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A case study of continuous improvement as a dynamic capability

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Abstract

The ability to consistently improve current processes and learn new ones is termed continuous improvement capability. A framework model is presented as based on the findings of a case study of process improvement within a firm. The results show that the key tacit elements are mediated by behavioural factors.

Keywords: Continuous Improvement, Dynamic capability, Knowledge management, Behaviour in operations

Literature Review

In recent years organizations, both public and private, have come under considerable pressure to reform and rationalize in response to the reverberations of the collapse of Lehman Brothers, globalization and the advent of the digital age. The speed of change in the external environment has witnessed the rise and abrupt fall of once industry leading firms such as Kodak, Nokia and Blackberry. The pressure for an organisation to adapt internal operations to external environmental changes is therefore becoming increasingly important. Due to an
increasing pace and complexity of business environments, organizations no longer compete on processes but the ability to continually improve processes (Teece, 2007).

The impact of these improvements represents a step change in practice and performance. Continuous improvement adopts an approach to improvement that assumes a never-ending series of small incremental improvement steps (Tecce & Pisano, 1994), for example reducing a machine changeover time or within a service setting dealing with a customer complaint in real time. Continuous improvement is not concerned with promoting small improvements per se, but it does see small improvements as having one significant advantage over larger ones, they can be followed relatively painlessly by others. It is not the rate of improvement which is important; it is the momentum of improvement. Continuous improvement is defined as a “systematic effort to seek out and apply new ways of doing work i.e. actively and repeatedly making process improvements”, (Anand et al., 2009, p 444) and “process improvements are defined as enhancements in operational processes” where the ability to consistently improve current processes and learn new ones is termed continuous improvement capability (Ittner and Larcker, 1997).

The dynamic capabilities approach argues that competitive advantage is dependent on particular organizational and managerial processes, termed ‘dynamic capabilities’ that are defined as the firm’s ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments. “Organizational learning is a process that occurs over time” P1124 Argot and Miron-Spektor (2011) and therefore can be described as a dynamic capability. One of the criticisms of the dynamic capabilities concept is that they are difficult to measure empirically, as are the underlying operational processes as well as the relationship between dynamic capabilities and firm performance. It is also difficult to measure the routines and processes that are often idiosyncratic to firms or part of resource bundles. Tecce, Pisano and Shuen (1997) have referred to learning as a specific type of process underlying dynamic capabilities, which is based on repetition, experimentation and identification of new opportunities. Conversely, Zott (2003) identifies learning of resource deployment as a performance-relevant attribute of dynamic capabilities.

The topic of knowledge creation though process improvement projects has previously been addressed in the context of total quality management initiatives by Mukherjee et al. (1998). Focusing on technological knowledge, their study finds operational and conceptual forms of learning to be significant predictors of project success. Operational learning
involves superficially learning how to run a process, and how to react to certain changes. Conceptual learning involves gaining deeper knowledge of cause-effect relationships. While Mukherjee et al (1998) treatment of these variables focused on explicit-knowledge contexts. Anand et al. (2010) builds on their paper by incorporating the role of tacit knowledge. In the context of process improvement, the tendency to focus exclusively on explicit knowledge is exacerbated by the fact that most projects have objectives related to exploiting and controlling existing process capabilities (Schroeder et al., 2008).

The tendency for leaders of such projects to concentrate on explicit knowledge that is easier to capture, while getting blindsided by tacit knowledge that may be relevant, makes it important for practice and academia to examine the missed opportunities that may result from ignoring tacit knowledge (Anand et al 2010). At the same time numerous organizations that have deployed improvement initiatives have not been successful in getting what they set out to achieve (Anand et al., 2009). Many attempts at quality improvement take longer than expected or fail to reap the intended rewards. A common reason given for failure is that organizational culture values are incompatible with the values underlying quality management. That is, employees may resist a quality initiative because it conflicts with the prevailing ‘way things are done’. In particular, ‘soft’ quality practices, such as empowerment, cross-functional teams and customer feedback are highly susceptible to cultural influences (Zhao et al, 2007). For example, General Motors (GM) had attempted expand lean manufacturing practices via it NUMI and Saturn operations with limited success due to the impediments imposed by GM’s culture (Inkpen, 2005).

Methodology

A lack of prior theorizing about a topic makes the inductive case study approach an appropriate choice of methodology for developing theory (Eisenhardt, 1989). To gain a deeper understanding of process improvement knowledge transfer within an organization, the research conducted an in-depth inquiry into the practice of transferring knowledge of process improvement amongst four different locations of one service organization. Insight was gained from conducting a number of process walks of each site, reviewing formal documentation on process improvement initiatives and interviewing senior and operational staff involved in improvement activities. In total twelve interviews were conducted.
Findings

The following two tables (labelled Theme 1, Theme 2) illustrate, in summary form, the results of the in-depth case based analysis. The tables depict the specific ways in which human capital resources and organizational capital resources are manifested in the case firm. While some traditional frameworks focus on the competitive advantage of the firm, viewing knowledge within a firm as a homogenous entity, this research highlights that knowledge of process improvement does not easily flow within a firm’s boundaries. In line with the guidance of Miles and Huberman (1984) the results are tabulated below to show existing theoretical elements matched to case evidence.

