

From continuous improvement to organisational learning

In more recent times, several scholars such as Bessant and Caffyn (1996) have conducted empirical research designed to match improved organisation performance to superior behavioural routines. The research has broadened the concept of total quality management by describing the CI process as one of sustained incremental innovation (Bessant and Caffyn, 1996). Most of this research has been conducted in UK firms, where sets of behavioural capabilities have been assigned to developmental levels of continuous improvement. The research contends that higher levels of continuous improvement translate into superior behavioural routines (or vice versa), with standard and structured routines, by comparison, consistent with lower-level improvement initiatives (Bessant and Caffyn, 1996, p. 5). Essentially, the focus of this approach is underpinned by the five principles of TQM including customer focus, process focus, teamwork, employee participation, and continuous improvement, but the difference appears to be embodied in the way continuous improvement is enacted. The mobilisation of high levels of participation for achieving innovative problem solving underlies the approach (Leonard-Barton, 1992; Imai, 1986; Bessant and Caffyn, 1996, p. 3).

According to these scholars, high levels of participation account for significant improvements in productivity, in the implementation of advanced technologies, and in the improvement of manufacturing efficiencies between productivity, quality, and time (Bessant and Caffyn, 1996). Bessant and Caffyn (1996, p. 4) extend the more linear frameworks of TQM by drawing attention to the need for high levels of participation where such routines need to be built into the fabric of organisational life. High performance organisations have accredited much of their success to high-involvement routines, but the establishment of these will vary from company to company based on their capacity to learn. For example, the Toyota production system took over 40 years to become embedded in the culture of the firm (Monden (1983), in Bessant and Caffyn (1996, p. 8)). Many programmes of continuous

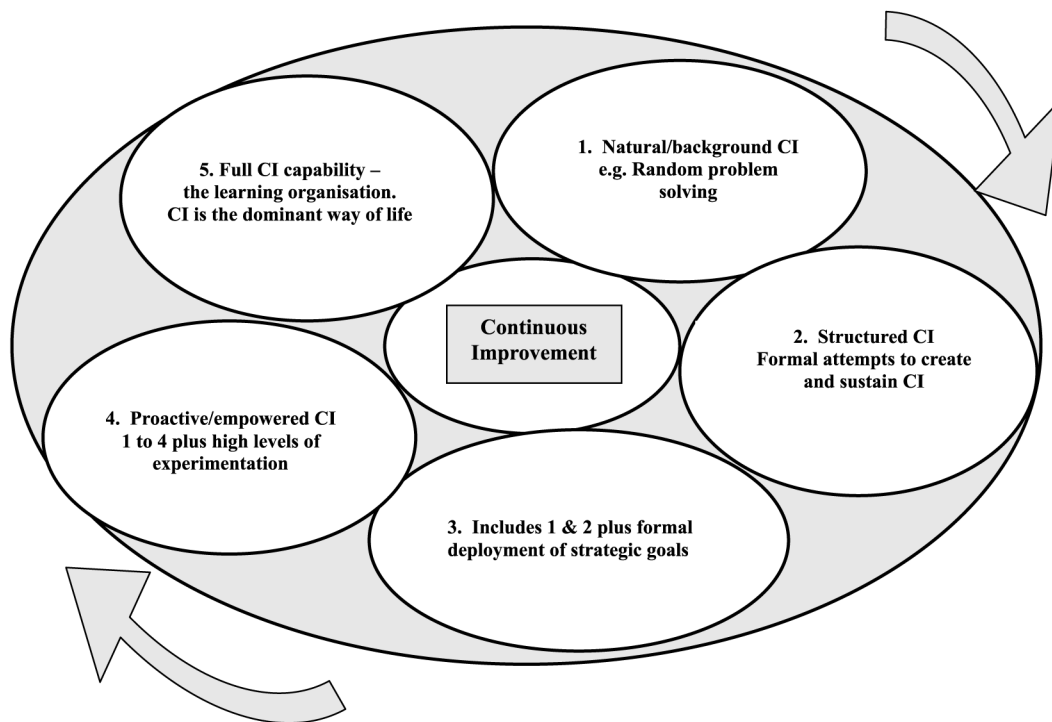
improvement in UK companies have been similarly described:

At the outset there is enthusiasm, but little skill, and the early days of CI development are taken up with learning the basics of systematic problem solving, and practising the use of simple tools and techniques. Putting a workable program together that integrates the generation of ideas with their implementation, with recognising and rewarding the effort put in, with measuring and recording the improvements and identifying the next targets, is a long-term undertaking (Bessant and Caffyn, 1996, p. 10).

