AN APPROACH TOWARDS PROCESS OWNERSHIP WITHIN THE FINANCIAL SECTOR

by

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ABSTRACT

One of the main challenges when improving business processes, is the sustainability of the improvements. The purpose of this dissertation is to extract knowledge from existing research around *process ownership* (PO) as a hypothetical solution and re-structure it, using the enterprise engineering contextualization model (EECM). The intent is to develop a new approach for the deployment of PO, called *Enablers Supporting effective Process Ownership* (ESPO) that will enable both the design and management of PO as a new function at the enterprise.

This study proposes a solution to the problem experienced at Co. INS, a short-term insurance company in South Africa where the main researcher is employed. People and/or information systems are frequently prioritized at the expense of processes. The hypothesis is that *process ownership* will address this misalignment between domains. The Primary Research Question is: "*What enablers, supporting effective Process Ownership, will prioritize process management to ensure improved process performance and subsequently sustain a competitive advantage within the financial sector?".*

The methodology followed is design science research (DSR) to develop and evaluate a first draft of the ESPO approach. A literature review was done initially, followed by thematic analysis. The synthesis which followed was done using EECM as reference model to construct the ESPO approach. The demonstration and evaluation of the artefact was done using small group discussions, questionnaires, and interviews.

The literature confirmed the phenomena that a lack of contracted *process ownership* results in poor process performance with a negative effect on competitiveness. PO is dependent on governance, culture, and clear roles and responsibilities as key enablers. Existing literature, however, lacks a coherent approach to embed PO within a holistic business process management approach. EECM guides the development of the ESPO approach and elaborates on the why, what, and how the enterprise should evolve towards effective PO.

During the demonstration and evaluation stages of ESPO at Co. INS, it was found that allocation of PO was done in some areas, but the effective deployment was lacking. As expected, the cultural assessments indicated various levels of readiness, correlated to the effectivity of PO. The importance of the process architecture and strategic alignment of processes were also highlighted as key components of the governance around PO. The demonstration and evaluation results indicate that ESPO effectively guides practitioners towards the achievement of sustainable process performance.

Since PO has been confirmed as a critical capability for sustained process improvement, the ESPO approach is supporting the value of process as a strategic asset to create a sustained competitive advantage.

Key words and -concepts: *process ownership*, process excellence, process sustainability, process as strategic asset, process performance, process governance, approach to *process ownership*, deployment of *process ownership*

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LIST OF ABBREVIATIONS

BPM	Business Process Management
CoE	Centre of Excellence
CoP	Community of Practice (referring to the community of GBs' practising LSS)
EE	Enterprise Engineering
EECM	Enterprise Engineering Contextualisation Model
ESPO	Enablers supporting effective Process Ownership
FEDS	Framework for Evaluation in Design Science Research
FLM	First Line Manager
GB (GBs' as plural)	Green Belt (a qualification for Six Sigma to indicate relative proficiency)
GSDP	General System Development Process
HR	Human Resources
HRM	Human Resource Management
IT	Information technology
KPI	Key Performance Indicators
KS	Key Studies
LSS	Lean Six Sigma
PO	Process Ownership
PPI	Protocol-extracted publication item
Px	Process Excellence
RAG	Red-Amber-Green
RQ	Research Question
SLR	Systematic Literature Review
SOP	Standard Operating Procedure
TOGAF	The Open Group Architecture Framework
VA	Value Add

PROLOGUE

In an attempt to define the research topic, I followed the work of Eric Hofstee *(2006)*:

The ***thesis statement*** is the stand I take with regards to the problem observed or experienced *(Hofstee, 2006)*. The subsequent research will present the evidence to argue or check the thesis statement. The thesis statement enables and informs the precise investigation to be done so that we come to new knowledge.

It could be derived from several sources in my area of interest:

- Problems observed or prioritized at work.
- Initial literature study to identify further research.

The aim is to find a worthwhile issue to be investigated via a reliable approach and be concluded with facts whether the outcome is proving the thesis statement right or wrong.

This worthwhile issue must lead to new knowledge within Enterprise Engineering.

The ***dissertation*** is the story of the thesis statement and will include:

- Explanation of the thesis statement (providing evidence)
- Systematic Literature Review of literature relevant to the thesis statement
- Developing the artefacts and method to investigate the thesis statement
- Analysis of the findings
- Conclusion of new knowledge to the body of Enterprise Engineering

Following the advice of Eric Hofstee, the dissertation is mostly written in active voice, rather than passive voice. In addition, the dissertation will be written in third person.

This dissertation has submitted a research article to a high-impact, accredited journal. The current status of the article is “Awaiting Referee Scores”. An e-mail was received stating that the reviews are done and a decision for publication is awaited from the editor.

This dissertation is structured using alphabet mnemonic in the following sequence:

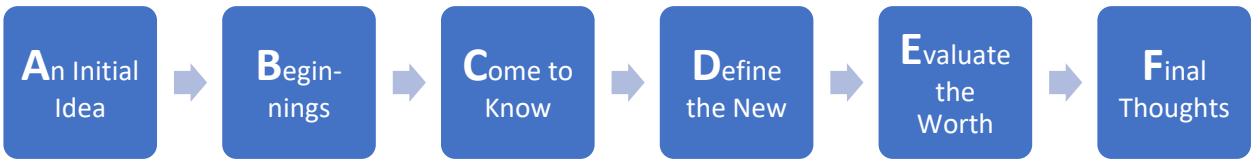


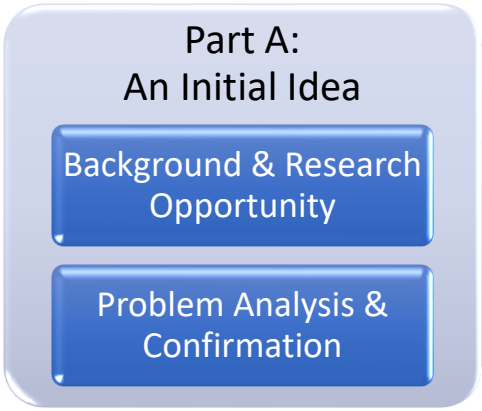
Figure 1: The ABC Structure of the Dissertation *(author-created image)*

PART A: AN INITIAL IDEA

"Wise men put their trust in ideas and not in circumstances."

— Ralph Waldo Emerson

Part A of the dissertation highlights where the idea of this research stemmed from and what the initial idea entails:



- The introduction in Chapter 1 provides the rationale for this study, as well as the research questions and thesis statement.
- Chapter 2 presents evidence to validate the problem and an analysis of the problem to confirm the potential root causes.

CHAPTER 1: INTRODUCTION

Everything we do is a process *(King et al., 2014, Looy et al., 2014, Van Looy et al., 2014)*. Process is about coordination *(Keen, 1997)*. It is a recurring sequence of activities to create a specific output (e.g. a service) using several inputs. It describes or visualize a means to create value *(Lehmann, 2012)*. W Edwards Deming, often referred to as the father of "Total Quality Management", said that if you cannot describe what you're doing as a process, you do not know what you're doing *(Stowe, 1989)*. Without a process, we do not have a service or product, and subsequently no business.

Process is the fundamental cornerstone of the operations of a business. Process depicts and holds the essence of a business. Process depicts the series of transactions and facts between the requester and the executor *(Dietz and Mulder, 2020)*.

Figure 2 shows the process as critical to creating a competitive advantage where an excellent customer experience is essential *(Weitlaner et al., 2012).* Especially true in a service organisation, where competitive advantage is directly proportional to customer experience *(Immaneni et al., 2007, Tor Wallin et al., 2016, Kohlbacher and Reijers, 2013, Koning et al., 2008, de Koning et al., 2008).*

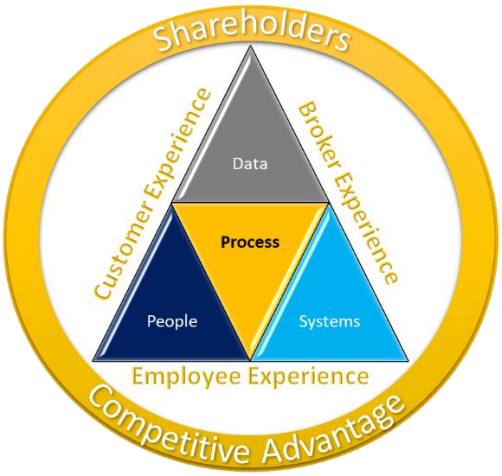


Figure 2: Process at the heart of a service organisation *(author-created image)*

Without a process, people will do nothing, and systems would be obsolete. In the "Process Edge" Keen *(1997)* states that processes are the source of unique company specific competence that increases the competitive advantage beyond what other levers of economic value could deliver.

Another perspective on creating competitive advantage is by deploying and enriching valuable, rare, inimitable, and non-substitutable resources appropriately, as it is not sufficient to just have them in the firm *(Sirmon et al., 2007)*. Therefore, leadership plays a vital role in positioning and nurturing the processes/assets to create an offering which is unique and compelling to customers, as well as a high level of employee experience. Only then do they become a strategic asset to the company with a potential source of competitive advantage.

Process Value is then linked to operational excellence, or rather: waste is a leading indicator of a lack of business agility *(Vakkuri and Johanson, 2021)*. Lack of agility occurs when resources are consumed on other types of acts and facts than the original, or essence of the organisation, which should be minimized to reduce waste. The human element in service processes plays an integral part in the value creation for the customer, the so-called moments of truth, or moments of magic *(Tor Wallin et al., 2016)*. The human interacting directly with the customer, and one who is mandated with decision-making will most probably take ownership for value creation and subsequent business agility *(Eu Chin et al., 2019,*

Hung, 2006). The so called "added value" *(Davis et al., 2003)* that humans can create within the process when interacting with the client during service delivery can increase the perceived value, especially in Insurance where customers want to feel and know that their assets are safeguarded. Supporting and protecting customer's value creation is in fact where the real value for a firm in the financial services industry lies *(Puustinen et al., 2014)*.

Hence, the importance of process, being a key enabler of value creation (especially in services), cannot be under-estimated or negated, i.e. a stark reminder that focus should be on process first *(Brenig-Jones and Dowdall, 2018, Orsini, 2013)*.

1.1 Problem context

A timeline creates a good understanding regarding the evolution of the problem, creating sufficient context to how this study was initiated at Co. INS: (See Figure 3). The following paragraphs explain the timeline as indicated in Figure 3.

In 2014 the Business Process Optimisation team was established to drive the deployment of process improvement. The vision for this team was twofold: 1) Achieve Process Excellence and 2) establish the Lean Six Sigma (LSS) faculty to drive process thinking.

In the past decade, the focus was to create the LSS faculty. Looking back and counting the numbers, the score is on the board!

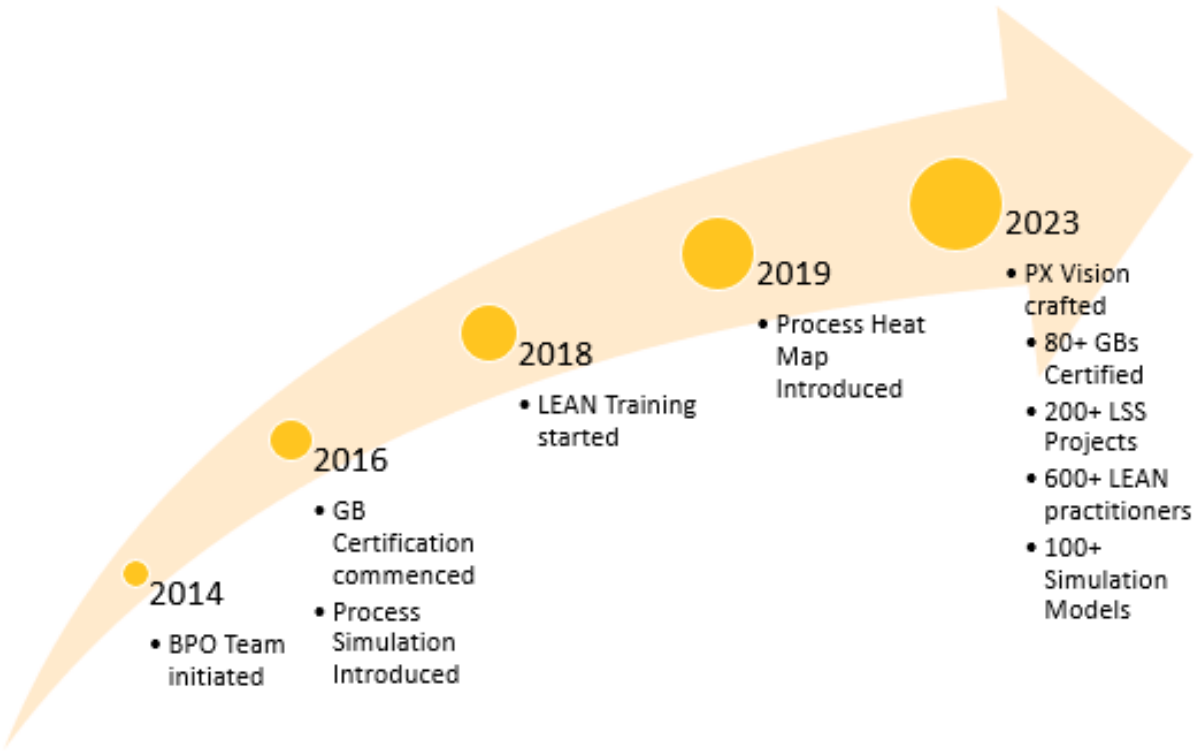


Figure 3: Timeline of Business Process Optimization at Co. INS *(author-created image)*

An important stepping stone was that of Green Belt (GB) certification in 2016. Delegates who applied every year are interviewed and assessed, and only 15 candidates are then selected to complete the certification course during the following year. The course consists of 5 classroom training sessions of a week each, a simulated project in class, and a process improvement in the business which needs to result in positive results. Upon successful completion, they receive their GB certification as an indication of proficiency. To date Co. INS has 95 delegates as certified GBs' across the business.

During the first two years of GB certification, the BPM Centre of Excellence (CoE) realised that the people in the process, which the candidate GB is improving, do not understand the approach or the language the candidate GB was using, for example "waste". IN 2018 it was then decided to commence with Lean training, which is called Process Excellence training, to provide the basics or foundational knowledge on process improvement. To take the example further: "Waste" is defined as non-value adding activities which involve transport, inventory, motion, waiting, over-processing, overproduction, defects and the waste of the skills in the process.

After 10 years the effort has not yet resulted in sustainable change, and process thinking is still not evident in the boardrooms and corridors whilst processes are still under-performing. In the book, "Lean Six Sigma for leaders", a mind shift is required, i.e. "Everyday Operational Excellence" *(Brenig-Jones and Dowdall, 2018)*.

In Deming's own words: "Best efforts without guidance leads to failure" *(Orsini, 2013)*. An insight that was gained during reflection on this predicament, was that the improvements must be done on the right processes to be more meaningful *(Liker, 2021, Johnson, 2017)*. This level of prioritisation is critical for long term success *(Hensley, 2017)*.

In order to provide the intended guidance towards a process view of the organisation, as well as being more strategic and intentional with the process improvement efforts, Co. INS devised a process heatmap[1] in 2019 (See Figure 4), based on the value stream of the specific organisation and the processes within each value capability[2].

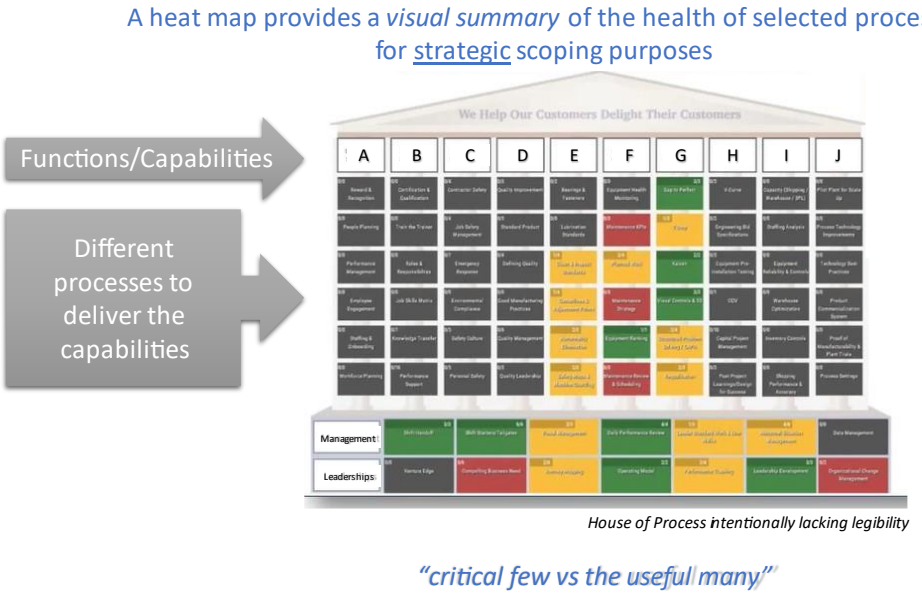


Figure 4: Process heatmap Concept at Co. INS *(author-created image)*

The heatmap, or House of Process, visualises the process health[3] in one consolidated view of the processes in the organisation with a clear distinction between the critical few and the useful many. The process heatmap compilation rate the strategically selected processes on a combined weighting between Customer Experience, Internal efficiencies, Business Partner Compliance and Process Data Quality and Availability. The red processes should then be the focus of the process improvement initiatives, aligned with the guidelines that Dumas provide for process selection *(Dumas et al., 2013)*.

[1] Wikipedia defines a heatmap as a graphical representation of data where the individual values contained in a matrix are represented as colors.
[2] See Appendices
[3] Based on a RAG status (Red, Amber, Green)

After 3 years of deployment of the heatmap concept, it is observed that delegates still choose their own immediate problem to improve during GB certification, rather than the more strategic selection using the process heatmap. Whilst consideration must be given to the fact that the delegate will select an "easier problem", being new and unexperienced, and also one that is within their circle of inference, the heatmap is not even considered for process selection, and it does not appear on agendas of management meetings.

Co. INS realized that strong and dedicated process leadership is required to drive and align the strategic selection of process improvement initiatives using the process heatmap in order to improve processes. The subsequent improvement suggestions using this portfolio approach would also need to be managed closely with a dedicated focus on collaboration and change management. Hence another intervention is required at Co. INS.

During 2023, in anticipation of this study and as a result of the literature review, the vision for Process Excellence was shaped into more detail. It is illustrated in Figure 5, consisting of four interdependent components: Leadership, Training, Culture and Process as a Strategic Asset.

This vision sets the purpose and compelling reason which serves as context as to why and what Process Excellence is in order to create a holistic customer experience *(Holt, 2019).* It creates the sense of direction (guidance) and sense of belonging (inspiration) to the role players in the community of practice. The Process Excellence Vision aims for the deployment of process thinking and process management together with the required leadership, training, and culture[4].

Jurczuk *(2021)* refers to some of the overlooked individual factors within BPM deployment that may have led to a lower success rate, including the support from top management, strategy alignment, methodology, clear responsibilities, culture, measurement and monitoring, IT alignment, and comprehensive process governance.

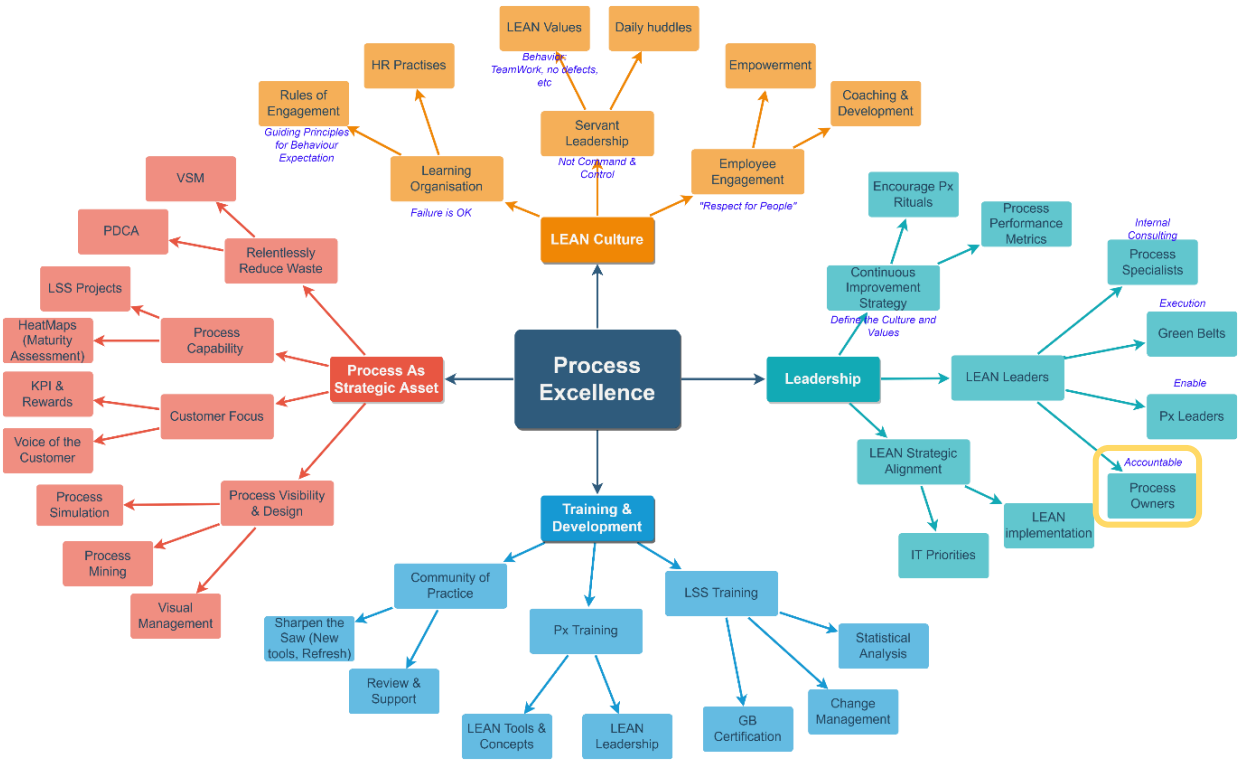


Figure 5: Process Excellence Vision for Co. INS[5] *(author-created image)*

[4] See Appendix B for more information on the Process Excellence Vision

As a next step in the journey, and a key consideration to make this vision real, is to contract with Leaders as Process Owners *(Delgado et al., 2010, Alnadi and McLaughlin, 2021, Laureani and Antony, 2019, Brenig-Jones and Dowdall, 2018)* to collaborate and lead towards creating the culture of a learning organisation, servant leadership, and treating processes as strategic assets to ensure they do not lose value but rather increase the value creation *(Puustinen et al., 2014, Maas, 2010)*.

Process Owners play a crucial role in the successful deployment of a Process Excellence Vision to foster the commitment to process *(Danilova, 2019)* but also to drive customer satisfaction and financial performance *(Weitlaner et al., 2012, Maddern et al., 2014).* The lack of *process ownership* is highlighted as one of the key barriers to BPM success *(Jurczuk, 2021).* In the Process Excellence Vision, it is crucial to start an ongoing process-centric conversation to influence the culture, as well as the leadership required to drive and build the Lean culture, but also to start the acts of process management to ensure process improvement is prioritized and executed.

1.2 Problem instantiation

The problem is that process improvements at Co. INS are not sustainable despite having the score on the board, i.e. the number of improvement initiatives, over the past decade. Processes are improved to a certain extent, but then something else happens and the improvement is either neglected or replaced. During the past few years, a remarkable number of processes identified for improvement, were part of an improvement journey before, either by technical solutions or process solutions or training of staff.

The illustration in Figure 6 indicates the problem experienced: the proverbial ceiling is reached on the current BPM journey (indicated in yellow), and it is getting progressively more difficult to impact the business. It has been noted that companies without the strategic vision to sustain process excellence fail on their path of maturity if they don't intentionally design the path towards sustainability. *(https://www.alfraconsulting.eu/the-toyota-way/)*

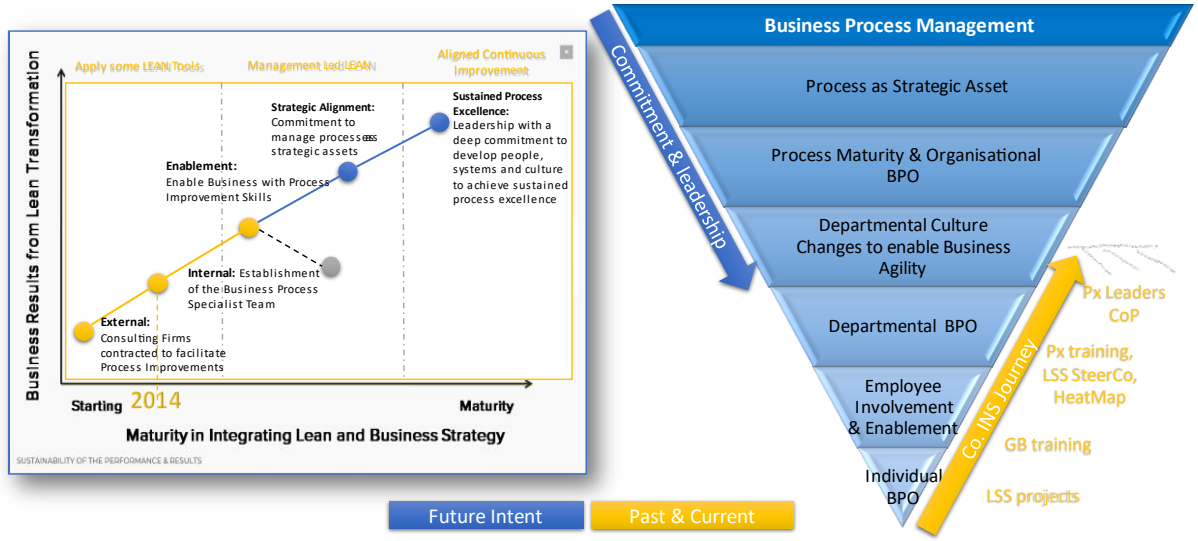


Figure 6: Problem Illustration at Co. INS *(author-created image)*

1.3 Problem statement

One of the main challenges when improving business processes, is the sustainability of the improvements. The problem at Co. INS is that the other parts of the process partnership, i.e. technology and people, are rather used as a leverage for performance without sufficient deliberation of the impact of those changes on the actual process of service delivery and value creation.

Figure 7 illustrates the problem as the misalignment between the components of value delivery in the "As-Is" part of the illustration. Misalignment leads to a significant amount of technical debt, and processes which are gradually degraded into ad-hoc performance *(Danilova, 2019)* degrading the service delivery and customer experience. Symptoms of misalignment of this process partnership are evident using the indicators of data inconsistency, duplicate data capturing, lack of information, and design cycle lack of agility *(Ross et al., 2006)*. Chapter 2 elaborates on the analysis of the problem instance.

The researcher believes that the vision of sustained Process Excellence (Px) demands dedicated *process ownership* as a key enabler to align the partnership. (Also see *process ownership* indicated as part of the vision in Figure 5). Processes should be regarded and managed as strategic assets, i.e. valuable entities that creates and delivers value to the customer, as represented in the "To-Be" part in Figure 7, to ensure alignment in the process partnership.

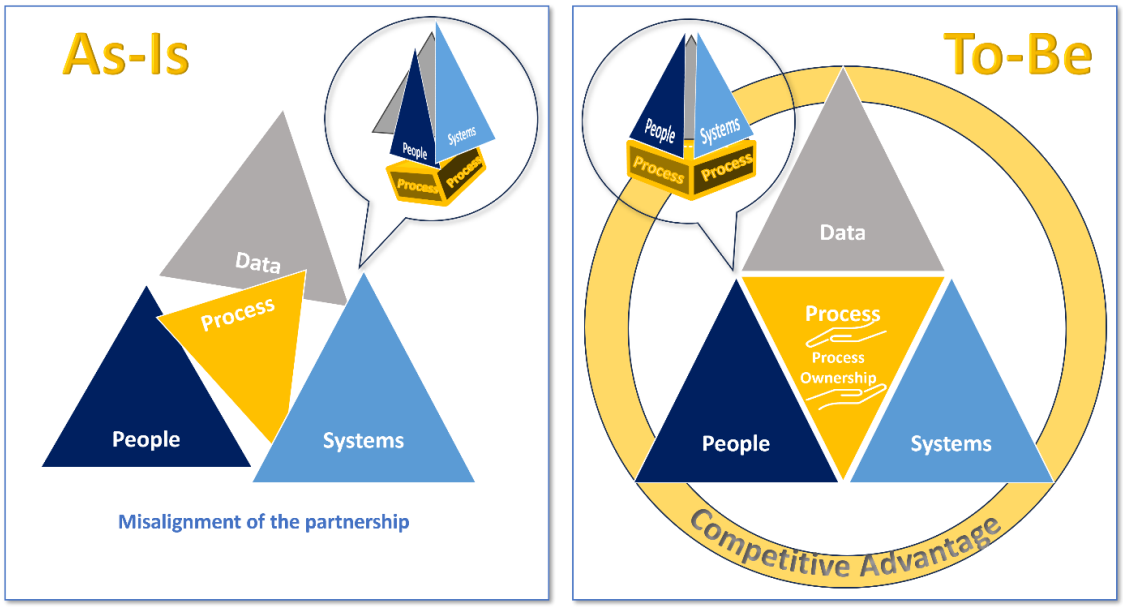


Figure 7: Problem statement illustrating process misalignment in the partnership *(author-created image)*

The misalignment in the process partnership leads to poor process performance, which in turn affects customer experience negatively and erodes the competitive advantage.

