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The Role of Human Resource Development in Continuous Improvement: Facilitating Learning and Change

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Abstract
A focus on strategic human resource development (HRD) has been emphasised as a key contributor to ensuring organisational effectiveness and the maximum return from their most important asset; the people in the organisation. It has been argued that effective management and innovative approaches to the development of employees will enable organisations to capture and embed knowledge and skills. Organisations that are seeking not only to survive, but to maximise operational effectiveness in an ever-changing environment, need to ensure that at all levels, the human resource development strategy is aligned with broader strategic imperatives, and that sufficient emphasis is placed on the human resource development function. It is a role of management to ensure that the organisation and its people acquire the competencies and knowledge it needs through education, training and development activities. In manufacturing firms seeking to achieve improved performance through systematic change processes such as continuous improvement (CI), it is important that the human resource development function plays a role in the CI process.

Introduction
Sustaining a competitive advantage increases the probability of long-term survival and financial success of the organisation (Kuratko, Ireland, & Hornsby, 2001). It has been argued that in the knowledge era, this competitive advantage can be obtained by the effective involvement, management and development of staff. In turn, the most strategic way to invest in people is through learning activities. Carneiro (2001) argues that an organisation should have the capacity to exploit its knowledge and learning capabilities, as a competitive strategy. Further Cullen (1999) argues the significance of both individual and organisational learning in order to develop organisational capacities. Boer et al (2001) present learning aspects similar to Cullen (1999), but they believe organisational capacities enable learning behaviours to develop across the organisation. So to remain internationally competitive, firms seeking to improve their position and processes must sustain a high level of learning that both refines current practices and capabilities and develops new ones. Human resource development has evolved as a critical element of broader business and human resource management strategies. The importance of an appropriately skilled and developed workforce is recognised by many in business as essential to the implementation of continuous improvement programs.

This paper examines learning behaviours reported in a survey of a sample of 580 manufacturing organisations in Europe Australia and South East Asia. It compares the learning in firms who have involved the human resource function in CI with those firms where the human resource function has not been involved. This paper also looks at how widespread CI is in the organisations surveyed and initial findings clearly demonstrate that when the human resource function is involved, CI is more widespread than in firms that choose not to include the personnel or HR department in CI activities.

Continuous Improvement
CI methods have become widely adopted and are regarded as being an important component of increased company competitiveness. Indeed McAdam, Stevenson and Armstrong (2000) argue that development of a CI culture by companies is strongly associated with the development within companies of an innovation culture. The
proposition that a CI culture gives rise to an innovation culture is of particular significance if one takes the view that development of an innovation culture is critical to the ability of companies to develop and take new strategic directions, while CI merely enables a company to be more successful in pursuit of a specific strategy or set of objectives. According to Biazzo and Bernardi (2003) organisational capabilities for sustainable and incremental innovation can only be developed by a number of behavioural routines. Specifically, Bessant and Caffyn (1997) suggest that these routines include the ability to; generate sustained involvement in continuous improvement; link continuous improvement activities to the strategic goals of the company; move continuous improvement activity across organisational boundaries; manage strategically the development of continuous improvement; articulate and demonstrate continuous improvement values; and learn through continuous improvement activity.

CI has many attractions, one of the most important being a potential low cost approach. However, Bessant and Caffyn (1997) note that despite the attractions, the technique can often fail. Successful CI requires long term organisational commitment to a course of action and the development of a consistent set of shared values or beliefs. The key to the success of continuous improvement is an ongoing process of plan (planning improvements); do (implementing improvements); check (whether expected performance have been achieved); and act (standardise the new practice). Among the major potential benefits of continuous improvement are increased business performance in terms of reduced waste, set-up time, stock, handling, breakdowns, and lead time, and staff performance in the form of improved development, empowerment, participation, involvement and quality of work life of employees. The role of ensuring enhanced people performance usually lies within the human resource function and this means that firms seeking to maximise the benefits of CI should ensure that the human resource function is involved. The problem with continuous improvement is that the concept, which at first sight appears to be very simple and attractive, is often difficult to design, implement and develop successfully. However mature continuous improvement requires ‘learning to learn’, or learning to improve ever-more efficiently and effectively and to tackle ever-more complex improvement problems and challenges both within and across organisational elements of supply chains (Gieskes, Hyland, & Magnusson, 2002).

Effective and sustainable continuous improvement of the manufacturing function requires strategic approaches within the organisation which enable managers to be able to think globally about the organisational needs but act locally in response to those needs. The global issues for the organisation reflect the competitive priorities of the market. Kaye and Anderson (1999) maintain that to meet today's rapidly changing business environment, characterised by uncertainty and unpredictability, businesses need competitive continuous improvement. This allows the organisation to be responsive and able to adapt their strategy quickly on the basis of feedback from customers and from benchmarking against competitors. However not all organisations have the same capacity and capabilities for improvement. Some manufacturers are more mature than others in terms of CI capability, and not all organisations have developed the same learning capabilities.

