
Improving organizational learning capability: lessons from two case studies

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Organizational learning, Change, Case studies

Abstract

This paper describes a diagnostic tool to benchmark improvements in an organization's learning capability over time. This diagnostic tool was used by two different organizations that embarked on a change program to improve their learning capability. Access to these two organizations has allowed a diagnostic measure of their learning capability on a longitudinal basis. Measures were taken prior to change efforts being implemented to improve learning capability and then two to three years later to assess whether any improvements have been achieved. Other qualitative information on the interventions they implemented to improve their learning capability was also obtained. The paper draws from these two case studies some conclusions and implications for managing change and specifically for improving the learning capability of an organization.

Keywords

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Introduction

To remain competitive, many organizations are adopting a strategy of continuous learning. They encourage employees to learn new skills continually, to be innovative and to try new processes and work methods to achieve the strategic business objectives of the organization. A continuous learning organization is an organization where employees are constantly encouraged to gain new knowledge, try new approaches to solving problems, obtain feedback and learn new behaviours as a result of the experimentation. Whether the need is increased efficiency, better customer service or defect-free products, managers are beginning to realize that learning organizations can achieve these performance goals better (Kiernan, 1993; Garvin, 1993; Stata, 1989).

The objective of this paper is to describe a tool to measure an organization's learning capability. It also describes two case studies from a longitudinal perspective; organizations that have used this measurement tool to benchmark themselves and improve their learning capability. The paper draws from these experiences and change management implications, some lessons learned on how an organization can improve their learning capability.

What is a learning organization?

The current literature on organizational learning uses a confusing variety of terms and concepts. It makes a distinction between "organizational learning" and "the learning organization" (Kim, 1993), between "academic" and "applied/practitioner" approaches (Argyris and Schön, 1996), between "normative" and "capability" perspectives (DiBella, 1995) and between "individual learning" and "organizational learning" (Weick, 1991). Such distinctions can create the impression that this concept is not well understood, and therefore not very practical.

In this paper the concept of a learning organization is discussed from a normative perspective using an organizational level of analysis. While it is not argued that organizations learn like individuals, the contention is that an organization's learning is



related to the experiences and actions of its members. Organizational learning can be identified "by studying the concrete structural and procedural arrangements through which actions by members that are understood to entail learning are followed by observable changes in the organization's pattern of activities" (Cook and Yanow, 1993, p. 375).

These arrangements become the foundation for learning in the organization, that is, the structures, strategies and procedures that allow the organization and its members to learn (Popper and Lipshitz, 1998). Learning organizations can therefore be viewed as entities that purposefully adopt structures and strategies to encourage learning (Dodgson, 1993). It can be argued that organizations with these organizational structures and procedures have a greater capacity to learn.

Moreover, what are these arrangements used by an organization to facilitate learning? That is, what kind of management practices and procedures make it a learning organization? What organizational structures support learning? These practices, structures, and procedures define the organization's learning capability.

Organizational learning capability

To answer some of these questions, a research project was carried out to develop a measurement tool for assessing the learning capability of an organization. The rationale was that organizational learning is really the product of individual and group learning applied to achieve the organization's vision and performance goals; certain management practices and internal conditions can either help or hinder this process (Duncan and Weiss, 1979; Senge, 1990; Garvin, 1993; Mills and Friesen, 1992). Thus, if these internal conditions and management practices that lead to learning can be identified, then we can assess the organization's learning capability. This information can also help managers to focus on specific interventions required to improve learning.

The literature on organizational learning has developed different perspectives on how to build learning capability; DiBella (1995) has identified what is called the normative perspective of a learning organization. That perspective best describes this paper's

approach – that is, that learning is a collective activity that takes place under certain conditions or circumstances. Therefore, organizations need to create the conditions that foster learning.

A learning organization is developed not by random chance but by its leader's intervention to establish the internal conditions for learning. The implicit assumption is that an organizational archetype exists that defines a learning organization, and that influences its performance, long-term effectiveness, and survival. This normative perspective moves us away from the confusing array of definitions and descriptive literature. In fact, Garvin (1993) argues that organizations need to manage the learning process actively to ensure that it occurs by design, rather than by chance. Distinctive policies and management practices form the building-blocks of learning organizations and are responsible for success.

