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Change-driven process management: exploring a new process paradigm adaptable to societal changes

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Abstract

Purpose – Process management principles are challenging owing to the increasing need for sustainable operations. The demand for rapid deliveries implies accelerated changes and increased flexibility. Therefore, this study aims to facilitate process improvements based on change-driven needs.

Design/methodology/approach – The research is conducted using holistic multiple case studies of eight Swedish organisations (with employees from Sweden, France and Germany), representing the automotive, energy, medical technology, healthcare, telecom and social services sectors.

Findings – A process management model with four change-driven phases is presented. The model fulfils demands for both speed and quality in process changes, providing specific guidance on working methods for (1) control and stability, (2) creativity and stability, (3) creativity and change and (4) control and change.

Research limitations/implications – This research is limited to eight organisations in Sweden, France, and Germany that participate in the automotive, energy, medical technology, healthcare, telecom and social services sectors. Future research should explore broader international contexts.

Practical implications – The proposed model helps decision-makers adapt process management to evolving business and operational needs; thus, leaders can make grounded decisions on when and how to change operations based on changing internal and external requirements.

Originality/value – This study challenges the current process management paradigm with new knowledge of how process management can be adapted to new business opportunities.

Keywords Quality management, Process management, Trust-based management, Innovation management, Change management

Paper type Research paper

Introduction

The business environment and operational requirements are changing at an ever-increasing rate, and these challenges affect the traditional process management principles of *stability and control*, which use the working methods introduced by Davenport and Short (1990). The necessity for *faster changes and increased flexibility* are apparent in the increased need for social, ecological, and economic sustainability (Broman and Robèrt, 2017; Deleryd and Fundin, 2020), demand for fast deliveries, and an increased number of customers and stakeholders (Hallencreutz *et al.*, 2020). At the same time, there is an increased focus on employees, as they are crucial components in the development towards societal sustainability (Cronemyr and Fundin, 2024). This is also a focus of Industry 5.0, which addresses the critical

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perspective of humans working alongside advanced technology to enhance workplace processes, which requires a more human-centric focus, increased resilience, and an improved focus on sustainability (European Commission, 2024). Process management is approaching a new paradigm of innovative quality improvement and emergent quality management in operations (Backström *et al*., 2017), while traditional business processes management (BPM) neglect the high value of knowledge intensive BPM (Szelagowski and Berniak-Wozny, 2024). However, they acknowledge creating AI (Artificial Intelligence) business value through BPM capabilities (Zebec and Indihar Štemberger, 2024). In this new paradigm, knowledge management, driven by motivation and innovation, has a positive and significant effect on both organisational and individual performance (Ştefan *et al*., 2024). This effect is partially confirmed by Indihar Štemberger *et al*. (2024) in terms of improving customer experience—a top priority in BPM. People and organisational culture play a key role in this improvement. Similarly, the need for governance is increasing owing to legal requirements and increased globalisation. As process management research evolves, BPM is entering a new era shaped by changing consumer demand patterns; environmental, social and governance (ESG) requirements; and concepts like conscious capital (Rosemann *et al*., 2023). In this context, there is a resilient societal demand for business processes to achieve more than just profit. These benevolent processes aim to place an even stronger emphasis on stakeholder demands.

To effectively manage sub-processes based on operational requirements and needs, many organisations express the need to balance these conflicting process management requirements. The two conflicting forces can be expressed as a dichotomy with divergent needs and contradictory ways of achieving results: (1) predictable, well-defined outputs under a high level of control; and (2) flexible and adaptable processes based on trust in co-workers' experience and judgement. Given these circumstances, balancing and managing process improvements in organisations presents a dilemma. However, the common denominator is that all process improvements start with a specific need for a subsequent type of change initiative. This logic defines the following research question: *How should process improvements be managed in fast-changing environments with a variety of conflicting stakeholder needs?* This study aims to help decision-makers manage process improvements to achieve sustainable operations based on a variety of changing needs.

Conducted as a holistic multiple case study design, following Yin (2018), this study uses eight organisations from the automotive, energy, medical technology, healthcare, telecom, and social services sectors. This study focuses on operations management theories—specifically, the discourse on process management. This study makes theoretical contributions to process improvement theories using knowledge and management perspectives on how to make more reliable decisions to move toward sustainable development in organisations.

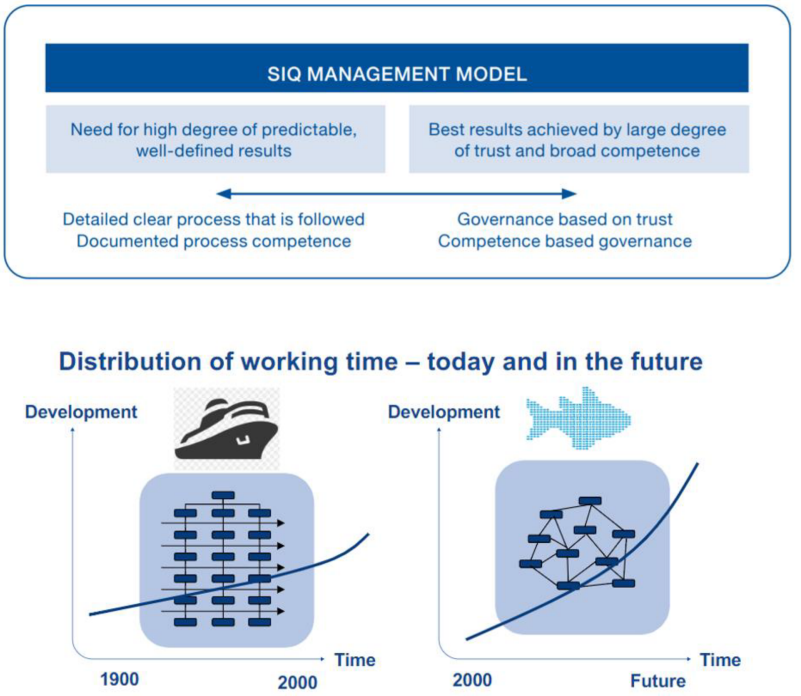
Further, this study synthesises the theoretical frameworks of processes and management into one framework to analyse the data collected in the empirical investigation. The case study design and data collection process are outlined, and the data analysis and model development are presented.

Theoretical framework

The need for change

Based on research conducted with numerous multinational member organisations and the public sector, the Swedish Institute for Quality (SIQ, 2022) has recognised the societal shift from traditional to trust-based management and from stability to change. Process management may be perceived by some as a relic of the past; however, there is a need for more flexibility to maintain good performance, and more innovation and creativity in ways of working to avoid ad-hoc behaviour (Figure 1).