As all organisations are not equal, management needs to select and develop the capabilities that best suit their needs and the needs of the organisation. In this way, managers develop local tactics which flow from local conditions, which complement
the local organisational capabilities yet are consistent with global needs. Managers then need to foster the development of local complementary tactics and ensure that they are integrated with the wider strategy of the company. Campbell and Alexander (1997) identified that many managers believe there is a structure and order to strategy development that should be followed. However Mintzberg (1987) argued strategy making does not occur in isolation. Rather, strategy making is a process interwoven with all that it takes to manage an organisation. Campbell and Alexander (1997) also argue that tactics need to be worked out before strategy can be determined, and any subsequent strategy needs to be clear in order to define organisational objectives.

CI activities, which should be related to the broad strategies of the business, appear to be focused more on manufacturing issues of cost reduction and product quality. The range of tactics being employed at an operational level is not necessarily being integrated through the use of the competitive priorities of the business. These tactics are presumably being driven by local needs. While this may lead to the occasional lucky outcome, it is more likely to produce local benefits, which do not gain the synergy of supporting a major strategy. Many firms have recognised that they need to create an environment conducive to learning and the acquisition of knowledge if they are to strategically manage their improvement activities. Learning needs to become central to ongoing development and improvement.

Learning and Work
According to Nonaka (1991), new knowledge is not simply processing objective information, but rather, tapping the tacit and often highly subjective insights, intuitions, and hunches of individual employees and making these available for testing. Nonaka (1991) also suggests that knowledge creation flows from explicit to explicit and tacit to tacit. An example of the former is when information is synthesised or collected into a new study, whereas knowledge communicated from one person to another describes the latter. Explicit knowledge can be expressed in words and numbers and shared in the form of data, scientific formulae, specifications, and manuals. Tacit knowledge on the other hand is highly personal and hard to formalise, and therefore difficult to communicate and share with others. Nonaka and Takeuchi (1995) suggest that knowledge creation is a spiralling process of interaction between explicit and tacit knowledge. In essence, the process can be described as a series of steps creating “shared space for emerging relationships” (Nonaka & Konno, 1998 p. 40). This process of knowledge storing, creation, and sharing, is synonymous with organisational learning. Tacit knowledge is a way of describing an individual’s worldviews, is deeply embedded in individual action and experience (know-how), and can only be usefully accessed if the organisation has the appropriate learning mechanisms in place.

The core capability of the firm according to Leonard-Barton (1992 p.113) is the “knowledge set that distinguishes and provides a competitive advantage”. Leonard-Barton (1992) believes that four dimensions typified this knowledge set: employee knowledge and skills; technical systems; managerial systems; and values and norms. Leonard-Barton (1992) contends that the first of these is the one most associated with core abilities as it encompasses at an employee level, both firm-specific techniques and scientific understanding. In the second dimension, knowledge is embedded in technical systems resulting from years of accumulating, codifying, and structuring the tacit knowledge in peoples’ heads. Essentially, it is possible for core capabilities to be
institutionalised as part of these dimensions with the organisation, in turn providing a competitive advantage.

There is a need to provide a context in which the knowledge creation trajectory can be usefully implemented in practice, where standard routines are challenged, and where new routines can be turned into improved actions. The socialisation process at work is evident in the way knowledge is shared. All employees can be encouraged to appreciate the self-reinforcing nature of knowledge-creating activities. Each activity is the operational expression of an underlying value and theme found in a number of organisational sub-systems that need to be mutually aligned and interrelated. Leonard-Barton (1992) contends that organisational competencies, without organisational learning, are similar to paradigms that have internal consistencies that make evolutionary change or adaptation nearly impossible. So organisations need to develop the organisational competencies that enable them to effectively manage their knowledge, but do it in a way that encourages organisational learning and provides for effective management of knowledge.

Knowledge can be recorded, archived and distributed; and one of the primary formats or vehicles for the transport and distribution of knowledge is information (Berman Brown & Woodland, 1999). The terms ‘knowledge’ and ‘information’ are not interchangeable, and information needs to be viewed as different from knowledge. Knowledge refers to information that is enriched through its interpretation, analysis, and the context in which it is examined. Information is data that has been organised, analysed, and interpreted either by computer or by people. The codification of knowledge in this way is difficult, if not impossible (Duffy, 2000). This stance is supported by Davenport, Sikka and Beers (1996) who view knowledge as information combined with an individual’s or organisation’s experience, context, interpretation and reflection.