1.4 Research opportunity

Process ownership is defined as:

> *a formal commitment to institutionalize business process management, to ensure end-to-end process performance and continuous process improvement (Danilova, 2018, vom Brocke and Rosemann, 2014).*

The body of knowledge regarding business process management (BPM) dates back to the 1990's *(Hung, 2006)* and elaborates on the quality philosophies of process improvement, the mapping and documentation of processes, and the roles and responsibilities of people involved in processes amongst others. Yet, to date, there is little to no guidance on the deployment of *process ownership* in the business.

Lack of *process ownership* is confirmed in the literature as a valid contributor towards poor process performance *(Danilova, 2018, Jurczuk, 2021, Hrabal et al., 2021, Hernaus et al., 2016, Doebeli et al., 2011)*. From the

literature, there is a hypothesis that process performance would be improved once *process ownership* is formally contracted. The hypothesis is that a gatekeeper role for process and continuous focus on process performance will result in sustainable process performance.

Based on literature review, there is a strong relationship between the impact of *process ownership* with continuous process improvement on customer satisfaction and financial performance, as proven by Weitlaner *et al.* *(2012)* using a one-way ANOVA on the data gathered from 420 firms in Austria.

It is further evident from the literature that a major contribution to operational failures or inadequate enterprise performance is caused by inappropriate design or implementation of the organisation *(Dietz and Mulder, 2020, Deming, 2000).*

However, existing literature lacks a coherent approach to embed *process ownership* within a holistic business process management approach. Therefore, the main intent of the dissertation, indicated in the primary research question, is to complete the first phase of design science research (DSR) in developing the first version of such an approach based on the function of *process ownership*.

1.4.1 Primary research question

The primary research question (PRQ) constitutes new theory around a possible solution for the problem stated in section 1.3 as the lack of alignment in the process partnership:

"What enablers, supporting effective Process Ownership, will prioritize process management to ensure improved process performance and subsequently support an increasing competitive advantage in a financial services environment?"

1.4.2 Supporting research questions

To elaborate on the main research question, an understanding of *process ownership* is required, and a coherent approach should be designed. Therefore, the following research questions are answered as part of this study:

Table 1: Research Questions and Content Map

Type	Nr	Research Questions	Answered
Discovery	DQ1	What are the reasons for process management not being prioritized at Co. INS?	Chapter 2
	DQ2	What knowledge exist in the current body of knowledge to describe *process ownership* within the financial sector?	Chapter 5, 6 and 7
Secondary	SQ1	What *theory* informs the structure of the coherent approach?	Chapter 8
	SQ2	What is the *structure* of the coherent approach?	Chapter 9
	SQ3	What *demonstration* provides evidence indicating that the functional requirements of the designed approach are sufficient?	Chapter 10
	SQ4	What *evaluation* results provide evidence that the newly designed approach can prioritize process management to ensure *improved process performance*?	Chapter 11

1.4.3 Initial requirements for design

In order to answer the PRQ, the research needs to address the following initial requirements for a solution as obtained from the literature presented in Chapters 5, 6 and 7:

- What should be the mandate, authority, boundaries, decision-making of the process owners within the financial services environment deploying Lean Six Sigma?
- Who should be contracted as Process Owners at the financial services enterprise within a matrix structure? (Dedicated focus is required for adoption)?
- What should be the qualifications required for a Process Owner given the capability limitations? (e.g. knowledge, competencies and skills)?
- What support should be provided to Process Owners to be effective, i.e. what social systems and culture need to be in place for effective *process ownership*, and what tools and information would they need?
- How would Process Owners be managed, including performance, reporting, structure, rewards, motivation?

1.5 Thesis statement

The holistic development and deployment of

Enablers, Supporting effective Process Ownership (ESPO)

will prioritize process management to ensure improved process performance, and subsequently also support the realisation of increased competitive advantage in a financial services environment.

1.6 Scope demarcation and limitations

The main researcher fulfilled two roles in this study: (1) A part-time academic to drive and conduct the study, as well as (2) a full-time practitioner, i.e. a senior manager of the BPM CoE at Co. INS, understanding the problem context and significance of the problem well.

The study included the development of the *process ownership* function from existing literature, as well as the design of the approach for an effective deployment thereof, called ESPO. The design of ESPO focused predominantly on the organisation domain, and the culture and people aspects.

The study excluded the operationalisation and embedding of the ESPO, although some components of ESPO were tested within Co. INS where a BPM Centre of Excellence (CoE) already exists. A summative evaluation of the designed artefact is excluded for various practical reasons. Rather, the evaluation included formative assessment using a number of different data gathering events.

The study was evaluated only at Co. INS, within different teams and with different roles across the business.

1.7 Significance

The motivation to do this research was two-fold: (1) to provide meaningful guidance to Co. INS on how to further the success and longevity of the process work they're doing, and (2) to complement the current body of BPM knowledge with a coherent approach to *process ownership*.

The significance of this study for Co. INS lies in the strategic commitment towards *process ownership* with an honest desire to improve competitiveness through process performance. The head of the department expressed the intention to deploy the conceptual model, as it is already part of the Process Excellence vision at Co. INS to intentionally affect the maturity of process improvements:

> *"At Co. INS, process ownership is pivotal for several reasons",* the main user of the ESPO has concluded. *"Our focus is now on advancing to the next level of maturity: Strategic Alignment and Sustained Process Excellence.*
>
> *We believe that establishing clear process ownership will propel us towards achieving this goal and position processes as strategic assets within our organisation."*

After this study was concluded and beyond the time frame of this research, the Chief Executive Officer: Broker Solutions of Co. INS, has agreed to a pilot deployment of *process ownership* within the Legal Claims team with the provisor that no additional resources could be requested.

The major contribution to the body of knowledge of this research is a useful approach for future approach developers as an effective means to address the lack of process improvement sustainability.

As Hrabal *et al.* *(2021)* mention in their article about the human factor in BPM and the competencies required: "Despite the vast body of literature (mostly on the technical aspects of BPM), there is actually a low awareness of what the process owner do or what they should do." This limitation is echoed by Kohlbacher *et al.* *(2011b)* who researched the performance impact of process management practices. Danilova *(2019)* concurs with this gap and highlights limited understanding of how *process ownership* is actually implemented. Her research also excludes Lean and Six Sigma, which results in an incomplete description of the roles and responsibilities of the process owner in environments where LSS is the chosen methodology for process improvement.

Part F of this dissertation provides a reflection on the contribution that ESPO offers to the existing body of knowledge.

1.8 Chapter summary

This chapter created context of the problem experienced by Co. INS, and background as to why this study has been undertaken, what the study would focus on, as well as the significance of the solution.

The BPM CoE has been established for 10 years within Co. INS to focus on process improvements, but to date the process work being undertaken (e.g. certification of Green Belts, Process Excellence training, compiling a heatmap of processes per department, process simulation, process improvements using Lean Six Sigma methodology) has not yet resulted in the desired sustainable process excellence.

The research therefore focused on a formal commitment to *process ownership* as a valid contributor towards sustainable process excellence. The research questions are focusing on 1) better understanding of the concept of *process ownership*, as well as 2) the design of an approach for *process ownership* as the main intent of this study.

The *primary research question* is: "What enablers, supporting effective *Process Ownership*, will prioritize process management to ensure improved process performance and subsequently support an increasing competitive advantage in a financial services environment?"

Processes should be regarded and managed as strategic assets, i.e. valuable entities that creates and delivers value to the customer. The thesis statement therefore pivots around the solution to protect processes from losing value: "The holistic deployment of *Enablers, supporting effective Process Ownership* (ESPO) will prioritize process management to ensure improved process performance, and

subsequently also support the realisation of increased competitive advantage in a financial services environment."

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CHAPTER 2: PROBLEM INSTANCE ANALYSIS

This chapter aims to unpack the complexities for not prioritising process management at Co. INS, addressing DQ1, i.e. *What are the reasons for process management not being prioritized at Co. INS?*

Some evidence of misalignment in the process partnership were observed within Co. INS and have been listed in section 2.1. Using the process capability, the value-add %, and the process heatmap rating as some of the measures for process performance, the poor performance of processes were illustrated in a quantitative analysis in section 2.2, and confirmed with summative results in section 2.3.

Using an inductive approach to understand the effect of no *process ownership*, the problem instance analysis focused on reasons for poor process performance through the use of root cause analysis tools indicated in section 2.4. The potential reasons for a lack of *process ownership* were extracted from the literature review and listed in section 2.5.

Section 2.6 elaborates on the potential stakeholders of this solution.

2.1 Evidence of misalignment in process partnership

To confirm the problem instance and provide evidence that the problem exists in Co. INS, the focus was placed on instances where misalignment occurred in the process partnership as illustrated in Figure 7. The following examples illustrate the problem where processes were subordinate to systems and/or ignored, or process improvement not prioritized, and hence affected the process negatively:

- No visibility for contact centre agents of work done, in order for them to manage their work.
- No real time (or near real time) visibility of service level of a specific service request exists.
- The mandatory creation of a case in order to ensure two systems talk to each other, which adds time to every interaction with the client and delays the service delivery.
- The agents in the Claims team and the Contact Centre team needing to recapture data between systems in order to “integrate” them.
- Incomplete integration between the workflow solution for service requests and the back-end system maintaining the policies, results in additional steps that delays the service delivery. The omission of critical details of the policyholder on the workflow solution for service requests, results in locating the policy on the back-end system first, finding the policyholder details, and then returning to the workflow solution to open the protected documents in order to provide context to the service request.

Other examples of misalignment between process and systems are:

- Process maps are often just the SOPs documented by the Business Analyst in the IT project team during a system deployment, and not what really happens, or should happen, in fulfilling a specific service.
- Product Ownership is formally contracted with people as a dual responsibility with their normal “day job” to maintain systems and system requirements, but *process ownership* is not contracted at all.
- Manco Agendas do not include process management or process metrics.
- Certified Green Belts (GBs’) are not contracted with improvement initiatives after certification. The certified GBs’ are absorbed into the business in their day-to-day tasks again, as prior to the certification, and their performance measures are not updated with the new skill and

capability. Hence the process improvement work is not done or prioritized, even if the business has the skill in their immediate environment.

- The same processes are improved year after year, e.g. optimization of car hire, optimization of assessment turnaround time.

The symptoms of misalignment are also observed at Co. INS when using several indicators as stipulated by Ross *et al.*(2006):

- Data inconsistency:
  - For the same customer query there might be many different answers.
  - For the same service rendered by suppliers, different line items are captured in the back-end system.
- Design cycle lack of agility:
  - Meeting a new regulatory or reporting requirement is a major issue.
  - Strategic initiatives seem to start from scratch every time.
  - IT seems to be a bottleneck to process improvement initiatives.
- Duplicate software functionality:
  - Different business processes completing the same deliverable, each with a different system.
- Duplicate data capturing:
  - People take data from one system, manipulate it and add it to another system.
- Lack of information:
  - Claims Centre deployed without reporting module, only added much later.
  - No view for Contact Centre agents on the cancelled policies in order for them to manage their work.

The discussion above indicates that there is evidence available that poor process performance potentially exists at Co. INS.

2.2 Quantitative analysis

Quantitative analysis provides a measurement, or a number, to describe how big the problem is. Process performance is measured using a few indicators. The following indicators have been chosen for this analysis:

- *Process capability:* The capability of the process to deliver within a specified target or agreement with the customer. This is calculated based on comparison of the performance with the target for every unique entity, and a count of how many of the entities in the count has been delivered within target. A value between 80% and 100% is the ideal performance.

- *Value-add %*: The value-add % is a time-based measure, and then specifically on the amount of time spent within the process on the value-add activities. That is expressed as a percentage of the total time the process takes to deliver. Value-add indicates flow, whereas waste or bottlenecks indicate congestion. Value-add % is then also an indication of waste or bottlenecks in the process, i.e. it indicates how “stuck” the process is in wasteful activities. In the regulated environment of the financial services industry, a value higher than 50% is a good performance.

- *Heatmap rating:* The rating that is obtained from the heatmap compilation is based on a weighted scale between the voice of the customer, internal efficiency, compliance of business partners, and the availability of process data. The heatmap is compiled by firstly creating the value chain of services to be delivered by the team. Next the processes to deliver that particular service is listed. The next step is to select the processes linked to strategic objectives. Then only does the team rate the processes based on lived experiences. It is therefore a

balanced rating that can be used to prioritise the required process interventions. Normally the top 10 processes are selected for possible improvements based on the (RAG) status.

Unfortunately, there is no data for quantitative analysis to prove lack of ownership as a root cause for process performance, as process ownership is not formally contracted within Co. INS.

Data indicating poor process performance, using the above metrics, was obtained from the 11 different processes investigated during the 2023 GB certification training. Figure 8 illustrates the range of process capability and range of value-add % for these 11 processes using boxplots to indicate variation within the metric, as well as the location, or average (indicated by the "x") and the median.

The process capability is visualized in the orange boxplot on the right. Refer to the previous paragraphs for the definition and calculation of process capability.

The value-add % of the processes are visualized in the blue boxplot on the left. Refer to the previous paragraphs for the definition and calculation of Value-add %.

As the boxplot for value-add % indicates, a very low percentage of total lead time is spent on value-add activities, except for one outlier, which is also 70% stuck in wasteful activities. On average the processes indicate only 6% value-add time, which means most of the time spent delivering a service to our customers is time spent on non-value add activities. Having a high degree of waste and non-value add activities in a process leads to complex and cumbersome processes. It must be noted that the financial services are strictly regulated as the nature of the industry, but that does not change the fact that our customer experience is impacted by the time spent on non-value add activities.

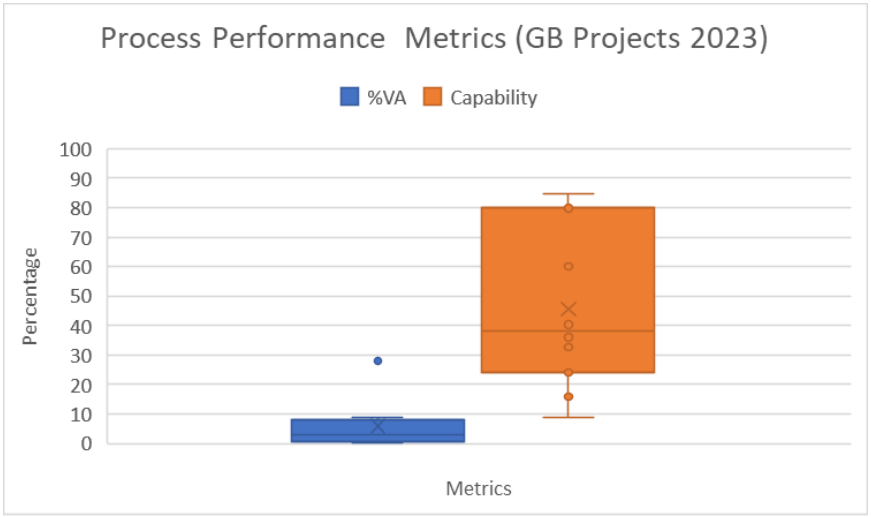

Figure 8: Process performance metrics within Co. INS of 2023 green belt projects *(author-created image)*

The boxplot in orange illustrates the process capability of the 11 processes. The median of the boxplot illustrates that 50% of the processes investigated have a capability of less than 40%. On average the processes are only 45% capable to meet the customer promise. It is very concerning that the customer promises are not honoured.

The current heatmap (aka House of Process) at Co. INS could also be used to validate that Process Performance is problematic. Figure 9 illustrates 2 different heatmap visualisations. The heatmap was referred to in section 1.1 and is elaborated in appendix A. The heatmap visually indicates under performance of process in red, based on the lived experience of the participants when creating the heatmap. It indicates the strategically aligned processes where potential misalignment in the process partnership occurs.

Figure 9: Examples of a current Process heatmap *(author-created image)*

What is more concerning than the visualized and quantified poor performance, is the fact that many of the processes in the above examples have been improved before, through either a new technology solution, or a previous process improvement intervention. And yet they are selected for improvement. Again.

2.3 Summative results for validating problem instance

The objective of this chapter in totality is to validate the existence of a real problem. The BPM CoE facilitates a Community of Practice (CoP) session every two weeks with the certified GBs' who are able to attend. The GBs' are trained and certified on the value of process and are deemed experts in Co. INS with regards to process knowledge and experience. During a CoP session comments were made when reflecting on the discussion of poor process performance and the need to formally contract *process ownership*. An example is displayed in Table 2. Refer to appendix E for the full transcript.

Table 2: Example of comments during a group discussion at community of practice with certified Green Belts (1 Mar 2024)

Speaker	Discussion
Speaker 1	"When you're talking about it, I was thinking quite simply 'Well, just imagine the opposite.' I mean that's why we chose certain projects for our greenbelt projects. It was because something wasn't working. …. I just even look in at the process that I chose. There were so many customer complaints. There were so many issues. Hence the project was chosen, but that's exactly what happens when a process is left and it just, it doesn't get maintained, or it starts falling apart and people just add to it as it goes along. So, the opposite of having no sort of process management and ownership and focus is actually at the end of the day just moving towards chaos."

During this session an online collaboration tool was used to probe for their input using a Likert scale of 1 to 10 regarding the existence of poor process performance and the current effort to manage processes. The feedback is displayed in Figure 10.

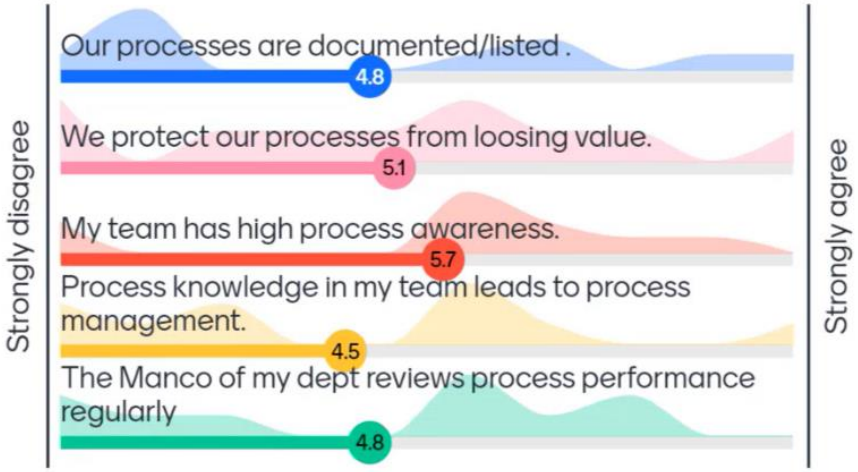

Figure 10: Summative results of group discussion with CoP (1 Mar 2024)

The results in Figure 10 is displayed visually using a histogram and an average of the feedback of the audience per question. The first probing statement indicates that there were pockets of strong disagreement with the statement that processes are in fact documented, but also a few smaller pockets along the continuum towards agreement. The average is also indicated and is only 4.8 out of 10. The rest of the questions have a similar interpretation and result.

The above narratives and feedback provide clear evidence to validate the lack of process ownership and an indication of some areas of concern regarding process management, which will be further unpacked in the next section.

2.4 Root cause analysis

Every problem has a cause, and it is through root cause analysis that a problem is addressed *(Doggett, 2005)*, otherwise the problem will persist. The next section focuses on identifying the potential root causes for the identified problem, so that the solution can be tailored to eliminate the root causes rather than merely addressing the symptoms of the problem. The root cause analysis tools as presented by Dogget *(2005)* is used to analyse the potential root causes using a current reality tree (CRT) and an interrelationship diagram (ID).

Ethical clearances were obtained prior to the research and included approval to conduct the root cause analysis using group discussions (See section 4.6).

2.4.1 Current reality tree

The CRT is designed to model the current reality in a complex system by relating multiple undesirable effects (UDE) of the core problem *(Doggett, 2005)*. The CRT depicts the most likely and probable chain of cause-and-effect factors that contribute to the core problem, with the intention to identify the core driver(s) or cause(s). The UDEs are depicted as entities, and the relationship between the entities are configured in an “if-then” statement pointing from the cause to the effect. The arrows in the CRT signify that the cause is sufficient to create the pointed effect. The CRT is constructed in a top-down fashion but is read from bottom to top to illustrate the ripple effect of the major and probable causes of the problem under investigation. For every UDE stated, the categories of legitimate reservation (CLR) are used to test the relationship. Each UDE is tested for clarity and tested for causal relationships between other effects. The objective is to identify the few causes for the stated UDEs. For every UDE the question is asked why this effect is happening and what the potential cause could be. The CRT is then extended to indicate causality until only a small number of root causes exist, which do not have preceding causes *(Doggett, 2005)*.

The CRT uses a sufficiency condition to ensure that the relationships are in fact depicted in a strong cause-and-effect correlation *(Doggett, 2005)*. When either of the causes are removed, the effect will change. In this example the narrative will be very different. These causes are typically interdependent and both must be present to create the cause.

The relationships are tested using CLR, which are clarity, entity existence, causality existence, cause insufficiency, additional cause, and predicted effect *(Doggett, 2005)*.

Using this model to investigate the poor process performance as illustrated in Figure 11, it highlights the following as the few root causes:

- absence of process performance measures
- the lack of customer focus
- the lack of a holistic approach
- limited budgets

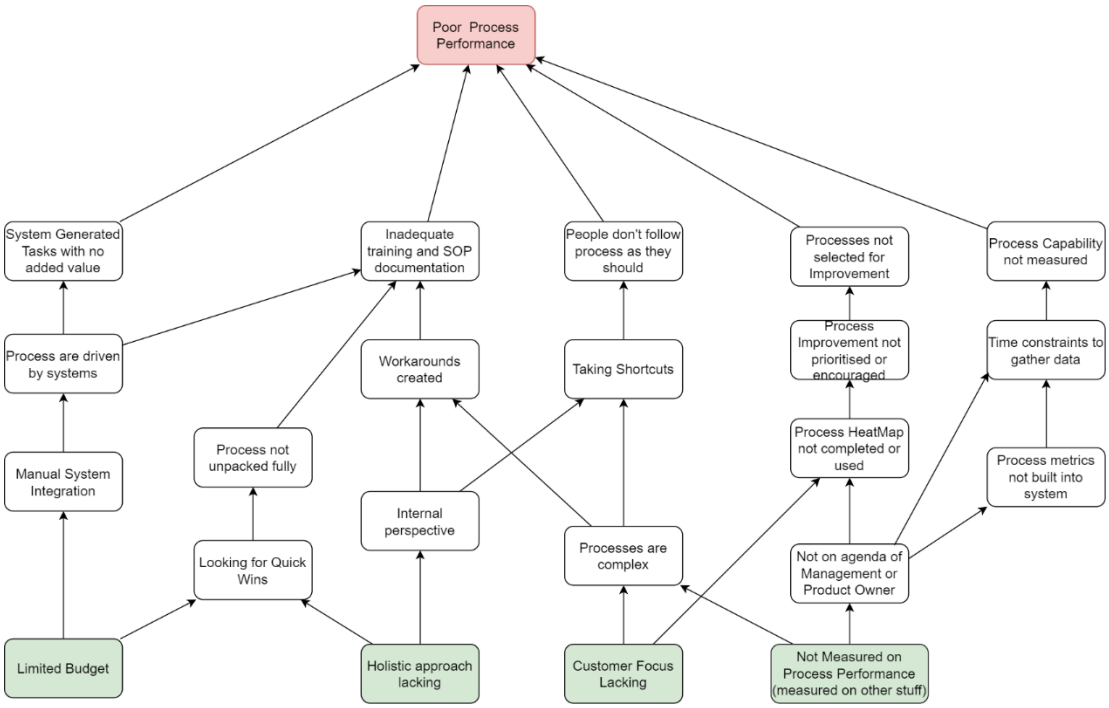

Figure 11: Current Reality Tree of potential causes for poor process performance *(author-created image)*

The CRT in Figure 11 states that if customer focus is lacking, then an internal perspective is used. A lack of customer focus will also lead to complex processes, which in turn will lead to people taking shortcuts, and workarounds being created. If workarounds exist, then process training and documentation is inadequate, which leads to poor process performance.

Another root cause from the CRT is the lack of a holistic approach. The latter will lead to people looking for “quick wins” during system development. “Quick wins” will lead to incomplete process representation and understanding, as well as systems dictating to process with subsequent tasks required which are not value adding. This in turn leads to poor process performance.

The absence of process performance measures leads to complex processes, as well as management agendas not focusing on processes. If the agendas are not focusing on processes, then the prioritization of process improvements using the heatmap will not be done. Neither would the drive to measure processes exist, which will lead to an unknown process capability. If process improvements are not prioritized and executed, or process capability not measured, then processes will be performing poorly.

One of the green belts have stated "*You cannot own something, if it is not tangible! Our processes are not tangible or visible!*"

The CRT was constructed using small group discussions with the management and certified Green Belts in two different teams. Table 3 highlights an example of the discussions of a few of these events based on the topic of poor process performance, or processes not protected from losing value. (See Appendix E, Table 24, for the full transcript)

Table 3: Example from Group discussions to identify root causes for poor process performance.

Speaker	Narrative
Facilitator	"Is poor process performance something that you guys also see in your environment? Why would you say that happens?"
Speaker 1	"Yeah, I can say definitely yes. Reason for that is: what you do see is that everyone is looking for quick wins. They're not actually unpacking the processes the way the process should be unpacked. And you know, the budget timelines are extremely tight. So these days, they're kind of looking for any quick wins. And looking for those quick wins might actually mean that exactly what you're mentioning now is: it's going to be a poor process because the process is not really going to actually address what's happening within the business. And those are the type of risks that you do actually have if you're looking for those quick wins."

2.4.2 Interrelationship diagram

As another diagnosis technique (triangulation of methods) to confirm *process ownership* as a potential solution for poor process performance, an *Interrelationship Diagram (ID)* was configured using the evidence currently available and align the factors with the Process Excellence Vision. The ID depicts the complex multivariable problems and explores the interrelated factors and relationships between them to assist in identifying an appropriate solution.

The factors used in the ID illustrated in Figure 12 relate to the issues mentioned in the CRT, as well as the Process Excellence Vision components, i.e. workload of managers, process metrics defined and built into systems, agendas of management, culture in the organisation, application of Lean concepts and tools, priority and focus on *process ownership*, active certified Green Belts, as well as the poor performance of processes. The analysis using subjective judgement around the possible influence of the factors on each other, indicates the lack of *process ownership* as the driver and low number of process improvement initiatives as the indicator.

The ID assist in identifying the root cause by using arrows pointing from the cause to the effect, or from the potential solution to the problem identified *(Doggett, 2005)*. The ID is created through the identification of the factors that lead to the problem instantiation. Then the effect of the factors on each other is indicated using arrows: from the cause (driver) to the effect (indicator). The factors with more "out" arrows are the potential causes, whilst the factors with more "in" arrows are the potential effects. The causes form the starting point for the analysis *(Doggett, 2005)*.

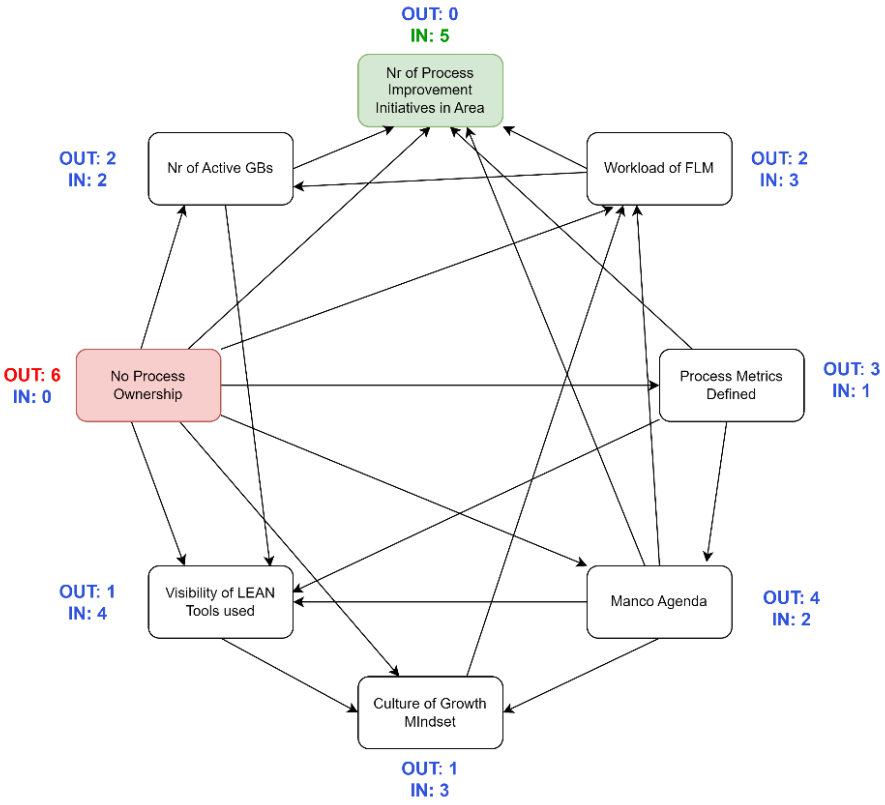

Figure 12: Interrelationship Diagram of factors contributing to underperforming processes *(author-created image)*

The ID in Figure 12 shows the factors for poor process performance and the relationships between these factors. It indicates the centrally converging factor as the number of process improvement initiatives. This inactivity is caused by a high workload of First Line Managers (FLM), as well as a Manco agenda that is not driving the initiatives as it is not aware of poor process performance due to process metrics not being defined. Because process metrics are not defined, no visual management is displayed, which is not supporting a culture conducive for a growth mindset. In turn the culture of blame and focus on people add to the workload of the FLM to manage people. As there is no *process ownership* formally contracted, the FLM is also responsible for ensuring people following the process, which adds to the workload of the FLM. In many cases the FLM is also a certified GB. Due to his/her workload, the FLM cannot fulfil the duties of an active Green Belt, which means process improvements are not done.