<table>
<thead>
<tr>
<th>Theme 1. Human Capital resources (Becker 1964)</th>
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<tbody>
<tr>
<td><strong>2.1 Skills and Experience</strong></td>
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<tr>
<td>The ability of a firm to recognize the value of new, internal process improvement information, assimilate it, and apply it to commercial ends regardless of its source location</td>
</tr>
<tr>
<td><strong>Case support</strong></td>
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<tr>
<td>No-one in the organization had prior knowledge of process improvement. The programme was initiated by a half day lecture and provision of a 300 to 500 page document detailing Japanese improvement techniques. Staff stated that learning was a “very slow process” and queried how “it applied to our culture”. After three years of the programme the improvement lead said “we still haven’t got the believe yet to interpret the material”</td>
</tr>
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</table>

| **2.2 Ease of transfer and conversion** |
| The seamless flow of tacit knowledge of process improvements to its point of need within the boundaries of the organization |
| **Case support** | **Literature support** |
| Improvement leader at each site and work stream supervisors project leads at each site have a different education and experience profile. For example site A the work organisation lead is a qualified electrician, whereas his counterpart in Site B is a newly graduated student with an Arts degree. | Stickiness (Szulanski, 1996) |
Knowledge tends to move with the person when they change sites or leave the organisation. Sites B and D reverted to old practices once work stream leads changed sites and/or organizations.

### 2.3 Behavioural characteristics
Human nature as we know it

<table>
<thead>
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<th>Case support</th>
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| • Driven by internal lead tables and a certification programme  
  • “As I said earlier about not sharing, that has got worse, rather than better over time” | Opportunism and Bounded rationality (Williamson 1979)  
Trust (Inkpen and Tsang 2005) |

### Theme 2. Organizational capital resources
(Tomer 1987)

### 3.1 Formal and informal Relationships
Organizational lead and individual led internal knowledge networks

<table>
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<th>Case support</th>
<th>Literature support</th>
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| • Improvement leads tend to build relationships with those of a similar perspective and background (i.e. shop floor workers with no third level education distrust graduate scheme work stream leads)  
  • ‘Them and us’ grouping are prevalent across the organisation, with a regional element to relationship building.  
  • Formal relationship networks have had poor leadership from the centre of the organization. Subsequently after a positive start most formal relationship approaches cease.  

### 3.2 Knowledge sharing routines
A regular pattern of within firm interactions that permits the transfer, recombination and application of knowledge

<table>
<thead>
<tr>
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<th>Literature support</th>
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| • Formally a number of initiatives have been in place. Ranging from weekly conference calls to a organization wide information depository for best practice. Periodically Kaizen events are organised around a specific issue on a host site for one week.  
  • Informally phone calls and emails are regularly exchanged. | Knowledge sharing routines (Li & Tsai., 2009) |
A random site visit by the Plant manager to Site C to Site B led to a phone back to the improvement leader to urgently travel to that site to capture how they have implemented an improvement. This was an accident rather than the outcome of a formal intervention on the part of the organization.

Locally within a site knowledge is shared “in a completely different way, so it will be more of a hands on sharing of knowledge, I guess it is not as clinical as the formal shared drive documents” This suggests that tacit knowledge is lost when communicating improvements outside of a specific site.

3.3 Commitment and Control
The hard and soft mechanisms used to achieve the organizations overall aims and objectives

<table>
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<tr>
<td>Control is in the form of a formal audit process matched to benchmarks for internal accreditation (the auditors have no prior experience of process improvement). This has encouraged behaviour that “ticks boxes” rather than generates a tangible improvement.</td>
<td>Coordination (Grant 1996) Effective governance (Dyer &amp; Singh 1998)</td>
</tr>
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<td>Overall commitment seems to be on the wane after initial frenzied efforts delivered benefits from basic improvements.</td>
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<td>Once the requirement for tacit knowledge came, the lack of knowledge (absorptive capacity and also flow of knowledge to point of need) have acted as a barrier.</td>
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<td>The people with the least organizational knowledge (recent graduate entrants) are responsible for updating and managing the central knowledge depository</td>
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Contribution

The key finding of this exploratory case study relates to how the tacit elements of process improvement do not easily flow within a service organization. Behavioural factors relating to partner specific absorptive capacity is mediated by the occurrence of opportunism. This opportunism relates to deliberate actions by organizational actors to prevent tacit knowledge of process improvement being shared with other locations of the firm, primarily acting in self-interest to protect jobs and internal influence. With this in mind this paper can be termed ‘behavioural operations’ research as it finds that that organizational actors are viewed as not being “hyperrational beings optimizing behaviour toward a single monetary goal” (Croson et al 2013). Acting in self-interest they do not seem to be working towards the organizations core aim of sharing best practice internally.

References


