications for senior management.

The key methods for conducting the research were observations, discussions, records of meetings, and a structured set of questions for interviews. At the end of the 3- month period, each of the team members was interviewed about the experience.

Observations and interviews were the central means of obtaining data and were supplemented by company documents and literature. The discussions ranged from informal discussions with people from shop-floor to formal committee meetings. The observations took place

over a 3-month period from January to April 2000. Clearly there are difficulties in trying to generalise from such a set of observations. Nevertheless, through exposing observations to discussion through the process and then supplementing them with a set of a more systematic, structured interviews with the executives involved, it was hoped to validate the perceptions of what had occurred. An interview schedule of questions was prepared.

The nine question areas in the interview schedule covered ideas associated with the learning organization, based upon the principles enunciated by Argyris and Schon (1978) and Senge (1990).

Members of the senior management group addressing the learning organization as part of the strategic planning exercise were:
1) Managing Director,
2) Deputy Managing Director,
3) Finance and Marketing Director,
4) General Manager - Business Development,
5) General Manager - Sales,
6) General Manager - Customer Service,
7) Senior Manager -Manufacturing Systems,
8) Senior Manager –Manufacturing Assembly.

The eight senior executives together had over 120 years of machine tool experience with rich international exposure. Towards the end of the process, each executive was interviewed. Each interview lasted approximately an hour. These interviews were completed during the third week of April, 2000. The interviews were open-ended, but the structured schedule was used to provide a common denominator without excessively restricting the parameters of the interviews and the information that might arise. A copy of the interview schedule is in Appendix 1.

Makino Asia

It is useful to briefly describe the company and its history. This description is divided into a picture of its history, the Company's field of technology development, its own business management and development, and then the future direction it had planned and set out at the beginning of 2000.

Company History

First founded as a manufacturing base to support its parent company, Makino Asia is now the largest machine tool builder in Singapore. As the lead player in the machine tool industry, in

1997 it generated an annual sale of S$85.8 million, making it one of the top 1,000 largest companies in Singapore.

In 1973, Makino Asia was established as LeBlond Machine Tool Co., in the production of lathes. Two years after starting its operation in Singapore, it constructed its first foundry to support its manufacturing activities. Following a joint venture between Makino Milling Machine Co. Ltd. Japan (which was ranked the 15th largest firm in the global machine tool industry) and LeBlond in 1981, the company was renamed LeBlond Makino Asia.

In 1987, the company was bought from its US counterpart to join the Makino Group, and was subsequently named Makino Asia. The Company proceeded to establish its first part production facility in Bangalore, India in 1995 and subsequently in Indonesia later in the year. As business in Makino India continued to expand, the manufacturing facility was moved to the International Technology Park (in India) in 1998, in which a full Technical Centre facility was also added. In 1999, two more branch offices were added in Asia, one in the Philippines and the other in Shanghai. Meanwhile, an expansion plan in Singapore is also underway, with the upgrading of its manufacturing facility and construction of new turnkey run-off area.

Makino Asia's business operation is classified into six business units, namely Customer Application, Customer Service, Finance and Administration, Manufacturing, Sales and marketing and, Pacific Precision Casting. Customer Applications comprise three business groups: part production, die/mould, and aerospace. Part production solutions, which in turn are subdivided into part production turnkey or services, include vehicle components manufacturing, tractors transmission and housings and, engine block and head manufacturing. Die and mould technology transfer activities include application engineering test cuts, process and tool research and development, technical seminars, CNC operation and programming and application audit. The third business group of the aerospace segment comprises two core areas, structural aircraft component machining and engine component machining. Having been traditionally engaged in the die/mould business, Makino Asia is now moving into new businesses in part production and aerospace.

Technology Development

Makino has consistently been a leading builder of machine tools ever since they developed Japan's first numerical control (NC) milling

machine. Its accomplishment includes the development of world-class machining centres, NC electrical discharge machines (EDM), flexible manufacturing systems (FMS) and Makino's unique FF (flush fine) machining and GI (geometric intelligence) control technologies. Makino's major product lines today include systems engineering services, involving the application of machining technology. The company is also expanding its manufacturing systems for volume production parts.