Backström *et al.* (2017) defined four dichotomies for the management of key production system processes. The operative processes of "production" and "innovation" contribute to the core processes of "value creation" and "knowledge creation". These operative processes are



Note(s): SIQ Management Model (top) is from the SIQ (2022) and Distribution of working time (bottom) is an illustration edited by the authors based on an illustration from the Swedish Institute for Quality

Source(s): Figure courtesy of SIQ (2022)

Figure 1. Two trends, from traditional to trust-based management and from stability to change

commonly performed during process management. Backström *et al.* (2017) identified "stability and change" as a dichotomy of "production" and "control and creativity" as a dichotomy of "innovation". For process management to remain relevant now and in the future, these dichotomies must be addressed within a new framework.

For this purpose, we propose a new framework for change-driven process management, comprising four quadrants that represent different states of dynamic process management.

Process management

Traditional process management, as described by Davenport and Short (1990), has been applied extensively for three decades. In the 1990s, many companies around the world started implementing and using process management or as it was called business process reengineering (Harrington, 1991; Davenport, 1993; Hammer and Champy, 1993; Willoch, 1994; Hellström and Peterson, 2006). However, process management is interpreted and used differently in various settings and cultures. Many software applications have been developed, mainly focusing on process mapping and later, for business enterprises. It is also considered a tool for building quality management systems (QMSs) based on the ISO9001 standard. In many settings the mapping and documentation of processes has become a major task, often conducted by the quality department of a company, detached from the core business. At the beginning of the 21st century, process management spread to the public sector with the

emergence of new public management. Although challenges and innovations in process management have been addressed, it has begun to resemble a rigid, bureaucratic concept from the past, especially with the emergence of "new and fancy" management concepts like Six Sigma, Lean, agility, and big data analytics.

However, many practitioners and researchers have tried to apply process management in cultures with a long history of quality work based on an egalitarian, democratic, and pragmatic society (Cronemyr *et al.*, 2014; Cronemyr and Fundin, 2024). Cronemyr (2007) conducted a long-term longitudinal study on implementing process management, without bureaucratic pitfalls and other problems. Cronemyr found that process management, in a broader definition than business process reengineering, should be introduced and implemented in steps that are accepted by employees, while fulfilling customer requirements and business goals. These three steps are process mapping and development, process analysis and improvement, and monitoring and strategic process control. It was found that making action *mistakes* in process management development and then *doing it right* was how to make it work. By doing so in a specific order, in each step, an organisation could build the foundation and capabilities needed to fulfil the purpose of the next step. The initiatives of organisations that started "too high on the ladder" before fulfilling the lower steps often failed. The organisations often labelled themselves "too unique", giving this as the reason for process management techniques not working in their organisations. However, through counselling and research, they could indeed succeed in redoing process management in the correct order.

Cronemyr and Danielsson (2013) presented a framework for process management and a three-step implementation plan with corresponding process maturity levels: (1) process mapping and development, (2) process analysis and improvement, and (3) monitoring and strategic process control. Huge-Brodin and Cronemyr (2019) further developed maturity levels for process management, with *lower* maturity levels for processes *without* process maps: ad hoc (0.1), tacit agreement (0.2), spoken agreement (0.3), policy documents (0.4), and detailed instruction documents (0.5). For each process, management could decide the current and planned process maturity levels from 0.1 to 3, thus prioritising and planning process development.

Process Management 1-2-3 (as well as the lower 0.x-steps) describe a much more complex and versatile model for process management. Only step 1, "process mapping and development", describes *traditional process management*—that is, how to identify core processes, set up teams, map the processes in software, and publish them online in a QMS (in the 1980s, it used to be in paper files). However, step 1 also describes how new or updated process maps should be published and communicated, and how employees and managers should be trained to work according to (and give feedback on) the way of working—that is, the process. This type of change management is seldom included in traditional process management. The aim of this step is for employees to be able to "walk and talk" about the process without checking maps every day, thereby moving into *trust-based process management*, where the new ways of working fit better with employees' wants and needs, making the processes the preferred way of working, not just "cost-effective", as suggested by Cronemyr and Fundin (2024).

In the second step, the established processes from step 1 should be evaluated by employees and customers, and measured, analysed, and improved. *All* processes should be improved using *specific* improvement processes. This could be small improvements called *just-do-it* (e.g. fixing an error in a map or document), medium-complex problems (e.g. recurring delays), or high-complexity problems (e.g. customers who are given products or services on time but remain dissatisfied). Complex problems must be addressed by specific teams performing root-cause analysis using, for example, Six Sigma or radical innovations, such as Design for Six Sigma. In the management literature, these tools and techniques are often viewed as something different to traditional process management (Cronemyr, 2007).

The third and most advanced step is "monitoring and strategic process control". Not all processes reach this level and do not need to do so. Based on the analysis in step 2, the process

control variables are established to control the output of the strategic result variables. Strategic result variables are often called key performance indicators and process performance indicators, whereas process control variables are settings in processes that can be altered, such as temperature, geometry, and number of employees, to steer the output from the process. In step 3, the process is stable and in control but still agile, without the need for tampering.

Process Management 1-2-3, as described above, has been implemented by practitioners and researchers in several organisations. As noted previously, it covers a much broader topic than just traditional process management. Therefore, it is necessary to link traditional process management with additional research areas. This is our current aim.

Models for dynamic management

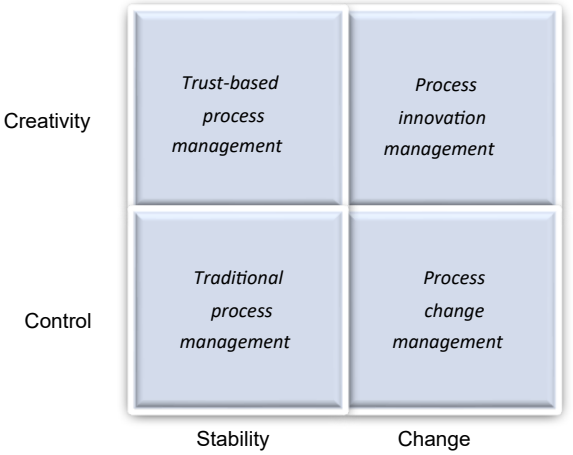
Kotter (2014) explained the evolution of traditional organisational hierarchies, showing that they were not built in an environment in which change was the norm. He advocated a second, more agile, network-like, and dynamic structure that operated in concert with a hierarchy to create a dual-operating system.

A trust-based method was also applied to software and product development using the 12 principles of the agile manifesto (Beck *et al.*, 2001). The manifesto was originally established to address software development. However, its principles have since been applied more broadly in product development and business management.

The theoretical framework is also inspired by the Cynefin framework presented by Kurtz and Snowden (2003) to explain change management processes, and the socialisation, externalisation, combination, and internalisation (SECI) framework presented by Nonaka and Takeuchi (1995) to explain knowledge-management processes.

Accordingly, several models and frameworks have inspired new frameworks for change-driven process management (CDPM). By projecting theories of change onto traditional process management, inspired by Process Management 1-2-3, the CDPM framework is synthesised as a generic decision support framework for managing minor or radical process changes (Figure 2).