The ID in Figure 12 also indicates that there is a causal relationship between having no formally contracted *process ownership* and the low visibility of Lean tools and visual management. The latter is also caused by a low activity of certified GBs'. The number of active GBs' would be affected by *process ownership* as either process owners being certified GBs', or the GBs' would be involved in process improvement initiatives.

Figure 12 depicts the lack of *process ownership* as a root cause for the low number of process improvement initiatives.

The creation of the ID started to be very similar to a Causal Loop Diagram (CLD) thinking through the causal relationships and whether it reinforces the current behaviour or balances the behaviour. For practical reasons it was decided that the problem is understood well enough and a CLD is not necessary.

2.5 Reasons from literature review

The literature review in Chapter 5, done as part of the research method used for this study, provided an initial understanding of the problem. From the literature review done, there are several potential reasons mentioned why *process ownership* is not established:

- Lack of ("lower use of") process performance measures in the service industry *(Danilova, 2019).*
- Senior management commitment and their perception of BPM as a basis for business change *(Danilova, 2019, Hernaus et al., 2016, Looy et al., 2014).*
- Strategic alignment of BPM initiatives is not formally happening *(Hernaus et al., 2016).*
- Certain cultural characteristics may not provide suitable conditions for BPM adoption *(Štemberger et al., 2018, Buh and Stemberger, 2016, Fernanda Gobbi de et al., 2015).*
- No clarity with regards to who make changes to the process, or who is responsible for the process *(Štemberger et al., 2018, Buh and Stemberger, 2016).*
- Low process awareness *(Danilova, 2019, Nightingale and Srinivasan, 2011, Scheer and Hoffmann, 2014)*.
- Peter Keen talks about the process paradox *(Keen, 1997)* where process improvements might not be focused on the processes (capabilities) that creates value for the customer.
- Lack of a formalised governance framework *(Jurczuk, 2021, Fernanda Gobbi de et al., 2015).*
- Human knowledge, skills and behaviours linked to process improvement are not rewarded. Without alerting these components of Human Resource Management (HRM), long term benefits of process orientation will not be sustainable *(Shafagatova and Van Looy, 2019).*
- Limited understanding of the benefits and methodology of BPM *(Fernanda Gobbi de et al., 2015).*

2.6 Stakeholders that need a solution

Following the intent of the significance of the study as discussed in section 1.7, the stakeholders who will benefit from this solution are both internally and externally to Co. INS.

The solution should benefit the future research fraternity studying the vast field of process optimisation and *process ownership*.

The solution should also benefit the stakeholders transacting around the delivery of the service as illustrated in Figure 2 as follows:

- Shareholders of a competitive enterprise.
- Customers, or policyholders, and brokers, or intermediaries, would experience better service delivery through optimised processes.
- Employees participating in the process would be rid of the frustrations which is caused by poor process performance.

The internal stakeholders of a solution to this problem would be the stakeholders within the process partnership, which are the following:

- Functional management of the different teams delivering the services, will be less consumed with defect management and complaints.
- System and IT development will benefit from the detailed knowledge of pain points to better support the process.
- The employees with Green Belt certification, with their desire to make an impact on a continuous basis, will have a career path in the process optimisation discipline.

The main stakeholder of this solution would be the BPM CoE who has the vision to ensure sustainable process excellence.

2.7 Chapter Summary

This chapter provided evidence that a problem indeed exists, understanding the potential reasons or causes for the problem, as well as stakeholders that are affected by the problem.

The chapter answered DQ1, starting with observed evidence of misalignment in the process partnership as illustrated in Figure 7 between process as foundational element of the partnership, and the rest of the partnership, i.e. systems, people and data. The misalignment was also further highlighted by using indicators of misalignment by Ross *(2006).* These indicators included data inconsistency, design cycle lack of agility, duplicate software functionality, duplicate data capturing, lack of information.

The problem was then further highlighted by providing quantitative evidence of poor process performance. Selected process metrics were used on 11 processes chosen for GB certification projects. The quantitative results displayed two boxplots, illustrating variation as well as the average and median, for process capability and value-add %. The results indicated that the selected processes are only 45% capable to meet the customer promise on average, and also a very low value-add time spent of 6%, indicating that a large proportion of time is spent on non-value adding activities. The visual representation of the process heatmap also indicated a RAG status of a balanced rating between customer experience, internal efficiencies, broker/supplier compliance, and data quality and availability.

A summative assessment then followed, that validated the existence of the problem with the stakeholders of a potential solution. A group discussion was conducted with verbatim feedback, as well as a Likert scale rating of a few statements using an online collaboration tool.

The next step was to do a root cause analysis on the validated problem, in order to guide the development of a solution. The current reality tree indicated that the absence of process performance measures, the lack of customer focus, the lack of a holistic approach, and limited budgets are potential root causes for process performance. The interrelationship diagram indicated a compelling visual illustration of the causal relationship between having no formally contracted *process ownership* and the process improvements in an area as factors influencing poor process performance.

The understanding of the problem instance was then also complemented by reasons for a lack of process ownership as found in the literature.

The last section of the chapter identified the stakeholders of a potential solution. The stakeholders are both internal and external to the business, as well as the research community. The stakeholders include the customers and brokers of the services being delivered though optimized processes, the management teams who manages the employees delivering the services, the IT and systems development teams, the certified GBs' with the heartfelt desire to make an impact, as well as the main stakeholder, i.e. the BPM CoE, who has a vision to achieve sustained process excellence.

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PART B: BEGINNINGS

"You don't have to be great to start, but you have to start to be great."

— Zig Ziglar

Part B of the dissertation really starts the research by selecting the methodology and refining the approach to conduct the research:

- Chapter 3 provides the literature review on research methodologies.
- Chapter 4 presents the plan and strategy to complete this study, based on the practicality of evaluation of the created artefact(s).

CHAPTER 3: RESEARCH METHODOLOGY

Research methodology is an organized process to solve a known problem. It is a science of studying how new knowledge should be created. Essentially, the procedures by which researchers go about their work of describing, explaining, and predicting phenomena are called research methodology *(Jadhavar, 2023)*.

The aim of the research is to develop theory and new knowledge around the deployment of the *process ownership function* and the enablers required to support this role, which will have implications for management and the Human Resources function at an enterprise. The systems perspective of this research is recognised, as *process ownership* does not function in isolation, but is highly dependent on relationships and feedback loops in the organisation *(Harmon, 2014)* and it is linked to supporting the strategy and goals of the organisation *(Rummler and Brache, 2012).* The multidimensional nature of *process ownership* allows for an explorative or interpretive, and qualitative research approach.

This chapter details different research methodologies in section 3.1, and section 3.2 elaborates on the artefacts and outcomes of the selected design science research (DSR) methodologies. Section 3.3 details the framework used for evaluation of the DSR.

3.1 Literature on research methodology

Action Design Research (ADR) is inspired by a real and immediate organisational problem, and the theory will emerge in the organisational context *(Sein et al., 2011, Sein et al.).* Although the initial design of the artefact will be based on theory and lived experiences, this design will be tested and shaped through the cycles of building, intervention and evaluation *(Sein et al., 2011).* ADR provides explicit guidance for combining the building, intervention, and evaluation in a concerted research effort and hence influence of the relevance cycle *(Sein et al., 2011).* ADR requires actual implementation of the artefact for the intended evolution of the research to happen. The researcher becomes an active participant to solve the problem in the organisational context. The cyclical nature of ADR reminds a lot of the typical exploration cycle in Lean Six Sigma, called the PDCA cycle, as it fosters an inquisitive culture of a learning organisation, as well as the evolution towards efficiency and effectiveness of the solutions *(Acur and Bititci, 2003).*

Several researchers enquired about the similarities between Design Science and Action Research in that it represents a real and validated business problem not yet solved, but with the main concern the development of an artefact to be evaluated *(Peffers et al., 2007)*. The artefact should be developed through a search process as a potential solution by using known and existing theories and knowledge *(Peffers et al., 2007)*. Peffers *et al. (2007)* suggest that it would be possible to present action research as the search process for an artefact in a design research method. However, during design science research (DSR) a rigorous evaluation should be done on the usefulness and efficiency of the artefact as a solution to be deployed and be communicated to the research community as clear contribution to the body of existing knowledge *(Peffers et al., 2007, Gregor and Hevner, 2013)*. Hevner *et al. (2004)* presents design as both a process and an artefact, i.e. a set of activities, as well as an innovative product. The evaluation of the artefact produces a better understanding of the problem, which improves both the design process and the quality of the artefact *(Hevner et al., 2004).* Therefore, recurring process of build and evaluate is at the core of DSR.

The comparison of the research methodologies has been tabled in Table 4 and is a useful way to select the more appropriate approach for this study. Both Peffers *et al. (2007)* and Sein *et al*. *(2011)* comment on the potential collaboration between the methodologies, but perhaps the distinction is more visible in a tabled format.

Table 4: Brief comparison of the research methodologies

Action (Design) Research (ADR)	**Design (Science) Research (DSR)**
Focus of interest is the organisational context and the active search for problem solutions *(Peffers et al., 2007)*.	Central component is design and the proof of its usefulness *(Peffers et al., 2007).*
Action design research stems from the concept of the researcher as an "active participant" in designing the solution within the organisational context *(Peffers et al., 2007)*.	Design science research stems from design as a component of engineering and computer science research *(Peffers et al., 2007).*
ADR Artefacts emerges in interaction with organisational elements *(Sein et al., 2011).*	Key steps "design and development" are separated from "evaluation" with a suitable demonstration context selected after building the artefact *(Sein et al., 2011).*
Exploratory and Evolutionary	Confirmatory and Interpretive

When considering the evaluation strategy for the research, it will unfortunately not be possible to test and shape the designed construct in the real world with a summative evaluation due to time constraints. The change management required to orchestrate and facilitate the required culture, which should be conducive for effective business process management, and the extensive process architecture might take substantial time beyond the scope and time frame allowed for this study.

Therefore, DSR has been opted as an appropriate research methodology for this study. The design of an artefact, ESPO, started with an extraction of knowledge from literature on *process ownership* as an aspect that should be addressed during enterprise design. The study evaluates the usefulness of the ESPO approach, using formative assessment, indicated by Venable *et al. (2016)* as a valid evaluation mechanism, to generate some evidence about the validity of the artefact.

3.2 DSR as opted research methodology

Design science is concerned about how artefacts have to be created, and enterprise engineering is the design science for enterprises, influenced by employee-centric theory of organisations *(Hoogervorst, 2018)*.

Design science creates and evaluates a designed object as an embedded solution to an understood research problem *(Peffers et al., 2007)* based on sound theory *(Hevner et al., 2004)*., i.e. a scientific approach. Hoogervorst *(2018)* states that designing has the purpose to create an artefact that adheres to the stipulated requirements, which Weigand *et al. (2021)* refer to as "formal rigor". Therefore, it is necessary to include build and evaluate in the design process.

However, the central component and research contribution of DSR is embedded in the design and some evidence of usefulness. DSR is inherently a problem-solving approach *(Hevner et al., 2004).* An important premise for DSR is that knowledge and understanding of the problem and its solution is derived through the design and evaluation of the artefact *(Hevner et al., 2004).* Hoogervorst *(2018)* states that the process of design, i.e. the research, must contribute to the scientific body of knowledge about the particular design. Hence DSR aims to improve design theories, methodologies and methods through the evaluation of the artefacts created as part of design science *(Hoogervorst, 2018)*. Weigand *et al. (2021)* recommend that this knowledge is generalizable at an abstract level to serve the nature of science and have multiple use contexts.

Thus, even though DSR according to Hevner et al. *(2004)* includes IT artefacts as designed objects, Hoogervorst *(2018)* argues that DSR is also applicable to enterprise engineering as a research process.

The next two sections elaborate on the different ontologies that exist for DSR artefacts, as well as the corresponding DSR activities as part of the research process.

3.2.1 DSR artefacts

Artefacts produced through DSR are evaluated with the purpose of improving design methods, methodologies and theories *(Hoogervorst, 2018)*.

Hevner *et al.(2004)* define an artefact as inclusive of constructs, models, methods, and/or instantiations. Gregor and Hevner *(2013)* recognize the research or knowledge contributions of both IT artefacts, and the artefacts at a more abstract level. In general, an artefact refers to "a thing that has, or can be transformed into, a material existence as an artificially made object (e.g. model, instantiation) or process (e.g. method, software)" *(Gregor and Hevner, 2013)*.

The nature of DSR artefacts in the literature is defined as follows:

- *Constructs:* (vocabulary and symbols)
    - Constructs provide the language in which problems and solutions are defined and communicated, i.e. the building of models *(Hevner et al., 2004, Weigand et al., 2021).*
- *Models:* (abstractions and representations)
    - Models use constructs at the core of DSR to represent real-world situations with connections between problem and solution *(Hevner et al., 2004, Weigand et al., 2021)*.
- *Methods:* (algorithms and practices)
    - Methods define processes and approaches as guidance to find solutions and solve problems, i.e. ways to implement models *(Hevner et al., 2004, Weigand et al., 2021).*
- *Instantiations:* (implemented and prototype systems)
    - Instantiations are implementations of a construct, model or method in a real-world environment to demonstrate feasibility and intended purpose, i.e. the integrated result *(Hevner et al., 2004, Weigand et al., 2021)*.
- *Abstract Artefacts*: (overall method description, design principles, technological rules)
    - Abstract artefacts can be operationalised in different "unstudied" contexts *(Gregor and Hevner, 2013)*.

ESPO cannot be classified as IT artefact, but it borders on being a method or method description. Therefore, more recent research has been used to further confirm the selected type of artefact.

Weigand *et al. (2021)* expand the DSR artefact to be more general and inclusive of any designed solution. In fact, they are called "treatments" and defined as "a desired interaction between the artefact and the problem context".

Weigand *et al.(2021)* define the DSR artefact as an *artefact universal* that has the following:

- "Make Plan": Sets a goal for building a solution with specified capacities
    - Defines the rigor with regards to components and structure, and the make process
    - This will result at some point in more than one instance
- "Use Plan": Sets a goal for evaluation in the use context
    - Describes a process, or way of working (method) to achieve an effect
    - Stipulates the use condition (generalizability)
- Type of object (with an instantiation)
    - Artificial object: physical object made by humans
    - Technical object: non-agentive physical object with a life-cycle
    - Non-Technical object

ESPO can be classified as a more abstract artefact, or a non-technical object artefact universal with a "make plan" and a "use plan".

3.2.2 DSR outcome objectives

The key activities of the DSR methodology are building and evaluating. According to Weigand *et al.* *(2021)* the following objectives are possible:

- Design of a new DSR artefact (including the "make plan", and the "use plan"), preferably with a proof-of-concept instantiation
- Improvement of the "make plan"
- Improvement of the "use plan"
- Establishing or re-enforcing the relevance or significance of the artefact
- Development of a scientific model (theory) of the artefact to create a better understanding of how it works

DSR as a research methodology can therefore be used for this study designing ESPO as an aspect of an emerging enterprise with a new "make plan" and a new "use plan".

3.3 Framework for evaluation in DSR

The framework for evaluation in DSR *(Venable et al., 2016)* (FEDS) is tabled in Table 5 and is used to choose an evaluation strategy for the artefact designed in this study, i.e. the outcome of the build activity.

The two dimensions of FEDS is illustrated in Figure 13, to support evaluation decisions in DSR as a bridge between evaluation goals and evaluation strategies *(Venable et al., 2016).* The two dimensions are the functional purpose of the evaluation, i.e. why to evaluate, and the paradigm of the evaluation strategy, i.e. how to evaluate.

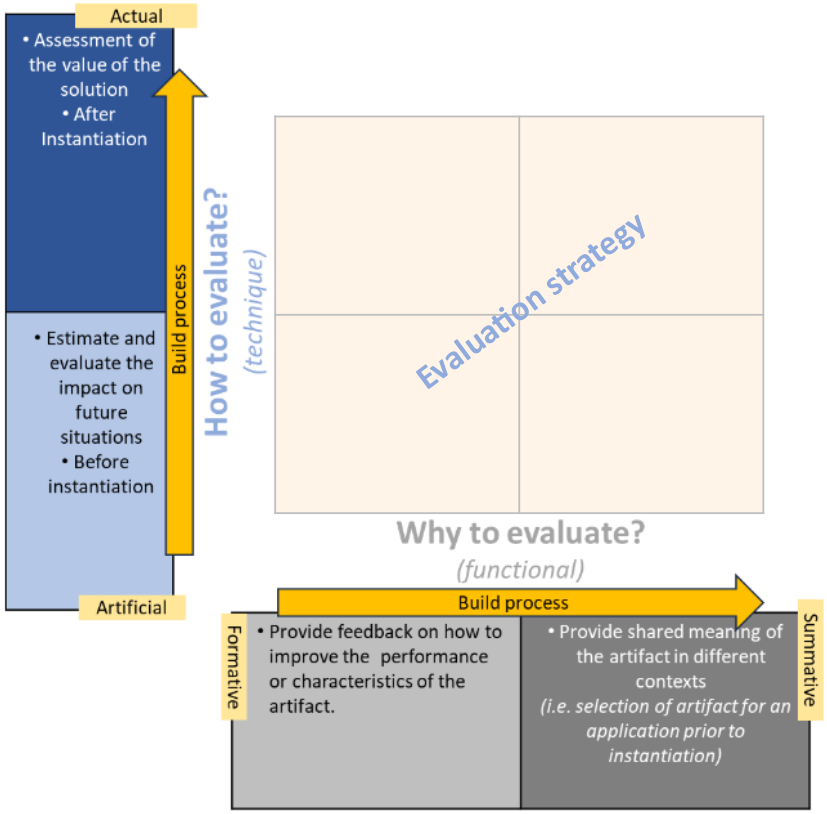

Figure 13: Two dimensions for evaluation in DSR to guide evaluation strategies based on *(Venable et al., 2016)*

The first dimension in Figure 13 is the functional evaluation to improve the outcomes. The second dimension in Figure 13 is the practical paradigm around the technique of the evaluation.

The functional purpose using *formative assessments* is to improve the outcome of the design process. Evaluations must provide a basis for successful action and result in an improved performance or characteristics *(Venable et al., 2016)*.

The functional purpose using *summative assessments* is to judge the extent that the outcomes match the expectations, i.e. the effectiveness of the process. Evaluations must create a consistent interpretation or shared meanings in different contexts, e.g. standards or requirements *(Venable et al., 2016)*.

The paradigm of the evaluation technique ranges from artificial to actual evaluation. *Artificial evaluation* is used to test the design hypotheses prior to instantiation and risk the lack of real use. Artificial evaluation includes experiments, simulations, criteria-based analysis, theoretical arguments, and mathematical proofs. The scientific reliability of a design process with artificial evaluation is stronger in the form of better repeatability *(Venable et al., 2016)*.

Actual (or naturalistic) evaluation explores the performance of a solution in its real environment, typically within an organisation. All the complexities of human practice in real organisations are evident when performing evaluation in a real environment, influenced by employee-centric theory and behaviour of organisations *(Hoogervorst, 2018).* Naturalistic evaluation methods typically include case studies, field studies, field experiments, surveys, ethnography, phenomenology, hermeneutic methods, and action research. Naturalistic DSR evaluation has the benefit of stronger internal validity and quality of the effectiveness in real use *(Venable et al., 2016)*.

FEDS focuses on the two key purposes of evaluation: 1) utility aspect of the artefact in the environment, and 2) quality of the knowledge transferred by the design of the artefact *(Venable et al., 2016)*.

For selecting an evaluation strategy, Venable *et al. (2016)* suggest placing the two dimensions in a matrix with the functional evaluation on the x-axis, and the paradigm of the evaluation study on the y-axis. In this framework they identified four potential evaluation strategies to choose from based on different circumstances:

1. *Quick and Simple strategy:* Quick project conclusion in a low-risk project with few evaluations *(Venable et al., 2016).*
2. *Human Risk and Effectiveness:* Complicated by human and social challenges for adoption and use, the strategy will require a few artificial and formative evaluations early in the process. More naturalistic formative evaluation becomes possible soon thereafter, and it is relatively cheap to test with real users, while the engagement progresses to a more summative naturalistic evaluation towards the end. The critical goal of this strategy is to establish that the benefit would be sustainable *(Venable et al., 2016)*. Adoption of the artefact, and cultural readiness for use is therefore critical.
3. *Technical Risk and Efficacy:* The major design risk is of a technical nature, and relatively expensive to test in a natural environment with real users and real systems. Therefore, progression towards a summative evaluation, whilst still formative, is required *(Venable et al., 2016)*.
4. *Purely Technical:* This evaluation strategy is useful when the artefact is not required soon, and there are no social aspects involved *(Venable et al., 2016)*.

Table 5 lists the process steps which guide the selection of the evaluation strategy:

Table 5: Framework for Evaluation in DSR *(Venable et al., 2016)*

Process	Explanation
Step 1: Explicate the goals of the evaluation	Competing goals in designing the evaluation component includes the following: • Rigor (correct artefact has been designed, artefact works to address the problem) • Uncertainty and Risk Reduction (why would artefact not work? Risks associated with the design?) • Ethics (safety critical systems) • Efficiency (cost benefit considerations)
Step 2: Choose the evaluation strategy	Each strategy implies a decision about why, when, and how to evaluate. 1. Evaluate and prioritize design risks (potential problems). 2. Evaluate the cost of a real instantiation. 3. Evaluate whether the artefact is purely technical. 4. Evaluate if the construction of the design is small and simple, or large and complex.
Step 3: Determine the properties to evaluate	This step entails choosing the general set of features, goals, and requirements of the artefact (design and/or instantiation) that are to be subject to evaluation. 1. Frame potential evaluands 2. Align candidate evaluands with the goals explicated in Step 1 3. Consider the strategy chosen in step 2 and review the evaluands. 4. Confirm the chosen evaluands.
Step 4: Design the individual episodes for evaluation	Design the actual evaluation based on the strategy and properties to be evaluated. 1. Availability and constraint of resources (People, time, budget, research site amongst others). 2. Prioritise the above contextual factors. 3. Plan the execution of the evaluation episodes.

3.4 Chapter summary

This chapter presented the theory around the available research methods relevant for this study. The aim of the research is to develop theory and new knowledge around the deployment of the *process ownership function* and the enablers required to support this process ownership as a role.

Action Design Research (ADR) and Design Science Research (DSR) has been considered as potential research methodologies. Due to practical reasons and constraints of change management and cultural readiness of the use context, the active participation in combining the building, intervention, and evaluation cycles of ADR was not possible within the scope of this study.

Therefore, DSR, with the sequenced steps of building and evaluation at its core, was selected.

Although DSR originated as a research methodology to develop IT artefacts, which ESPO does not comply with, this chapter presents recent theory on a general abstract artefact ontology expanded to include any designed solution that solves a problem in context, i.e. an artefact universal.

The artefacts of this study, ESPO and the changed enterprise providing a "PO function", can be classified as non-technical artefacts universal with a "make plan" and a "use plan".

This chapter also highlighted the practical implications of the different DSR outcome objectives of designing a new artefact, improving an existing artefact, re-enforcing the relevance or significance of an existing artefact, or the development of a scientific model of the artefact.

Both ESPO and the changed enterprise providing a "PO function" are considered new artefacts.

The chapter concluded with a theoretical evaluation framework developed by Venable *et al.* *(2016)* useful for DSR studies, indicating four possible strategies to choose from, as well as a process to choose the appropriate evaluation of the artefact's utility. Evaluation is based on two dimensions which are the functional purpose of the evaluation, aa well as the technique of evaluation. The first dimension of "why to evaluate" includes a formative and summative evaluation. The second dimension of selecting the technique of evaluation includes the artificial or the actual assessment.

Summative evaluation in an actual environment is beyond the scope of this study.

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CHAPTER 4: RESEARCH APPROACH FOR THIS STUDY

With the selection of design science research (DSR) as the chosen research process, the methodology for this study is discussed in section 4.1. Validation plays a crucial part in research, and hence the selected validation guidelines are discussed in section 4.2. Based on the opted methodology and the subsequent validation guidelines, the appropriate research evaluation strategy (section 4.3), research plan (section 4.4), expected rigor (section 4.5) and ethical considerations (section 4.6) are discussed in this chapter.

It is important to note that this study designed three different artefacts:

1. The *enterprise* as an artefact, consisting of multiple design domains; and
2. The *PO function* that requires some essential tasks to govern and improve the development of enterprise operations, and
3. The *ESPO* as an approach artefact to guide the enterprise designer in deploying the PO function.

4.1 Design science research methodology for this study

The DSR process in this study followed the mental model and approach as outlined by Peffers *et al.*(2007) and Gregor & Hevner (2013). The methodology is illustrated in Figure 14 and are as follows:

1) *Identify a problem:*

   The actual problem has been introduced in Chapter 1 and the value and significance of the problem has also been highlighted. The problem instance has been analysed in Chapter 2 using existing theories for problem analysis to arrive at the potential root causes for the problem.

2) *Define objectives of the solution:*

   The research opportunities and discovery questions has been documented in section 1.4 to frame and guide the actual research and design of the artefact. The root causes to be eliminated by the implementation of the solution has been discussed in section 2.4 and also draws on descriptive knowledge extracted from existing literature.

3) *Design and Develop:*

   The next step was moving from objectives to design and development of an embedded solution drawing on existing theory using a contextualisation model for enterprise engineering, EECM.

   - The *design phase* was strongly influenced by the following:
     - A literature study as prescribed by Okoli (2015) in Chapter 5.
     - The synthesizing of the data through thematic analysis according to Guest *et al.*(2011), Lochmiller (2021) and also by Bingham (2023), applied in Chapter 6.
     - The knowledge gained was then synthesized in Chapter 7 as a conceptualization of *process ownership* as a function that needed to be addressed during enterprise design.
     - The enterprise engineering design methods, elaborated in Chapter 8, influenced the design of the ESPO approach. The EECM was used as a guideline and reference model for the design of the coherent ESPO approach.

- The *development* of the ESPO approach to deploy *process ownership* was constructed in Chapter 9 using the design input, as well as the feedback from evaluation to refine the solution.

The artefacts are validated by the guidelines stipulated in section 4.2 for a DSR output or artefact, and an approach.

4) *Demonstration:*

The demonstration focused on the usefulness and efficiency of the artefacts to solve the problem. This could be an experiment, simulation, case study, proof, or other activity. The demonstration could vary from a single interaction to a more formal evaluation *(Peffers et al., 2007)*.
This study elaborates on the demonstration of the ESPO artefact in Chapter 10 using a reflective approach building a comparison with the green belt journey, which the participants are familiar with.

5) *Evaluation:*

The purpose of evaluation is to observe and measure how well the artefacts addressed the problem *(Peffers et al., 2007)*. The evaluation should include a comparison of objectives with actual results, which could involve objective quantitative or quantifiable performance measures, results of surveys, client feedback, or simulations, or any appropriate empirical evidence or logical proof *(Peffers et al., 2007)*.
At this point there is an option to refine the design and iterate the design, demonstration, and evaluation steps of the process, which is indicated by the circumscription in Figure 14.
The evaluation of the artefacts is discussed in Chapter 11 and is planned to follow the evaluation framework guided by Venable *et al.* *(2016).*

6) *Communication:*

Communication aims to diffuse the knowledge gained to other researchers and practicing professionals. The communication, publication or thesis/dissertation could be structured using the DSR process as a chapter layout *(Peffers et al., 2007)*.
The alphabet mnemonic used for this dissertation (See Figure 1) is aligned with the activities of the DSR method. Gregor & Hevner *(2013)* stipulates four concerns which reviewers would be interested in:

- Whether the problems discussed is of substantial interest to the body of knowledge?
  - Discussed in Chapter 7.
  - No coherent approach to *process ownership* exists in the current literature.
- Whether a contribution to a solution exist?
  - New design in Chapter 9.
  - Artefacts developed in this study includes an approach, ESPO, to guide the practitioner in developing a changed enterprise, where the latter provides a “Process Ownership function” to the environment.
- Whether the methods of the solution are new and applicable to other problems of interest?
  - Discussed in Chapter 12 and 13.
  - The innovative combination and use of both descriptive knowledge from prior research, as well as prescriptive knowledge in designing and guiding a new approach predicated a successful design research project.
- Whether the dissertation supports the understanding of this area of research?
  - The fundamental value underlying this research is that process is a strategic asset, and should be nurtured not to lose value.