The need then is to identify the management practices that foster organizational learning, or the conditions that enable an organization to become a learning organization. The assumption is that organizational learning does occur, but effective learning requires the appropriate conditions and management practices (Ulrich *et al.*, 1993).

Based on this discussion, learning capability is defined as "the ability of the organization to implement the appropriate management practices, structures and procedures that facilitate and encourage learning" (Leonard-Barton, 1992; Popper and Lipshitz, 1998; Garvin, 1993; Goh, 1998). The more prevalent these practices are found to be in an organization, the stronger the learning capability of the organization. In the next section of this paper, these organizational characteristics and management practices are described.

The strategic building-blocks of a learning organization

By analyzing the commonalities among the various descriptions found in an earlier extensive review of the literature (Goh, 1998; Goh and Richards, 1997), five main characteristics and management practices that are key conditions for learning in an organization have been identified. These five

strategic building-blocks of a learning organization are outlined below:

- (1) *Clarity of mission and vision.* The organization as a whole, and each unit within it, needs to have a clearly articulated mission or purpose. Employees need to understand this mission and how their work contributes to achieving it. In addition, the organization needs to promote its employees' commitment to the purpose. Senge (1990, 1992) and others have stated that "building a shared vision", especially a vision of a future desired state, creates the tension that leads to learning. Employees understand the gap between the vision and the current state and are better able to strive to close that gap (Mohrman and Morhman, 1995).
- (2) *Leadership commitment and empowerment.* Leaders need to be committed to the goals of the organization, particularly the goal of learning. Moreover, they need to create a climate of egalitarianism and trust, where leaders are approachable and failures are turned into part of the learning process. Specifically, leaders need to help identify performance gaps and then to encourage the search for knowledge that can narrow and close the gaps. Virtually all writers cite leadership as an important element of fostering a learning climate, through behaviors, such as seeking feedback, being open to criticism, admitting mistakes, and empowering their employees to make decisions and take some risks (Garvin, 1993; Slocum *et al.*, 1993).
- (3) *Experimentation and rewards.* Problems faced by an organization present opportunities for experimentation. The organization's structure and systems need to support this practice of experimentation. Budgeting systems, for example, can be designed to challenge the need for doing things because "we have always done them", and compensation systems can be designed to reward innovation and risk taking. This is the management practice observed most consistently by far in learning organizations. The freedom to experiment with new work methods and innovative processes is supported and encouraged (Senge, 1990; Garvin, 1993; Pedler *et al.*, 1989; Slocum *et al.*, 1993).

- (4) *Effective transfer of knowledge.*

Communication needs to be clear, fast and focused. Information related to organizational problems and opportunities should be transferred across functional and structural boundaries within the organization. Again, the majority of writers cite in particular the ability of the organization to transfer knowledge across internal boundaries and to transfer knowledge from the external environment – for example, from suppliers, from customers and even from benchmarking of competitors (Garvin, 1993; Shaw and Perkins, 1991; Pedler *et al.*, 1989).

- (5) *Teamwork and group problem solving.* In today's complex world, individuals need to help one another accomplish the organization's objectives. Structures and systems in the organization need to encourage teamwork and group problem solving by employees and to reduce dependence on upper management. Teams also need to be able to work across functions. Working in teams, organizational members can share knowledge and increase their understanding of other individuals in different parts of the organization, their needs and the way they work, encouraging knowledge transfer as well (Senge, 1990, 1992; Garvin, 1993).

It is, therefore, argued that these five strategic building-blocks are the essential foundations for achieving a learning capability in an organization. Clearly some of the strategic building blocks are not new. Previous literature has also identified, for example, leadership and empowerment and teamwork and group problem solving as management practices that can facilitate employee learning, job performance and job satisfaction (Nadler, 1998; Jick, 1994; Mohrman and Mohrman, 1995; Goodstein and Burke, 1991). But it is argued here that these previously identified strategic building-blocks together with an experimenting culture and an ability to transfer knowledge can also contribute to an organization's learning capability.

In building this learning capability, organizations need also to be aware that they are engaging in a change process. Building a learning capability is similar to any change intervention that organizations undertake.

The organization has to move from its current state to a more desired future state that embodies the characteristics of a learning organization that has a strong foundation of the five strategic building-blocks described above. Planning and successfully implementing the changes needed to improve learning capability is therefore a crucial part of the process of becoming a learning organization.