The CDPM framework highlights four different *states* of dynamic process management, in contrast to traditional process management. Different paths can be taken in the model, always moving in a clockwise spiral (as in the SECI model) within a specific quadrant or between two,



Source(s): Authors' own work

Figure 2. The Change Driven Process Management framework

three, or four quadrants. This is further explained in the Results section. The main purpose is to identify when and how to move quickly between quadrants without falling info pitfalls; that is, how to change *quickly and cleanly* instead of *quickly and dirtily* or *slowly and cleanly.*

Guiding principles for speed

For all quadrants, there are good practices for organisations that need to maintain a high pace of process change in sync with a rapidly changing environment. This is a summary of the most vital principles presented by Kotter (2014), and most principles can be applied to all quadrants and to the entire model (Table 1).

Method of investigation

The method of investigation has four main parts. First, the relevance gap was identified. Second, the case study was design to frame the unit of analysis. Third, the data collection procedures were designed using an interactive research approach. Fourth, the construct validity and empirical maturity were developed. This section explains how the pre-study supported the case study design and the exploration of the Units of Analysis (UoA). It further details the selection of cases and participants, and it elaborates on the case study context. The data collection procedure is described, including a justification for using interactive user stories to gather data and develop construct validity. This section also explains what criteria framed the interactive user stories.

Identifying the relevance gap

The Swedish Quality Management Academy (11 Universities in Sweden), with research within quality management, broached the need for a more flexible approach to process management to achieve a more dynamic way of working in organisations (Fundin *et al.*, 2018, 2020). Consequently, the SIQ initiated a pre-study through interviews with process management professionals from the telecom, automotive, healthcare, and social service sectors to better understand and define the research relevance. Based on the pre-study, the SIQ initiated a research project with a project manager (the third author) with approximately 40 years of process management experience, representing the SIQ, and two researchers (the first and second authors, from Linköping University and Mälardalen University, respectively). The second author also represented the SIQ as the Director of Research. Findings from the pre-study indicated that most organisations, at varying process maturity levels, used process management to standardise their ways of working. Findings show that using process management to enhance change-based processes was limited owing to organisational conflict. This influenced the subsequent case study design, aimed at clarifying the lack of standardised ways of working and the potential conflicts with change-based processes across different contexts, including both the private and public sectors.

Case study design and unit of analysis

The outcome of the pre-study revealed a widespread and critical need for new knowledge regarding CDPM across the business domains involved. During the pre-study period, a model for CDPM evolved as a foundation for the case study design and unit of analysis (UoA). Following Yin (2018), a holistic multiple case study was designed to clarify the differences between various types of process management conflicts in organisations. These conflicts were used as the UoA to assess the characteristics of the organisational challenges at hand through a cross-case analysis. A conflict (the UoA) is when a specific process is not designed to meet stakeholder needs, and there is no clear answer how to standardise new ways of working. Each case study organisation provided examples of two types of processes with conflicting needs. The first is a process with detailed procedures and high compliance requirements, and the second is a process with vaguely formulated principles relying on individuals' skills.

Table 1. The principles for speed

#	Principle	Benefit	Description
1	Provide a structure for priorities, resource balancing, and follow-up (part of the organisation's infrastructure)	Secure alignment, resources, success factors	Routines and forum for evaluation of initiative scope, relevance and readiness plus priorities and resource availability. Follow-up of progress and benefits realisation
2	Break down the project/initiative work tasks into smaller iterations	Reduce complexity, create continuous flow, enable change of direction	For example, no initiatives with less than 1 month or more than 6 months of lead time – and all with useable output
3	Use empowered, cross-functional, self-organised, and collaborative teams	Quick anchoring and decisions, continuous improvement, access to knowledge	Empowered: fully delegated decision mandate and trust (without any need for escalation). Cross-function includes external functions
4	Base the team on motivated individuals with full focus, availability, and mandate	Accelerate the pace of the process change	Motivated: self-motivated, passionate people. Availability is key, strive for 100% availability to get speed (no context swapping)
5	Apply methods and tools that facilitate speed without sacrificing quality	Deliver value quickly – while safeguarding quality of the outcome	Use tools from a well-proven toolbox and secure skills to use appropriate tools
6	Share experience openly to develop individual/community knowledge	Provide instant access to relevant knowledge	Establish and provide a structure for collecting and spreading knowledge (e.g. community of practices)
7	Work in fast iterations with agreed vision and goals; days or weeks rather than months	Deliver value quickly	Deliver and implement small viable outputs to start immediate harvesting of some benefits
8	Keep the work and the output simple, avoid any type of wasted effort	Focus effort on value for the customer	Question all work efforts and outputs based on value for customer (internal and external), make it "good enough"
9	Capture customer and stakeholder feedback for refinement – start in early stages	Value for the customer and right from the start	Involve customers and stakeholders (internal/external) early and frequently to improve value and avoid wasted effort
10	Respond to change, adapt the iteration plan based on new understanding	Deliver value quickly	Listen to customer feedback and adapt accordingly to maximise value
11	Communicate transparently in short daily team meetings	Speed of internal communication, avoid wasted effort	Keep all team members updated, despite the high pace, to maintain momentum
12	Communicate regularly and transparently to all stakeholders concerned	Secure speed of implementation and quality assurance	Change management starts on day one, make sure everyone is aware (why, what, when, where, how, who), such as open sessions
13	Success is measured as improvements implemented in operations	Focus on speed of value and benefits realisation	Take responsibility of the benefits realisation – an improvement has no value until implemented
14	Secure post-project coaching to drive and secure the new way of working	Secure quick and sustainable benefits realisation	Establish support for business operations until the new way of working is ingrained in daily work

Source(s): Authors' own work, based on Kotter (2014)

The case study organisations were represented by six process management professionals from four companies and three countries (Sweden, France, and Germany) in the energy, automotive, and medical technology sectors. Participants were selected based on their holistic process responsibility within the organisation and their strategic responsibility to improve process governance. Contextually, the cases were selected based on their critical need to improve their holistic process governance owing to rapid changing stakeholder needs. The research project involved the same researchers as in the pre-study (the three authors).

Data collection procedures using an interactive research approach

Given the characteristics of the UoA, the data collection procedures used an interactive research approach (Ellström, 2008). This interactive research approach was jointly created based on the case study's organisational needs and research relevance. To ensure validity, data was collected through a triangulation process with three data collection procedures: (1) In-depth pre-study interviews, (2) Quantitative respondent self-estimations on process maturity in selected processes, and (3) Research project interactive narratives.

The purpose of the in-depth pre-study interviews was to understand and interpret the challenges of the participating organizations by discussing and comparing examples of different process types (see Kvale and Brinkmann, 2014). Together with five other organizations (one Telecom organisation, two Automotive organisations, one Health care organisation and one Social services organisation), representative participants identified patterns and potential problem areas for more detailed research. Each organization contributed two examples of typical processes: (1) One process with clear requirements for documented, formal, and adhered-to routines, and (2) One process with vaguely defined routines and a high level of trust in individual competencies. A joint analysis of these two processes (conducted in an in-depth interview lasting between 2–3 h per participating organization) gathered process requirements, documentation, and governance, which were then used to identify patterns and common denominators for managing the two different process types.