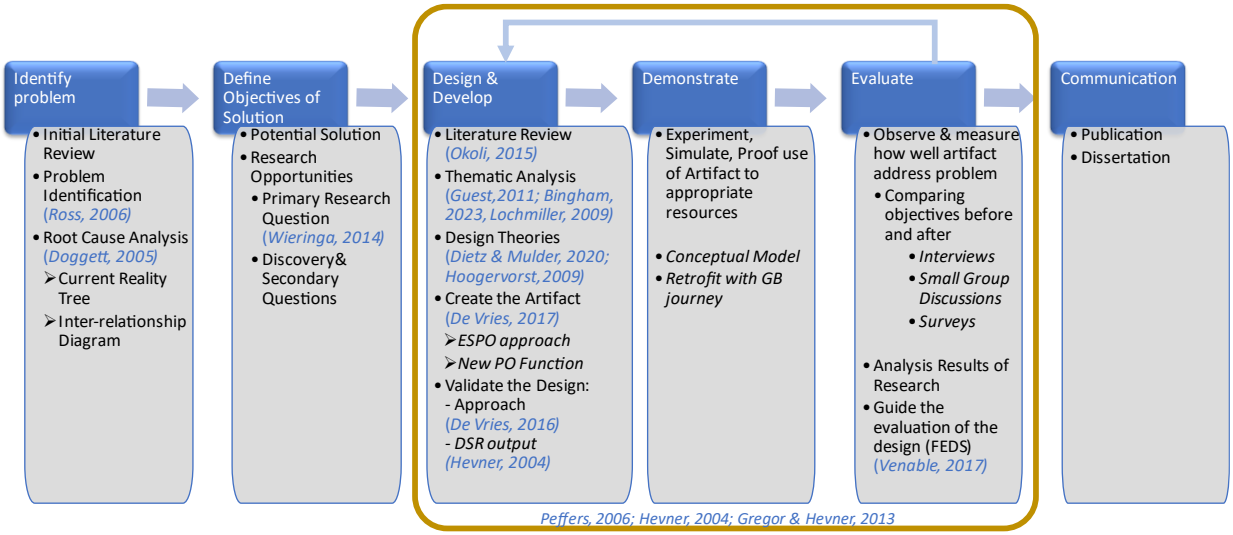

Figure 14: DSR Method as used in this study with highlighted research contributions - based on *(Peffers et al., 2007)*

4.2 Validation of the design process and artefacts

Since this study contains a new approach, called ESPO, classified as a "*make-plan*" using Weigand *et al.*'s more general classification *(2021)*, which guides the construction of a new "PO function" at the enterprise, the guidelines for constructing a DSR output *(Hevner et al., 2004)* were used to validate the design process (see Table 6). Since the non-technical artefact universal (ESPO) is an approach, the principles for the design of an approach *(de Vries et al., 2017)* has also been used and discussed in Table 7. In Table 5 guidelines for using an evaluation framework in DSR *(Venable et al., 2016)* is discussed as a method to increase the rigor and relevance of the design, using the more general artefact classification of the DSR as per Weigand *et al.*'s guidance.

A design artefact is complete and effective when it satisfies the requirements and constraints of the problem it was meant to solve. Therefore, the evaluation phase and/or framework provide essential feedback to the construction phase to ensure improved quality of the process and the actual design of the artefact *(Hevner et al., 2004).* Using the evaluation guidelines and frameworks on a more extensive DSR artefact, the next section elaborates on the different evaluation and validation guidelines.

4.2.1 Guidelines to construct a DSR artefact

The table below stipulates the guidelines to conduct a good DSR artefact *(Hevner et al., 2004)* and is aligned with the DSR methodology in section 4.1

Table 6: Design Guidelines for a proper DSR *(Hevner et al., 2004)*

Guideline	Description
Guideline 1: Design as an artefact	DSR must produce viable artefacts according to the discussion of artefacts in section 3.2. The capabilities of the artefact (whether it is in an IT, people, organisational or social context) are crucial and DSR efforts are required for their creation. It must be described effectively, enabling its implementation and application in an appropriate domain.
Guideline 2: Problem relevance	The objective of DSR is to acquire knowledge and understanding that enable the development and implementation of innovative solutions to important and relevant business problems. The artefact should be aimed at changing the phenomena that occur.

Guideline	Description
Guideline 3: Design evaluation	The utility, quality, and efficacy of a design artefact must be rigorously demonstrated via well-executed evaluation methods. The evaluation method of Venable et al. *(2016)* has been selected as a valid and appropriate evaluation framework (see Table 5). Since the design will include a coherent approach using EECM as reference model, the principles to guide the development of an enterprise approach *(De Vries, 2016)* would be another useful evaluation method (see Table 7).
Guideline 4: Research Contribution	Effective DSR must provide clear and verifiable contributions in the areas of the design artefact, design foundations, and/or design methodologies.
Guideline 5: Research Rigor	DSR relies upon the application of rigorous methods in both the construction and evaluation of the design artefact. Rigor addresses the way in which research is conducted. Rigor is derived from the effective use of the knowledge base.
Guideline 6: Design as a search process	The search for an effective artefact requires utilising available means or processes to reach desired ends while satisfying laws in the problem environment.
Guideline 7: Communication of research	Design-science research must be presented effectively both to technology-oriented as well as management-oriented audiences.

Design evaluation methods (as mentioned in guideline 3 above) must be matched with the evaluation metrics to prove the goodness and efficacy of an artefact *(Hevner et al., 2004)*. The design evaluation methods are as follows:

- *Observational*:
  - Case study: A study of the artefact in depth in business environment.
  - Field study: Monitor the use or artefact in multiple projects.
- *Analytical:*
  - Static analysis: Examine the structure of the artefact for static qualities.
  - Architecture analysis: Study the fit of the artefact into technical IS architecture.
  - Optimisation: Demonstrate inherent optimal properties of the artefact or provide optimality bounds on the artefact behaviour.
  - Dynamic analysis: Study the artefact in use for dynamic properties (e.g. performance).
- *Experimental:*
  - Controlled experiment: Study the artefact in controlled environment for qualities (e.g. usability).
  - Simulation: Execute the artefact with artificial data.
- *Testing:*
  - Functional (black-box): Execute the artefact interfaces to discover failures and identify defects.
  - Structural (white-box): Perform coverage testing of some metric (e.g. execution paths) in the artefact implementation.
- *Descriptive:*
  - Informed argument: Use information from the knowledge base to build a convincing argument for the artefact's utility.
  - Scenarios: Construct detailed scenarios around the artefact to demonstrate its utility.

4.2.2 Principles to validate an approach design

The enterprise approach design principles as prescribed by De Vries *et al.* *(2017)* are briefly explained in Table 7.

Table 7: Approach Design Principles to validate an approach design *(de Vries et al., 2017)*

Principle	**Summaries**
Principle A: Explicit concept of the enterprise	A design approach should indicate how an enterprise is perceived or conceptualised, such as machines, biological systems, and psychic prisons, as it influences on how an approach author demarcates design domains, while it also provides a descriptive representation of the enterprise. Provide a description of the enterprise using analogies, together with the underlying theory for the enterprise contextualisation.
Principle B: Explicit Phenomenon	A design approach should provide evidence for a phenomenon or class-of problems, or similar kinds of problems. If a phenomenon is not fully understood, it cannot be properly addressed and improved. Produce sufficient evidence that an existing phenomenon or class-of-problem exists, but that it is inadequately addressed by theory or application.
Principle C: Explicit paradigm of creating value	A design approach should state a paradigm of value creation as a testable proposition for addressing an existing phenomenon or class-of-problems. State the paradigm of value creation, i.e., if the approach is instantiated, it will achieve the intended value.
Principle D: Explicit means (ways) of demarcating and representing design scope	A design approach should clearly define and motivate the way to demarcate design scope (enterprise scope, design domains, and concerns/requirements) that is relevant to the approach. Define the way to demarcate design domains, as well as the concerns per design domain.
Principle E: Well-demarcated and well-defended design scope and using scope	A design approach should define and defend the intended design scope to achieve the intended value creation. A clear distinction between inside-the-boundary complexities versus outside-the-boundary complexities, design domains, and areas of concern for the intended industry.
Principle F: Representations of design scope	A design approach should clearly define and motivate notation standards that are used to describe/represent the design scope adequately. Define notations to describe design domains and motivate any deviation from the standard.
Principle G: Approach form and function	A design approach should clearly define the constructs and features of the approach. (for example using the four EECM components as a metamodel to identify and define the constructs of an approach.) Define the overall structure and organisation of the approach, together with the mechanisms, practices, and roles.
Principle H: Justificatory knowledge	A design approach must provide explanatory knowledge that links the paradigm of value creation with its constructional components. Define kernel theories on which the approach is based.

Principle	Summaries
Principle I: Approach mutability	A design approach should clearly state the possibilities for tailoring the approach within the pre-defined design scope. Identify possibilities for tailoring the approach.
Principle J: Principles of implementation (conditional)	A design approach may incorporate guidance for implementing the approach. Consider the pre-defined design scope and decide whether additional advice would add value, e.g. additional advice may be required if the approach has been designed for the health industry.
Principle K: Expository instantiation (optional)	A design approach may incorporate an instantiation. A realistic implementation of an approach contributes to the identification of potential problems in its design, also demonstrating its worth.

4.3 Research evaluation strategy for this study

The purpose of evaluation is to observe and measure how well the artefact addressed the problem *(Peffers et al., 2007)*. According to Weigand *(2021)* the artefact universal should be evaluated to accumulate design knowledge.

Since a real-world implementation of *process ownership* is not possible, it is not possible to obtain empirical feedback on whether *process ownership* will address the main measure, i.e. ensure improved process performance and subsequently increasing competitive advantage.

The research evaluation approach is based on the chosen strategy as guided by Venable *et al.(2016)* in the previous section. The 4 steps of the DSR evaluation framework have been used to select and design the research evaluation approach as illustrated in Figure 16:

1. *Goals of the evaluation:*

   The major goal of the evaluation is to refine the main artefact (ESPO) and validate the constructional parts of the artefact.

   - The first goal was to obtain evaluation around the *potential efficacy* of *process ownership* prior to evaluation of the effectiveness of *process ownership* at a later stage. The reason for this approach is that *process ownership* has been informally accepted by many people in Co. INS with different roles and responsibilities, and it might also be different to the construct developed from the literature study.
   - Another goal was to understand the readiness of the culture, and assessment of susceptibility of the environment to the concept of a dedicated role to monitor process performance. *Organisational fit* is therefore another consideration.
   - *Efficiency of evaluation* was another consideration as the research serves two purposes: (1) beneficial to the body of knowledge of enterprise engineering, and (2) beneficial to Co. INS. The research could therefore extend beyond the due date for submission of this study, but sufficient evaluation is needed prior to submission of this study.

2. *Strategy for evaluation:*

   The *Human Risk and Effectiveness* strategy was selected for this study due to the difficulties regarding adoption and usage in the real context.

The evaluation shaped the initial conceptual model as illustrated in Figure 15. The audience was introduced to the concept initially and then the journey of understanding and shaping took place towards shared meaning in a real use context. An informed argument and different scenarios were used as formative assessment input for evaluation.

- Formative assessment was required early in the process, and for a longer period, to inform the iterative design and evaluation cycle. The nature of evaluation was more descriptive within a real-world setting using real people and real scenarios, but in an artificial context.

  The formative assessment focused on the cultural readiness, the maturity of the different teams, as well as the differences and challenges between the suggested function and current job roles and responsibilities.

- The somewhat more naturalistic evaluation was possible with a retrospective approach to review and compare the actual certification journey of green belts within Co. INS with the suggested ESPO approach. On the continuum of functional evaluation, it was more geared towards a summative evaluation, but it still informed the design to a large degree, i.e. formative evaluation.

- A structured and detailed pilot would be possible in future being a naturalistic evaluation. More planning and change management is required which will prolong the evaluation *beyond the scope of this study*. More insight would be possible on the effectiveness of the artefact using a summative evaluation.

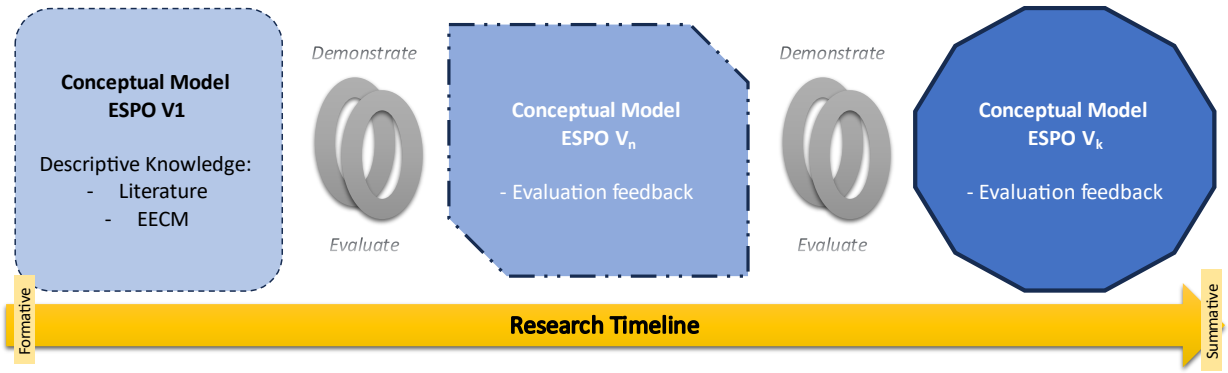

Figure 15:Shaping of the initial conceptual model

3. *Determine the properties to be evaluated:*

   The design of the artefact, ESPO, in Chapter 8 also influenced the list of properties to be evaluated. The properties to be evaluated are the validity of the constructional parts of ESPO, the organizational fit and cultural readiness across different teams, as well as the consistency of the expectations of the process ownership roles and responsibilities across different teams.

4. *Design the individual evaluation episodes:*

   The evaluation episodes have been illustrated in Figure 16 and are discussed below using Venable *et al.*'s guidance *(2016)*, and the strategy selected:

   i. Event 1: Evaluating the validity of constructional parts of ESPO. This event aimed to understand how the culture should be shaped for effective *process ownership*.

   ii. Event 2: Evaluating cultural readiness for deployment, demonstrating some of the ESPO facets.

iii. Event 3: Evaluating whether roles and responsibilities for process ownership exist, demonstrating some of the ESPO facets.

iv. Event 4: Evaluating the comprehensiveness of ESPO, using a retrospective approach to draw a comparison between the successful and existing certification journey of a green belt and that of the designed artefact for *process ownership*, ESPO.

v. Event 5: Summative evaluation of ESPO and how ESPO effectuated improved process performance. *Note: This episode is outside the scope of this study*.

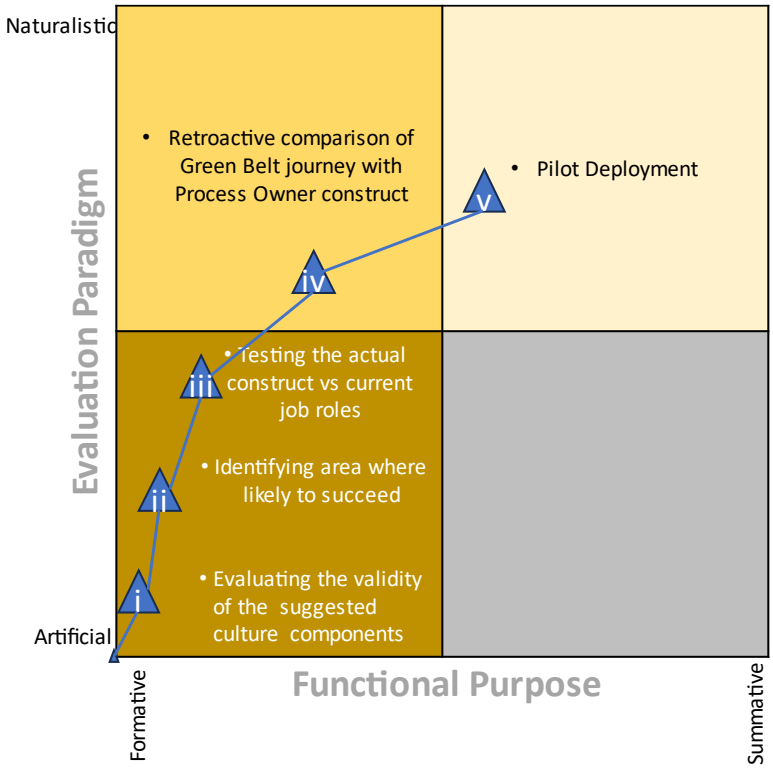

Figure 16: DSR evaluation strategy for this study - based on *(Venable et al., 2016)*

According to the guidelines for a DSR artefact *(Hevner et al., 2004)* as detailed in section 4.2.1, the evaluation method selected is descriptive:

- Informed argument requires the use of information from the knowledge base to build a convincing argument for an artefact's utility in a conversational inquiry and inductive probing. For this study the existing knowledge extracted from literature informed the argument and the ways in which it will address the observed problem and subsequent root causes.
- Scenarios required the construction of detailed scenarios around the artefact to demonstrate its utility. For this study the conceptual model would be retrofitted for each team depending on their cultural readiness to create mental models for evaluation.
- A static analysis will also be done to evaluate the static properties of the construct when a retrospective comparison is done with the observed certification journey of a green belt.

4.4 Research Plan

The research was done through a number of interactions as data collection opportunities with key stakeholders within Co. INS. As part of the research rigor, different teams were selected to participate, each with a potential different process- and leadership culture.

The next sections elaborate on the plan with regards to potential resources and areas within Co. INS who participated in the study.

4.4.1 Stakeholders as participants

The participant selection within each area listed below, is based on their relative interest and anticipated engagement or collaboration with a potential process owner. The participants include the following roles in Co. INS:

- Resources from a *process expertise perspective*, i.e. green belts and BPO CoE team.
- Resources from a *managerial perspective*, i.e. first line managers and managers.

The areas requested to participate are tabled in Table 8 below:

Table 8: Targeted audience for this study

	Green Belts	First Line Managers	Product Owners	Managers	BPO CoE Team	Total nr of Staff
Other	51			3		**158**
BPM CoE				1	7	
OPS	7	32	4	4		
Finance	8	10	2	1		
Legal Claims	9	13	3	3		

The different areas were:

1. The community of green belts across the business, attending the bi-weekly CoP conversations around the topic of process improvements.
2. The Legal Claims team dealing with 3rd party claims.
3. The Contact Centre managing policy maintenance and new business.
4. The Business Enablement team of the Finance department.

Each of the areas had a different cultural and structural readiness. The participants also had varying experience in process improvement, different levels of perceived proficiency related to process improvement, and of different seniority within the business.

A total of 52 people gave consent to participate in the research, with different engagement levels.

4.4.2 Data gathering instruments

The methods for data gathering included questionnaires, group discussions and individual interviews. For the retrospective comparative journey, observations from lived experiences were used.

The data gathering instruments are discussed in Table 9 to ensure consistency of interpretation, using guidance drawn from Canals *(2017)*.

Table 9: Data gathering instruments used in this study

Instrument	Definition
Questionnaire and Surveys	Questionnaires and surveys are common tools as research instruments. A questionnaire is simply a list of questions that is completed by a respondent to give his opinion *(Roopa and Rani, 2012).* A questionnaire collects quantitative data in a standardized way so that the data are consistent and coherent for analysis *(Roopa and Rani, 2012)*. For this study questionnaires were used to refine the main artefact and validate the constructional parts of the artefact.
Group Discussions or Focus Groups	Focus groups allow participants to voice their opinion and concerns on a particular subject or concept. This might include questions to guide the participants to converse about certain topics *(Canals, 2017)*. For this study group discussion were used to refine the main artefact and validate the constructional parts of the artefact.
Interview	Interviews could be structured and formal, where the interview questions posed are the same to all the participants *(Canals, 2017)*. Interviews could also be semi-structured and hence more conducive for clarification and probing as the conversation progresses *(Canals, 2017)*. The interviews in this study were semi-structured using the evaluation event as the purpose and goal for the conversation, but generally more relaxed in informal discussions. For this study interviews were used to refine the main artefact and validate the constructional parts of the artefact.
Lived experience	"The participant's 'lived experience' is coupled with a subjective and reflective process of interpretation, in which the analyst explicitly enters into the research process. Importantly – and in contrast to some other qualitative approaches, the analyst is still on familiar territory, in terms of the inferences that can be made from 'data'. Participants are experts on their own experiences and can offer researchers an understanding of their thoughts, commitments and feelings through telling their own stories, in their own words, and in as much detail as possible. Participants are recruited because of their expertise in the phenomenon being explored.", quoted from *"Exploring Lived Experience"* *(Reid et al., 2005).* Seeing that the main researcher is also a senior manager within Co. INS and were asked to act as manager for the BPM CoE, the lived experience of the main researcher will be used for interpretation of the artefact validation results.
Literature review	A literature review uses rigorous methods to identify and analyse existing literature related to a specific topic of interest *(Pham et al., 2014*). For this study, existing literature was used to shape the main artefact.

The disadvantage of a questionnaire is the lack of interaction between the researcher and the participants. Therefore, some mitigation actions were required:

- The context for each questionnaire was discussed in detail in a group discussion preceding the questionnaire.
- The questionnaire questions were related to one topic only.
- The length of the questionnaire was considered.
- The initial questionnaire provided sufficient input and granularity to support analysis for questionnaires later in the process.

The instruments were planned and developed to provide feedback on the research goals and properties as discussed in section 4.3.

4.4.3 Analytical and data synthesis methods

The data collected are classified as qualitative data and quantitative data, and the methods to interpret and analyse the data is discussed below.

Table 10: Data synthesis methods

Type of Data	Source	Synthesis method
Qualitative	Literature	The identified literature collected around *process ownership* was imported into Atlas.ti where it was coded, categorised and analysed. The data analysis tools within Atlas.ti were utilised to synthesize the data. The aim is to relate codes to each other that have been applied either to the same quotes or to overlapping quotes. Data visualisations are summative and dynamic images and highlights the research insights. • *Sankey Flow Diagram:* Emphasizes association between data elements, and make dominant factors stand out *(Otto et al., 2022)*. • *Force-Directed Graph*: This visualisation tends to be aesthetically pleasing, exhibit symmetries and proximity between data elements, and tend to produce crossing-free layouts for planar graphs *(Atlas.ti).*
Qualitative	Interview and focus group transcripts	The transcripts were fairly straight-forward in that the evaluation were focused on a specific evaluation concern. The narratives were therefore analysed for feedback and input. No techniques were used to further synthesize the transcriptions, other than using the inputs to refine the main artefact.
Qualitative and Quantitative	Survey and Questionnaire	Descriptive statistical analyses were used to synthesize the feedback obtained through the surveys and questionnaires. Descriptive statistical analyses were performed in accordance with Montgomery and Runger. *(2010)*

4.4.4 Research Timeline

The research timeline is illustrated in Figure 17 and is aligned with the events as planned in the research evaluation strategy of section 4.3, and depicted in Figure 16.

The research could only commence after approval by the university's ethic commission, and confirmation and approval by the senior management team of each of the participating areas. The latter was obtained through describing the observed problem, potential solution, and intent of the research.

The launch of the research informed the participants of the study and the intention of the research. The session was followed by a questionnaire to obtain information about their process engagements, and years of practice in process engagement amongst others.

The series of group discussions with the certified Green Belts were done using the current journey of the Community of Practice which occurred every 2 weeks. The purpose of the research was repeated at every session to remind them and create the narrative for discussion. The different concepts related to the plan were then described and followed by an open discussion to obtain their opinion and lived experiences regarding the concept.

The series of group discussions with the individual areas and their management teams were diarized in advance. A similar agenda was followed to remind them of the purpose of the research, a description of the concept with a discussion of the concept.

The group discussions indicated in Figure 17 were followed by a questionnaire based on the topic of discussion.

Evaluation Episode Nr	Purpose of Interaction	Teams Meetings	Survey	05-Feb-24	12-Feb-24	19-Feb-24	26-Feb-24	04-Mar-24	11-Mar-24	18-Mar-24	25-Mar-24	01-Apr-24	08-Apr-24	15-Apr-24	22-Apr-24	29-Apr-24	06-May-24	13-May-24	20-May-24	27-May-24	03-Jun-24	10-Jun-24	17-Jun-24	24-Jun-24	01-Jul-24	08-Jul-24	15-Jul-24	22-Jul-24	29-Jul-24	05-Aug-24	12-Aug-24	19-Aug-24	26-Aug-24	02-Sep-24	09-Sep-24	16-Sep-24	23-Sep-24	30-Sep-24	07-Oct-24	14-Oct-24	21-Oct-24	28-Oct-24	04-Nov-24
	Approval by Senior Management team	x				x	x																																		
	Launch the research	x	x					x	x																																
i	Cultural Elements Evaluation	x	x								x	x	x																												
	Problem Instantiation confirmation	x												x	x	x																								
ii	Cultural Readiness Assessment	x	x																																					
iii	Roles & Responsibilities Evaluation	x	x												x	x	x																							
	Verification of ESPO (effectivity)	x																	x	x																				
iv	Demonstration of ESPO																				x																			
	Data analysis & final report writing															x	x	x	x	x	x	x	x																		
	Submission of Dissertation																														x									
	Preparation for pilot	x																							x	x	x	x	x	x	x									
v	Pilot Deployment & Evaluation																															x	x	x	x	x	x	x	x	x

Figure 17: Project plan for Research following the evaluation strategy as planned

4.5 Expected rigour and methodological limitations

The research rigour is ensured through the use of the following strategies:

- Triangulation of problem analysis methods (Current reality tree, interrelationship diagram, confirmation of input via group discussion), where the techniques were guided by Dogget *(2005).*
- Triangulation of data sources (books, articles, expert opinions, surveys, group discussions), in accordance with the guidelines provided by Guest *et al.* *(2011)* to develop and validate the main artefact, ESPO.
- The use of existing theory and guidelines to ensure a rigorous process, where the primary knowledge source(s) are indicated as references:
    - Guidelines to identify misalignment *(Ross et al., 2006)*
    - DSR Methodology *(Peffers et al., 2007)*
    - Guidelines to validate the design artefact *(Hevner et al., 2004)*
    - Guidelines to validate the approach artefact *(De Vries, 2016)*
    - Guidelines for the evaluation strategy of DSR *(Venable et al., 2016)*
    - Literature Review Methodology *(Okoli, 2015)*
    - Protocol to update a Literature search *(Wohlin et al., 2020)*
    - Thematic Analysis Methodology *(Lochmiller, 2021, Bingham, 2023, Guest et al., 2011)*
    - Reference model to contextualise an Approach *(de Vries et al., 2017)*
- The mitigation actions for the limitations of the questionnaire as a data gathering instrument *(Guest et al., 2011).*
- Use of multiple participants from both managerial and process perspectives
- Evaluation within 4 different areas with differing process maturity
- Developing a codebook during thematic analysis
- Coding in a few cycles during thematic analysis
- Using multiple coders during the initial phase of thematic analysis

The limitation of the research is the fact that the research will not be able to evaluate all the ESPO components in equal measure, hence the formative evaluation nature of the research. Another limitation is the fact that deployment and evolution of the design in an iterative manner with a summative evaluation nature will not take place in the timeline of this study. The research was also restricted to one enterprise only. The lived experience of the main researcher used during evaluation should be noted as a limitation as it may create bias in the results.

4.6 Ethical considerations

The required ethical forms and procedures were completed as prescribed by the University of Pretoria and submitted for approval. The ethical approval was requested in October 2023 and received in February 2024.

No tests were done including animals, humiliating people, or harming the environment.

The major ethical considerations were (1) protecting the anonymity of Co. INS and the participants, and (2) obtaining consent for participation in the research.

4.7 Chapter Summary

This chapter used the theory of DSR as detailed in Chapter 3 and applied it to guide the creation of a new artefact, called ESPO that can be used to develop a new PO function at an enterprise.

Requirements for a PO function, were extracted through a literature review and thematic analysis, followed by the *development* of the ESPO approach, using design theories and EECM as a descriptive contextualisation model. *Validation* of the DSR artefact was done using the seven guidelines of Hevner *et al.* *(2004)*, which encompassed a descriptive evaluation method of an informed argument and scenarios. Further *validation* of the approach was performed using the eleven principles for an approach prescribed by *(de Vries et al., 2017)*.