Myburgh (2000) argues that whatever else an organisation may do, it must generate, acquire, process, and use this information to develop knowledge. Many organisational activities require or depend on satisfactory information flows. Such activities include monitoring of the organisation's performance; assessing the possibility of breakdowns; creation and communication of instructions, advice, and policies; exchange of experience and knowledge; scanning the business environment; and the making of major and minor decisions. Information must be appropriately managed so that the organisation can understand and progress toward goals; inform the decision-making processes; and communicate to groups inside and outside of the organisation. In many organisations groups of employees often based within professional silos of engineers, accountants, scientists or technicians, jealously guard their own knowledge and information and fail to share it with others in the organisation. So, to maximise the organisation’s benefits from the information and knowledge its members hold or can acquire, collaboration across professional boundaries is required of individuals. As Amidon (1998) asserts, the creation of knowledge takes place in communities of practice, where individuals with different backgrounds collaborate and share information. However, organisations that wish to create an environment that allows for knowledge sharing may have to identify intervention strategies that encourage the collaboration.

In the right environment and circumstances, a nurturing process may encourage the development of new knowledge that employees can share with others for the benefit of
the organisation. One of the challenges for management is to create an environment that values and recognises those employees who are willing and able to share their knowledge freely. The development of such an environment is often the domain of human resource (HR) professionals.

**Integrating Learning and Work**

The rate of improvement in organisations may ultimately be limited by the rate at which new things can be learned by individuals and the organisation. The concept of the learning organisation therefore has some appeal. Organisational learning consists of more than individual employees gaining knowledge. For the organisation to learn, knowledge captured by individuals must be shared, disseminated throughout the organisation and applied to modify current practices, creating a culture embracing constant change and improvement. As Hedberg (1981) emphasised, while organisational learning occurs through individuals, it is a mistake to conclude that organisational learning is nothing more than the cumulative result of their members' learning. Knowledge must be readily available to all members of the organisation. Schein (1985) also observed that a major organisational challenge is the internal integration of individuals within a shared culture that facilitates learning. The sharing of learning occurs more often when there is a similarity within the group culture.

In summary, to be competitive, organisations must engender an environment where CI is the focus and individuals are trained, encouraged and rewarded for their learning behaviours and the sharing of knowledge. Organisational learning also needs to be recognised as an important component of CI, with emphasis placed on organisational systems, routines and a culture that encourages rather than stifles this learning and development. The HR function is often tasked with the championing of such a culture, and it is often claimed that involvement of HR professionals should enhance CI efforts and assist in the timely solution of issues within the CI process. This paper aims to identify whether this is the case based upon results of international research relating to CI initiatives.

**Methodology**

The survey being reported is part of an international investigation of CI. A total of 580 surveys were received from manufacturing organisations in Europe, South East Asia and Australia. The European countries included: Ireland, Italy, the Netherlands and Sweden. The Australian sample consisted of 89 organisations located on the eastern seaboard. The South East Asian firms were located in Hong Kong. Each firm was mailed a survey explaining the purpose of the study.

This paper reports on this data set, and examines eight learning behaviours that have been identified by Bessant and Caffyn (1997) as central to CI. The survey required operation managers or quality managers to indicate their level of agreement with each of the statements. The managers were asked to compare the organisations over a three year period to see if there has been an improvement in behaviours over time. The sample is divided into those firms that involved the HR professionals and those firms who did not involve the HR professionals, to determine if their involvement alters the learning behaviours in the firms. The results also consider the dispersion of CI activities, the ease with which the CI process was embedded in the organisations and problems encountered with the CI process. In each instance firms that involve the HR function are compared with firms that did not involve the HR function. The question
that is addressed in this paper is whether CI and learning are more effective in organisations that involve the HR function in the CI process than those that do not.

**Results**

From Table 1 it is evident that there are differences as measured by the mean and mode between firms where HR is involved in CI and firms that have not involved the HR function. Although these differences are minor in some cases such as Behaviour 2; in most cases where HR is involved there is a greater emphasis on learning as can be seen from the bold figures in Table 1.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>HR involved</td>
<td>HR not involved</td>
<td>Behaviour 1. Appropriate organisational mechanisms are used to deploy what has been learned across the organisation</td>
</tr>
<tr>
<td>2.0</td>
<td>2.1</td>
<td>2.0</td>
</tr>
<tr>
<td>2.0</td>
<td>1.8</td>
<td>2.0</td>
</tr>
<tr>
<td>3.0</td>
<td>2.4</td>
<td>3.0</td>
</tr>
<tr>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>2.0</td>
<td>2.1</td>
<td>3.0</td>
</tr>
<tr>
<td>2.0</td>
<td>2.1</td>
<td>3.0</td>
</tr>
<tr>
<td>3.0</td>
<td>2.4</td>
<td>3.0</td>
</tr>
<tr>
<td>2.0</td>
<td>2.4</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Table 1 Learning Behaviours in CI

Whenever the HR function is involved there also appears to be wider involvement of other departments in improvement activities as is evident from Table 2. Not surprisingly, the only exception to this is the Quality function, which sees improvement as an integrated part of daily life in firms regardless of the involvement of the HR function. It is interesting to note that when the HR function is involved, the managing director and the management team also regard improvement as an integrated part of daily life.
How widely spread are improvement activities in your organisation?