One change approach with a strong history and tradition is the field of organizational development (OD). A major focus of OD in facilitating change is the use of a framework for the internal/external diagnosis of an organization to create pressure and dissatisfaction with the status quo. These gaps when identified can serve to unfreeze the organization and to motivate change (Beer, 1980). Measuring and benchmarking the learning capability of an organization can therefore be an effective tool to initiate and facilitate a change process to building a greater learning capability (Nadler, 1998; Jick, 1994). In the next section of this paper a survey tool is described to measure learning capability.

Measuring organizational learning capability

This paper will illustrate how two organizations used a survey approach as a basis for a change program to improve their learning capabilities. The organizations were tracked over time by using the same survey to measure them again after two to three years. Additional qualitative data were also gathered through interviews as well as from secondary information provided by these organizations. The quantitative data are based on surveys completed by employees in the organizations at two different points in time.

In this study, three different methods of data collection were used. A survey was used to gather employee perceptions of learning capability, interview data from senior executives and employees involved in the change process and also any secondary published information related to the activities undertaken were also gathered. This triangulation methodology, which uses both qualitative and quantitative methods, has been argued by Jick (1979) to increase the

validity and accuracy of the results and conclusions of a research study.

Development of the measure

A survey has been developed called the learning organization survey, to measure the five strategic building-blocks previously discussed in this paper. The development of this survey and the reliability of the scale were established as follows. Initially a 55-item survey was developed to capture the five strategic building-blocks. This was given to a sample of managers working in the public sector. Approximately 100 surveys were usable and a factor analysis was carried out. The analysis resulted in 21 items with a loading of 0.50 or greater being selected as measuring all five strategic building-blocks. The reliability of the scale was assessed using an internal consistency measure, Cronbach's alpha = 0.94. For this study, the reliability of the scale was alpha = 0.90. See the Appendix for questionnaire items for each learning capability scale dimension in the survey.

Validity of the scale was established through a predictive validity study of the scale (Goh and Richards, 1997). It was hypothesized that learning capability would be positively correlated with job satisfaction and negatively correlated with bureaucratic organizational structure. This was supported in the study where the results were significant and in the right direction. The 21-item scale correlated, $r = 0.66$ with job satisfaction and $r = -0.22$ with a measure of bureaucratization. Stability of the scale was also tested with a small sample of graduate business students. The scale was given to students in-class at the beginning of the semester and then ten weeks later again. Correlation between the two measures was $r = 0.77$, indicating the measure is stable over time and not subject to random fluctuations. Development of the learning capability scale with 21 items indicates that the measure is very reliable. In addition, there is some evidence of the validity of the scale with respect to its relationship with other related measures and its stability.

In the next section of the paper a description of the implementation process undertaken by two organizations is presented. Both organizations used the survey to benchmark their initial learning capability and then designed a series of interventions to improve their learning capability. After about two to three years, the same measure was

used again to assess the progress made in improving organizational learning capability.

Longitudinal case studies

The following cases describe two companies and the process each undertook to become a learning organization, using the organizational learning capability survey for initial benchmarking of their organization. The researcher was involved in survey administration, data analysis of the surveys, providing feedback to the organizations of the survey results and subsequent interviews with senior managers and employees as part of this study. At no time was the researcher directly involved in any detailed design of interventions nor did they participate in any actual implementation of the changes described.

Case 1: A high-technology research and development group

This is a very successful international company considered a world-class organization. The group that participated in the learning organization survey was one of this organization's work units. The group's 300 or so employees were focused on research and development of a new product for the company. Most of the employees were either computer or software engineers and had high-powered computers and networks at their disposal. Within this R&D group, employees were broken down further into work units with different responsibilities such as support, testing, and design, for example.

With a strong performance record, it was expected that the company would score well on the survey. This result provided further support for the predictive validity of the survey. By agreement, the survey was administered to all employees using the organization's intranet. All completed surveys were downloaded to an Excel spreadsheet and the data analyzed.

Implementation process

The senior management group was debriefed on the survey results first. Feedback of the survey results was then given to the senior group of team leaders – about 12 managers. Results were grouped according to work teams, so each team leader could see how the team's score compared with those of the other

teams and with the overall score for learning capability. The feedback session was an initial step in intervention as the managers began to question how some current management practices lined up with the five building-blocks; ideas began to flow from the discussion and concerns about low scores on, for example, the transfer of knowledge.