The five *evaluation* episodes were planned based on the Human Risk and Efficiency strategy presented by *(Venable et al., 2016)*. This strategy used a few formative assessments early on in an artificial paradigm moving relatively quickly to a still formative assessment in a near naturalistic environment. A pilot deployment is planned, but beyond the scope of this study.

The research plan elaborated on the process experts and managerial staff from different areas who participated in the study, where 52 people gave consent to participate.

Data gathering instruments would predominantly be the literature review, as well as surveys and questionnaires with qualitative and quantitative data analysis.

Expected rigour in the process is achieved through the extensive use of primary knowledge source(s) and different methods used in triangulation.

The study is done at Co. INS and included formative assessments using small group sessions, questionnaires, and interviews. Due to practical reasons a summative assessment with actual deployment was not possible within the time frame of this study. However, the study has resulted in executive approval for a pilot deployment within a specific team and governed by the existing BPM Centre of Excellence.

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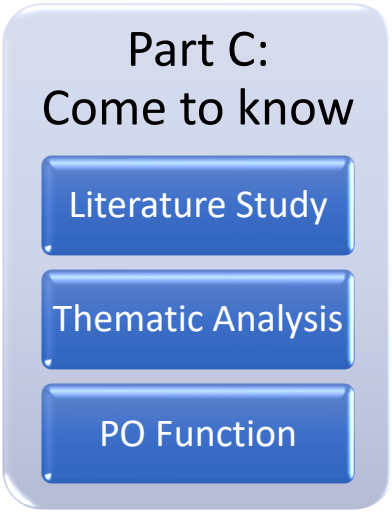
PART C: COME TO KNOW

"The master has failed more times than the beginner has even tried."

— Stephen McCranie

Part C of the dissertation highlights the continual learning of available studies from other scholars in the existing body of knowledge:



- Chapter 5 provides the method used to complete the literature study, and the results.
- Chapter 6 provides the method for thematic analysis on the selected literature.
- Chapter 7 presents the results of the identified themes related to Process Ownership.

Figure 18 illustrates the approach for Part C: The literature study identified the protocol-extracted publication items (PPI) for further research. The PPI then formed the basis from which the key studies (KS) were selected for the thematic analysis to extract the knowledge of *process ownership*.

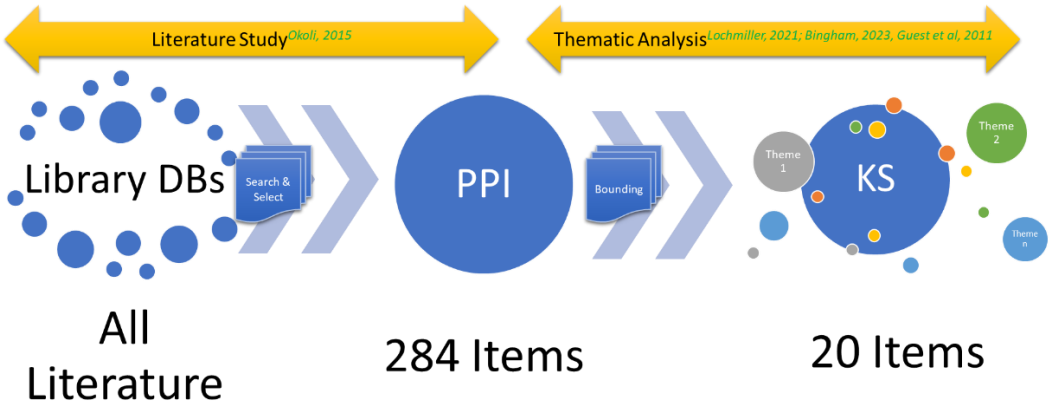


Figure 18: Approach for Part C – the design phase of the DSR methodology *(author-created image)*

CHAPTER 5: LITERATURE STUDY

This chapter elaborates on the method used to complete a literature review as the first step in the DSR design, partially answering DQ2, i.e. *What knowledge exist in the current body of knowledge to describe process ownership within the financial sector?*

Section 5.1 elaborates on the method for a proper literature review. Section 5.2 details the purpose of the review. Section 5.3 presents the protocol that was used to search for literature. Section 5.4 provides detail about the application of the search protocol, using an incremental search process. Section 5.5 presents the rigor applied to update the latest systematic literature review (SLR) found on the topic of *process ownership*.

5.1 Research Method for the Literature Study

Ensuring a rigorous approach in systematically analysing existing literature, a literature review was done following the guidelines by Okoli *(2015)* as illustrated in Figure 19. The process consists of planning the literature search, performing the actual search, screening of the studies, selecting the relevant studies, doing a quality review of the studies, extracting, and evaluating the data. This process follows an iterative approach and the consistent execution of the process ensure the rigor of the review.

5.2 Planning of the review

The planning of the literature review for this study was initially informed by the Px Vision of Co INS (section 1.1), as well as Research Question DQ2.

A few broad literature searches were done initially to see how many individual publications (including SLRs) could be found on the broad topic of Lean Six Sigma in the financial or insurance sector that linked the process approach to “business agility” or “value creation” or “process as a strategic asset”. The search focused for publication items in the past 10 years within the finance sector to achieve process excellence. A total number of 59 PPIs that were deemed most relevant were saved to the initial list, i.e. passing the practical screen.

The effort to find literature was done from two different perspectives, each including additional search strings to narrow down the search:

- an initial perspective using keywords “process performance” AND “competitive advantage”, and
- another perspective as the study matured, using keywords "process owner” AND “continuous improvement”. The next paragraphs will highlight the results of both efforts, following the search protocol as detailed in section 5.3.

5.3 Search protocol

The protocol for extracting publication items for the literature review was to extract only: (1) peer reviewed articles to ensure the quality of the review, (2) full text available publications, (3) English only, (4) in certain instances the source type would guide inclusion, and (5) depending on the number of search results, the last 5 years would be included as a practical screen.

Literature *source types* included books, scholarly journals, conference papers, and dissertations and theses. The *publication type* was not restricted, but of particular interest, was inclusion of existing “Literature Reviews”.

Upon reading a protocol-extracted publication item (PPI) and finding it applicable to the study, the references to specific concepts or components of the study would be searched and included in the initial publication list if that was found to be applicable, i.e. including backward snowballing. Another method to search for relevant PPIs, was to look at the PPIs which have cited the specific PPI, i.e. forward snowballing. ProQuest Central and the UP library were selected as the main digital repositories. The recommendations made by ProQuest based on the search criteria were another avenue of finding data related to the study. The literature search was completed when no new applicable studies were found after snowballing, i.e. on reaching data saturation.

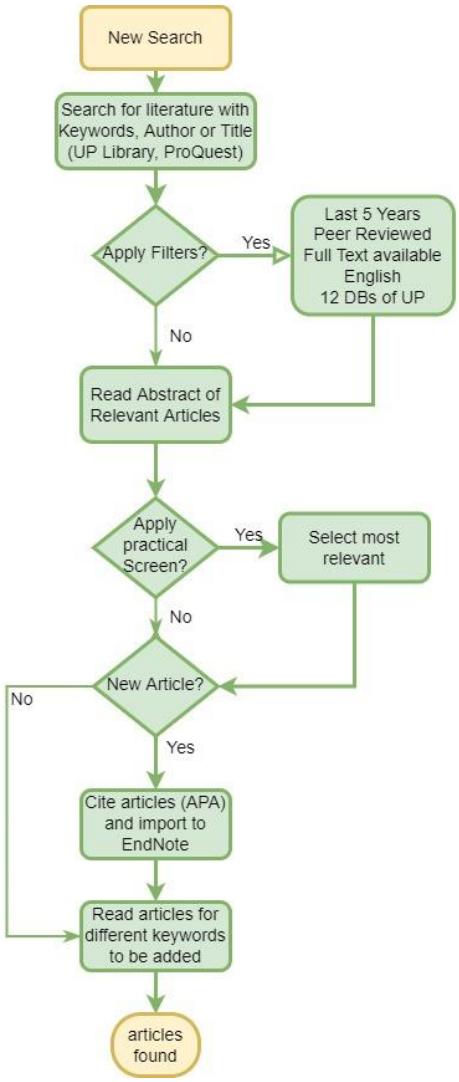


Figure 19: Process for performing a literature study for this study, based on guidance from Okoli *(2015)*

5.4 Detailed literature search

The search*, using the first perspective*, included keywords such as "process performance" AND "competitive advantage" within the ProQuest Central and ProQuest Dissertation and Theses Global as the 2 main databases, extracting 642 items of which only 6 were *literature reviews*, none of which were relevant to this specific study. Based on the relevance of the 642 items, 15 most relevant PPIs, using practical screening, were chosen based on the content of the abstract's relevance to the anticipated field of study, through manual inspection, and availability via the university's library services. A second iteration was done to only include *process ownership*. The initial results of 642 were narrowed down to 45 results. When selecting only *scholarly journals* as source type within the past 5 years, only 7 results were retained as PPIs. Another iteration was done by adding "insurance", which displayed only

21 results if limited to peer reviewed and full text articles available. Upon reading the items, some process owners were referred to as “CI Leaders”, i.e. continuous improvement leaders. Therefore, the search was refined to include “CI leaders”, searching from 2015 in English with full text available, but no results were found. There were 9 results listed, but these were not added to the list of PPIs, since they were not applicable to the study.

The search, *using the second perspective*, as illustrated in included keywords such as “process owner” AND “continuous improvement” in all source types for the past 5 years, which resulted in 91 PPIs. When editing the search criteria to include "strateg* AND “measure”, 74 PPIs were retained. When adding “insurance” to the above criteria, only 11 PPIs remained.

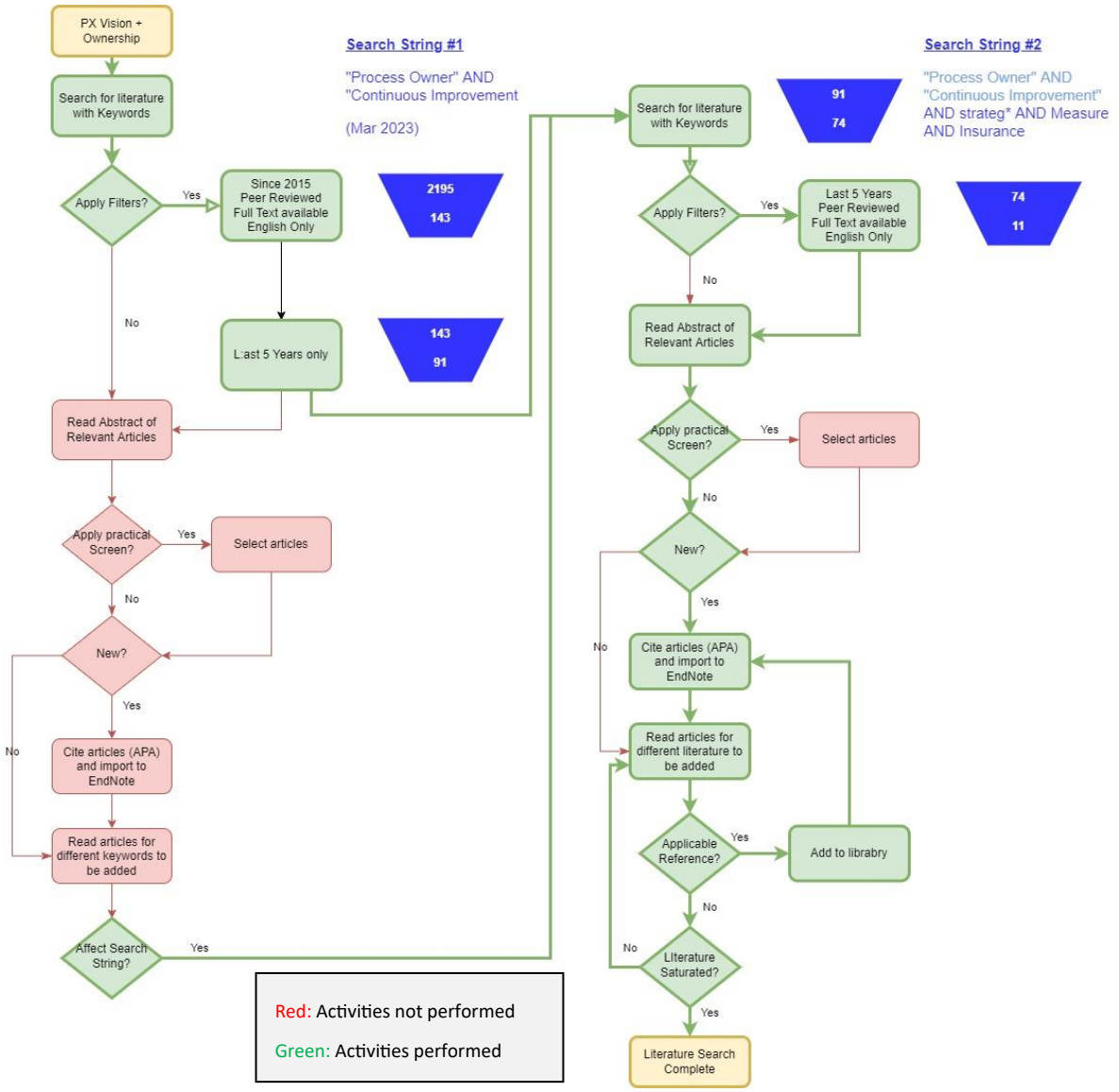


Figure 20: Literature search using a consistent process

A few articles and/or books were added additionally during the study if the content was found to be applicable.

5.5 Applying forward snowballing

In the PPI library the most recent SLR of Danilova *(2019)* indicated that new research opportunities exist, indicating that other research scholars may have performed a more recent SLR on the same topic.

Wohlin *et al.* *(2020)* suggest using Google scholar to find items who have cited a specific SLR, i.e. doing forward snowballing. This process was done using Google Scholar, as well as searching on ProQuest.

On Google Scholar, 46 different items cited Danilova, of which 30 were in English. Full access to 24 of the studies were available, and 5 were SLRs. None of the SLRs elaborated on *process ownership*, except for 1 in the context of Robot Process Automation, which is not relevant to this specific study. Amongst the 24 items, a study of Hrabal *et al.* *(2021)* devised models with competencies for process owners amongst others. A few other articles could be useful too, focusing on HR practices, rewards, and appraisals around process roles, and therefore was cited and added to the list of PPIs.

ProQuest was also searched for an updated SLR, not detected by Google Scholar. The specific SLR of Danilova was cited 16 times on the Web of Science and 3 times on ProQuest, but no new articles emerged other than the Google Scholar articles already included.

The above process of forward snowballing was then repeated to search for an update on the study of Hrabal *et al.* *(2021)*, using Google Scholar, where 25 items cited Hrabal, of which 18 were in English and only 1 study *(Jurczuk, 2021)* was found relevant via practical screening. ProQuest could not find any items citing Hrabal.

The total literature search resulted in the EndNote library consisting of 284 references, including 66 SLRs and 84 e-books. Most of the PPIs were published since 2010 and later as illustrated in Figure 21.

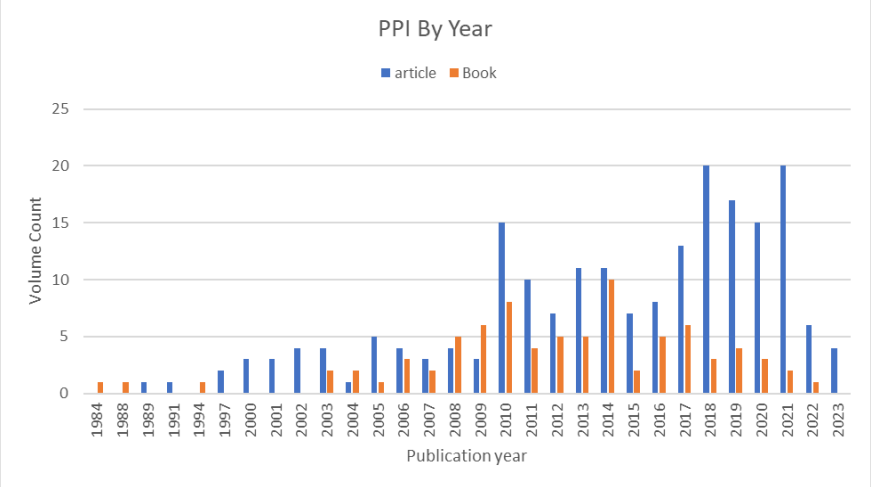


Figure 21: Literature study results by year

The PPIs (including conference articles) were distributed over several different journals, with the top 4 journals being:

- Business Process Management Journal where 28 articles were published.
- International Journal of Lean Six Sigma where 7 articles were published.
- International Journal of Operations & Production Management where 5 articles were published.
- Total Quality Management & Business Excellence where 5 articles were published.

5.6 Chapter Summary

Partially answering DQ2, this chapter applied a systematic process to search for literature concerning *process ownership*. The initial literature search informed the review, as well as the vision for process excellence at Co. INS. The literature consists of scholarly journals and books, where the Business Process Management Journal and the International journal for Lean Six Sigma produced the most publications in this study. Forward and backward snowballing ensured a comprehensive search.

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CHAPTER 6: THEMATIC ANALYSIS

This chapter elaborates on the method used to complete qualitative analysis on the extracted literature on process ownership, partially answering DQ2, i.e. *What knowledge exist in the current body of knowledge to describe process ownership within the financial sector?*

Section 6.1 explains the method followed for thematic analysis. Section 6.2 discusses the bounding of the data creating the key studies (KS) for the thematic analysis. Section 6.3 describes the process of how meaning is extracted from the data, whereas section 6.4 discussed the codebook used. Section 6.5 presents the findings.

6.1 Method for Thematic Analysis

Qualitative research in this study would follow an interpretive approach to complete an inductive and deductive, but exploratory analysis, on textual data from the literature review in the previous chapter. This involves the reduction of text to codes that represent patterns in the text related to the research purpose. The analytic process of applied thematic analysis that follows, is the application of quantitative methods on these codes, to ultimately find patterns and relationships among the codes *(Guest et al., 2011)*.

The thematic analysis process followed in this study is largely in accordance with that of Lochmiller *(2021)* and Bingham *(2023)* to ensure a trustworthy and rigorous analysis process, with additional guidance from Guest *et al.* *(2011)*. Both Bingham *(2023)* and Lochmiller *(2021)* support the ontology of this analytic technique as illustrated in Figure 22 consisting of codes, which are linked to categories. Categories are derived from the research questions and form a priori codes whilst addressing the essence of the potential codes. The codes are the short phrases or words for the meaning of text which are used as tags to identify the quotations. Themes are patterns or relationships between categories which are coalescing into finding statements.

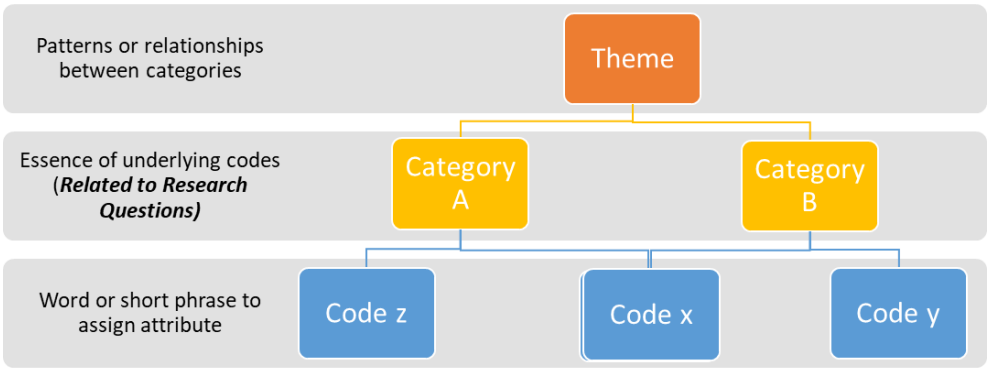

Figure 22:Components of Thematic Analysis (based on Lochmiller *(2021)* and Bingham *(2023)*)

In short, the process starts with deductive analysis, where the research questions guide and focus the analysis with specific topics or categories. This phase is then followed by inductive analysis, to create, apply and define new codes from these categories.

The thematic analysis process is illustrated in Figure 23:

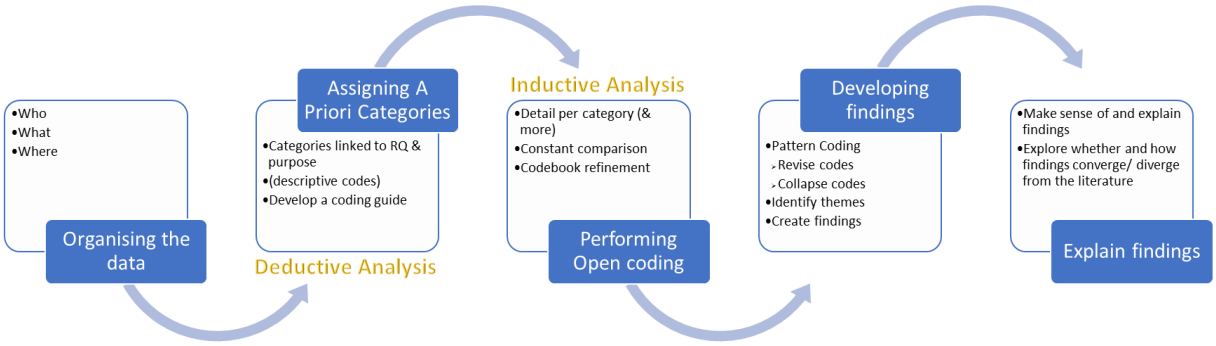

Figure 23: Applied Thematic Method (Based on Lochmiller *(2021)* and Bingham *(2023)*)

The process starts with organizing the data with applicable attributes or meta data. This could include e.g. source, location, type, or time period *(Bingham, 2023, Lochmiller, 2021)*. The next step is to apply deductive analysis using the broad categories derived from research questions, purpose or requirements to focus and guide the rest of the analysis *(Bingham, 2023)*. Deductive analysis is where a priori codes are linked to text after careful reading through the text in order to sort and organize the data *(Bingham, 2023, Lochmiller, 2021)*. In this phase researchers can also start developing a codebook to keep track of code development, which supports the trustworthiness, consistency and rigor of the analysis *(Bingham, 2023)*. The third phase of thematic analysis is where the researcher inductively analyses the topical categories, using the constant comparative method *(Bingham, 2023)*. This comparison entails comparing new codes with existing codes all the time, whilst refining and updating the codebook *(Lochmiller, 2021)*. The fourth phase entails pattern coding where codes are revised or collapsed, to identify themes and eventually finding statements could be devised *(Bingham, 2023, Lochmiller, 2021)*. The last phase is all about sense making and explanation of the findings *(Bingham, 2023, Lochmiller, 2021)*.

6.2 Bounding the data

Guest *et al.* *(2011)* recommend a structured scan of the data for evaluating the quality in the case of a large collection. The purpose and core of the research pivots around *process ownership* (PO).

The PPI list was then interrogated to identify the data items within the PO narrative to bound the data set with relevant data items. This list of identified data items in the PPI, 20 in total (see Figure 18), is referred to as the key studies (KS) and would be used for the thematic analysis (See Appendix C for a list of the KS).

6.3 Understanding and Interpreting the Data

The KS were uploaded into ATLAS.ti as the qualitative data analysis software and used for an interpretive synthesis in identifying the trends and patterns with regards to *process ownership*.

Category codes connect the data segments to the theoretical framework as guided by the Research Questions. Categories inform themes about the specific research study. We used the concept of *category* to group associated codes *(Bingham, 2023)*.

Using the codebook approach *(Guest et al., 2011, Bingham, 2023, Lochmiller, 2021),* several categories emerged from the KS based on initial reading performed by the primary researcher: competencies required, culture enabling PO, governance bodies and practices, governance principles and standards, IT systems and methods used, process performance management, management practices, maturity levels and models, organisational positioning of PO, rewards and appraisals, roles and responsibilities, and

stakeholders of a process owner (See Table 11). These categories have been explained in section 7.1. During this phase of the analysis, the team of the main researcher were requested to identify categories as per the codebook on a specific item in the KS allocated to them. This approach provided additional rigour to the analysis and triangulation of resources so that the highlighting of categories was not relying on only the main researcher *(Guest et al., 2011)*.

A second coding cycle was introduced, where another layer of coding was added to the initial categories and codes. The data items were then repeatedly analyzed over 6 months using inductive coding, i.e. for emerging categories and associated codes, to understand and interpret the data in more detail. Codes were repeatedly reviewed for emerging patterns. Some codes were also collapsed or removed. New categories were created to create more structure to the analysis, whilst others were merged. The data analysis was done once 5 iterations of coding were completed on all data items within the KS.

6.4 The codebook

The codebook aids in keeping a record of the development of codes and/or categories. During the process of initial bounding of the data, several categories emerged. The categories were also identified using the Research Questions and requirements in section 1.4.

Table 11: Codebook for extracting Process Ownership knowledge from Key Studies

Extracted Category	Short Description	Long Description
Competencies	Knowledge, skills/abilities, behaviour	The expertise, experience, and skills to be effective in executing the roles and responsibilities listed. The knowledge required to have sufficient authority.
Culture	Values and behaviours of the organisation in respect of managing processes on a continuous basis	How is process awareness and process orientation made visible? What is the effect of this on the organisation's leadership and HR practises to further the desired culture? What values drive these behaviours and structures? Description of a culture that favours process management.
Governance Bodies and Practices	Responsibilities of supporting structures for effective *process ownership*	Required structures and their responsibilities to align, support, coordinate and govern the work and impact of the PO across multiple business units.
Governance Principles and Standards	Rules and guidelines that govern the deployment and practices of a PO	Principles provide guidance to the practices of governance and determine the “playing field” in which to operate. It is a foundational truth or requirement that needs to be adhered to.
IT Systems	IT systems that could be used by a PO	Systems used by the PO to execute the given roles and responsibilities.
KPIs for Process Performance Management	Performance metrics for processes	The performance measures of processes to distinguish between good and poor performance. The process targets and control requirements form an integral part of process performance management.
Management Practices	Management habits that support *process ownership*	The practices that management need to consider in supporting and enabling the PO.
Maturity and Transformation Levels	Intentional deployment over time	Several different realisations of *process ownership* that builds on each other over time, i.e. a roadmap of deployment, focusing on specific elements of maturity assessment. The levels define the essence of the maturity roadmap.
Methods	Methodologies that could be used by a PO	Methodologies used by the PO to execute the given roles and responsibilities.
Organisational positioning	Reporting lines of the PO and supporting structures	Functional vs Horizontal positioning in the organisation (matrix) Any mentioning of managing of staff (or not) Elaboration on the authority of the PO Role (Management/Expert level) Positioning of supporting structures in the organisation
Process Architecture	Portfolio of processes in an area	Reference to process architecture, process infrastructure, process repository or a selection of processes to inform the services delivered. The process architecture often indicates the relationship between processes.

Extracted Category	Short Description	Long Description
Rewards and Appraisals	Measuring the performance of a PO	Rewards and performance management appraisals of a process owner to indicate good/poor performance. How would the success of the PO be measured to indicate a good performance? How would the PO be rewarded and measured? (When not to code: Process Performance is discussed under key performance indicators, i.e. KPIs)
Roles and responsibilities	The tasks of a PO	Detailed list of tasks or responsibilities allocated to the PO to be accountable for on a daily, weekly, monthly, yearly basis.
Stakeholders	People with whom the PO needs to interact with	Key stakeholders of a PO to perform the role effectively. The key interactions required for the PO or guidance required - people and nature of interaction.

6.5 Explaining the findings

The data visualisation tools of ATLAS.ti were used as a means of sense making of the analysis. The code co-occurrence is visualised in the Sankey diagram, which displayed the number of quotations linked to the codes or categories. The Sankey diagram illustrates the strength of the relationship between the various codes. The key to reading and interpreting Sankey Diagrams is to remember that the width is proportional to the quantity represented *(Otto et al., 2022)*.

In Figure 24 the relationships between the different categories of the *process ownership* narrative are illustrated for this study. The biggest node is governance principles and standards being the main driver, with a strong relationship with culture, and roles and responsibilities. It is therefore implied that governance is the biggest enabler for *process ownership* and need to be in place for *process ownership* to be successfully deployed. Another finding through visual inspection is the relative equal strength of the relationship between governance (as a whole) and culture, as well as with roles and responsibilities as the other critical enablers of *process ownership*.

Roles and responsibilities, as a driver, has a strong relationship with a number of other codes, of which the strongest relationship is with governance principles and standards, governance practices, methods, competencies, and stakeholders. The relationship with KPIs is not that strong from the perspective of roles and responsibilities, but switching the perspectives, there is a key relationship between KPI and roles and responsibilities (from the KPI perspective).

Culture is another obvious enabler from the Sankey diagram. It seems to be strongly influenced by the competencies related to *process ownership* and vice versa. It also has a strong bearing on governance, i.e. governance practices and governance principles and standards, and a lesser impact on the roles and responsibilities of *process ownership*.