Business Management

Though wholly owned by its Japanese parent, Makino Asia is fully managed by local managers who are granted autonomy in the day-to-day running of the business. Deviating from the conventional Japanese management style of tight control, business decisions have been left largely to the local management team overseeing Makino Asia. The freedom that the company enjoys is attributed to Makino founder Mr. Tsunezo Makino's "outward looking" attitude which encourages an independence in management approach among the Group's overseas offices.

From the early 1980s, Makino Asia has been undertaking the company's marketing function, which is identified as an essential driver of the company's various business activities. In preparation for developing and upgrading machining centres for the Asia market, the company is keen to continue cooperation with Makino Japan in development work. Through these joint efforts, the company is able to expand its product line, gradually enlarging its presence in the region, either with direct offices or through distributors.

In outsourcing all its turnkey areas, Makino Asia has established a global network of suppliers. This wide network has not only served the company but has also been an open door for Makino Japan in its procurement in Asia. In 1998, the Research and Development (R&D) department was launched in the Singapore office. This was in line with the company's objective to make Singapore the base of design and development of its products. Currently, Makino machine tools in the Asian market are supplied by Makino Asia and its headquarters in Japan. Being the first to manufacture computer numeric control (CNC) machining centres in Singapore, Makino has since designed and developed several CNC machine tool models. Among its top selling product lines are vertical machining centre FX650 and MAX65, both of which were developed since the early 1990s.

The Company has a clear goal for its future, to achieve Manufacturing Headquarters Status (MHQ) for its operation in Singapore. MHQ status is awarded by the Economic Development Board of Singapore to companies with established core manufacturing, product and technology capabilities in Singapore. As it moves towards full independence in marketing, manufacturing and R&D, plans for the company to apply for public listing are in the pipeline.

Business Development

With a business focus on tooling, the key industries targeted for its sales are the semi-conductor and automotive industries. Makino Asia's early entrance into the electronics industry enabled it to expand its market base in South East Asia where few machine tools ventures existed. At a time when the industry is moving away from electric to electronics, the company's availability to serve the growing needs has proven to be rewarding.

Makino Asia's efforts in developing a clear strategy began in the early 1980s. The company's initial attempt to build up its image was through the sales of its machines to technical schools arid universities in Singapore at discounted prices and at the same time provide extended after sales service. But, customers in the Asian market were still inclined toward US or Europe-made machine tools. To overcome the brand image barrier, the management saw the need to move to change the mindset of its customers. Consequently, it sought to review its position and pursue strategic planning around new directions.

Future Direction

At the beginning of 2000, the Company had identified that the challenge lay in the development of the operating systems rather than the machine tool itself. Consequently, its objective was to improve the software, deploying more soft skill rather than hard skill. Given the essential need for a skilled workforce, the company would continue to invest in its human resources, training them to be knowledge workers to help the company stay competitive. The ability of its members at all levels to think together, with important stakeholders, about the kinds of futures that they desire to co-create was seen to hold the key to operations in the 21st century.

The Company felt that in the future, knowledge businesses such as design and engineering services, computer software design, management consulting, and the like, not only would rely upon the process of innovation but also

require a continuous cycle that created more dynamic markets for goods and services. Knowledge-based firms would not only have to quickly respond to customers needs, but also actively shape their expectations for future products and services.

While it is difficult to transplant skill in the machine tool business, the significant challenge faced by the Company would be to develop skill and knowledge under the constraint of a short product life cycle. With increasing need for precision in the aerospace business, Makino Asia recognised the importance to develop new process technology. The leaders agreed with the many scholars who were expressing the sentiment that the ability to learn faster than their competitors might be the only sustainable source of competitive advantage (DeGeus 1988, Nonaka 1991, Dickson 1992, Day 1994b).