<table>
<thead>
<tr>
<th>No improvement activity</th>
<th>Occasional improvement activities</th>
<th>Regular improvement activities</th>
<th>Frequent improvement activities</th>
<th>Improvement is integrated part of daily life</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

HR involved - Mode   HR not involved -Mode

3c.1 Managing director/ management team 5 2
3c.2 NPD department 5 2
3c.3 Engineering department 5 3
3c.4 Production department 5 3
3c.5 Marketing & sales department 3 2
3c.6 Logistics department 3 2
3c.7 Quality department 5 5
3c.8 Maintenance department 3 2
3c.9 After sales service department 3 2
3c.10 Financial department 3 2
3c.11 Personnel/HRM department 3 2

Table 2 Comparison of involvement in CI activities

From Table 3 it is evident that in firms involving the HR function it is easier to maintain activity in on-going efforts, to spread change efforts to other departments or units, and to raise sufficient resources for CI activities. This may be an indication that when the HR function is involved there is less internal competition for resources and a more supportive culture.

<table>
<thead>
<tr>
<th>What are general experiences with improvement activities in your organisation?</th>
<th>Very easy</th>
<th>Very difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HR involved - Mode</td>
<td>HR not involved -Mode</td>
</tr>
<tr>
<td>5.1 To initiate concrete changes is</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5.2 To maintain activity in on-going efforts is</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.3 To spread change efforts to other dept/units is</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.4 To manage several projects simultaneously is</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5.5 To align CI activities and overall business strategies is</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5.6 To raise sufficient resources for CI activities is</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 3 Comparison of improvement activities based on HR involvement

However Table 4, identifies that in firms where HR is not involved compared to firms where the HR function is involved, there is less likely to be a culture that is supportive of improvement. It would also appear that in firms involving the HR function, resources such as time and money are frequently a problem in trying to maintain improvement activities and respondents perceived there was an insufficient support and facilitation of improvement activities. There appears to be no difference in worker commitment to improvement practices whether HR is involved or not and this is an area for concern.
How frequently have you encountered any of the following problems when implementing improvement activities

<table>
<thead>
<tr>
<th>Problem</th>
<th>Very Frequently</th>
<th>Very rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Not enough time</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6.2 Not enough budget</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.3 Not enough knowledge/capabilities/experience</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6.4 Insufficient training facilities</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6.5 Not enough information</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6.6 Insufficient support/facilitation</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>6.7 Insufficient management commitment</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.8 Goal unclarity or ambiguity</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.9 Insufficient worker commitment</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6.10 Culture not supportive of improvement</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>6.11 Insufficient performance measures</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4 Comparison of problems in CI activities and HR involvement

Conclusion

It is apparent from the findings in this paper that when the human resource function is involved in CI activities and learning that there is a real benefit to the organisation. It may be the case that when a strategic approach is taken to managing CI and including the human resource function, the alignment of learning and strategy pay off for the firm. In the data reported here the learning behaviours are more evident in firms involving HR professionals than in firms not involving the HR professionals. Schein (1985) argues that organisational culture needs to support learning yet the firms in this study do not perceive the culture to be supportive of improvement activities although it appears they are supportive of learning. It is possible therefore that the respondents considered learning at an individual level to be supported, whilst at the organisational level, they did not necessarily see any demonstration of widespread support for improvement.

It is also the case that in those firms including the human resource function, they should be able to draw upon additional expertise and capabilities that enhance learning and build capabilities that engender a better CI culture. However in the firms in this study involving the HR function, the CI culture appears to be less supportive of improvement and it may be the case that firms seeking to implement CI do not involve the HR function unless the culture is in need of change. Managers wishing to minimise the problems of implementing CI and maximising the returns would do well to include the human resource function in CI activities.

In the firms in this study that involved the HR function there was a greater tendency for CI activities to be more widespread and for the management team to be involved on a daily basis with CI activities. As the early work by Bessant and Caffyn (1997) argues, CI is a people centric process and as such requires leadership and commitment by senior managers. It is very likely that all departments or functional units are more likely to support an improvement process supported and driven by senior management. The HR function can play a significant role in any change process but their involvement needs to be supported with both time and money, and the senior management team needs to be committed to involving all functions in a culture of continuous improvement.
References