This suggests that the culture for continuous improvement (CI) develops over time, is established through cultural routines, and through behavioural change. Bessant and Caffyn's research suggests that these changes can be tracked by categorising them at different levels of continuous improvement. They identified five levels of CI as organisations progressively develop:

- (1) natural/background CI;
- (2) structured CI;
- (3) goal oriented CI;
- (4) proactive/empowered CI; and
- (5) "full" CI.

Each of these levels is associated with a matching capability so that the capability or behaviour would improve as each higher level is reached. Most of the capabilities used to categorise these levels are clearly linked to specific learning behaviours, and it is not difficult to view the levels as specific levels of learning. At the highest level (full CI), this underlies the characteristics of a learning organisation (Figure 2). This paper contends that it is useful to think of the levels as cycles, since one cycle of learning depends on the other, and evidences of learning can be found at each stage of the cycle. For instance, the CI literature argues that firms can only advance to a new stage after an earlier one has been achieved (Bessant and Caffyn, 1996, p. 14). Murray's research contends that there are elements of every stage in most firms (Murray, 1999, 2001). Generally, such routines are found in various competencies. The point is that the evidence of routines at each stage in a cycle of learning increases as firms learn new behaviours that challenge and improve the old routines. From their research of UK firms, Bessant and Caffyn (1996, p. 12) suggest that six behaviours (or routines) are needed to activate the cycle:

Figure 2 Adaptive learning, cycles of continuous improvement

Source: Adapted from Bessant and Caffyn (1996)

- (1) getting the CI habit;
- (2) focusing CI;
- (3) spreading the word;
- (4) CI on the CI system;
- (5) walking the talk; and
- (6) building the learning organisation.

In expanding the contextual barriers discussed previously, the problem with the five cycles in Figure 2 is the emphasis on a process that draws on some fundamental ingredients of change while ignoring others. Steps 1 to 3 in Figure 2 draw on adaptive learning. Adaptive learning is based on a firm's coping ability, that is, its capacity to select, interpret, and respond to environmental stimuli both inside and outside the firm (Murray, 2001; Hedberg, 1981). Underlying a firm's coping ability will be its capacity to learn and change simultaneously. Adaptive learning is similar to continuous improvement in that a firm is concerned with gradual learning where companies improve past decisions and make them better through small-scale adjustment (see Stacey, 1996; Quinn, 1980). Steps 4 to 5 in Figure 2 closely resemble Senge's concept of generative learning. Generative or higher-level learning requires new ways of looking at the world, whether in understanding customers or in understanding how to better manage a

business (Senge, 1990, pp. 7-8), and encourages learners to challenge, question, and repudiate decision-making assumptions (Fiol and Lyles, 1985; Kim, 1993; Argyris and Schon, 1978).

Generative learning will also be influenced by individual and organisational worldviews to the extent that organisations see what they want to see and filter out information that fails to match their decision-making coping ability (Cyert and March, 1963). Much recent research shows that learning styles, cognitive learning abilities, as well as generative learning abilities influence learners (Crossan *et al.*, 1993; Allinson and Hayes, 1996; Honey and Mumford, 1986), not always in the way managers prefer (Argyris, 1993). Similarly, culture is often portrayed in the CI literature as "shared values", "cultural fit", and "cultural adaptation", yet recent research suggests that two or more different archetypes (competing structures and systems) exist in most firms (Hinings and Greenwood, 1988). Competing archetypes reflect cultural values and ideologies that prevent new learning taking place, and deep-seated paradigms that inhibit change on an ongoing basis (Johnson, 1988). Firms develop and maintain learning systems that not only influence their immediate members, but are

then transmitted to others by way of organisation histories and norms (Fiol and Lyles, 1985).