This then is the study of Makino Asia. It is a study of one experience where an organization has taken up the challenge to confront the changes impacting upon it, and choosing to pursue a plan of becoming a learning organization.

VII.   RESULTS AND DISCUSSION

In pursuing the plan to become a learning organization, Makino's senior executives became aware of a number of issues emerging from the processes put into train and began to see a number of specific learning outcomes. There seemed to be an endorsement that when an individual learns, the organization learns. But when participants started to elaborate on the issue of implementing the learning organization concept, a more complex pattern was revealed.

During the period of observations and in the interviews, there was abundant reference to rapid change and the need for learning and reflection. Operating managers were given freedom to carry out the intentions behind the concept and the idea in a way that was suitable to their specific conditions. This meant that top management had to depend upon the ability and willingness at middle levels to implement learning organization principles. So it was important to ensure that the notion was diffused throughout the Company. Executive members were acutely aware of this:

"The learning organization notion could make an effective contribution to strategic planning, and indeed, it could provide a strategic competitive advantage" (interview 11.4.00).

Consequently, the analysis of the observations and date from the interviews revealed

a number of specific learning outcomes which were possible recommendations for Makino Asia to adopt the "learning culture". These can be usefully discussed as follows:

- Key components of the]earning organization
  - *mental attitude*
  - *potential for change*
  - *managing the culture of learning*

- The planning dimension
  - *strategy orientation*
  - *information system as a tool*
- Learning as a dynamic process
  - *continuous upgrading*

- The role of leadership
  - *involved leadership*
  - *climate of openness*
  - *commitment to change*

VIII.   KEY COMPONENTS OF THE LEARNING ORGANIZATION

Mental Attitude

The interview data suggested that individuals' attitudes depended a lot on personal experiences. Some saw learning as a "painful" experience and were unable to see learning as a creative enjoyable process. Others, apparently the new breed of workers with higher educational qualification, perceived learning as enjoyable, enriching and challenging (interview 11.4.00).

To alleviate this potential problem of cultural difference, section managers held weekly dialogue sessions with staff, discussing the need to move ahead and improve knowledge and skill. In addition, the management promoted the learning of soft skills where employees had the opportunity to attend "bootcamps" as part of experiential learning on a company-wide basis. "Bootcamps" were residential workshops where trainees learned how to work hand in hand, trust each other, and achieve greater team spirit with the help of experienced facilitators.

Having people talking about business issues had led Makino's leadership to believe that existing business practices would not allow the company to be successful in the future. From the interviews, it was clear that the management recognized that without innovative products and services, it would not have the cutting edge over the competition. Senior management had to shape the business' overall capacity for innovation and its ability to successfully launch new products in the marketplace. Part of this meant re-evaluating one's own position. As Pedler pointed out, a key part of learning was to know oneself, and gain knowledge

about what needs to be improved (Pedler et al 1991).

Potential for Change

Senior management recognized the generative nature of language; through language, conversations could create reality to provide a major shift in the organizational thought processes (6th Steering committee meeting, 3.1.00). Communications, both official as well as private, provided the access to Organizational mindsets, mental models and belief systems.

For the organization to build shared interpretations and understanding, the workforce was given the opportunity during dialogue sessions with strategic business unit (SBU) leaders to raise their ideas and beliefs. Hence, there was a shared commitment to open and extensive communication. This does not mean that all channels were used all the time, but it did mean that such channels were available and the organization had to spend time developing a common vocabulary for effective communication to occur.

Noting that workers needed to develop their capabilities quickly to cope with the move to a knowledge-based economy, one interviewee commented:

"We need many more workers who are prepared to make an effort, experiment on their own and come np with a new idea" (interview 10.4.00).

Managing the culture of learning

A key feature of the learning organization is that it supports development opportunities for all its members. There is often continuous learning opportunities (Sandra Kerka, 1995 cited in Smith 2007). And the challenge is to continuously develop and build Organizational capacity to continually transform itself and also for the leaders to provide a climate in which making mistakes is viewed as being in the interests of learning. And leaders are to grow leaders (talent management); they also coach, mentor and develop talents (Low, 2013).