This feedback discussion led to an agreement that three focus groups would be held with a broader representation of employees. In total, 21 volunteers participated in the three focus groups, their objective was to generate specific ideas and recommendations for improving the organization's learning capability, and after 12 to 18 months progress would be measured. These focus group discussions were led by an external consultant. The consultant then wrote a short report documenting the recommendations and action plans for improvement that would be followed up by the groups.

That report with 16 specific recommendations was made available to all employees. These recommendations were mostly targeted at improving the three areas where scores had been the weakest: effective transfer of knowledge; clarity of mission and vision; and leadership commitment and empowerment. Some of the activities included learning retrospectives that discussed and documented completed projects as well as conference trip reports and debriefings. The information thus captured was also made available on a Lotus Notes database. Other steps were extensive leadership training for managers, a mentoring program for newcomers and a more intensive orientation to the group for new team members. Specific retreats were organized to discuss and clarify the group's purpose and mission and to link them to the work and project deliverables of the organization.

All of these activities were tracked and documented to completion, in a report card on the organization's progress toward a better learning capability. The overall process was not side-tracked by other initiatives such as ISO qualification. Employees and managers saw the plans for improving learning capability as "a journey" and not as a one-time program with a fixed duration. The activities continued for over a year. After about two years, the same survey was administered to measure the organization

again. The learning capability score had improved for three of the building-block dimensions except teamwork and group problem solving and experimentation and rewards. Both areas had scored high initially and consequently had been targeted less than the others for improvement (see Table I for the comparative results). Response rate for Time 1 was 52 per cent and 40 per cent for Time 2, based on 300 surveys sent to all employees.

The second survey was able to capture the efficacy of some of the improvements and change activities, especially in the areas of leadership, clarity of mission, and transfer of knowledge. It also pointed to three areas where there were opportunities to leverage the improvements in learning capability:

teamwork, experimentation, and leadership. The organization is continuing the process through a new cycle of improvement activities focused on these three areas; and a future report card will track these activities.

The organization reports that all of these activities have helped it to reach its work goals more effectively and encouraged greater innovation among employees. This company is an excellent example of a learning organization; it compares well with organizations often cited in the management literature (Stata, 1989; DeGeus, 1988). It has a strong orientation toward action and is highly proactive in implementing innovative management processes. It continues to hold discussion groups on the subject and actively promote activities that are linked to learning.

Case 2: A telecommunications company

This second example is a company that develops new products and marketing strategies for telephone companies in the areas of long-distance services, commercial

clients, wireless communication, and Internet network services. The company has about 1,000 employees concentrated mostly in one regional location but with other workplaces across North America. Most of its employees come from strong engineering, technical and marketing backgrounds, and there is also a small number of support staff.

A key champion of the learning organization initiative was a member of the organization's human resources team. A case study was written documenting how the company had identified weaknesses in its learning capability and describes a series of interventions to improve it. The following description of the implementation process is based on this case study (Simington and Berry, 1998).

Implementation process

The company initiated the process by launching a pilot program called the Learning Forum. In the initial planning stage, a company-wide survey on the learning organization was carried out. The survey revealed shortcomings in the areas of leadership, knowledge transfer and clarity of mission and vision. The Learning Forum then focused on these core problems, enrolling a pilot team of mid-level marketing employees with substantial bottom-line responsibility to drive change in these areas. A team of outside consultants with expertise in leadership development, coaching skills, collaborative consulting, and advanced negotiation skills was then hired as a resource for the Learning Forum.

The Learning Forum was designed around several shared-learning teams, each with seven members. Those teams were then enrolled in prerequisite courses in coaching, time management, and career-planning skills. Business objectives were then set for each

Table I Case 1: High-tech R&D group

Learning capability dimensions	Time 1: 1994 (n = 156)		Time 2: 1997 (n = 121)		Change (Time 1 - Time 2)
	Mean	SD	Mean	SD	t-value
1. Clarity of mission and vision	4.65	0.97	4.83	0.94	1.65*
2. Leadership commitment and empowerment	4.47	0.91	4.83	0.87	3.28***
3. Experimentation and rewards	4.86	0.78	5.02	0.81	1.55
4. Effective transfer of knowledge	4.03	1.03	4.34	0.89	2.61**
5. Teamwork and group problem solving	4.91	0.86	4.82	0.91	0.83
Overall organizational learning capability	4.61	0.69	4.79	0.73	2.05*

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

individual in the team – based on revenue or growth – and then the team decided what skills each would need to achieve those objectives. Setting business objectives meant that each participant had to take on a real business project as the basis for his or her learning.