The quantitative respondent self-estimations on process maturity in selected processes included the following three steps: (1) An initial discussion about how general challenges affected each organization; (2) A review of the two (diametrically opposed) processes and their purpose; and (3) quantitatively plotting each process on a scale corresponding to the dichotomies in the CDPM model.

The third data collection procedure was conducted in a "user stories" format. The user stories were synthesised into research areas as a base for continuously narrowing the scope in the iterations. User stories are a valid data collection method as interactive narratives (Green and Jenkins, 2014). They can explore mental processes within stories by offering loss and gain frames, highlighting decision points and alternative outcomes. Since our study focuses on analysing potential conflicts and alternative outcomes in processes, interactive narratives in user stories are well-suited for this purpose. Beyond their practical applications, they also serve as a tool to integrate persuasion theories with narrative processing.

The user stories were brief descriptions of a process (often a potential conflict), described from the perspective of the user or stakeholder. They were used to define the requirements for a process in a user-centric way. The user stories as a data collection method addressed three key needs: (1) Clarity—ensuring that the stories helped clarify user needs, not just from a technical perspective but from the stakeholder/user experience and problem-solving viewpoints; (2) Focus—encouraging process owners to prioritise delivering value to users and stakeholders, and (3) Flexibility—ensuring that the user stories were manageable and adaptable over time.

Construct validity, empirical maturity, and theoretical concepts

In parallel, the three authors tested and analysed the data by comparing related existing theories and validated the results with the four organisations through the research question and objective of the research study. The overall project was planned in iterations, each producing

validated results ready for use by the participating organisations. The interactive user stories enabled empirical maturity by integrating persuasion theories with narrative processing (see Creswell and Creswell, 2018). In this manner, interactive narratives allow users to make choices that shape the story, enhancing engagement and deepening the impact of the narrative. By blending persuasive theories with narrative processing, these stories can encourage a better understanding. As the traditional process management paradigm faced challenges from new theories, such as trust-based management, innovation management, and change management, user stories were used to exam construct validity. In this study, a construct refers to an abstract concept, such as conflicts in process management (UoA) and how leadership and new methods of managing processes could enable new ways of working to create value for stakeholders and users. The stories supported this narrative processing, as process management cannot be directly observed but must instead be inferred through behaviours and responses. Construct validity is essential in these types of studies as it ensures that the empirical investigation accurately captures the intended theoretical concepts.

Results and discussion

Summary of results

In this section, we integrate the presented theoretical frameworks and practical tools for managing dynamic business processes in an increasingly complex environment. In short, the following results are presented in this section: (1) The results of a cross-case analysis describing the business processes of the participating organisations, and how they helped construct the CDPM model; (2) The design and rationale of the proposed CDPM model; (3) Reflections on movements, and flows within the model; (4) The approach to handle the dilemma of control versus creativity in the CDPM model, with a special focus on traditional vs trust-based process management; and (5) The manner of handling the dilemma of stability versus change in the CDPM model, with a specific focus on how to start, conduct, and hand-over process innovation projects.

Cross-case analysis

It was clearly expressed by all eight organisations from the automotive, energy, medical technology, healthcare, telecom, and social services sectors that their organisations—regardless of type of business—act in a dynamic and changing environment and have a need for more guidance and dialogue on how to approach process management in a relevant way in that context. The draft model for change-driven process management was tested by mapping the provided business processes and terminology for the axis was adapted.

The provided business processes were positioned in distinctly different ways despite differences in types of business for the participating organisations. In the lower left corner, we find processes with detailed documentation, performed frequently by different individuals but with high requirements on performing them in a very controlled way. In the upper half, we find processes with unique and unforeseen conditions in which we must rely on the competence of the process worker. Since individual instances are variable and unpredictable it is difficult to model what to do and how. We can also see that in the upper half, organisations strive to be more innovative, but the stability requirements caused by regulations, efficiency, and so on limits innovation (Figure 3).

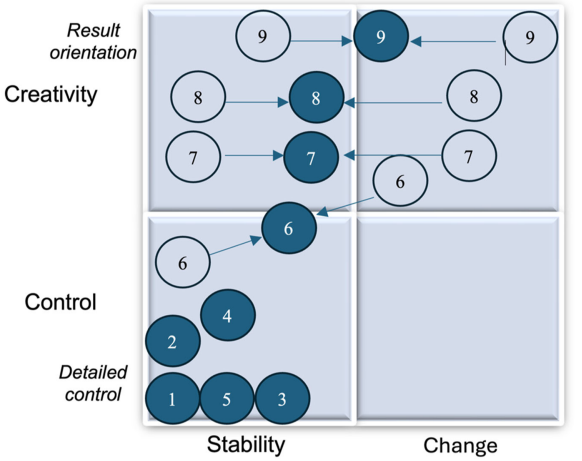
Examples of tensions in processes with a creativity and change focus (*automotive*, *health care*, *medical technology*, *and energy*):

Case 6 (automotive): Use existing technology vs solving customer needs.

Case 7 (health care): Reliable diagnosis vs adapt to patient.

Case 8 (medical technology): Documented effect vs diversified contributions to user needs.

Case 9 (Energy): Stable quality plan vs adapt to societal needs.



Source(s): Authors' own work

Figure 3. Process 1–5 are processes with a control and stability focus, while process 6–9 are processes with a creativity and change focus

The model for CDPM

This research resulted in a framework for CDPM, which can be used as a decision support tool. Depending on the changing stakeholder needs, process improvements can take different turns in the four stages. Using terminology from the SECI model by Nonaka and Takeuchi (1995), the analysis revealed four different ways of managing process change and subsequent improvement.

Control and stability focus on *traditional process management* with internalisation and incremental changes, which transfer the existing process knowledge. Traditional process management activities are found in this area.

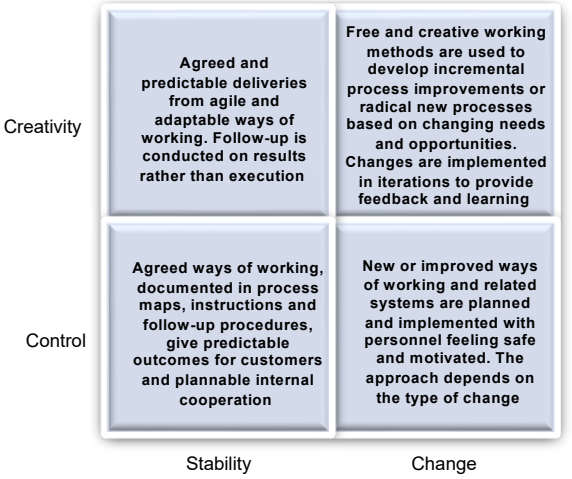
Creativity and stability focus on *trust-based process management* with socialisation, sharing in the team, and the community of process practice, whether internal or external, depending on stakeholder needs. In this case, we do not examine process maps; instead, employees are invited to discuss process work in an informal manner, thus adapting processes to employees' preferred ways of working.