During the interviews with the senior management team, it appeared that barriers to learning could be traced back to individuals' behaviour and attitudes. For example, even when executives communicated with the workforce through carefully orchestrated communications and meetings, cultural factors (e.g. workers' belief, attitude and value systems) thwarted progress (interview 10.4.00). This demonstrated that change can be intrinsically unnerving to the workforce at all levels. Learning is change, and change is often

perceived as a threat. Consequently, this has to be managed and the ability of the managers to communicate and generate a climate where mistakes were seen as part of the process, was important.

Competence in managing the culture of learning was essential. The ability to both understand and communicate the need for change, combined with the skills to make it happen meant that resources had to be used prudently. Learning from the past, while building bridges into the future and investing in the commitment and talent of the workforce, were examples of how the management team facilitated the culture of learning (interview 7.4.00).

Management provided a psychological safety to the various levels of workers in the company. This psychological safety encompassed the leadership willingness in accepting or tolerating mistakes by workers. For example, the management focused on embedding knowledge and practice transfer into their employees' work methods and professional development, while recognizing employees for their contributions. Instead of threatening "learners" with disaster scenarios, senior management provided a vision of a better future that made it worthwhile for "learners" to put in effort (28th Marketing Management Meeting, 10.4.00). The management accepted that there would be some risks involved and that they were required to tolerate errors (28th Marketing Management Meeting, 10.4.00). This matched the idea of the organization acting as a catalyst, facilitating learning and developing a positive vision for the group.

Leaders provide direction for people where learners simply do not know where to start and how to go about doing it. Giving the learner direction and guidance may be crucial in reducing anxiety.

The idea of taking the threat out of learning was not easy, but it was essential to an understanding of learning transformation. One of the respondents put it this way:

"The management subscribes to frank appraisal of reality and understand cultural biases that exist within the organization" (interview I 0.4.00).

The approach to tackle cultural biases was through seeing the world from the other person's perspective. Of course, in reality managers do not have all the answers to every problem all the time, but by recognizing this they shared power with

others and found ways to act. Hence, one executive recommended:

"For Organizational learning to occur, managers themselves must become learners and in that process begin to acknowledge their own vulnerability" (interview 11.4.00).

The Planning Dimension

Strategy orientation

The interviews with the senior management team suggested that they felt that their planning cycle was inadequate to deal with the rapid rate of change that was occurring in the external environment. In order to cope with strategic surprises and fast developing threats and oppo1iunities, strategic decisions had to be made outside the traditional planning cycle.

The organization was continually rechecking and revalidating its own market-positioning. But, what was needed, was what Jantsch and Waddington (1976, p.9) called, a "self-transcendent" capacity in organizations. In becoming learning organizations, "companies will have to appreciate that continuous improvement does not necessarily bring about openness to surprises or new directions" sighed one of the executives in the manufacturing shop-floor (interview 13.4.00). As indicated earlier, continuous improvement brings incremental gains, but it would not help much when the rules of the game shift entirely (Kiechel 1990, p.76, Mintzberg 1994, p.207, 403).

The senior management team knew that they must understand and respond accordingly to the complex forces that push and pull organizations in so many conflicting directions. Unless they could think flexibly, they would not be able to deal with the full range of issues they invariably encounte1:. This led to the establishment of six strategic business units (SBUs) by the senior management team:

viz
- Application
- Service
- Finance and Administration
- Manufacturing
- Sales and Marketing
- Pacific Precision Casting.

The Application SBU had three business groups: part production, die/mould and aerospace. The idea behind this was to design smaller sized units which could innovate more quickly and use local initiative to learn from customer needs. Individuals within their respective SBUs performed the role of environmental scanners. This included the use of information from all staff with customer contact to review policy and identify new business opportunities. SBU clinics provided the opportunity to test the ability and willingness of managers to engage with challenging strategic issues. Frequent strategy and policy reviews were vital mechanisms to achieve the flexibility and seen necessary for continuous learning. They created the environment for change and the recognition of the need for change. It was not just some vague idea but a real business process, generating plans and actions:

"It is not good enough for members just to acknowledge this without translating them into action plans where they could monitor, review and progress towards accomplishing business objectives" (interview 14.4.00).