The outside consultants then worked with the shared-learning teams to help each establish an appropriate training curriculum for their specific business objectives. The teams met once a month to receive the training they had selected, and to report on the status of their business projects. Participants also received two to three hours of individual coaching each month, often by telephone. Since they were working on actual business projects, they completed a majority of the course work during the normal workday.

The Learning Forum teams adopted as their motto “Learn, demonstrate, share”. The structure of the program and the development of all Learning Forum measurement tools focused on these three guiding principles. The company required each participant to select five learning partners with whom to share the training received while enrolled in the Forum. This encouraged program participants to practice and teach their new skills; it also helped to spread learning more rapidly through the organization.

The teams used a number of measuring tools to justify the value of their learning program and to fine-tune its structure such as a shared-learning team effectiveness survey. This was given one month into the pilot program and again after nine months. Results from the survey showed the organization where to modify its training curriculum to increase team performance in areas such as shared vision, clarifying business objectives and achieving stronger bottom-line results. The results of these surveys, therefore, allowed the company to correct its course in the program’s weak spots and to leverage its strengths in others.

The company also implemented a register of learning and accomplishments as an ongoing register recorded by program participants. It provided a complete record of pivotal points in the learning process and their key results. The document allowed for easy tracking of success and provided a program history that would be shared throughout the

organization and with future participants in the Learning Forum.

As part of the tracking process, the organization reported significant business results such as increase in revenue-generating activities with existing clients, new business ventures and other new business opportunities that can be directly attributed to the Learning Forum activities.

The strategic interventions described above show the company’s intense approach to change. However, the approach focused on the specific areas identified in the initial survey. Similar to organization one, an initial survey was carried out and then a re-survey of the organization carried out again. Table II compares the survey’s initial results with those about two and a half years later, showing significant improvements in clarity of mission and vision, leadership, and in transfer of knowledge, as well as in overall learning capability. Response rate for time 1 was 45 per cent and 53 per cent for time 2, based on 350 surveys selectively distributed to ensure representation by function and region.

Discussion

As described in the previous section of this paper, the survey results, as shown in Tables I and II, indicate that these two organizations significantly improved their overall learning capability over a two-year period. Both organizations had made strong commitments to become learning organizations and they took different paths to achieve their objectives. The company in the first case used a more broad-based approach and undertook a series of more generic interventions to improve leadership, knowledge transfer, and clarity of the mission and vision of the organization. However, a much smaller group was involved, and it may have been size that made this approach more effective.

The company in the second case was a much larger organization that called for a different intervention strategy. It required a more focused and slower process, targeting a specific group and then allowing the learning process to extend into other groups. The organization also started the intervention process with a core-operating group, marketing, to underscore the importance of the change. It worked well as this group was able to show positive results for the

Table II Case 2: A telecommunications company

Learning capability dimensions	Time 1: 1996 (n = 136)		Time 2: 1998 (n = 158)		Change (Time 1 – Time 2) t-value
	Mean	SD	Mean	SD	
1. Clarity of mission and vision	4.05	0.98	4.75	1.04	5.87*
2. Leadership commitment and empowerment	3.84	0.96	4.61	1.08	6.34*
3. Experimentation and rewards	4.18	0.92	4.37	0.71	1.91
4. Effective transfer of knowledge	3.63	0.90	4.07	0.99	3.91*
5. Teamwork and group problem solving	4.51	1.01	4.71	1.10	1.57
Overall organizational learning capability	4.02	0.76	4.49	0.78	5.09*

Note: * $p < 0.001$

organization. This early success was then used as a learning example to initiate changes in other groups.

The second organization showed more significant improvement over time (see Tables I and II, overall organizational learning capability score). This is not surprising, given that it took the change process as a serious challenge and devoted significant resources to it. In addition, its approach was unique in making sure that the learning initiatives were strongly anchored in reality for the employees, that is, linked directly to their job goals and results. The organization also spent significant resources on training and support, targeted directly at improving the skills and competencies needed to implement the changes.

In the first case, the organization emphasized its R&D activities and had to focus on a clear timeline and a deliverable product. It is interesting to note that the strategic building-block of teamwork and group problem solving declined over the period between the two measures (see Table I). This was explained by the fact that after two years the product development cycle had moved to a point where teamwork between work groups was less critical to the success of the project.