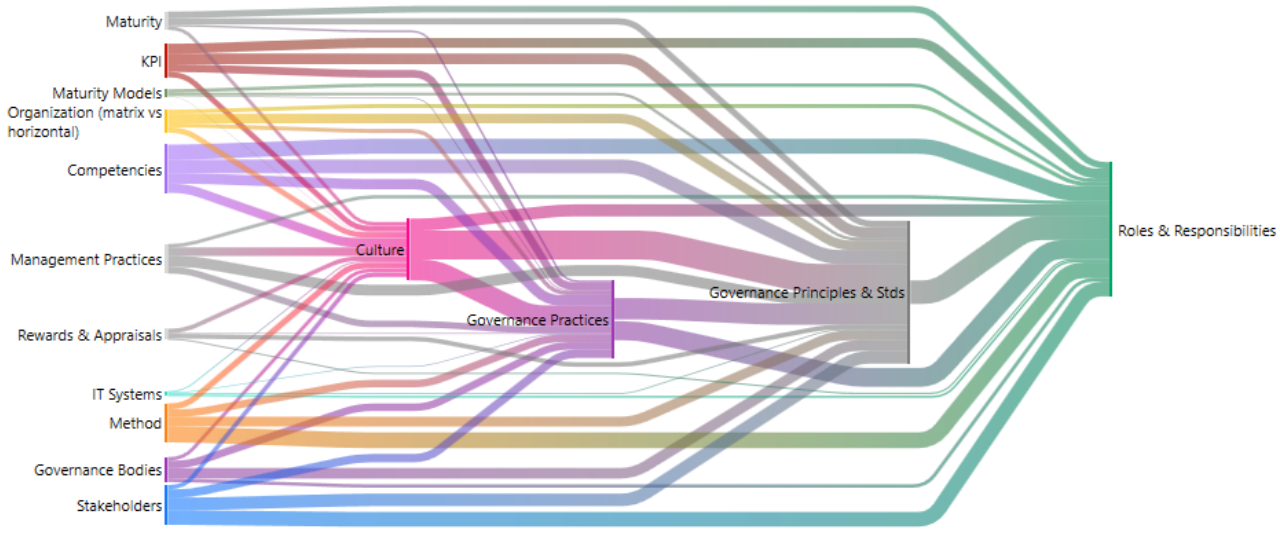

Figure 24: Sankey Diagram Illustrating the Relationships between the Codes (author-created)

The analysis results show the relative importance of governance, culture, and clear roles and responsibilities as key enablers for effective *process ownership*. The *process ownership* narrative is mostly influenced by these categories.

Also evident from the analysis, is a lack of scholarly work about IT systems used for *process ownership*, as well as the rewards and appraisals related to *process ownership*.

Maturity models are also not frequently occurring in the KS, and it is remarkable that there is such a weak relationship between maturity and culture, and the governance practices. It is also evident from the analysis that as maturity increases the roles and responsibilities would be affected as well.

Another visualisation in ATLAS.ti is the force-directed graph indicating networks and “closeness” or proximity of codes as indicated in Figure 25. The aim of this graph is to relate codes to each other that have been applied either to the same quotations or to overlapping quotations.

According to ATLAS.ti force-directed graph drawing algorithms are a class of algorithms for drawing graphs in an aesthetically pleasing way. Their purpose is to exhibit symmetries and proximity between data elements.

The researcher has not engaged with the simulation capability of this function on ATLAS.ti as it seems to be a new function not yet explained in their supporting documentation.

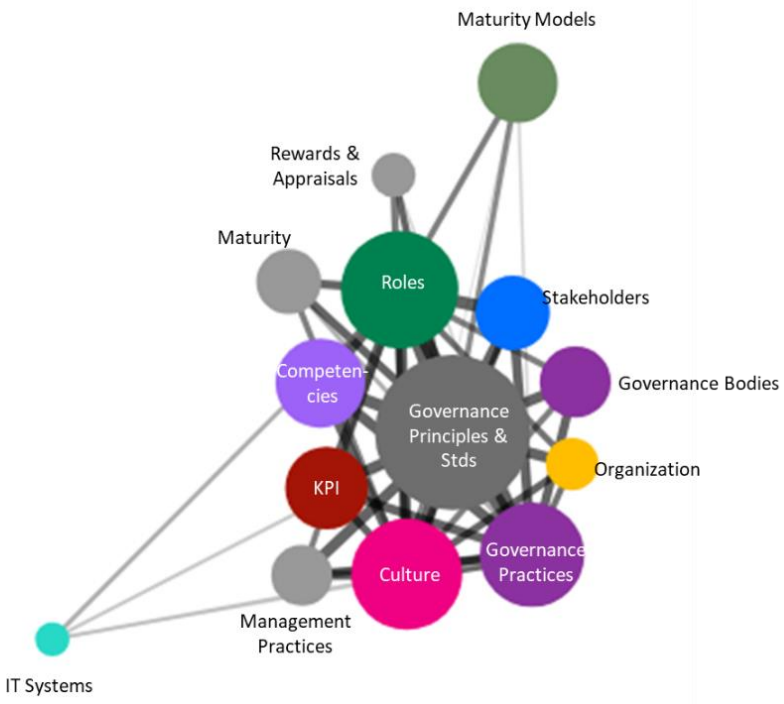

Figure 25: Force-Directed graph showing code co-occurrences

What is obvious though, is the relevant distance between the PO construct of the nodes forming a conglomerate in the middle, and the codes of IT systems, and maturity models on the edges of the diagram. This confirms the findings obtained from the Sankey diagram (Figure 24) above.

As architecture forms a strong foundation for Enterprise Engineering, the researcher was curious about the strength of the relationship between the narrative around the Development of a Process Architecture (or repository) and the PO facets. In Figure 26 a force-directed graph illustrates a weak relationship. Only 2 studies out of the 20 KS were found to use this code in a proper narrative.

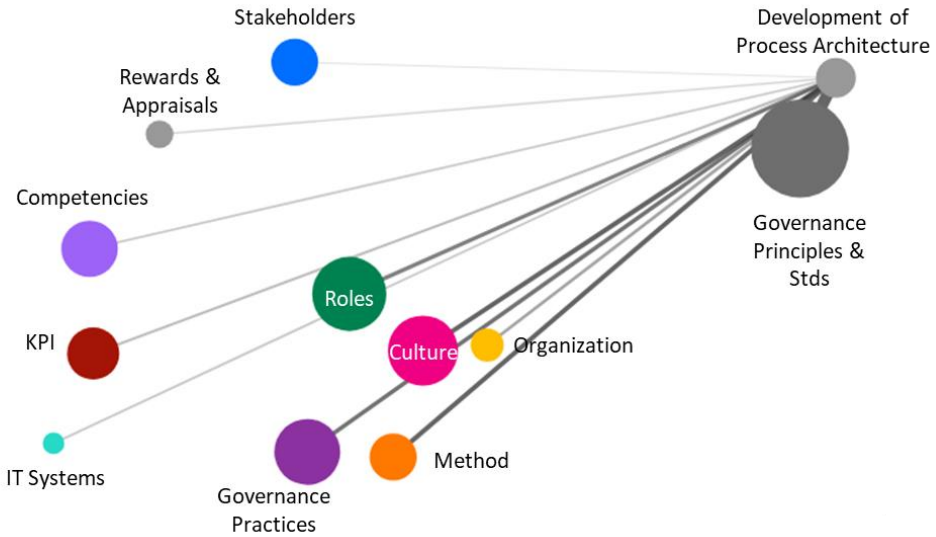

Figure 26: The relationship of Process Architecture in the PO Construct

In summary, the key enablers of *process ownership*, i.e. governance (both principles and standards, and the practices), culture, and roles and responsibilities need to be clarified prior to deploying other components of *process ownership*.

6.6 Chapter Summary

This chapter used thematic analysis to do qualitative data analysis on the literature identified regarding *process ownership*, partially answering DQ2.

The 20 key studies identified from the literature were uploaded to ATLAS.ti where the coding and thematic analysis happened in an iterative cycle following 5 phases using deductive and inductive analysis. The analysis entailed creating codes, linked to categories and eventually linked the themes.

The findings, based on the emerged themes, were illustrated using a Sankey diagram that visually depicts strong relationships between data elements, indicating that governance, culture, and clear roles and responsibilities are key enablers for *process ownership*. The force-directed graph was also displayed using the proximity of the various themes, indicating that the narrative of *process ownership* is guided by these key enablers.

In summary, the key enablers of *process ownership*, i.e. governance (both principles and standards and the practices), culture and roles and responsibilities need to be clarified prior to deploying other components of the *process ownership*. This then informed the construction and evaluation episodes of ESPO in Chapters 9 and 11.

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CHAPTER 7: THE PROCESS OWNERSHIP FUNCTION

This chapter presents the emerging themes from the thematic analysis and creates a framework of concepts for effective *process ownership*, answering DQ2, i.e. *What knowledge exist in the current body of knowledge to describe process ownership within the financial sector?*

Section 7.1 provide evidence that *process ownership* is a solution for poor process performance. Section 7.1 unpacks the mechanisms framing the narrative of *process ownership* as stated in the body of knowledge. Section 7.3 summarizes these mechanisms of process ownership, highlighting the key enablers as identified in Chapter 6.

7.1 Evidence about poor process performance due to lacking *process ownership*

The analysis confirms the importance of *process ownership* as a key function to improve process performance, as motivated in section 2.5. Several researchers confirmed that *process ownership* is a formalised commitment to process as a strategic asset, which will deliver a competitive advantage by means of an increased organisational performance *(Danilova, 2018, Danilova, 2019, Maddern et al., 2014, de Boer et al., 2015, Buh and Stemberger, 2016, Palmberg, 2010, Hernaus et al., 2016, Kohlbacher and Gruenwald, 2011b, Kohlbacher and Gruenwald, 2011a, Trkman, 2010)*.

Danilova *(2019)* states that "process owners aim to avoid gradual degradation into ad-hoc performance, multiple versions, and incompatible behaviors [...], with a consequent loss of organisational competence and customers".

There is also empirical evidence that indicates improvement of organisation performance if *both process ownership* and process performance management are deployed *(Weitlaner et al., 2012, Kohlbacher and Gruenwald, 2011a)*. According to the experts, process improvement management has been escalated to an organisational competency for longevity of businesses *(Kohlbacher and Gruenwald, 2011b, Smart et al., 2009)*.

7.2 Process ownership mechanisms

Literature indicates the multidimensional nature of *process ownership*, which consists of synergistic elements which should be synchronised and pursued together for a successful deployment *(Hernaus et al., 2016, Jurczuk, 2021, Van Looy, 2020, Danilova, 2019, Buh and Stemberger, 2016, Kohlbacher and Gruenwald, 2011b, Kohlbacher and Reijers, 2013)*. The multidimensional nature is evident in both a strategic and operational focus, as well as in the focus on both culture and performance for successful deployment of *process ownership*.

The following sections provide a synthesis of the codes and categories identified in the KS as mechanisms framing the narrative around *process ownership.*

7.2.1 Governance Principles and Standards

The definition of process governance is given in the literature as a consistent framework to facilitate the transition from unstructured to structured process management *(Jurczuk, 2021, de Boer et al., 2015, Danilova, 2018, Buh and Stemberger, 2016, Hernaus et al., 2016, Trkman, 2010)*. Maturity models aid in defining the requirements for an intentional approach towards evolution of BPM implementation *(Van Looy et al., 2014, de Boer et al., 2015).*

A few important principles and standards are listed in Figure 28 on two levels: (1) Enabling BPM in the enterprise, and (2) governing the BPM efforts of the various process owners.

De Boer *(2015)* recommends that the governance ensured by this central unit is strategically guided and supported by the organisation's senior management. The governance practices include 1) criteria and guidelines for strategic planning and selection of initiatives, 2) establishing process and performance targets and assessment with subsequent transparent communication of process results and initiatives, 3) ensure the allocation of process related roles and responsibilities for decision-making (See section 7.2.3), 4) the management practices and culture (See section 7.2.3) that supports and enable a successful BPM deployment in different levels of maturity (See section 7.2.12).

Trkman *(2010)* adds that this unit should also focus on training and coaching of the methods used during process improvements. Another strong focus of this central unit should be the coordination and integration of initiatives between process, IT and the enterprise, e.g. influence over personnel assignments *(Kohlbacher and Gruenwald, 2011a, Kohlbacher and Reijers, 2013, Trkman, 2010).*

Jurczuk *(2021)* adds that this CoE unit must support process owners, specifically guiding them with the regulatory framework for effective process management, training and coaching them, supporting them with projects, as well as collaboration and communication with different process stakeholders. This unit should ensure that the use of external process consultants is minimised.

Danilova *(2019)* states in addition to the governance practices already mentioned, that the BPM CoE is responsible to establish process thinking throughout the organisation, as well as a culture of trust and collaboration between the two pillars of the matrix organisation *(Danilova, 2018)*. The CoE should establish a process council to ensure initiatives support corporate strategy and facilitate change management initiatives where required *(Danilova, 2019)*.

Shafagatova and Van Looy *(2019)* suggest that the CoE engages with human resource management for their practices to be aligned with the culture of a process organisation, i.e. establishment of process owners as a position on the organogram, process performance indicators added to the staff in order to create process awareness and process thinking.

Hrabal *et al. (2021)* contribute that the CoE should ensure uniformity and consistency of the standards applied, which relate to the competencies of the process owners, methods used, and tools applied.

Hernaus *et al. (2016)* recommend that the CoE is responsible for building the "enterprise view of the service portfolio" and maximise the benefits from the investment in BPM efforts. The CoE unit should be responsible for maintaining the process architecture *(Hernaus et al., 2016, Hrabal et al., 2021)*. BPM governance should ensure process on the boardroom agenda by aligning processes to strategy execution and implementing a formal responsibility for BPM *(Hernaus et al., 2016)*.

The BPM CoE should also be the custodian of a central process repository *(Buh and Stemberger, 2016, Hrabal et al., 2021)*.

Figure 27: Governance Supporting Process Ownership (author-created image)

7.2.2 Governance Bodies and Practices

The structural commitments that should adhere to the governance is prescribed by the researchers as a centre of excellence, i.e. a central BPM office, a process coordination unit and a process council to ensure and facilitate collaboration between process owners *(Jurczuk, 2021, Danilova, 2018, Danilova, 2019, Hrabal et al., 2021, Buh and Stemberger, 2016, Hernaus et al., 2016)*.

The practices of these governance bodies should be to manage and monitor process performance, communicate process performance results, create process awareness, manage value creation for stakeholders, intentionally create process maturity by managing and supporting the BPM program, and ongoing maintenance of the process architecture *(Jurczuk, 2021, de Boer et al., 2015, Danilova, 2018, Danilova, 2019, Buh and Stemberger, 2016)*.

Figure 28: Roles and responsibilities of the BPM Center of Excellence (author-created image)

7.2.3 Culture enabling PO

The culture of the organisation has been acknowledged as a critical enabler for BPM adoption *(Buh and Stemberger, 2016, Schmiedel et al., 2015)*. They state that a culture is compounded by beliefs, values, attitudes, and behaviors that are displayed in an organisation. At Co. INS the executive committee refers to the "rituals" that are required to entrench a certain identity, adoption, and sense of belonging with regards to process excellence.

Schmiedel *et al.* *(2015)* refer to a common analogy of culture as an iceberg with visible elements ("above the surface") like actions and structures, as well as the invisible core of the iceberg, i.e. ("below the surface") values and underlying assumptions. In Figure 29 the iceberg model is populated with items identified in the literature, as well as values, actions and structures used in the Px Vision and Px Training.

Ongoing process conversations will influence a Lean culture, as a culture is created through a number of facets, including the conversations the company has *(Flamholtz and Randle, 2012).* The Lean culture in turn will foster servant leadership, which is one of the key components for service excellence *(Liker, 2023).* Servant leadership is all about supporting the employee to work at his/her best possible level,

and hence it will drive process conversations again, but also employee engagement as they would feel supported and inspired. In turn employee engagement, together with servant leadership, would allow time for daily huddles and PDCAs to be done, which would in turn lead to improved processes. "Success breeds Success" *(van de Rijt et al., 2014)* and hence the more process improvements happen when *process ownership* has also been deployed *(Weitlaner et al., 2012)*, i.e. the cycle re-enforces the behavior again.

A culture creates a common purpose *(Flamholtz and Randle, 2011)* and is the glue that makes people "belong" to an organisation. It can be very inspiring, or extremely toxic, and differs from department to department and from team to team. The critical component to create a specific culture is leadership *(Schein and Schein, 2016)*.

According to Flamholtz and Randle *(2012)* a culture is manifested in the language between people, e.g. the acronyms which are so frequently used and created for just about anything. Or the performance feedback people get as either recognized for their contribution or reprimanded for their lack of performance.

Flamholtz *(2012)* states that the strength of a culture, rather than the financial rewards, will unleash that last 10% of people's dedication and effort through honoring them, respecting them and making them feel involved and wanted. It is visible in the artefacts on the walls, or on peoples' desks, e.g. the company values on the walls, or the branded screen saver, or the branded coffee mugs or T-Shirts *(Flamholtz and Randle, 2011)*.

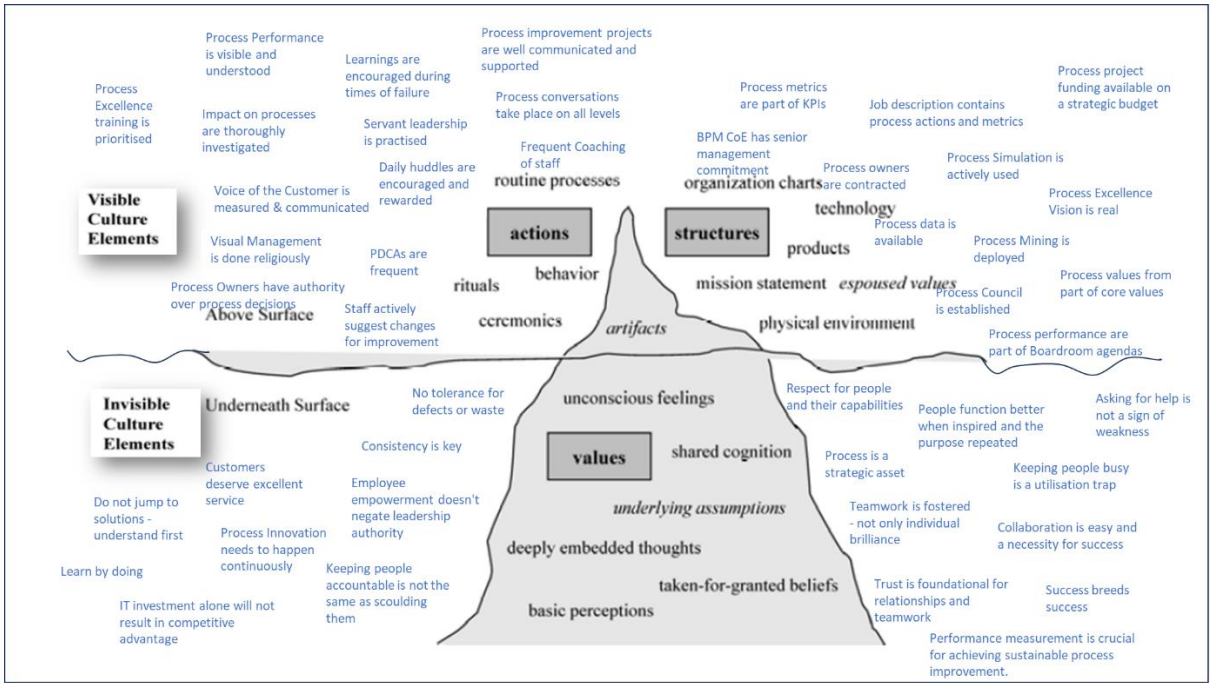

Figure 29: Culture conducive for Process Ownership based on Schmiedel *et al.* *(2015)*

But it is also visible in the goals for performance and metrics used to measure performance as either customer driven, e.g. customer satisfaction, or an internal set of metrics, e.g. productivity of staff. A culture with the intention and commitment towards process orientation becomes "real" through the narrative of *process ownership* *(Kohlbacher and Gruenwald, 2011a)*.

Van Looy *et al.* *(2014)* concur that the values must include intense customer focus, empowerment of staff, innovation, collaboration across different disciplines, and trust. These values and skills regarding prioritizing process and the process mindset must enrich the current job descriptions and growth path of staff *(Van Looy et al., 2014, Shafagatova and Van Looy, 2019)*. Kohlbacher and Gruenwald *(2011a)* add teamwork, willingness to change, personal accountability, cooperative leadership style which involve employees in setting goals and standards *(Laureani and Antony, 2019)*, and frequent process related

communication. Shafagatova and Van Looy *(2019)* state the need for a culture that includes focus on the customer, continuous improvement/excellence and innovation, responsibility/accountability and teamwork/collaboration, i.e. the so-called CERT values, as an acronym, referring to these major values underpinning BPM deployment *(Schmiedel et al., 2013, Schmiedel et al., 2015)*, as discussed in the next paragraph (See Figure 30).

Customer orientation (C) refers to a proactive and flexible approach to the needs of the customer, or the recipient of the deliverables of the process. Excellence (E) refers to an attitude of innovation and continuous improvement to constantly aim for a better and more consistent performance of processes. Responsibility (R) refers to the ownership of the process and dedication to the objectives of the process, especially the strategic objectives. Teamwork (T) refers to the acceptable and inspiring engagement or collaboration with cross-functional teams and leadership on different levels to foster positive engagement towards BPM success and process thinking.

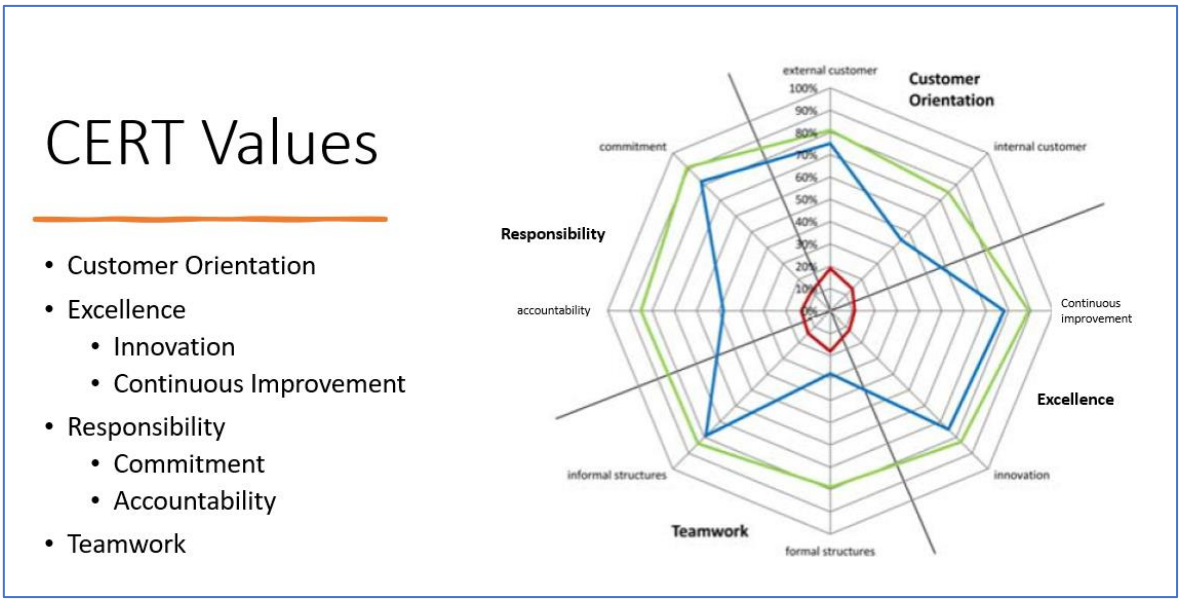

Figure 30: CERT values for BPM readiness assessment based on *(Schmiedel et al., 2013, Schmiedel et al., 2015)*

In a study on the behavior-value patterns, Van Dun and Wilderom *(2021)* list the values and behaviors of efficient Lean teams, i.e. leadership that rewards self-management skills, active listening, demonstrating a need to understand by asking "why" and promote employees to suggest ideas, an attitude of learning from mistakes, allowing teams to frequently engage and manage their own results. Active support and respect for employees to nurture their skills is the premise of a coaching and servant leadership style that leads to high team performance *(van Dun and Wilderom, 2021, Childs, 2017, Tribe, 2017, Aghina et al., 2017, Laureani and Antony, 2019)*.

Directive leadership style which includes micromanaging, regular task monitoring and, correction, command and control has been found to be detrimental to high performance *(Laureani and Antony, 2019, van Dun and Wilderom, 2021, Amaro et al., 2021)*. Servant leadership of negotiation, coaching, support, and collaboration is required *(Kohlbacher and Gruenwald, 2011a, Amaro et al., 2021)*.

Both Schmiedel *(2013)* and Stemberger *(2018)* refer to the assessment of cultural values using the "competing values framework" to assess the culture of an organisation to be conducive for successful BPM deployment. Stemberger *(2018)* recommends that the BPM deployment is customized to fit the organisational culture rather than changing a culture that were developed over a few years.

An interesting contribution on culture is found in the article about the culture for Lean Thinking *(Amaro et al., 2021)*, where the authors highlight the difference between the American and Japanese cultures. The underlying values of "we invest in people prior to making cars" of the Japanese culture for Lean

thinking pivots around teamwork, empowerment of staff, coaching, waste reduction, and shared learning. They highlight, amongst others, the value of "go and see for yourself", learning through experimentation, visual display of work, and regular face-to-face engagements to share knowledge and lived experiences, which are all fundamental principles for PDCA and daily huddles.

7.2.4 Roles and Responsibilities for PO

A process owner should be mandated appropriately to take end-to-end accountability across organisational functions and authority of a process and its results, and should ensure acceptable performance on a consistent basis through appropriate improvement efforts *(Kohlbacher and Gruenwald, 2011a, Danilova, 2018, Danilova, 2019, Štemberger et al., 2018, Van Looy et al., 2014, Hrabal et al., 2021, Buh and Stemberger, 2016, Trkman, 2010, Kohlbacher and Reijers, 2013, Shafagatova and Van Looy, 2019)*. PO responsibility includes formal decision-making authority around continuous improvement where and when required *(Jurczuk, 2021)*. Process owners should continually manage processes, i.e. processes should not just be fixed when they break *(Rummler and Brache, 2012).*

Danilova specifically states that process owners do not manage staff, and that the roles and responsibilities are dependent on the maturity level of the BPM deployment *(Danilova, 2019).*

The following is a list of suggested roles and responsibilities which have been allocated to a process owner by the primary studies' authors (See Figure 31).

Process management:

- Take accountability for processes to be modelled, defined and documented, across functional boundaries, highlighting the interfaces with other processes *(Hrabal et al., 2021, Van Looy et al., 2014, Danilova, 2019, Jurczuk, 2021, Danilova, 2018, Weitlaner et al., 2012, Trkman, 2010, Maddern et al., 2014, Palmberg, 2010, Nightingale and Srinivasan, 2011).*
- Benchmark processes and identify best practises *(Kohlbacher and Gruenwald, 2011a, Kohlbacher and Reijers, 2013, Danilova, 2019).*
- Standardise processes and authorise process variants *(Jurczuk, 2021, Danilova, 2018, Hrabal et al., 2021, Danilova, 2019, Trkman, 2010)*.
- Determine and review process metrics and key performance indicators, including customer satisfaction benefits *(Buh and Stemberger, 2016, Kohlbacher and Gruenwald, 2011b, Weitlaner et al., 2012, Trkman, 2010, Kohlbacher and Reijers, 2013, Maddern et al., 2014, Palmberg, 2010, Hrabal et al., 2021, Danilova, 2019).*
- Establish requirements for process expertise and quality execution *(Danilova, 2019).*
- Cost the process through the application of activity-based costing *(Kohlbacher and Reijers, 2013).*

Review process performance:

- Monitor the process performance and compare with planned targets *(Buh and Stemberger, 2016, Danilova, 2019, Jurczuk, 2021, Kohlbacher and Gruenwald, 2011b, Weitlaner et al., 2012, Trkman, 2010, Kohlbacher and Reijers, 2013, Palmberg, 2010).*
- Visualise and communicate the process results *(Kohlbacher and Gruenwald, 2011a, Danilova, 2019, Kohlbacher and Reijers, 2013, Hrabal et al., 2021)*.
- React on bad process performance in a timeous manner *(Kohlbacher and Gruenwald, 2011a, Kohlbacher and Reijers, 2013, Danilova, 2019).*
- Align processes performance with overall strategy and goals of the business *(Danilova, 2018, Hernaus et al., 2016, Kohlbacher and Reijers, 2013, Maddern et al., 2014, Danilova, 2019, Trkman, 2010).*

Manage process improvements:

- Identify improvement opportunities within the process *(Van Looy et al., 2014, Danilova, 2019, Jurczuk, 2021, Kohlbacher and Gruenwald, 2011b)* using process analysis tools, e.g. root cause analysis, or fishbone to elicit and prioritize opportunities *(Buh and Stemberger, 2016, Danilova, 2019).*
- Elicit and understand the pain points in the process *(Danilova, 2019, Danilova, 2018).*

- Facilitate and evaluate process improvement suggestions and innovations, e.g. find new opportunities, and estimate the cost of implementation *(Buh and Stemberger, 2016, Danilova, 2019, Jurczuk, 2021, Trkman, 2010).*
- Propose and communicate process improvements to the business *(Buh and Stemberger, 2016, Hrabal et al., 2021).*
- Deploy and own process improvements *(Van Looy et al., 2014, Hrabal et al., 2021, Buh and Stemberger, 2016, Danilova, 2019, Jurczuk, 2021, Weitlaner et al., 2012).*
- Sponsor improvement projects and guide the effort *(Hrabal et al., 2021, Weitlaner et al., 2012)*.