Information systems (IS) as a tool

A fundamental premise of IS in Makino was that it had to serve user needs. Frequent communication between users and the Management Information System (MIS) Department was often necessary to ensure that information technology (IT) applications were developed according to users' requirements. Systems that fail to meet users' needs were often underutilized and a waste of valuable resources. One interviewee commented that:

"Coordination and feedback between users and MIS need to be improved" and "we believe that one of the sustainable advantages that an organization has is what its people know and what they do with what they know - the use of IS" (interview 13.4.00).

Through frequent communication, users became more knowledgeable about IS, while the MIS department became more knowledgeable about the business. This reinforced the partnership between the business and MIS department, and as a result facilitated the use of IS to create business value for the organization (IS committee meeting, 5.5.00)

This was further reinforced by the concern to develop "knowledge portals". Although very similar to the website application that can be delivered to users in a personalised fashion through browser access, the portal technology offers document management, business intelligence, search engines and intelligent agents. This was taken up in the planning process and installed, with the result that it was believed to help Company run the business more efficiently and be competitive (interview 13.4.00).

Clearly, it was no longer sufficient for IS management to be concerned only about the technical aspects of the IS function. Increasingly, IS management was expected to be knowledgeable about the business and to play an essential part in business strategy formulation. If IS management was not knowledgeable about the business, it would become difficult for them to recommend appropriate IT applications to support business strategies. Such lack of knowledge about the business might well stifle Makino's ability to exploit IT strategically (interview 14.4.00).

The management at Makino Asia believed that there was a danger in substituting technology for knowledge:

"Real knowledge is embedded in the routines of work and companies ultimately need to employ competent people in the workforce" (interview 14.4.00).

Thus the company, had to utilize the IT/IS developments in a framework of business development between the units and department, and this became an integral part of the planning.

Learning as a Dynamic Process

Continuous upgrading

The interviews made clear that the commitment to on-going learning at all levels in the organization was seen as difficult to achieve if the top management commitment had not been visible. Management recognised that a comprehensive company-wide learning organization strategy had to be developed in conjunction with the Human Resource (HR) division and also the other divisions (6th Steering committee meeting, 3.1.00). This was a critical step in the learning organization assessment:

"The mere presence of traditional training and development activities is not sufficient. It must be complemented by a tangible sense that one is never finished learning" (interview 12.4.00).

The majority of those interviewed considered that the starting points for the recognition of the need for learning were the globalisation of economy and culture, and the increasingly pervasiveness of information technology. They knew from this that learning was vital for survival. The consequence was the need for flexibility to learn to deal with the complex and uncertain environment. There had to be openness and questioning by the learners and a reflectivity that accepted errors and turbulence. Without a common denominator, vis-a-vis shared commitment to learning and to think

systematically, the efforts of the leaders would be in vain.

The management objective was to have the best possible people working together throughout the organization. The role of HR was to promote and facilitate the development of a culture that was dynamic, open and customer focused. One interviewee summed it up this way:

"Employees understand how their role links to the business objectives. The managers are approachable, fair, firm and decisive. There is reliable and clear two-way communication. People are confident and learning is consistently supported" (interview 12.4.00).

The Company provided courses that helped people understand themselves, the "soft skills", and sponsored individuals to pursue higher education to assume future leadership. By having professional self-mastery courses, the Company aimed to create self-esteem and wellness amongst its employees. One of the respondents put it this way:

"By providing incentives and appropriate support from the management, such as time-off from their work is seen as a welcoming proposition by the employees" (interview 11 .4.00).