The first organization did not show as significant an improvement as the second case. Currently, however, it scores highest on the survey, indicating that it may already have in place most of the learning capability building-blocks. If that were so, the impact of the interventions would have been smaller. An important role played by the researcher was in providing benchmarking data during the feedback sessions. Data from surveys in other similar organizations were provided for comparison. For the organization in case study one, since they were the highest-

scoring, this was not possible. This may have resulted in less motivation to improve their learning capability, accounting for the lower improvements observed.

Another factor that could have influenced the relative improvements registered by the two organizations is the notion of a change champion. In case study two, the organization had a pivotal individual who was a clear focus for the efforts to build a stronger learning capability. This individual as a driving force behind the process was well respected and known to have significant leverage with the most senior managers in the company. Both the enthusiasm and the power of this individual may have resulted in the greater success achieved by this company. In case study one, the organization also had a key dedicated individual who was solely responsible for driving the learning organization initiative.

One problem that both organizations encountered was the reluctance of the senior managers to be actively involved in the implementation process. Frequently they were absent from key meetings or were not seen as leading by example in building a learning organization. This lack of perceived top management support could have decreased the impact of the change initiatives as employees may not have placed as high a priority on the learning activities.

A constant challenge in the implementation process was the struggle to convince employees that it is not an added-on activity but it should be seen as an integral part of daily work activities. Since this is a long-term process, lack of immediate results or feedback frequently hampered a continual focus on the activities needed to build a better learning capability. There were lapses in attention as employees worked on more immediate goals such as project deadlines and deliverables to

customers. This stop and start implementation was a significant drawback to the overall change process.

Presently, the organization in case study one is suffering from the overall problems of the high-tech sector. In the past year, its overall financial performance has suffered along with the industry and has undergone drastic downsizing. The case study two organization has also had problems, but not because it was not performing well. It was owned by a group of very large independent organizations that could not agree on its long-term goals and it was disbanded a year ago. However, during the period under study, both organizations were considered high-performing, based on their financial results.

Lessons learned and change implications

As discussed earlier, improving organizational learning capability involves implementing change interventions to move the organization from its present state to a desired future state, a more capable learning organization. The approaches to change in the case examples described in this paper clearly avoided some of the failure approaches and practices to implementing change, such as engaging in large-scale changes driven solely from the top, attempting to involve the whole organization at once, setting unrealistic time frames and failing to provide sufficient resources for the change (Beer *et al.*, 1990). In fact, they incorporated both successful principles of change and a focus on building the organization's learning capability. The following are some lessons learned in these two successful case examples for implementing change to improve learning capability:

- Focus on mechanisms such as structures and management practices that are practical for the organization to implement to enhance its learning capability.
- Find out where the organization stands in comparison with best practices for developing an organization's learning capability. That is, conduct an internal diagnosis and benchmark the organization to motivate and unfreeze the organization to provide a direction for change.

- Design a change process that has specific mechanisms to ensure that the principles and practices of a learning organization become a part of its culture and its operations, for example, a specific process to encourage the transfer of knowledge.
- Anchor the change process to actual tasks to be accomplished, and incorporate the practices for learning capability into new activities for accomplishing these tasks.
- Invest in providing employees with training in the new skills needed for the change process they are undertaking. Learning these new skills and increasing their competencies will help employees and ensure that the change process succeeds.
- Do not engage the whole organization in the process unless it is a small organization. Instead, target a small core-operating unit that can demonstrate results to illustrate the program's success and use it as a learning platform for other groups.
- Identify a group of employees at all levels who strongly support the concept of a learning organization. Provide them with an infrastructure such as a Learning Forum where they can interact to discuss and support these issues. Use those employees as agents of change.
- Allow employees to provide input to the process, especially in developing measures to track progress toward a better learning capability. However, allow sufficient time to elapse before assessing progress.
- Recognize that improving the learning capability of an organization takes at least two to three years of concerted effort and adequate resources, as well as the commitment of top management to the process.
- Re-measure or use other measures to track any improvements in learning capability. Use this practice to develop a culture of continuous learning and to provide feedback for use in recalibrating the change process.