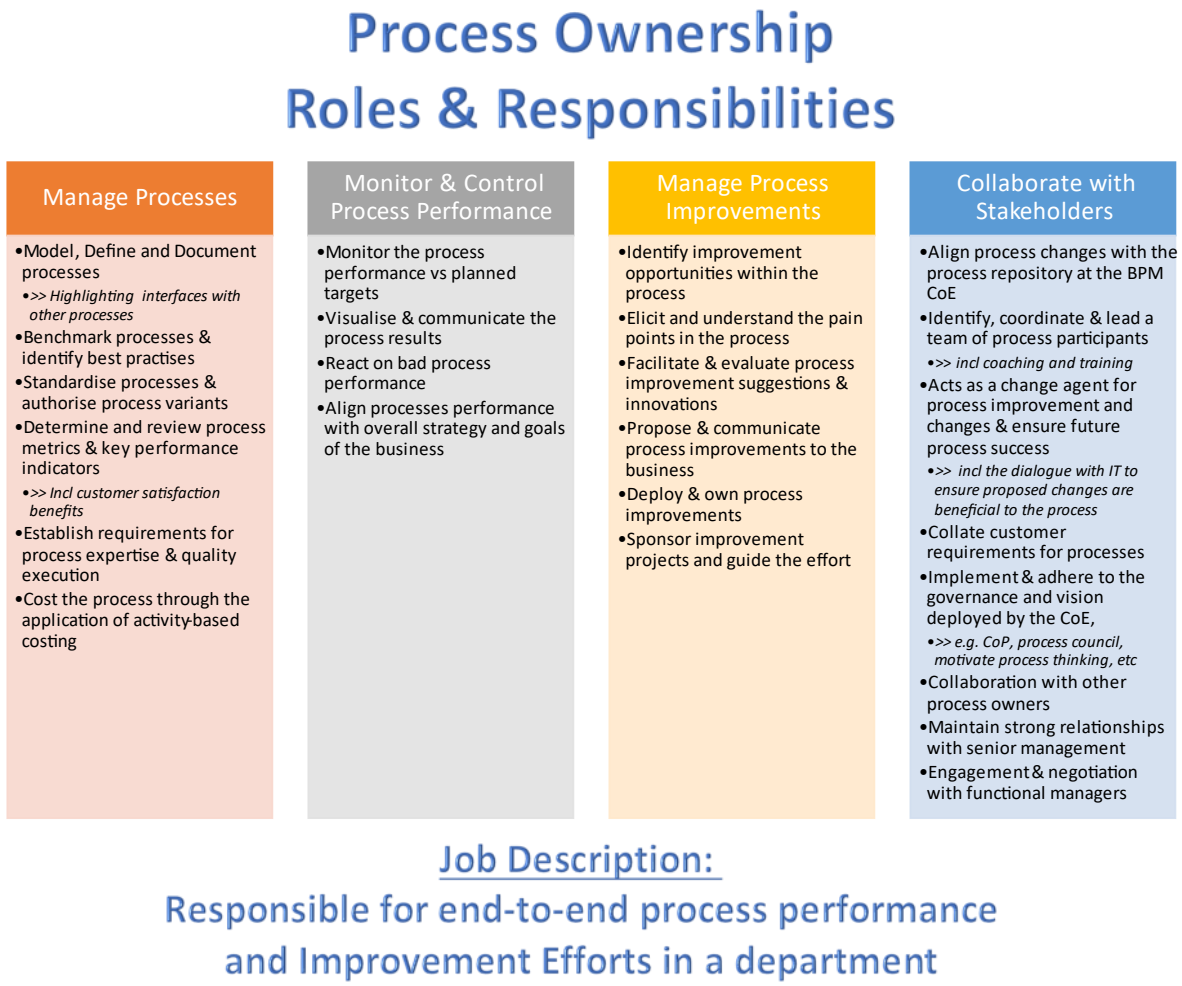

Figure 31: Roles and responsibilities of the process owner (author-created image)

Collaborate with stakeholders:

- Align process changes with the process repository at the BPM CoE *(Buh and Stemberger, 2016).*
- Identify, coordinate and lead a team of process participants across organisational functions, including coaching and training *(Van Looy et al., 2014, Danilova, 2019, Trkman, 2010, Palmberg, 2010, Weitlaner et al., 2012).*
- Act as a change agent for process improvement and changes and ensure future process success, including the dialogue with IT to ensure proposed changes are beneficial to the process *(Danilova, 2018, Danilova, 2019).*
- Collate customer requirements for processes *(Danilova, 2019).*
- Implement and adhere to the governance and vision deployed by the CoE, e.g. attend and participate in the communities of practice and process council and motivate process thinking *(Danilova, 2019, Danilova, 2018)*.

- Collaborate with other process owners to standardize the *process ownership* role *(Danilova, 2018, Danilova, 2019).*
- Maintain strong relationships with senior management *(Danilova, 2018).*
- Engage and negotiate with functional managers where interfaces affect cross-boundary processes *(Danilova, 2019).*

7.2.5 Competencies required by PO

Competencies required by suitable process owners are also complemented by specific qualifications, skills and experience. This not only affects the culture, but also the effective process governance. Jurzcuk *(2021)* points out that the competency of the PO is one of the major barriers to process governance.

Process owners also need to have sufficient operational knowledge of the end-to-end process to have formal authority, and be able to create and maintain the process architecture *(Van Looy et al., 2014).*

It is crucial for process orientation and sustaining competitive advantage that process related skills and competencies be added to HRM practices, i.e. job descriptions and career paths, to focus on the needs of the process *(Shafagatova and Van Looy, 2019, Van Looy et al., 2014, Weitlaner et al., 2012, Kohlbacher and Gruenwald, 2011a).*

In order to fulfil these extensive responsibilities of the *process ownership* role, elaborated in section 7.2.4, the process owner must possess the following *qualifications, skills, competencies and experience*:

- Trained and certified in process improvement management *(Van Looy et al., 2014, Hrabal et al., 2021, Jurczuk, 2021, Danilova, 2018, Shafagatova and Van Looy, 2019, Weitlaner et al., 2012, de Boer et al., 2015, Smart et al., 2009)*
- Proficiency in the systems and skills to manage and visualise process data *(Van Looy et al., 2014, de Boer et al., 2015)*
- Project management skills and experience *(Van Looy et al., 2014, Hrabal et al., 2021, de Boer et al., 2015)*
- Professional knowledge of allocated processes *(Hrabal et al., 2021, Danilova, 2018, Shafagatova and Van Looy, 2019)*
- Strong leadership skills and experience *(Van Looy et al., 2014, Hrabal et al., 2021, Kohlbacher and Gruenwald, 2011a, Jurczuk, 2021, Danilova, 2018)*
- Systems thinking to be able to anticipate changes and “connect the dots” *(Hrabal et al., 2021, Jurczuk, 2021)*
- Problem solving ability *(Van Looy et al., 2014)*
- Decision making ability (including prioritisation) *(Van Looy et al., 2014, Jurczuk, 2021)*
- Facilitation skills *(Buh and Stemberger, 2016)*
- Change management *(Van Looy et al., 2014, Jurczuk, 2021, Shafagatova and Van Looy, 2019)*
- Coaching ability *(Van Looy et al., 2014)*
- High level of communication abilities, including listening, connecting with people on different levels *(Van Looy et al., 2014, Buh and Stemberger, 2016, Hrabal et al., 2021, Jurczuk, 2021, Shafagatova and Van Looy, 2019)*
- Appropriate and acceptable social and interpersonal skills, e.g. empathy, integrity, respect for others *(Hrabal et al., 2021, Jurczuk, 2021, Danilova, 2018, Shafagatova and Van Looy, 2019)*
- Emotional intelligence and resilience *(Van Looy et al., 2014, Hrabal et al., 2021, Jurczuk, 2021)*

The values by which a process owner must abide, have been listed in the discussion around Culture (section 7.2.3) and pivots around the CERT-values to enable successful BPM: customer focus, process excellence and innovation, responsibility and accountability, and teamwork and collaboration.

7.2.6 Key partnerships and stakeholders of PO

The process owner needs to engage with the team executing the process on a regular basis *(Danilova, 2019)*. This engagement includes collaboration with functional management as a necessity in a matrix structure *(Shafagatova and Van Looy, 2019, Danilova, 2018)*.

Another group of stakeholders includes the central BPM CoE, who is responsible for the governance around BPM, the culture of process management, and training and support on methodologies for successful BPM *(Danilova, 2019, Hernaus et al., 2016, Buh and Stemberger, 2016, Hrabal et al., 2021, Jurczuk, 2021, Kohlbacher and Gruenwald, 2011b, Kohlbacher and Gruenwald, 2011a, Van Looy, 2020, Trkman, 2010, de Boer et al., 2015)*. Interaction with process analysts and -architects reporting into the BPM CoE, who are supporting the BPM efforts of the process owner, would be required. Required interaction also includes the governance bodies associated with the BPM CoE unit, e.g. Process Council, as well as strategy alignment with executives. (See section 7.2.1).

When modelling processes for a specific business unit, the external parties of those processes, e.g. suppliers, business partners and customers, must be actively involved with regards to honouring the service level agreements, communication and defining requirements *(Van Looy, 2020)*.

The affinity and camaraderie with other process owners will contribute to the learning and development of process owners, and the process thinking culture an orientation required for a successful BPM *(Van Looy et al., 2014, Danilova, 2018)*.

7.2.7 Methods used by PO

Continuous improvement activities are central to the success of BPM *(Smart et al., 2009, Kohlbacher and Gruenwald, 2011b)*. According to Rummler and Brache *(2012)* the biggest opportunity for improvement is between functional interfaces, i.e. the "white spaces on an organisation chart". The methods used by process owners should include not only methods for process improvement and monitoring of performance, but also prioritisation and change management *(Smart et al., 2009).* Weitlaner *(2012)* also suggests that continuous process improvement methods be deployed simultaneously with *process ownership* for the financial benefits to be realised. Danilova *(2018)* suggests an integrated approach and agreed techniques between BPM and other management systems to ensure consistency in value creation, daily management, and continuous process actions.

Hrabal *et al. (2021)* mention that the most common methods used by process owners include industrial engineering methods (e.g. Lean practices) for process improvement, or process modelling. Process modelling could be done on a few different software platforms. They then also add Six Sigma, business process re-engineering, activity-based costing, and process simulation as methods.

Kohlbacher and Gruenwald *(2011b)* mention some methodologies for continuous improvement, e.g., KAIZEN which involves the whole team to make small improvements daily. They also mention Six Sigma for solving more complex problems *(Kohlbacher and Gruenwald, 2011b, Kohlbacher and Reijers, 2013, Smart et al., 2009)*. Van Looy *(2020)* adds BPM Notation (process modelling) and PDCA[6] to the list of methodologies.

Hrabal *et al. (2021)* also recommend the "process of Process Management" which needs to be established. That includes project management methods to ensure alignment with IT, quality assurance, change management, workshop facilitation and planning (to name but a few) *(Van Looy et al., 2014)*.

James Clear *(2018)* says "you don't rise to the level of your goals but fall to the level of your systems". He states that "systems" refer to the habitual acts and daily processes that lead to the desired results. Clear *(2018)* states that the systems you create to achieve your goals[7], will support you to continue

[6] The PDCA (Plan-Do-Check-Act) approach is a technique utilised when doing KAIZEN.
[7] Operational and professional goals, e.g. being the best process owner

"playing the game". It is about the small daily things you need to do as a regular practice or routine that will make you effective *(Clear, 2018)*.

Jeff Liker *(2021)* concurs with the daily habitual approach when he says "The key to the Toyota Way and what makes Toyota stand out is not any of the individual elements.... But what is important is having all the elements together as a system. It must be practiced every day."

A process owner will typically need to have habitual practices to support the efforts and relationship building with stakeholders (e.g. frequent coffee sessions/check-in with senior management), the monitoring and visualising of key process results, e.g. daily huddles, and having 3 screens with one dedicated to process monitoring.

7.2.8 IT Systems used by PO

Very little detail has been found on the actual systems for PO. Systems are generically referred to as "IT Systems", but in more detail the following were mentioned in the literature: Simulations, process mining, process modelling systems and statistical process control systems *(Jurczuk, 2021, Van Looy et al., 2014, Maddern et al., 2014, de Boer et al., 2015, Danilova, 2019)*.

7.2.9 Process performance management and key performance indicators

The concerns around PO transpire to be the metrics and goal setting to ensure consistent process performance.

Nightingale and Srinivasan *(2011)* recommend a "structured system of metrics" that are aligned with the objectives of the organisation. These metrics should be described in a metrics dictionary, compiled by the BPM CoE, for clear definitions and data collection methods, used by all process owners to whom the metric applies.

Several measures are emerging from the literature, e.g. reducing the cost of processing, higher financial performance, increased efficiency of the process, consistent process capability to honour customer requirements, reducing defects, increased process compliance, reduced cycle time, increased quality of customer and employee experience *(Shafagatova and Van Looy, 2019, Van Looy et al., 2014, Jurczuk, 2021, de Boer et al., 2015, Danilova, 2018, Danilova, 2019, Buh and Stemberger, 2016, Hernaus et al., 2016, Štemberger et al., 2018, Palmberg, 2010, Maddern et al., 2014, Smart et al., 2009, Trkman, 2010, Kohlbacher, 2010, Kohlbacher and Gruenwald, 2011b, Kohlbacher and Reijers, 2013, Weitlaner et al., 2012).*

Smart *et al.* *(2009)* reflect on the study at a large UK retail bank where process dashboards display the link between process and customer requirements. They suggest that the operational process measures are aligned with customer service performance, i.e. "accuracy and timeliness of each process against customer requirements". Apart from the other "normal" metrics, including number of defects, cost, productivity, system availability, and complaints, the number of customer touchpoints and their performance were prioritized[8]. That includes six sigma performance improvement targets for each customer facing process.

Trkman *(2010)* recommends that result measures be deployed not only for process performance, but also "in-process" at important steps in the execution of the process. He specifies the metrics to be measured for process performance as customer satisfaction, defect rate, variability, cycle time, productivity[9], service time, wait time and resource utilization.

Shafagatova and Van Looy *(2019)* also define improvement of processes to have a positive impact on the speed of the process, increased customer satisfaction, improved quality, reduced cost and improved financial performance.

[8] Co. INS uses a Customer Moment Map

[9] Although Trkman, or the references cited, do not define what they mean by productivity, I assume they refer to the number of good quality units produced compared to employee labour hours invested.

Danilova *(2018)* defines process success along the measures for process performance (predictability, capability and quality), process efficiency (time and cost measures), process flexibility (ability to make quick changes) and customer satisfaction.

7.2.10 Rewards and Appraisals for PO

Rewards and incentive systems must ultimately have a positive consequence on performance and encourage required behaviours, especially linked to the culture that is required for *process ownership* and process orientation *(Palmberg, 2010, Shafagatova and Van Looy, 2019)*. An appropriate reward system would aid in cultivating the required culture for successful *process ownership* *(Vaishnavi and Suresh, 2020)*.

In a successful process-oriented enterprise, the job descriptions and incentive systems should be clear, and be aligned with process and process management needs *(Kohlbacher and Gruenwald, 2011b)*. The rewards should be linked to process performance and results, rather than performance of a business unit or department *(Kohlbacher and Gruenwald, 2011a, Kohlbacher and Gruenwald, 2011b, Van Looy et al., 2014)*. However, processes need to be strategically aligned with their contribution to customer satisfaction and business performance clearly translated and specified by means of business process performance targets *(Van Looy et al., 2014)*. Rewards could be financial or non-financial incentives, e.g. bonuses, salary increases, or praise/gifts/time-off *(Shafagatova and Van Looy, 2019)*.

Appraisals of actual performance needs to be based on what the person, the goals and objectives of the role, and how that performance was achieved, i.e. the competencies required for the role *(Shafagatova and Van Looy, 2019)*. The role of the process owner is therefore a guideline as to what the performance appraisals should consider, i.e. process performance and process improvement efforts within a department. (See section 7.2.3). The competencies required for effective *process ownership* is discussed in section 7.2.5.

Van Looy *et al.* *(2014)* point out that the way performance is evaluated and appraised, forms part of the culture of the company, i.e. the values, behaviours and attitudes which are rewarded. Performance evaluation includes top management commitment and support, and team incentives rather than individual brilliance only, aligning with the teamwork focus of the CERT-values of a process-oriented culture. (See section 7.2.3).

To confirm the focus on teams rather than the individual, Van Dun & Wilderom *(2021)* recommend a measure for "perceived team performance" where the team rates their own performance (team performance, learning and viability, general satisfaction) based on their perceptions of the team's effectiveness as a motivation for continuous improvement. This notion of team appraisal in the context of *process ownership* as described in this study, could be done on the two different levels on which a process owner is expected to engage: 1) for the inclusion of the process owner in the management team of a matrix organisation, as well as 2) the sense of belonging in the larger, distributed *process ownership* team reporting to the governance of the BPM CoE. (See section 7.2.13). However, it is also recommended that team-based appraisals are done informally by the project team during the control phase of an LSS project in reflection on the project and its process KPIs *(Shafagatova and Van Looy, 2019)*.

Another concern that emerged from literature, is the way a process owner and process teams are appraised and rewarded for being effective, apart from the processes performing (or not). Process performance is also a function of the maturity of process management and should be adjusted accordingly *(Shafagatova and Van Looy, 2019, Smart et al., 2009, Palmberg, 2010).*

Behaviours supporting process management, e.g. CERT-values, could be appraised and rewarded. Careful consideration should be given to rewarding certain behaviours (and not others) as it is apparent how measurements drive and affect people's behaviours *(Shafagatova and Van Looy, 2019)*. A job well done leads to the credibility and earned authority of the process owner *(Danilova, 2019)*.

It is also important to evaluate the achievement of improvement targets, as well as the behaviour and knowledge required as enablers for *process ownership* *(Shafagatova and Van Looy, 2019)*. Another optional

metric on appraisal, is learning and development, although it might be possible to see this as part of knowledge/skill assessment.

Process KPIs (see section 7.2.9) could also be considered for achieving a better process performance *(Shafagatova and Van Looy, 2019)*.

7.2.11 Management Practices supporting PO

Management practices were highlighted as a separate concern to create collective ownership and measuring effectiveness, due to the critical nature of senior management support for effective PO, as well as the potential conflict between functional and process management.

The management capabilities and practices concern the translation of organisational strategies into strategies per business process, daily management and coordination of processes, facilitating effective communication and collaboration, daily coaching of staff, process discussions around the boardroom tables, maintaining positive relationships with customers, suppliers and other process staff, measurement of processes, and aligning appraisals and rewards with HR practises *(Danilova, 2018, Danilova, 2019, Maddern et al., 2014, Palmberg, 2010, de Boer et al., 2015, Hernaus et al., 2016, Trkman, 2010, Smart et al., 2009, Shafagatova and Van Looy, 2019, Weitlaner et al., 2012, Van Looy et al., 2014, Jurczuk, 2021, Buh and Stemberger, 2016, Kohlbacher and Gruenwald, 2011b, Kohlbacher and Gruenwald, 2011a, Kohlbacher and Reijers, 2013).*

A critical component to create the specific process-oriented culture is leadership. Strong supportive leadership is required to facilitate the CERT-values. Cooperative and servant leadership style should replace directive leadership style which includes micromanaging, regular task monitoring and task correction, command and control, as it is detrimental to high performance *(Laureani and Antony, 2019, van Dun and Wilderom, 2021, Amaro et al., 2021)*.

7.2.12 Maturity Levels and Models for PO

Maturity models illustrate the evolution of BPM implementation, or the sequence of maturity levels of process capabilities *(de Boer et al., 2015, Van Looy et al., 2014)*. It is used as a measurement instrument, as well as a guideline for intentional transformation. An illustration of maturity levels is depicted in the model most frequently used as the critical success factors for BPM implementation, comprising six main factors, each with five capability levels: (1) strategic alignment, (2) governance, (3) methods, (4) information technology, (5) people and (6) culture *(Van Looy et al., 2014, Jurczuk, 2021, Danilova, 2018, Danilova, 2019, Hrabal et al., 2021, Buh and Stemberger, 2016, Maddern et al., 2014, Palmberg, 2010, Kohlbacher and Gruenwald, 2011b)*.

Another potential roadmap for maturity is the maturity levels from siloed processes to an intelligent operating network *(de Boer et al., 2015)*, or the BPM adoption levels as illustrated by Van Looy *et al. (2020, 2014)*, or the advancement levels of *process ownership (Danilova, 2019)*. Each enterprise will need to select and use an appropriate model or models, depending on the governance requirements outlined by the BPM CoE.

Van Looy *(2020)* alluded to the fact that maturity is designed over time and regular assessments needed to ensure the improvement of the organisation's performance according to the design parameters of scale development.

Maddern *(2014)* highlights the importance of "maintaining the asset" of *process ownership* in the long term, i.e. keeping *process ownership* relevant and alive. This implies the intentional intent to craft maturity over a period of time.

Smart *(2009)* recommends an overall process strategy towards maturity, which confirms the design intent over time.

Danilova *(2019)* mentions the changing nature of the role of the process owner, i.e. from process owners with little formal authority, to *process ownership* on an executive decision-making level with impact on strategic planning, personnel assignments, and budgets.

Buh & Stemberger *(2016)* advise the monitoring of BPM adoption as a crucial responsibility of the CoE. That might include regular surveys on process awareness, and/or moderating process workshops with process owners.

Trkman *(2010)* and Shafagatova and van Looy *(2019)* warn that the conflict between middle management and process owners could derail the efforts towards a successful BPM deployment, and that the CoE should carefully craft and create the buy-in, inclusion and commitment of the vertical functional execution towards maturity. Rummler & Brache *(2012)* recommends that process owners should create themselves as a value-adding resource for functional managers, not a threat.

Danilova *(2019)* mentions the difficult transition from exploitation (selection, implementation, and execution) to exploration (discovery, experimentation, risk-taking, and innovation) as part of the development of *process ownership*. A slow transition will have the effect that process owners only be involved in incremental change, and not in "radical and revolutionary change".

The are many different maturity models, but the transformation and maturity model in Figure 32 based on the 4P philosophy *(Liker, 2021)* is favoured for developing the ESPO approach, due to its usage of the Lean transformation approach from Toyota. Maturity starts with applying some Lean tools. The next level of maturity is then where management encourages Lean tools and culture through practising Lean on a regular basis. Maturity is exceptional when there is a deep commitment to integrate the different strategies with Lean on a daily basis.

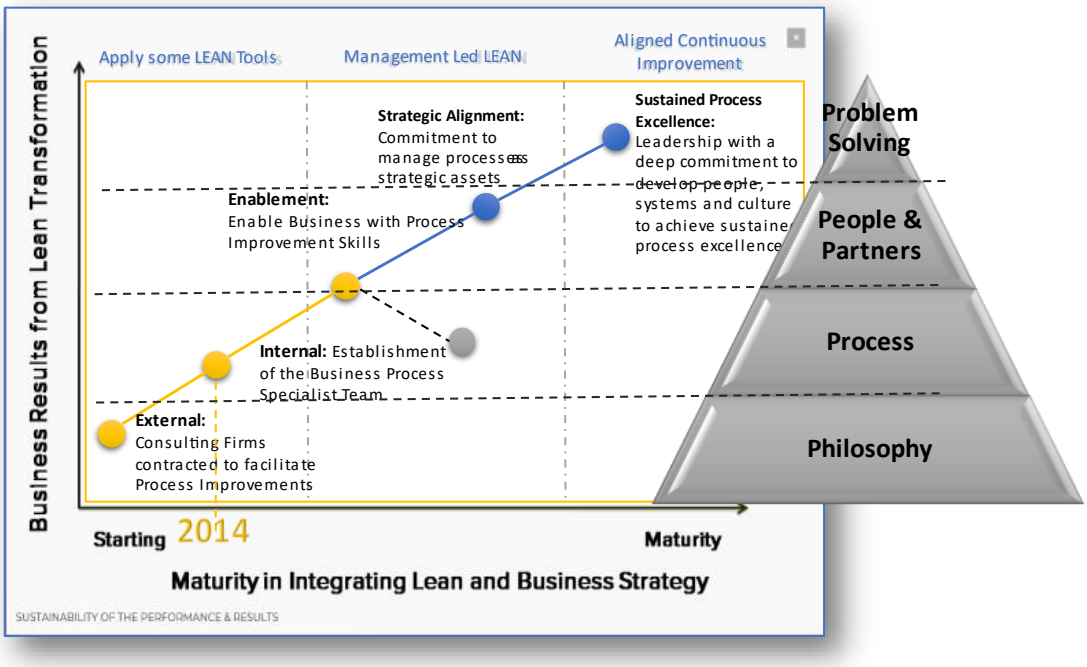

Figure 32: Maturity model based on Liker *(2021)*

7.2.13 Organisational Positioning of PO

The research experts in the primary studies agree with regards to the organisational positioning of the process owner role, i.e. a matrix structure to separate the functional accountability and process management practices. The systems (horizontal) view of the organisation includes the flow of the products/services across functional boundaries, the positioning of the customer, as well as the internal relationships necessary to deliver the service/product to the customer *(Rummler and Brache, 2012)*. Process ownership should hold the horizontal responsibility for end to end, or cross functional, processes. A central BPM Centre of Excellence (BPM CoE) unit, that holds the primary responsibility of governance,

is recommended by the experts to be deployed in conjunction with *process ownership* in a matrix structure.

Van Looy *et al.(2014)* state that a structural focus on processes is expressing the values of process orientation, e.g. customer focus and multidisciplinary collaboration. Jurczuk *(2021)* emphasizes that the formal decision-making power of a process owner is supported through the placement of the role in the organisational hierarchy. Danilova *(2018)* states that the influencing powers of a matrix structure exceeds the functional boundaries and create a strong customer orientation. De Boer *(2015)* and Jurczuk *(2021)* recommends that the creation of a horizontal organisation is a matter of time and maturity towards process management.

Hernaus *et al.(2016)*, Shafagatova & Van Looy *(2019)*, Trkman *(2010)*, Smart *et al.(2009)* and Palmberg *(2010)* recommends a permanent and dedicated role on a full-time basis for *process ownership*.

7.2.14 Process Architecture

Process Architecture did not emerge as a key theme in the KS. Seeing that architecture is a critical component of Enterprise Engineering, it has been added retrospectively to the codebook, and the thematic analysis repeated for this code.

Only Maddern *et al.(2014)* and Smart *et al. (2009)* created a narrative around process architecture within the context of *process ownership*. Process architecture is useful to identify core processes and the relationship between processes for end-to-end management *(Maddern et al., 2014).* Process Owners are then contracted to manage the end-to-end process with focus on the customer perceptions. The process infrastructure is informed by a process mindset of continuous process management, process as a strategic component, and the impact on the customer *(Maddern et al., 2014).* Maddern *et al. (2014)* also link the process infrastructure to process maturity levels. He found that the process architecture required a strategy to ensure integration and ongoing maintenance to maintain the integrity of the process infrastructure. Gaining visibility and ownership of the end-to-end process was another challenge identified due to the recurring nature of changes and scope of handovers. According to Maddern *et al. (2014)* an early priority should be tangibility of the processes through a process infrastructure framework, which then needs to be added to the process owner's roles and responsibilities.

Smart *et al. (2009)* define a process architecture as a way to conceptually understand what an organisation does. They make the distinction between processes from a 'manage ', 'operate ', and 'support ' perspective, and urges the visibility of the integration between processes as to illustrate the flow of service/product and information through the business, even if a hierarchy has been applied. Another critical element that is often overlooked creating a process architecture, is the 'systemicity' principle implying that technical resources are often omitted, but they still transform input to output *(Smart et al., 2009)*. The governance around maintaining the process architecture includes a central repository of models which should be consistently reviewed and updated. Their study utilised modelling notation of $IDEF_0$.

Harmon *(2014)* defines process architecture as the entire set of models, metrics to define the success of the processes, and responsible people to manage the process. He states that process practitioners are always involved in compiling the process architecture, which happens in stages over time. It needs to be maintained through constant monitoring of processes and incorporating changes. Harmon *(2014)* concurs with Maddern *et al. (2014)* that an organisation-wide focus on process is a function of process maturity. He continues to use the notion of Porter's value chain methodology as a means to illustrate the 'end-to-end large-scale processes', similar to core processes. Another model he refers to is the Supply Chain Operations Reference (SCOR) model, which consist of 3 levels creating variations of Plan, Source, Make, Deliver, Return and Enable sub-processes, as indicated in Figure 33. The use of the SCOR framework supported business to identify the processes most cost-effective to consider fixing by adding a 'SCORcard' of metrics. This illustrates the purpose of a process architecture as a tool for management.