Change and creativity are related to *process innovation management* with externalisation, such as improvements based on root-cause analysis, or innovative and radical process changes. Root-cause analysis and improvements can be performed with Six Sigma projects, while more innovative changes can be performed with Design for Six Sigma projects (Kovach *et al.*, 2024). A small improvement, the so-called *just-do-it*, is not considered in this quadrant but is performed in a more operational manner within traditional process management or trust-based process management (Figure 4).

Control and change involve *process change management* by integrating an intended change into practice–in other words, learning and training a new, innovative way of managing a certain process. As noted in Process Management 1-2-3, this step is overlooked in many process improvement and change efforts, leading to the disregard of the wants and needs as well as the psychological safety of employees (Cronemyr and Fundin, 2024).

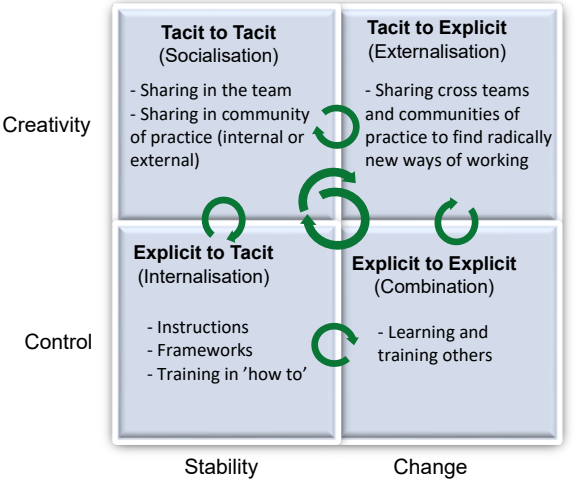
The four quadrants represent different target images and pathways for decision-making and providing guidance on different working methods (Figure 5).

The different changes in managing process improvements are explained by the clockwise spirals in the model; that is, a radical change may need to be managed across all four quadrants, whereas minor changes may only pass through one or two quadrants depending on stakeholder needs (Figure 6). A medium or major change initiative should pass through all four quadrants. A medium change may be quick, "close to the centre of the model", while a major change



Source(s): Authors' own work

Figure 4. Working methods explained in the four quadrants of Change Driven Process Management



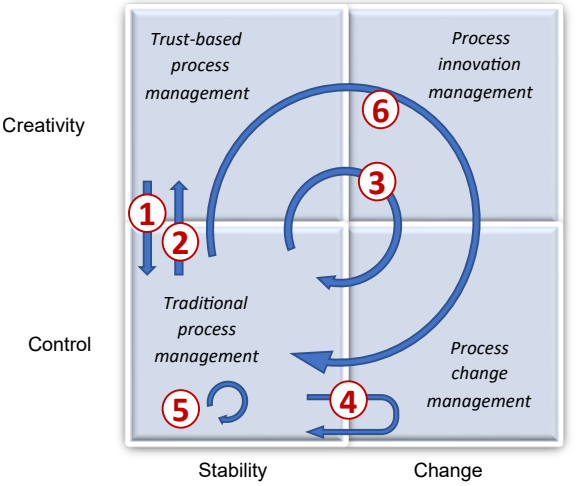
Note(s): SECI is an abbreviation of Socialisation, Externalisation, Combination, Internalisation

Source(s): Authors' own work

Figure 5. Change Driven Process Management model with four quadrants based on the SECI analytical framework by Nonaka and Takeuchi (1995)

needs to be thorough, covering more of the quadrants and therefore, and potentially taking a longer time. It does not need to take a longer time, but taking a path too quickly might not fulfil the target of the change initiative.

The main purpose was to identify when and how to move quickly between quadrants without falling info pitfalls; that is, how to change *quickly and cleanly* instead of *quickly and dirtily* or *slowly and cleanly.* The results of the agile research project showed how to move *quickly* and *cleanly.*



Source(s): Authors' own work

Figure 6. Examples of different change flows within the model

Reflections, movement, and flows within the model

The management of a certain process is not static; it changes depending on influencing environmental factors, such as technical, legal, and social. The current state, the magnitude of the change needed, and the organisational culture influence how the management of a process changes within the model. In Figure 6, some examples of change flows are given:

(1) A legal requirement for more control in a trust-based process setting

(2) Market requirements on more flexibility in a process with firm control

(3) Disrupting technology calls for radically new thinking

(4) Implementing change in a process with high control demands

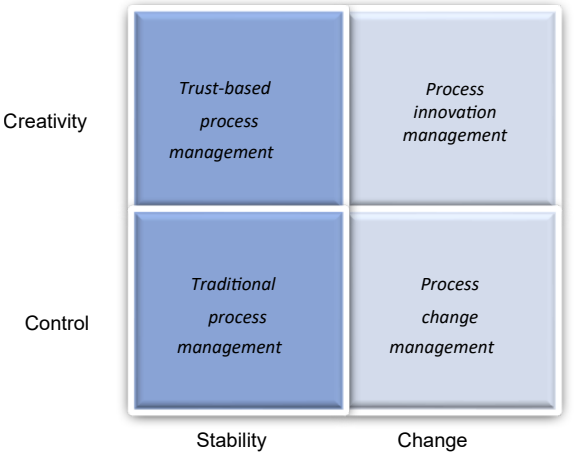
(5) Narrow process changes within one process

(6) A wide and radical process change impacting the entire organisation

Note: The flow can start anywhere and end at any point, as long as it moves clockwise (or straight, for simple movements). For example, in example 6, the flow starts and ends in *traditional process management*. However, in a mature organisation with high process maturity, the flow is more likely to begin and end in *trust-based process management.* Nonetheless, passing through traditional process management remains necessary to establish instructions and routines, ensuring everybody can work in a trust-based environment.

The dilemma of control versus creativity

Extensive control with strict operational routines may place the organisation in a position in which it is impossible to meet market requirements because the internal requirements are too rigid. By empowering co-workers and relying more on their individual skills rather than documented routines, organisations can act faster and become more flexible. This makes it easier for them to navigate in a rapidly changing environment but comes at the expense of less control and (if not managed correctly) less re-use of knowledge. These downsides may put the stability of the output at risk (Figure 7).