Figure 2 is incomplete in the sense that firms depend on learners who can exhibit many different learning styles (Table I). Indeed, if the goal of learning cycles is to improve behavioural routines and achieve shared values, then it follows that an individual's belief system (individual schema) will need to be highly advanced and continually challenged. Highly advanced individual belief schemas will have more ability to interpret environmental stimuli (interpretive skills) than those individuals with less advanced cognitive schemas. The potential level of interpretation is a function of the complexity of individual schemas and the divergence among them (Crossan *et al.*, 1993; Neisser, 1967). Similarly, when groups work to create shared meaning from their experiences, whether good or bad, the collective experiences translate into an integrative ability, leading to greater capability that transcends individual experiences. Managers need to understand that individuals have varying style dispositions when exposed to various problem-solving stimuli and only a small number of individuals have sufficient breadth (learning versatility) to perform well in multiple roles (Allinson and Hayes, 1996, p. 14).

To optimise the behavioural routines illustrated in the continuous improvement cycle, managers will need to choose from a range of possible learning behaviours that best suits the environment, or requirements of a given situation or task. Indeed, organisations need to have available to them a range of

learning behaviours, some which are habitual (i.e. derived from individual schemas), but others which are consciously applied to overcome the weaknesses of one's habitual approach (Sadler-Smith and Badger, 1998, p. 252). To achieve change, managers must go further than simply creating the illusion of change such that managers appear to be in control (Starbuck, 1983).

Capabilities have been interlinked with the stages of learning in much of the continuous improvement literature. The literature suggests that capabilities are underpinned by behaviours that must be advanced before the capability can be reached. Bessant and Caffyn's approach is a fairly objective one; picking from a list of behaviours and implementing them suggests that a firm will move closer to a predefined capability. Such an approach does not take account of learning styles, organisation and individual worldviews, and cultural systems that mirror the actions of a regulator that push-pull any new learning initiatives back to a state of equilibrium. In most firms, the concept of equilibrium is represented by norms and values, and any change in the technical or operational system is greeted with resistance by the existing social system. It is not easy to simply advance a group of behaviours, conceived in advance, and expect them to emerge into a set of capabilities.

Instead of a one-dimensional approach to developing capabilities, capabilities may best be understood in terms of teams of resources that perform some task or activity (Grant, 1991), as collective learning that integrates multiple streams of technology (Hamel and Prahalad, 1989), and the ability of an

Table I Differences in learning styles

Honey and Mumford's learning styles	Kolb's learning styles
Activists: people who learn best when they can use trial and error to discover something	The ability to be involved fully, openly, and without bias in new experiences (concrete experience)
Reflectors: people who learn best when they are given adequate time to digest, consider, and prepare	The ability to reflect on and observe experiences from different perspectives (reflective observation)
Theorists: people who learn best when there is a sound structure and a pattern or purpose – they respond well to complex ideas or concepts that stretch or question current thinking	The ability to create concepts that integrate reflection and observation into logical theories (abstract conceptualisation)
Pragmatists: people who learn best when they can be given real life practical issues to discuss and are supplied with practical tips and suggestions (Honey and Mumford, in Rylatt, 1994, p. 67)	The ability to use theories to make plans and implement action (active experimentation) (Kolb, 1984)

organisation to develop a competence to continuously use learning to achieve its purpose (Dunphy *et al.*, 1996). If learning is embedded in competencies that enable firms to achieve something better or different, then the development of capabilities will already be predisposed to learning styles, cognitive learning, and cultural routines. Multiple approaches will be needed. Scholars underplay most if not all of these approaches in the CI literature.

A multiple approach to learning will add a new dimension to the CI framework discussed earlier. Murray (2002) suggests that a multiple approach to learning can be thought of in terms of unbounded learning (Figure 3). Unbounded learning means the capacity of a firm to grow and change simultaneously without being limited by organisational systems and culture (Murray, 2002, p. 239). In Figure 3, while each learning approach depends on the other, learning has a reciprocal effect in that improvements and advances in one area will affect the other. Unbounded learning approaches help to foster the development of new individual and organisational routines and these will be reflected in the firm's