The Role of Leadership

Involved leadership

The leaders understood the importance of their involvement in the vision implementation. One executive commented:

"Battles are fought not just on strategies but on purpose, vision and core values by which our employees live" (interview 11.4.00).

The task in designing and building the learning organization was to bring about an alignment of corporate vision in the hands of autonomous, cross-functional teams. The leaders continuously clarified the larger "picture" and they consistently transmitted messages through the bi-annual "state of organization" reports (January and July). This concept of open reporting underpinned their ability to lead and command respect. Projects were seen to be successful because leaders were willing to bridge the gap between themselves and the team, and build a sense of purpose together. To echo Senge's words, one interviewee said:
"Developing this virtue is by no means an easy task for leaders, but by becoming stewards themselves, leaders will bring about reality" (interview 13.4.00).

Another important reflection of Makino's leadership was that managers in the SBUs were acting as "teachers" where they fostered learning for everyone rather than teaching people how to achieve one specific vision (quarterly SBU clinic sessions). By demonstrating this, they promoted the culture of developing systemic understanding where everybody in the organization knew the axiom that every influence has both cause and effect. This dealt with the shifting of people's minds from seeing parts to seeing the whole (Senge 1990, p.356).

A major struggle, that surfaced in the interviews (interviews 10.4 & 14.4.00) were the executives' concerns that leaders in a technological world could not avoid addressing the three important aspects of doing business: namely, uncertainty, complexity and novelty (Krone 1991). They realized (interviews 10 & 14.4.00) that the practical implication for leaders in Makino as facilitators of organizational learning required them to perform a number of key tasks very well. Bunning's (1998) six tasks of the leader's role were well evidence:

viz
- become active learners
- encourage vision-directed thinking
- foster workplace learning
- develop active links with the external environment
- create a climate in which it is safe to think
- encourage teamwork and synergy

These tasks are never easy and they require passion on the part of managers. Harvey-Jones (1993) pointed out the difficulty that there could never be any single correct solution for any management problem, or any all-embracing system which carries one through a particular situation or period of time. The skill of the manager consists in knowing them all and choosing the particular ideas which are most appropriate for the position and time in which he finds himself (Harvey-Jones I 993).

Climate of openness

When those interviewed were asked to describe the information flow from top management to lower levels, the majority indicated a view that people would make their own observations whether management was sincere in their desire for open communication and transparency. Traditionally, in the Singapore context, various levels of management do not discuss failures, actions or strategies openly. There are psychological and social pressures to cover mistakes rather than to identify and learn from them. Organizational hierarchies tend to block

dissent and warnings. Porter and Roberts (1976) reviewed studies indicating that people in hierarchies talk and listen upward. They send more messages upward than downward, they pay more attention to messages from their supervisors than to ones from their subordinates, and they try harder to establish rapport with supervisors than with subordinates. Not surprisingly the messages that do get through enhance good news and suppresses bad news (Nystrom and Starbuck 1984). This was an established, traditional pattern in the Company and typical of the Singaporean context.

During an interview discussion, one executive said:

"There must be a climate within the company, in which making mistakes or errors are viewed as being in the interest of learning" (interview 14.4.00).

At the heart of this lies the challenge for management to ensure that people feel impunity to express their views through legitimate disagreement and debate. The critical aspect becomes the magnitude to which errors are shared and not hidden. It was imperative for management in Makino to embrace errors rather than avoid them, to enable learning to occur.

Perhaps the most dramatic example of openness in this study was the transparency of management, where financial and sales results were publicly reported in the bi-annual "state of organization" reports (January and July) regardless of whether results were positive or negative. Another example was customers' complaints, where the entire marketing division (comprising sales, customer service and application departments) was explicitly advised (28th Marketing Management Meeting, 10.4.00). The company viewed such feedback as opportunities for learning and improvement.

The managers and line-leaders were explicit in the decision-making process reducing risk-aversion levels by framing problems and solutions in a manner consistent with overall strategy and priorities. By making the decision-making process clearer, divisional managers were better able to assess how to allocate and share resources within their functions and other SBUs. Transparency of decision-making was also crucial, particularly when setting up transfer prices that had to be calculated for regional resource sharing.