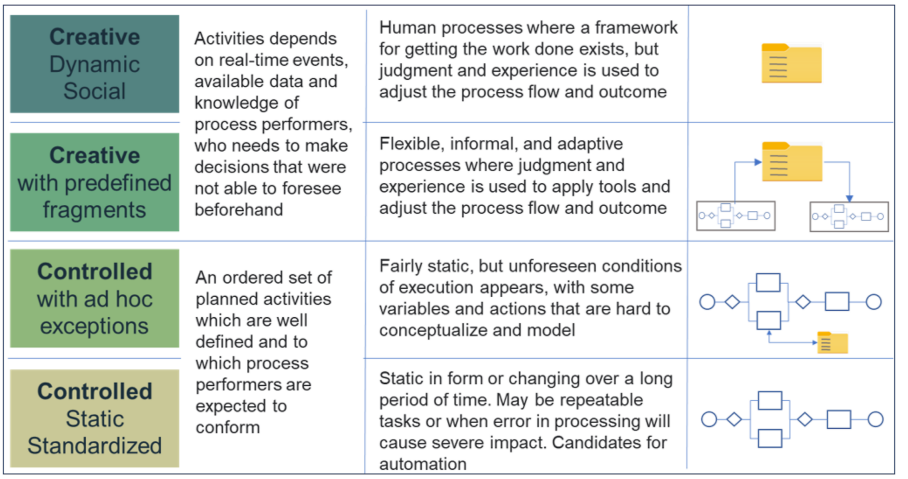


Source(s): Authors' own work

Figure 7. Balancing Stability in Change Driven Process Management

The scale in Figure 8 explains the characteristics of a process with different levels of control and creativity. The right-most column indicates the level of detail describing the process flow and activities. The folder illustration represents a portfolio of available methods and tools (internal, public, or individual experience) that process performers can select and apply as needed, based on purpose and experience.

Different sub-processes in a specific process flow can have different levels of creativity versus control. The key is to be aware of these differences and make a conscious decision on what to control in detail and what not to control—rather than applying a "one size fits all" approach.



Source(s): Inspired by Bukhsh *et al*. (2017) and Kemsley (2011), Authors' own work

Figure 8. Different levels of control

The dilemma of stability versus change

There is a need to increase the speed of implementing changes—but new ways of working need to safeguard quality levels, it should not be "quick and dirty", nor "slow and clean". Consequently, process change methods and processes need to be respected and scrutinised to ensure that they can provide the required speed of change. Principles for speed should be developed to support process changes at high speeds, but still in a controlled manner.

The complexity of a change depends on many factors. From a process management perspective, it is easier to change within one process and more difficult if it involves changes in processes with no direct relationships. The closer one is to "one's own" processes, the easier it is to influence them. The organisation needs to provide communication and escalation paths to address supporting and far upstream or downstream processes. The type of change and maturity of the process also affect complexity (Table 2).

Changing the ways of working in a controlled and safe manner requires a sufficiently mature change process. In Figure 9, the left column describes the type of change initiative needed for an operational process, and the top level describes the change process maturity needed for that type of initiative.

Table 2. Process change complexity

Complexity	Process impact	People concerned	Duration
Narrow process change	Within one process step	Few	Days
Medium process change	One or several process steps	Many	Weeks
Wide process change	High-level processes	Large parts of the organisation	Months

Source(s): Authors' own work, based on Cronemyr and Danielsson (2013), Cronemyr and Huge-Brodin (2020)

	Maturity levels of change process							
Change initiative to operational processes	Ad-hoc (not controlled in any way)	Tacit agreement	Spoken agreement	Policy document (why and what?)	Detailed instruction (how?)	Process map (of the change process) + Templates, check lists and instructions	+ Analysis and improvements	+ Measurement and statistical control
Fix spelling errors		x						
Update looks, improve readability			x					
Update document links and references			x					
Upgrade IT system, minor operational process change					x			
Implement measurements and KPIs					x			
Implement new/updated operational process input/output					x			
New/updated operational process roles					x			
Launch a new core operational process						x		
Remove/exchange operational processes						x		
Implement new IT system, concurrently with operational process changes						x		
Develop and implement upgraded WoW in an operational process							x	
	Narrow			Medium		Wide		

Note(s): The impact level (narrow, medium, wide) indicates how much control in the change initiative that is needed (see Table 2)

Source(s): Based on Cronemyr and Huge-Brodin (2020), Authors' own work

Figure 9. Example of different initiatives for process change, ranked based on change complexity from low to high

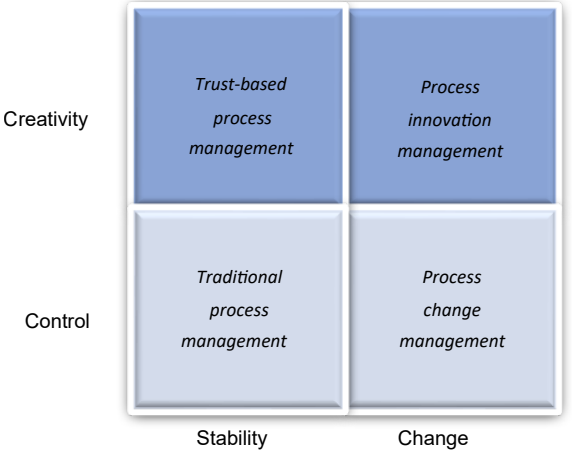
A balance needs to be maintained between empowerment and flexibility to provide a stable output and innovative ways of working, which will require radical changes in other processes or functions (Figure 10).

An improvement need may arise in the upper left corner but, depending on the magnitude of change, will require different types of changes and involvement from other organisations and functions (Table 2). Some decision points are required to determine the magnitude of the change.

Change and creativity are related to *Process Innovation Management* through externalisation (e.g. innovative and radical process changes; Figures 4 and 5). The current findings explore the interconnections and feedback loops that enable a movement from creativity and stability (*trust-based process management*) to control and change (*process change management*). While trust-based process management places gravity on process results rather than process execution (socialisation), process change management involves integrating an intended change into practice (combination); that is, learning and training about an innovative way of managing a new process.

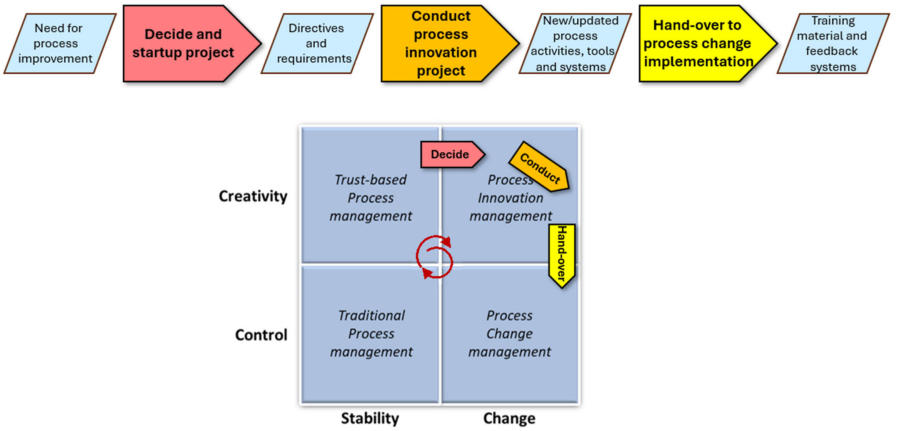
The different turns in managing process improvements are explained by the clockwise arrows in the model; that is, a radical change might need to be managed through all four quadrants, while minor changes might only need to pass through one or two quadrants, depending on the complexity and stakeholder needs. Process innovations can be incremental or radical depending on societal needs; that is, process innovation requires transparency and creative working methods. However, our study reveals that even if organisations intend to change or develop new business processes, investments seem to fall back to low-risk projects with gravity on control and stability. Consequently, to enable process innovation in practice, a solid framework of direction in terms of working methods is required to foster creativity that enables new ways of working. This also aligns with the new ISO standard for innovation management systems (ISO 56001:2024, 2024), which describes a structure for process, competence, time, and resources to enhance innovation management. While it is broadly applicable to innovation management, it is also relevant for process innovation management.