A continuous learning capability is imperative today for organizations that want a competitive advantage (DeGeus, 1988; Kiernan, 1993). Transforming a large organization into a learning organization is not an easy endeavor but it can be done, as

these two companies studied illustrate (Jusela, 2000; Goodstein and Burke, 1991).

Conclusions

As a cautionary note, however, the positive results in the two organizations have some limitations and alternative explanations. It could be argued that the investment in training and the new initiatives themselves explain the improvements in the survey results, a sort of Hawthorne effect. This is a plausible explanation. However, the training focused on results and goals that were clearly linked to learning capability; it was not just training for its own sake.

A second plausible explanation is that the two organizations already had the necessary foundations for building a learning capability. Employees were well educated, mostly professional, or technical staff who worked in either a research environment or the fast-paced telecommunications industry. Over time, they were able to adapt well to the process of change, as it was essential and relevant to their work performance. Thus their results cannot be generalized to other types of organizations.

The current literature, however, does describe the learning capability of other organizations such as those that are purely service- or production-oriented (Leonard-Barton, 1992). So it can be argued that it is not its employees nor the nature of its business that make the difference in the organization's learning capability but rather the processes it has in place to encourage learning.

Other factors and changes over the two to three years between measurements could also have affected the results of the survey, and cannot be ruled out – for example, improved compensation, turnover of senior managers and improved physical facilities and resources. However, it was not a general survey of the work climate or job satisfaction. It asked about specific management practices, activities and actions related to the five strategic building-blocks of learning capability.

Another potential problem is the fact that the researcher was involved in feedback and interviews with employees and senior managers in both organizations. These could be considered as interventions especially in

the feedback discussion sessions. Depending on the relative depth of the intervention in each organization, this may have had an impact on the results reported in this longitudinal study. In retrospect, the researcher was more involved with case organization two, which may have biased the results. This organization seemed to have improved significantly more than case organization one.

Obviously case studies that were better controlled, and the use of a wider sample of organizations would have reduced some of the ambiguity in the results of this study. But the concrete positive results of both organizations indicate that a focused, well-designed change initiative anchored to the measurement and improvement of learning capability can be implemented successfully and enhance the performance of an organization.

This paper has presented a measurement approach utilized by two companies to successfully focus on the key management practices needed to improve its learning capability. Progress in these concrete management practices can be measured periodically to track the organization's progress in improving its learning capability. By combining this approach with an appropriate strategy for change, an organization can continue over time to develop an improved learning capability.

However, a strong learning capability should be considered as only one of the strategic levers that can be used by an organization to gain competitive advantage. This learning capability should be linked to other operational activities of the organization such as innovation, marketing, competitive intelligence and environmental scanning to ensure that the organization survives over the long term.

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Appendix. Learning capability dimensions

Clarity of mission and vision

- (1) There is widespread support and acceptance of the organization's mission statement.
- (2) I do not understand how the mission of the organization is to be achieved(r).
- (3) The organization's mission statement identifies values with which all employees must conform.
- (4) We have opportunities for self-assessment with respect to goal attainment.

Leadership commitment and empowerment

- (5) Senior managers in this organization resist change and are afraid of new ideas(r).
- (6) Senior managers and employees in this organization share a common vision of what our work should accomplish.
- (7) Managers in this organization can accept criticism without becoming overly defensive.
- (8) Managers in this organization often provide useful feedback that helps to identify potential problems and opportunities.
- (9) Managers in this organization frequently involve employees in important decisions.

Experimentation and rewards

- (10) I can often bring new ideas into the organization.

- (11) From my experience, people who are new in this organization are encouraged to question the way things are done.
- (12) Managers in this organization encourage team members to experiment in order to improve work processes.
- (13) Innovative ideas that work are often rewarded by management.
- (14) In my experience, new ideas from employees are not treated seriously by management(*r*).

Effective transfer of knowledge

- (15) I often have an opportunity to talk to other staff about successful programs or work activities in order to understand why they succeed.
- (16) Failures are seldom constructively discussed in our organization(*r*).

- (17) New work processes that may be useful to the organization as a whole are usually shared with all employees.
- (18) We have a system that allows us to learn successful practices from other organizations.

Teamwork and group problem solving

- (19) Current organizational practice encourages employees to solve problems together before discussing them with a manager.
- (20) We cannot usually form informal groups to solve organizational problems(*r*).
- (21) Most problem-solving groups in this organization feature employees from a variety of functional areas.

Note: (*r*) indicates item is reverse scored.