Commitment to change

The interviews suggested that Makino's senior executives recognized the social dimension

of learning and the value of collaborative interdependence. Observations at various meetings revealed that individuals were encouraged to form networks and contribute to SBU development through an exchange of ideas, information and resources. There was recognition within the company that these network activities enriched the learning organization and were seen as fertile breeding grounds for the change process.

As mentioned earlier, management put in place broad-based and frequent open communication opportunities, which included all interested members from across the organization. They believed that the workforce would appreciate such frankness in the dissemination of classified information. One of the executives described it by saying "...a learning culture must be pro-active and pragmatic in its worldview" (interview 12.4.00).

In addition, senior management gave innovation a strategic priority (6th Steering committee meeting, 3.1.00), where the manufacturing strategy and marketing activities were framed within the strategic context of the business. The organizational goals and plans were in alignment with the corporate strategy and the performance standards. However, just saying the company was going to achieve higher performance and results would not make it happen. The corporate vision and values were communicated to all staff. Relentless communication was pursued by senior management in order to promote:

- people understanding how their individual role linked to the overall business objectives and wanted to make contributions,
- greater achievement as the norm,
- the focus on change management skills, with people open to new ideas.

Other examples included specially created message plaques hung at strategic locations throughout the manufacturing plant and administrative blocks. These messages cascaded down throughout the organization in a way that helped everyone's commitment.

Makino's leadership was fully aware tl1at in making internal transformations; they could create undesirable side effects (6th Steering committee meeting, 3.1.00). Consequently, much thought went into this. Management firstly adopted new structures (Strategic/Business Planning meeting, 5.5.00) and routines around cultural "hybrids" that understood the old culture before introducing new elements. Secondly, management created parallel structures for new processes to be implemented into the total system. Thirdly, it

blended the two approaches in an effort to overcome the inherent social and technological inertia (interview 12.4.00). Management believed that this would enhance the climate of openness. Another important point was that management strongly believed that the only way to open up people to change was to drive fear out of the organization. By providing an environment which was focused on psychological safety at work place, management was successful in enhancing greater participation and acceptance for change (interview 10.4.00).

Given the critical competitive forces on business, senior management had to shape the business's overall capacity for innovation (process and technology) and its ability to successfully launch (new) products in the marketplace with speed. The approach taken by the company was to a conduct a diagnostic audit of current business as well as product development strategy, and then compare the plans and results. Subsequently the results and practices were benchmarked against the best-in-class (market leader in the specific category of market or industry). The operating managers constantly practiced the quality movements model of PDCA (plan, do, check and act), to close critical gaps and thus ensure growth and profitability.
This encouraged personal reflection on aspirations and assumptions. The operational managers also encouraged dialogue to help understand different people's aspiration and mental models, and to build shared visions and mental models.

This experience offered the notion of doing and thinking together. The willingness to forego one's immediate idea in a general discussion generating a range of ideas allowed a "free flow" of ideas to permeate the group. It inevitably produced results more superior than those that individuals could generate. Team learning was fundamental to performance. Members could attend strategic planning sessions, learn quality assurance techniques or learn how to run a meeting more effectively, but unless the principles of team learning were effectively implemented, improvements would be short-lived. After all, Senge (I990) argued that team learning was vital because teams, not individuals, are the fundamental learning unit in modern organizations; unless teams can learn, the organization cannot (p.238).

In sum, the paper has suggested several recommendations for Makino to succeed in adopting the "learning culture".

1. Makino will need to continue to emphasise the transformation to a learning organization

as part of its mission and incorporate a statement in its strategic business plan.

2. Makino will need to continue to emphasize new knowledge and skill acquisition by incorporation its due recognition into business processes - e.g. by publicising employee successes, managers as change agents.