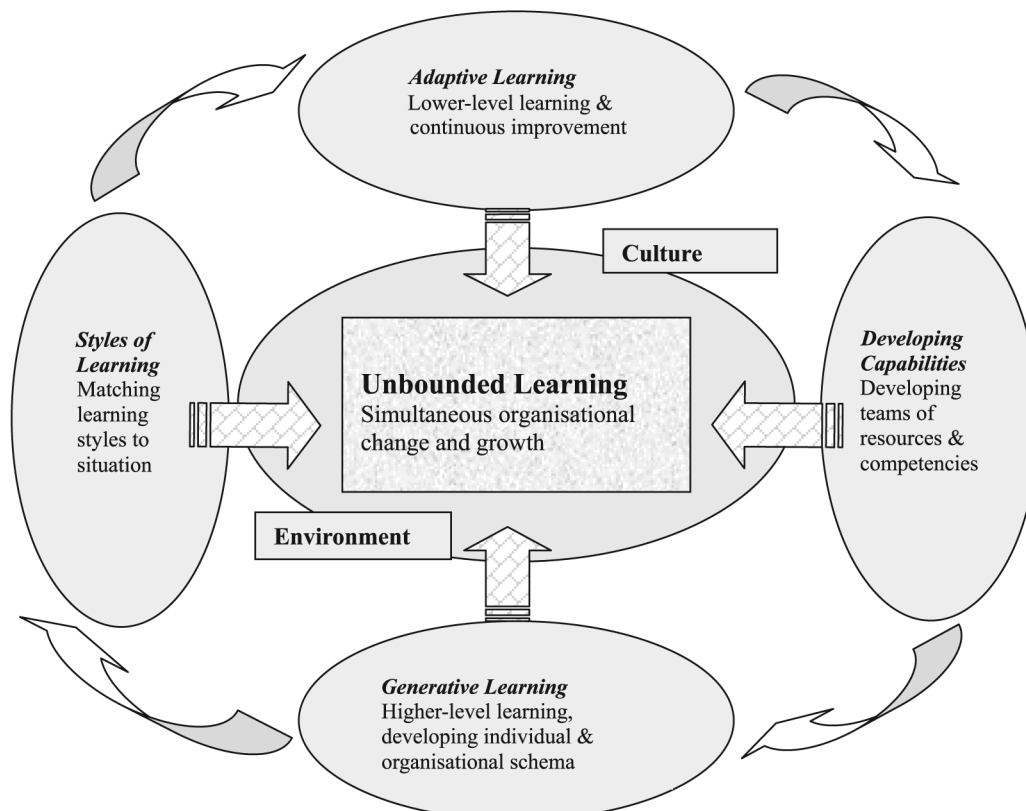
cultural values. Improvements in learning behaviour will enable better response time to the environment as well since more sophisticated learning responses challenge the various forces that impede change (e.g. deeply held values, old management practice).

Recent empirical research has found that higher-level learning routines assist learners to interpret and respond better to environmental stimuli (Murray and Donegan, 2003).

While the continuous improvement and total quality management literature has played a key part in improving and developing work processes, particularly in the manufacturing area, its essential contribution lies in adaptive learning. The capacity to improve past decisions and make them better is a useful insight in improving and adapting past discoveries and decisions, and is particularly useful when high involvement routines are enacted. However, significant change will come from a more holistic approach; multiple learning methods are infinitely more valuable as old routines are challenged and new ones created.

Significantly, this discussion suggests that new behavioural routines reflect the new learning and that a firm's capacity to respond

Figure 3 Unbounded cycles of learning



Source: Murray (2002, pp. 239-247)

to change internally and adapt to change externally will be greatly improved.

Conclusions

In summary, there are a number of contextual barriers to implementing TQM in practice, and CI methodologies appear to be imbued with a one-dimensional approach.

Organisational learning frameworks provide useful ways of thinking about TQM and CI – a more holistic process towards learning suggests that efforts to improve and develop behavioural routines will be more beneficial.

A different cycle of learning is demanded when the barriers to current learning impede firm performance. We suggest an unbounded learning approach that represents the four broad areas discussed in this paper.

Unbounded learning underlies a holistic approach represented by adaptive learning (continuous improvement), styles of learning, generative learning, and developing capabilities. Such areas can be recognised from the previous discussions. It is our hope that this paper will stimulate discussion with other scholars to explore the links between improved firm performance and an unbounded learning philosophy. The unbounded approach includes the best that continuous improvement methodologies can offer, and adds a number of new dimensions that will assist the firm to achieve change and growth simultaneously.

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