The three main activities within *process innovation management* describes a sequence of activities (Figure 11).



Source(s): Authors' own work

Figure 10. Balancing Creativity in Change Driven Process Management



Source(s): Authors' own work

Figure 11. The three main activities within process innovation management are described as an elementary process map in the Change Driven Process Management model

Innovation is performed in the activity "Conduct process innovation projects". This is the main topic of *innovation research*. However, *process innovation management* also includes how to start up innovation projects as well as how to hand over results. Looking into these three activities, start-ups and handovers benefit from a structured way of working. Innovation may or may not be structured.

Decide and start up projects: Information on recurring problems and/or suggestions for process improvement may be available during daily operations. Information and suggestions must be collected, documented, clustered, and prioritised so that improvement projects can be selected, planned (both in time and resources), and kicked off. This should preferably be organised according to established business, support, or management processes with process owners and teams.

Related to the CDPM, some decision points are required to determine the magnitude of change based on complexity (Cronemyr and Danielsson, 2013; Cronemyr and Huge-Brodin, 2020, Table 2).

"Narrow impact" remains within the quadrant for trust-based process management. These are typically continuous, small changes and improvements with a very narrow scope, such as *just-do-it*. "Medium impact" is a potential innovation that requires inter-process synchronisations. These are characteristically lean projects or smaller Six Sigma Define–Measure–Analyse–Improve–Control [DMAIC]) projects with a medium scope, mainly within one process. "Wide impact", however, concerns radical innovation with a significant impact on other processes. These are a type of major Six Sigma (DMAIC/DMADC) project or the Design for Six Sigma (DfSS) project (see Cronemyr, 2007).

Conduct process innovation projects: Innovation projects can either be *unrestrained* or *directed*, in the latter case using some procedure, often called "roadmaps". An example of an *unrestrained* procedure is the "technology stream" presented by Clausing (1994). Specialist domains typically invent new and better solutions to both old and new problems. Once innovations have been tested on a small scale, they are implemented from the technology stream into current products and operational processes (Clausing, 1994).

Examples of *directed* innovation roadmaps include Six Sigma (DMAIC) and DfSS. Both are used for process improvement projects, statistical data analysis, and innovation methods. In the improvement phase of a DMAIC project and the design phase of a DfSS project, many innovation tools are used; for example, brainstorming and best practices. All the proposed process improvements should be evaluated, analysed for possible risks, and pilot-tested before they are implemented in existing processes.

Handover to process change implementation: For any type of development project, the output must be placed into context to be of any value. For process innovation projects, this implies that new and updated process activities, tools, and systems need to be transferred into QMSs, and that employees should be informed and trained in the new/updated process. For example, it is not sufficient to submit a message on the intranet that "the process has been updated". A handover to process change management should include training materials and feedback systems. The implementation then contains the following activities: publish new processes in the QMS (and remove all old/replaced documents), set up implementation and training plans, implement system support and feedback systems, train managers on how to manage according to the process, train employees on how to work according to the process, and official process launches by the process owner. It is important for all employees to feel safe and confident while working according to the new process. Otherwise, they will not change their activities or behaviours. This is why managers are trained ahead of their co-workers. Managers need to feel safe when co-workers ask questions like "Why/how should I do this"?

The handover from Process Innovation to Process Change should be structured, but not *too* structured. Certain aspects or problems may arise during training as feedback for the process improvement team to make minor updates to proposed process solutions. Therefore, the transitions must be iterative.

Conclusions

All process improvements are triggered by the need for a subsequent change initiative. This logic defines the research question: how should process improvements be managed in fast-changing environments with a variety of conflicting stakeholder needs? Thus, the objective of this study was to help decision-makers manage process improvements to achieve sustainable operations based on a variety of changing needs. Through a holistic multiple case study design with eight organisations representing six business areas, a framework was created with four significant change-driven phases, providing guidance on different working methods: (1) control and stability, (2) creativity and stability, (3) creativity and change, and (4) control and change.

Theoretical contributions

Our results contribute to the theoretical and practical discourse on process management by addressing process improvements, as exemplified by Gross *et al.* (2021), who proposed business process design spaces, and Reijers and Mansar (2005), who addressed the layers of knowledge domains for business process design. While contemporary process theory and practice emphasise stability and control, this study extends the process theory paradigm by revealing new ways to manage process improvements, while considering a variety of changing stakeholder needs. Specifically, with change-driven process improvement logic, this research anchors and extends current process theories with creativity and change perspectives using a knowledge-creation perspective, in line with Nonaka and Takeuchi (1995) and Backström *et al.* (2017).

Further, from a holistic process improvement perspective, the current study contributes to operations management theories on how to move between different process management modes depending on stakeholder needs. This study builds on the theories and ideas proposed by Reijers and Mansar (2005), who argued that business process design requires different spaces. Our research contributes by identifying four distinct process improvements areas. Specifically, to expand on the traditional process management paradigm, we propose new theories: (1) Trust-based Process Management, (2) Process Innovation Management, and (3) Process Change Management. The theoretical contribution lies both in framing these distinct perspectives and explaining how and when to transition between them depending on different contextual situations.

The theories can help decision-makers by providing new process management principles that enable sustainable business operations. Rather than making "slow and clean" or "quick and dirty" improvements, this framework aims for "quick and clean" improvements that can be adapted to current societal needs. According to Kotter (2014), the principles for speed could have different gravidity in CDPM. This could support new leadership in managing a transition from a traditional process management paradigm towards a new state with (1) trust-based process management, (2) process innovation management, and (3) process change management as guiding principles. This way, the theoretical contribution also extends to process management theories on models for dynamic management. Our framework synthesises the theories of Kotter (2014) on agile, network-like, and dynamic structures, combining traditional process management with innovation, creativity, and change in a dual-operating system. The newly proposed dynamic model also expands on agile management theories in product development and business management, as described by Beck *et al*. (2001), by integrating and projecting agile management principles onto operations management in general, and process management theories specifically. Contextually, our research contributes to the ongoing discourse on the emergent quality management paradigm (Backström *et al*., 2017), business process design spaces (Gross *et al*., 2021), process maturity modelling (Cronemyr and Huge-Brodin, 2020), BPM lifecycle implementation (Kovach *et al*., 2024), and definitions of knowledge domains for business process design (Reijers and Mansar, 2005).

The theoretical framework is also inspired by the early Cynefin framework presented by Kurtz and Snowden (2003) to explain change management processes and the socialisation, externalisation, combination, and internalisation (SECI) framework presented by Nonaka and Takeuchi (1995) to explain knowledge-management processes.