3. Makino could institute prizes for individuals or teams who successfully pass on their learning to others.

4. Makino could enhance a cross-fertilisation of ideas through on-line learning. Group members may comprise members from different departments, levels or regions, etc. who are united in a common task, particularly in electronic communication skills where an increasing percentage of the communication may occur over the Internet.

Leadership was about much more than mobilizing the workforce to achieve output objectives. It was also about creating delight, efficacy and a shared vision - in short, a "learning culture".

IX. LIMITATIONS AND BENEFITS OF THE STUDY

Although the study and its findings were from several years back, the relevance and benefits of the learning organization are definitely ever paramount; and organizations can still see its many and key benefits (that make the research paper important) – just to say a few and these include, for example, cross-fertilisation of ideas, emphasis on new knowledge and strategic transformation of the organization.

More importantly, it is also about harnessing humans' being wonderfully designed to be able to learn from the moment of birth and besides, "learning can and should be a lifelong process" (Steinbach, 1993: 1) and when incorporated into the organization, the organization (LO) itself becomes a powerful machine.

X. CONCLUDING REMARKS

Makino as a Learning Organization
This study has presented an operationalisation of a conceptual model of the learning organization, illustrated by a case study of one organization. It suggests that this organization represents a particular form of learning organization - one that uses various mechanisms for leveraging knowledge towards business advantage.

This study which involves social relationship and interaction in the context of technological environment offered a particularly important approach to examining and exploring the development, processes and principles of the learning organization within a marketing-driven firm. A socio-technical view of the learning organization has implications for overall management. This study suggests that however successful an organization may be in transforming its internal environment to a learning organization in the short term, a more daunting task for organizations is that of facilitating a truly learning culture sustainable for the long run. The task is to continuously create and maintain a knowledge-enterprising culture and community whereby people feel comfortable with learning and are motivated, and rewarded.

This study aimed to contribute to our understanding of the operationalization of the learning organization concept. It concludes that such a learning organization involves more than technology or IT/IS; rather it extends to a culture in which new roles and constructs are created. The learning organization notion changes the communication patterns between individuals and teams. It alters the design of the organization by fostering new processes and structures. Learning needs to be encouraged, and a knowledge sharing system instituted to encourage the integration of knowledge towards business objectives.

In summary then, we might conclude that the effectiveness and value of a learning organization depends on the active participation of each individual. The Makino management recognized this and actively sought to identify ways of involving all employees. The whole purpose of a learning organization is to empower individuals to become self-learners and use the knowledge gained to inform the community in the company. This study revealed that management has to place an emphasis on re-prioritizing some of the shared assumptions in the company and that this runs counter to other shared assumptions. But in doing this, the Makino experience also shows that the learning organization concept has value for firms facing a changing environment and seeking to sustain competitive advantage, in a changing environment and that it can act as a unifying vision for the organization and can be successfully adopted where senior management incorporates it into its principles of planning.

Finally, the well-known writer on action learning Revans (1982) offers us a final word:

"The most precious asset of any organization is the one most readily overlooked; its capacity to build on lived experience, to learn from its challenges and to turn in a better performance

by inviting all and sundry to work out for themselves what that performance might be" (p.286).

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INTERVIEW SCHEDULE

REFLECTION ON THE ADOPTION OF

LEARNING ORGANIZATION PRINCIPLES: THE MAKINO EXPERIENCE

1. To what extent does the organization develop new knowledge internally or seek inspiration in external ideas?
2. Does the organization give emphasis to workforce experimentation on an ongoing basis?
3.   Has the organization established an atmosphere in which learning evolves or conversely, does a structured approach induce learning?
4.   How can we take the threat out of learning?
5.   How does the organization understand the business and technological environment in which it operates?
6.   Is there a commitment to lifelong learning at all levels of the organization? If learning has potential for bringing about the necessary change in the organization, how does the process begin?
7.   Is leadership at every organizational level engaged in hands-on implementation of the vision?
8.   Are the perimeters around information flow accessible where people can make their own observations?
9.   Is there more than one way to achieve corporate goals?
10.   Other Comments