Practical implications

The practical implications outlined in this study on change-driven process management provide a comprehensive framework for decision-makers to adapt process management practices to meet the evolving demands of modern business environments. Employee motivation and commitment are also crucial for successful implementation. Therefore, the framework should be understood by employees and can serve as a mental model and rationale for management decisions, thereby promoting a more consistent path toward improvement and change. This framework is crucial for achieving sustainable operations amidst rapid societal changes, increased flexibility, and diverse stakeholder needs.

Guidance for decision-makers: The proposed model offers a structured approach to process management by categorising processes into four significant phases: control and stability, creativity and stability, creativity and change, and control and change. Each phase provides specific working methods tailored to the needs of the organisation. For instance, processes requiring high control and stability focus on traditional process management activities, emphasising incremental changes. Conversely, processes that demand creativity and change leverage process innovation management techniques, such as Six Sigma projects and design thinking approaches.

Iterative process and feedback integration: Transitioning between the four phases can occur either clockwise or counterclockwise, depending on new conditions that necessitate changes in process management. For example, organisations may shift from traditional process management to trust-based process management when processes are well established and "everyone knows what to do". Conversely, they might revert if employees and groups develop inconsistent ways of working that lead to unpredictable outcomes. This transition can also be iterative—for instance, moving from process innovation management to implementation. Process change management often needs to be iterative to accommodate feedback and adjustments. This flexibility enables organisations to refine processes based on real-world application and employee feedback. Such an approach both enhances the effectiveness of process improvements and fosters a culture of continuous improvement and innovation within

the organisation. The large clockwise loop through all four quadrants can also be seen as an iteration on a larger scale, encompassing long-term process and business management.

Implementation and training: Implementing CDPM is a big task, especially for organisations that do not already use traditional process management. It requires a stepwise implementation. The first major step would be to implement traditional process management, which is not covered in detail here (see Cronemyr, 2007, for an example). However, once traditional process management is established, the rest of CDPM becomes necessary—employees want to work with trust, improvements need to be developed, and changes need to be managed—and can be successively implemented in modules and then integrated into CDPM.

A key practical implication is the structured handover process from process innovation management to process change management. This involves comprehensive training programmes for both managers and employees to ensure they understand and can effectively implement new processes. This study emphasises the importance of creating training materials and feedback systems, publishing updated processes in quality management systems, and removing outdated documents. This structured approach ensures employees feel confident and supported in adapting to new processes, which is critical for successful implementation.

Based on the challenges addressed by the participating organisations, the following six steps for implementing the CDPM model in an organization are proposed:

(1) Define objectives, stakeholders, and stakeholder needs: Begin by clarifying the organization's goals for adopting the CDPM model and identify key stakeholders who will support and drive the change. This step includes conducting an assessment to understand current processes and pinpoint areas for improvement.

(2) Develop a detailed implementation plan: Map out a step-by-step guide that includes timelines, roles, and responsibilities for each phase of the transition. Include clear milestones and deliverables to keep the implementation plan on track.

(3) Provide tools, templates, and best practices: Equip teams with practical tools and templates tailored to the CDPM model, such as process maps, decision-making frameworks, and change management checklists. This minimizes ambiguity and provides concrete resources for adaptation.

(4) Invest in training and support: Offer targeted training sessions to educate employees on the new model, its benefits, and practical applications. This includes leadership training for managers and ongoing support for teams as they adapt to the new way of working.

(5) Leverage case studies for guidance: Introduce case studies of organizations that have successfully adopted similar models. Analyse their approaches, challenges, and key lessons, using these insights to build a realistic roadmap for your organization.

(6) Measure progress and adjust: Use key performance indicators (KPIs) to monitor progress, gather feedback, and adjust as necessary. Continuous improvement is vital, so create a feedback loop to refine the process based on results.

By following these steps, organizations can make the transition more manageable and effective. Adding specific examples or case studies can further reinforce these strategies, making them more actionable and easier for teams to visualize and adopt.

Adaptability to societal changes: The study's framework highlights the need for process management to be adaptable to societal changes, balancing economic, social, and environmental sustainability. By incorporating principles from Agile project management, Lean, Six Sigma, Waterfall models or trust-based management, organisations can respond dynamically to external pressures and stakeholder demands. This adaptability is essential for maintaining competitiveness and achieving long-term sustainability.

Empirical validation and cultural considerations: The research was conducted with eight Swedish-owned organisations (with participating employees from Sweden, France, and Germany) across various sectors, including automotive, energy, medical technology, healthcare, telecom, and social services. While the findings are particularly relevant to these sectors, they may also apply more broadly, with some contextual adjustments. This study acknowledges that the results are based on the Swedish egalitarian culture, suggesting that further research is needed to explore the framework's applicability in different cultural contexts.

Trompenaars and Hampden-Turner (1997) elaborated on national patterns of corporate culture, classifying different cultures based on two dimensions: "status," ranging from egalitarian to hierarchical; and "orientation," ranging from person-oriented to task-oriented. They described four archetypes of corporate culture: (1) power-oriented, (2) role-oriented, (3) project-oriented, and (4) fulfilment-oriented. Sweden, classified as egalitarian and person-oriented, typically has a fulfilment-oriented culture, which facilitates pragmatic, non-hierarchical work with employee participation. This cultural fit makes CDPM well-suited for Swedish companies but may present challenges in other cultural contexts. In our project there were participants from France and Germany that "qualitatively tested and validated" the proposed CDPM model from a non-Swedish perspective, albeit in a very limited way.

Nevertheless, the research is conducted in several contexts such as the automotive, energy, medical technology, healthcare, telecom, and social services sectors. This variety of sectors provides a basis for an analytical generalisation that spans both public and private sectors, and one case organisation operates internationally, providing a basis for broader analytical generalisation. Therefore, more sectors should be included in future research projects.

Research methodology: This research project employed a novel methodology based on agile project management. While agile methods are common among development practitioners, applying them to a research project was a new experience for the researchers involved. The project produced results rapidly, achieving faster knowledge creation. The research was conducted with eight organisations, and the results are relevant to their respective sectors and possibly beyond, as this study draws on general knowledge from the literature. The project was conducted with four companies/public organisations across three countries (Sweden, France, and Germany) in the energy, automotive, and medical technology sectors. Future research, using this methodology, is open to new international contexts. To further develop the CDPM model, future research should investigate detailed stakeholder analysis to guide strategic decision-makers on when and how to use the model. Future research should also include a broader range of sectors, such as finance, retail, and Information Technology (IT).

In summary

The practical implications of this study on change-driven process management provide valuable insights for decision-makers looking to adapt their process management practices to meet modern challenges. By offering a structured yet flexible framework, this study equips organisations with the tools to achieve sustainable operations, foster innovation, and respond effectively to societal changes. These insights are crucial for maintaining competitiveness and achieving long-term success in an ever-evolving business landscape.

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