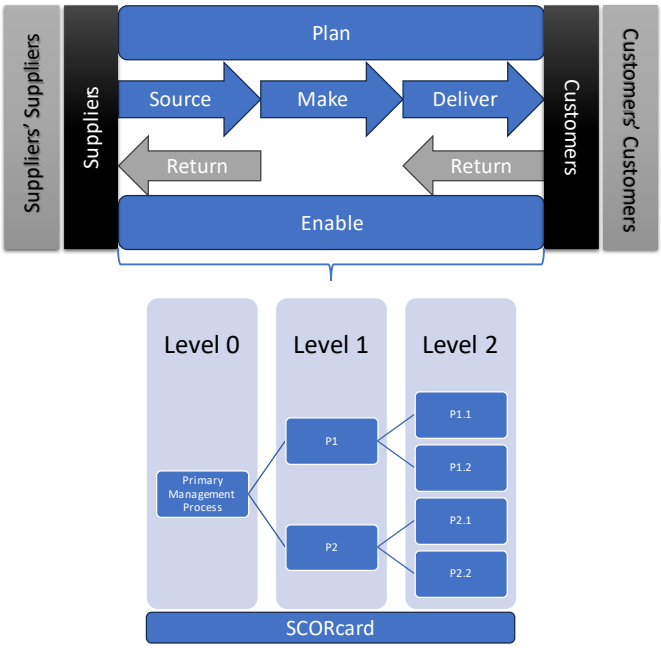

Figure 33: The three levels of the SCOR process architecture framework based on *(Harmon, 2014)*

Several business or enterprise architecture frameworks exist per industry (e.g. Zachman, TOGAF, OMG, BIZBOK, FEAF, eTOM, ACORD). Harmon *(2014)* refers to business architecture as a capabilities modelling approach, listing things a company do or wants to do, that may or may not add value, and with a strong focus to manage IT resources. He promotes using the value chain, a process model, a process measurement system, process governance and alignment with support resources as a prioritisation tool to suggest performance measures.

7.3 Key enablers supporting effective process ownership

The body of knowledge describes *process ownership* using the narrative consisting of the mechanisms as detailed in the previous paragraphs. Figure 34 aims to illustrate the PO mechanisms as a summary of *process ownership* using the findings of the thematic analysis in Chapter 6 highlighting the key enablers for *process ownership*:

- *Governance*: *Process Ownership* needs to be governed through specific principles and standards, and several governance bodies, including the BPM CoE, needs to exist for effective *process ownership* as detailed in sections 7.2.1 and 7.2.2.
- *Culture*: A culture conducive for business process management and continuous improvement is critical for the success of effective *process ownership* as detailed in section 7.2.3.
- *Clear roles and responsibilities*: The mandate of a process owner was highlighted as another key enabler for effective *process ownership* and has been detailed in section 7.2.4. The key activities in the literature which describe what a process owner need to do, as summarised as follows:
    - Manage processes
    - Review process performance
    - Manage process improvements
    - Foster key partnerships
    - Maintain the process architecture
        - This has been added retrospectively in accordance with Maddern *et al. (2014)* and Smart *et al. (2009)* as discussed in section 7.2.14

The other enablers as discussed in section 7.1 have been indicated in Figure 34 for completion purposes.

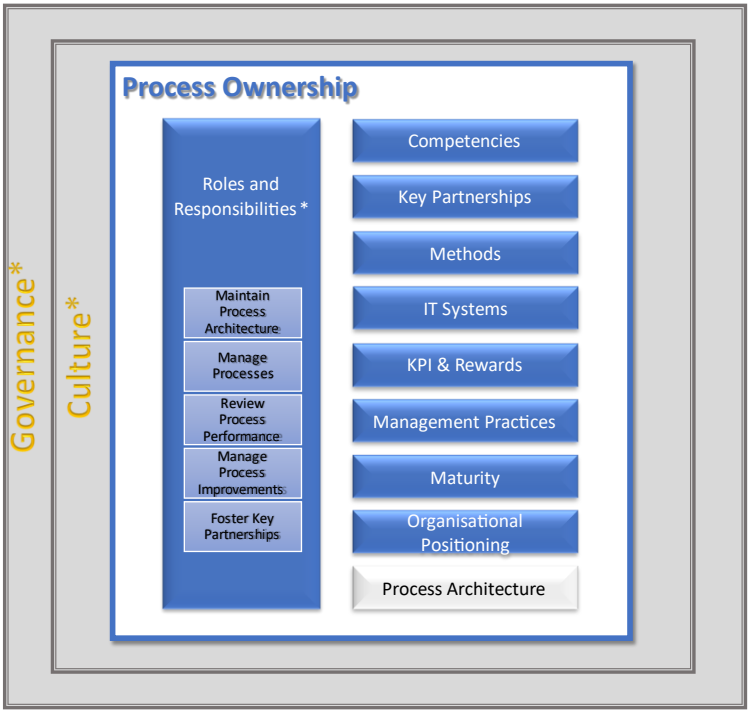

Figure 34: Process ownership mechanisms indicating the key enablers with an asterisk* (author-created)

7.4 Chapter Summary

This chapter contains the synthesized data from literature to describe the PO function. In answering DQ2 this chapter highlighted the fourteen mechanisms for PO, with the three key enablers as identified during the thematic analysis in Chapter 6.

The synthesis in this chapter confirmed the importance of *process ownership* as a key function to improve process performance which will deliver a competitive advantage by means of an increased organisational performance.

A key finding in this chapter is the lack of knowledge around IT systems, maturity models and rewards and appraisals in the narrative of *process ownership*. There is also no coherent approach to guide the deployment of *process ownership*. Hence the reason for this study with the purpose of designing an approach towards effective *process ownership*.

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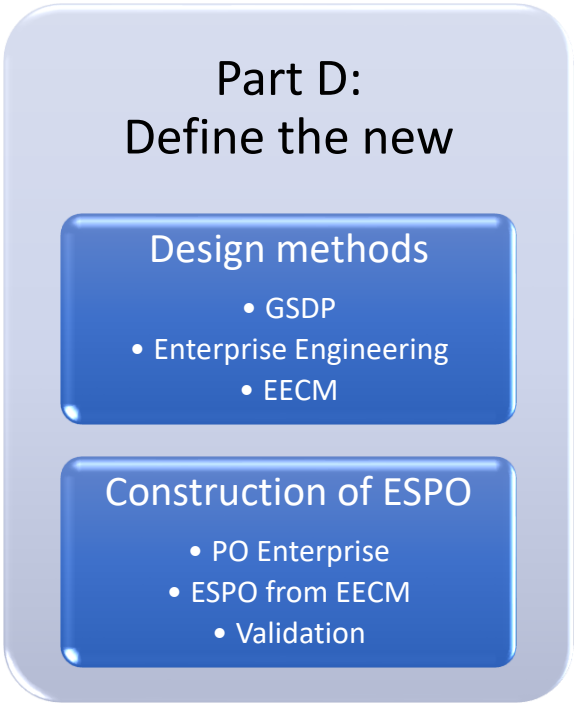
PART D: DESIGNING

"Knowing is not enough, we must apply. Willing is not enough, we must do."

— Bruce Lee

Part D of the dissertation is the response to the learning in the previous chapters. This part of the dissertation creates the artefact being created as a contribution to the body of knowledge:



- Chapter 8 provides the literature around several enterprise design methods.
- Chapter 9 provides the constructional parts of ESPO and its validation.

CHAPTER 8: DESIGN METHODS

This chapter creates theory about scientific methods that guide the creation of new artefacts, supporting the evolution of the enterprise to deploy *process ownership*, answering SQ1, i.e. "*What theory informs the structure of the coherent approach"?* In Section 8.1 the generic system design is briefly discussed. Section 8.2 highlights the enterprise engineering disciplines in design. In section 8.3 the enterprise evolution contextualisation model (EECM) is explained as a means to provide descriptive guidance towards the purpose of a new enterprise design. Section 8.4 elaborates on creative methods used in the design of ESPO.

8.1 General System Development Process

The General System Development Process (GSDP) is based on the BETA theory about designing artefacts, which is a theory for *Building from Essence with Technology and Architecture* *(Dietz and Mulder, 2020).* The BETA theory guides the design to make it concrete rather than abstract, which represents a summary or reflection of something. The APLHA theory, on the other hand, tells one how to abstract from the concrete appearance of a system *(Dietz and Mulder, 2020).*

The design process, illustrated in Figure 35, implies that there is a problem and a solution, i.e. a more preferable or better situation than the current, and that the solution provide support to the problem. In the GSDP the solution is developed (the object system) for the benefit of the problem (using system) *(Dietz and Mulder, 2020)*. According to Hoogervorst *(2018)* design is concerned about how things "ought to be or become". The three main phases of design in the GSDP are function design, construction design and implementation design.

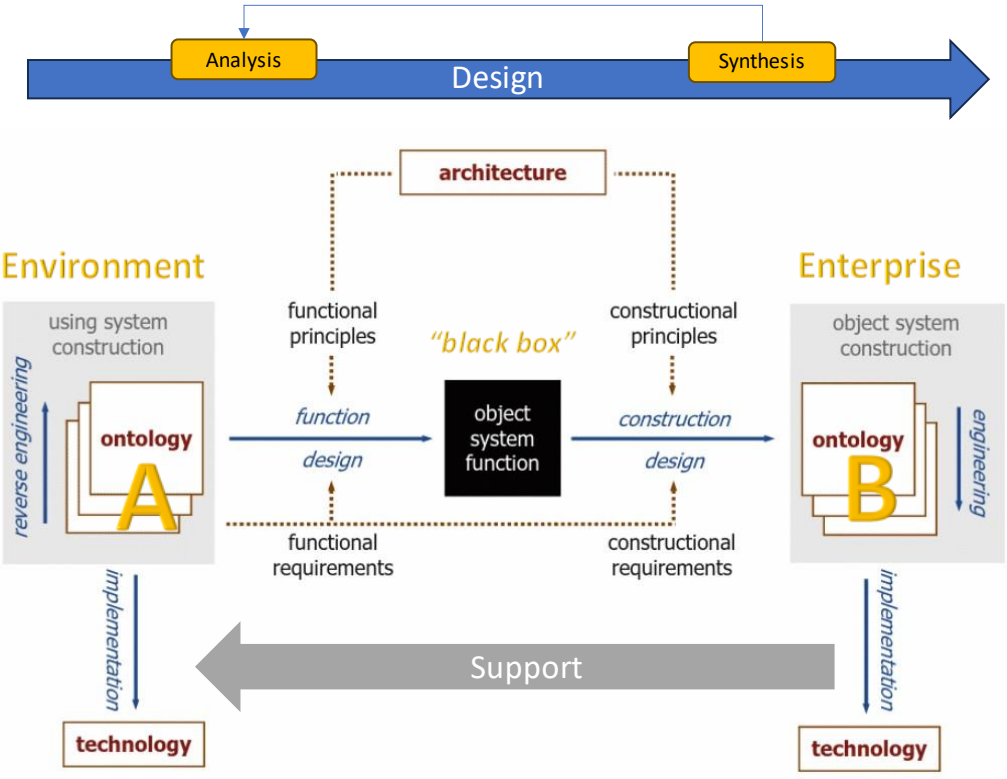


Figure 35: The General System Development Process, based on *(Dietz and Mulder, 2020)*

In Figure 35, “A” represents the using system construction, and “B" represents the object system construction.

Function design is about eliciting the functional requirements from the using system “A”, and the functional principles as determined by the applicable architecture, to specify the object system’s function, i.e. “the black-box” *(Dietz and Mulder, 2020)*.

Construction design uses the constructional requirements from “A”, and the constructional principles as determined by the applicable architecture, to specify the object system “B”. The object system “B” can be specified, using white-box construction models, starting with the essential models, also called *ontology* *(Dietz and Mulder, 2020)*.

Implementation design uses the constructional requirements and the constructional principles of “B” to specify possible implementation, i.e. converting the ontological constructional models into technology-specific solutions where human beings are assigned to transactor roles. During the discussion in section 3.2.1 around DSR artefacts, ESPO was classified as a more abstract artefact, or a non-technical object artefact universal with a “make plan” and a “use plan”. The implementation of ESPO aims to guide the deployment of a PO function and therefore the implementation of ESPO would result in a changed enterprise, where the enterprise now provides a “PO function” to the environment in delivering *process ownership*.

The role of architecture principles in the design of the object system is paramount to the guided development and deployment of the object system *(Dietz and Mulder, 2020)*.

It is important to note that the iterative design process consists of two main design activities as highlighted in Figure 35, i.e. analysis to understand *requirements* of what the object system should provide, and synthesis or design to devise *specifications* for the construction of the object system *(de Vries, 2017)*. The design cycle of analysis and synthesis is not applicable to the implementation design.

This study is concerned with the object system being some operations at the enterprise that need to provide a *PO function*. Given the required *PO function*, white-box models of the object system should be specified. The white-box models represent only the essence of operation for a *PO function*, using aspect models. Aspect models apply the ALPHA theory (“Abstraction Layer in Production for Holistic Analysis”) to only specify one abstraction of the organisation domain of an enterprise, namely the original organisation, highlighted in red in Figure 36 *(Dietz and Mulder, 2020)*. The ALPHA theory as illustrated in Figure 36, makes a distinction between three sorts of production acts: original production acts, informational production acts and documental production acts.

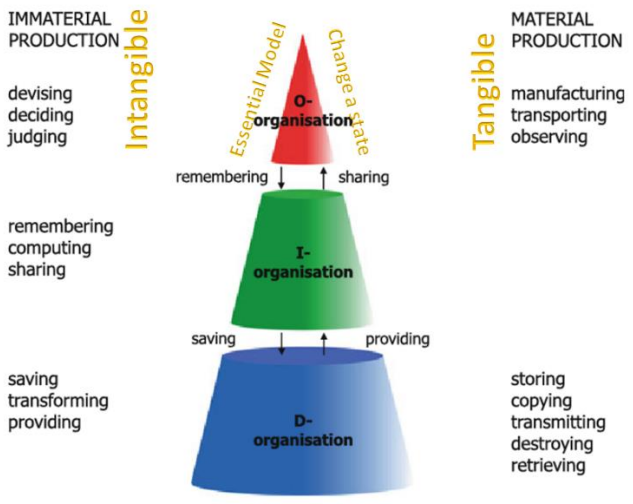


Figure 36: Organisational layers and sorts of production - based on *(Dietz and Mulder, 2020)*

Original production acts create tangible or intangible production facts, which bring about change in the state of the production world of the organisation. Abstraction from these acts is called the essential model or ontology *(Dietz and Mulder, 2020).*

Informational production acts are all the remembering and recalling of remembrance, computing or deriving/sharing facts *(Dietz and Mulder, 2020)*.

Documental production acts comprise the acts related to documents or data for example saving, storing, providing, copying or retrieving *(Dietz and Mulder, 2020)*.

White-box models of a system also contain knowledge about its construction and are suited for studying both the construction and operations of the systems *(Dietz and Mulder, 2020)*. Hence, both ALPHA and OMEGA theory is required. OMEGA theory ("organisational modules emerging from general arrangements") explains the coordination structures in which transactor roles are connected. Three basic coordination structures are identified: interaction, interstriction and interimpediment *(Dietz and Mulder, 2020)*.

The *interaction* structure clarifies the responsibility ranges of actors (executors of transactions) within business processes such as a request, a promise, the declare, the accept, the decline and reject in coordination of the transactions concerning one specific product kind. The combination of the transaction kind and its executor role is called a transactor role. It is the building block of organisations *(Dietz and Mulder, 2020)*. The *interaction structure* therefore determines the initiators of transactions.

The *interstriction structure* clarifies which transactor roles may inspect the history of the transactions of other transaction kinds, which may be external to the organisation *(Dietz and Mulder, 2020)*.

The *interimpediment structure* identifies the waiting of actor roles upon other transaction processes prior to continuing with processing *(Dietz and Mulder, 2020)*.

Transactor roles (TAR) are categorised as elementary transactor roles (where an actor is the executor of the transaction), self-activating transactor roles (where an actor is both the initiator and the executor of the transaction), and a composite transactor role (comprises of a network of interlinked transactor roles).

The original production acts identified are modelled in a cooperation model, consisting of a coordination structure diagram (CSD) and a transactor product table (TPT), to present the essential model of the organisation *(Dietz and Mulder, 2020)*.

8.2 Enterprise Engineering

In enterprise design, it is critical that the design requirements are established as elaborated in section 8.1 *(de Vries, 2017)*. However, the enterprise emerges and evolves in unforeseen ways *(Hoogervorst, 2018)*. The enterprise is a complex system that is not adhering according to mechanistic thinking *(Liker, 2023)*. The perspective of the enterprise as a living system, i.e. a complex network of interrelated dynamic and evolving elements, demands the need to govern the evolution of the enterprise in a more systematic way *(Hoogervorst, 2009)*. "*The intentional creation of conditions for all facets of organizing is identified as enterprise design*" *(Hoogervorst, 2018)*.

The focus of enterprise engineering (EE) is therefore to ensure that sufficient design, alignment and governance exist between the different design domains of an enterprise *(de Vries, 2017)*. (See Figure 37).

Design domains represent the class of systems that exist in the enterprise *(de Vries, 2017)* where the researcher of this study also added definitions from other research scholars:

1. *Business Domain* as the enterprise function to deliver a feasible economic model, products and/or services to customers and other environmental aspects *(de Vries, 2017)*.
2. *Organisation Domain*

   a. Dietz & Mulder *(2020)* make a distinction between the organisation and the business, when they advise that 'organisation' be used when referring to the construction perspective, and the term 'business' when referring to the function perspective.
   b. They also define the 'organisation' as a social system where human 'actor roles' perform essential 'production acts' *(Dietz and Mulder, 2020).*
   c. Hoogervorst *(2009)* indicates that the organisation domain "*concerns the internal arrangement of the enterprise, having for example to do with processes, employee behavior, enterprise culture, management/leadership practices, and various structures and systems, such as regarding accounting, purchasing, payment, or employee evaluation*."
   d. Harmon *(2014)* defines an organisation as a system that took inputs and generates outputs, i.e. a process.
   e. Smart *et al.(2009)* notes that "*processes are conceptual notations of what organisations do.*"
3. *ICT Domain* (software applications, databases and ICT hardware) *(de Vries, 2017)*.
4. *Infrastructure Domain* (e.g. facilities, utilities, machines, and other-than-information-and-communication technologies, i.e. non-ICT) *(de Vries, 2017)*.

Aspects are not classifiable as systems per se, as it does not have elements with influencing bonds within a specific composition *(de Vries, 2017)*. Examples of aspects are human skills and know-how, culture, and skills and learning. Aspects should be influenced intentionally, i.e. designed, and therefore specifications or requirements should be stipulated *(de Vries, 2017)*. The concern with aspects is the timing to achieve the desired result, since it is not possible to apply the design cycle in a deterministic way.

For every process in an enterprise, each of the 4 main design domains defined by de Vries *(2017),* are potentially used, i.e. organisation, human skills and know-how, ICT and infrastructure. Human skills (people) and ICT (IT systems) are enabling the processes that form part of the organisation domain, whereas organised teams require infrastructure and facilities. Together they contribute towards the value proposition of the enterprise *(de Vries, 2017)*.

For every design cycle of support within the specified domains there are two main design activities *(de Vries, 2017)*:

1. the functional requirements are specified (analysis) and
2. the system specification devised accordingly (design).

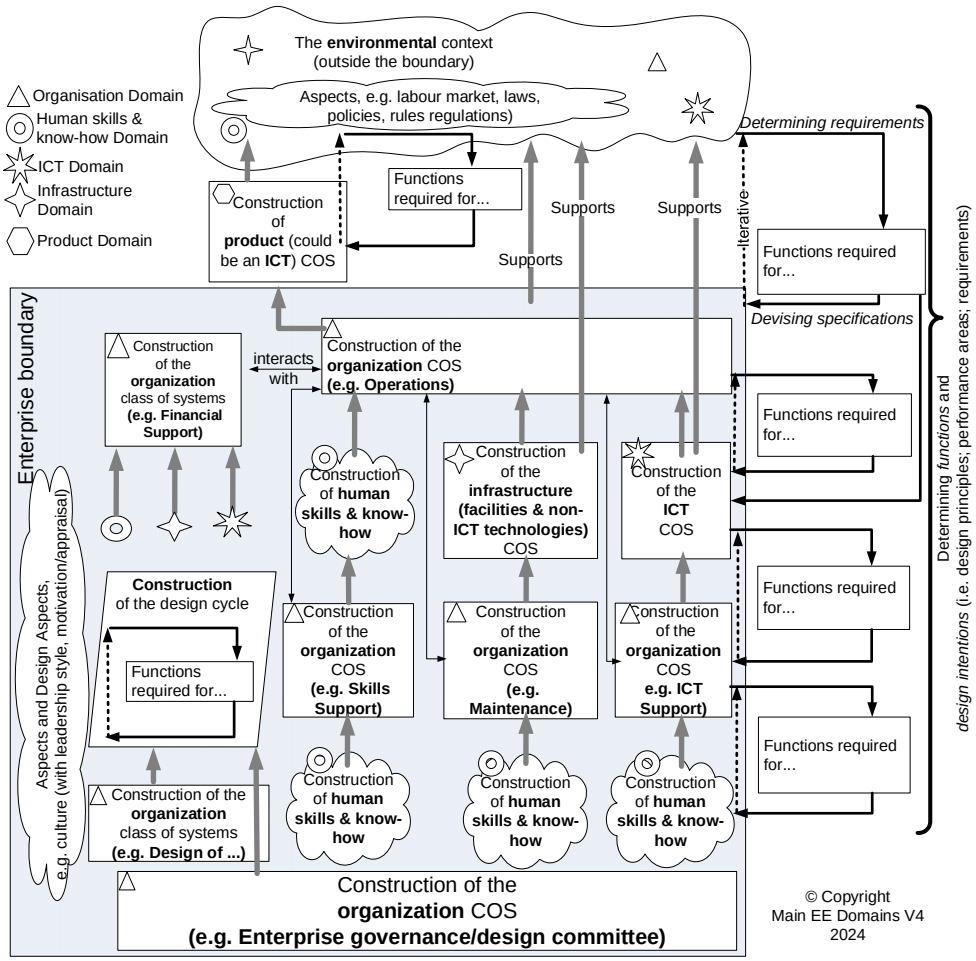


Figure 37: Design domains and aspects within an enterprise *(de Vries, 2017)*

In Figure 37 the different design cycles (as discussed in section 8.1) are illustrated between the different design domains using light grey thick arrows indicating the using system and the object system, also called the provisioning system.

When we consider the *organisation domain*, the design cycle starts with the construction of the environment *(de Vries, 2017)*. De Vries indicates that the requirements and functions of the environment could be summarized in an "identify statement". She suggests that the feasible functions of the enterprise be specified in a business model canvas. Based on the identified functions, enterprise design needs to create specifications for construction of the provisioning system. During enterprise implementation, production acts (as discussed as part of the ALPHA theory in Section 8.1) and human actors required to perform these essential production acts, are organized or grouped into departments or teams *(de Vries, 2017)*. Typical areas of concern/interest include profit, process excellence, customer orientation, and employee involvement.

At the bottom of the enterprise in Figure 37 is the *enterprise governance organisation* that needs to support the holistic and coherent design of all enterprise COSs and facets, but also need to be supported by infrastructure, ICT and human skills and know-how *(de Vries, 2017)*. According to Hoogervorst *(2018)* the definition and enforcement of general requirements and architecture is assuming that a governance entity exists to some degree.

Architecture differs from requirements or specifications in that it serves a broader scope pertinent to a system class, and express guidance to design *(Hoogervorst, 2018)*.

The *ICT domain* incorporates software applications, hardware and databases. Based on the existing actor roles and their production acts in the organisation domain, the requirements and functions of

the ICT domain are determined. These functions will in turn be used to devise specifications of the construction of the ICT systems, e.g. provide ICT elements to the organisation. Typical areas of concern/interest in this domain include interoperability, scalability, security and user friendliness *(de Vries, 2017)*.

The i*nfrastructure domain* entails facilities and other non-ICT technologies that support actor roles and their production acts in the organisation domain. Based on the identified functions of the organisation domain, the enterprise design team needs to devise specifications for the construction of the infrastructure domain. Other than functional concerns to support the construction of the organisation domain, typical areas of concern/interest include space utilisation, flexibility, upgradability, environmental friendliness, reliability, security, noise levels, vibrations, lighting, air quality and workspace *(de Vries, 2017)*.

The *human skills and know-how domain* includes the competencies and skills required to perform the production acts, and the coordination acts, on a performa, informa and forma level. In order to perform these coordination acts and production acts the design team needs to devise specifications for required contextual knowledge, experience, skills and working styles (e.g. perseverance, stress resistance and self-control). Typical areas of concern include expansion of skills and know-how via formal training programmes, but also facilitation of invisible learning environments for lifelong learning *(de Vries, 2017)*.

8.3 The Enterprise Evolution Contextualisation Model

EECM, as illustrated in Figure 38, could be used to support the contextualisation of the design/alignment/governance approaches that focus on a broader scope of enterprise than only the enterprise IT architecting perspective, and also include the enterprise integrating and the enterprise ecological adaption schools of thought *(de Vries et al., 2017)*. The approach focuses on reducing the knowledge fragmentation and ad hoc nature of enterprise design with a more holistic and comprehensive design process.

The next high-level explanation of EECM, references the article of De Vries *et al.* *(2017)*

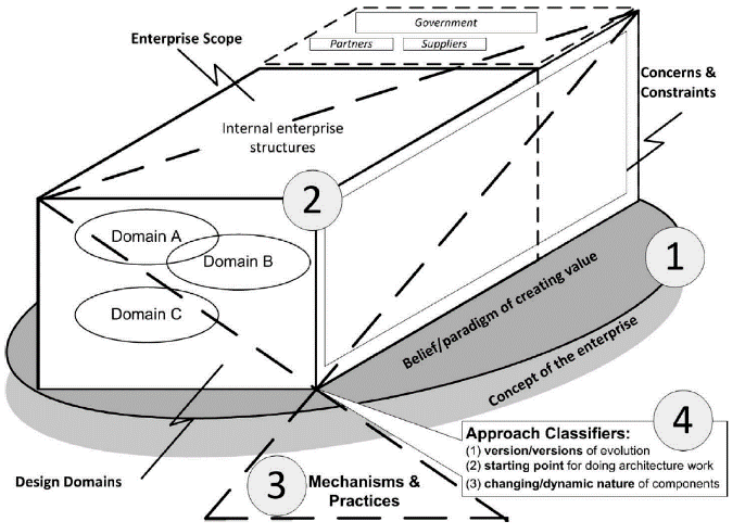


Figure 38: EECM version 2 *(de Vries et al., 2017)*

EECM endeavours to address 3 objectives:

1. To serve as a common reference model to understand and summarize the enterprise engineering (EE) knowledge base.
2. To encapsulate a holistic set of approaches for enterprise engineering.

3. To enable the description of an enterprise evolution approach.

EECM was developed inductively from existing enterprise engineering approaches, providing an abstraction of the EE body of knowledge. EECM is useful to analyse and compare existing enterprise design approaches, but also a descriptive guide to create a new design approach for establishing a new competence/capability/function within an enterprise. EECM answers 3 main questions about a new approach:

- Question 1: Why should the new approach be used?
- Question 2: What should the new approach establish?
- Question 3: How should the enterprise evolve?

Approach content in EE could be classified according to the four main components as illustrated in Figure 38.

The first component, the *paradigm of creating value* component, is a key foundational component to answer the "Why" of a specific value proposition. It directly influences the approach, which in turn influences the mechanisms and practices required.

The second component, the *dimensions* component, consist of the enterprise scope, concerns and constraints, and the design domains as discussed in section 8.2. This refers to the functional and constructional requirements and answers the "What":

- The *enterprise scope* reflects the extent of design, alignment, and governance in terms of the internal enterprise structures.
- The *concerns and constraints* contain the functional and constructional requirements that need to be addressed during the design of one or more design domains.
- The *design domains* are the constructs that an approach aims to (re)design.

The third component of EECM refers to the *mechanisms & practices* as extracted categories from existing approaches and partially answering the "how" to ensure the desired evolution across the three dimensions in the second component:

- Architecture description and reference models for design domains
- Selection and measurement of concerns
- Methodologies
- Governing Principles and Standards
- Governing Bodies and Governing Practices
- Transformation Roadmaps
- Analysis
- Maturity Models
- Skills/Learning Requirements
- Software Tools and/or Guidance
- Other categories, i.e. the above list is not an exhaustive list

The fourth component of EECM, *approach classifiers*, partially answers the "how" and influences the selection of appropriate mechanisms and practices:

- *Version(s) of evolution* refers to the version of the architecture description, in which some approaches focus on the as-is state with a view to identifying improvement opportunities, while others take a forward-looking to-be state view.
- *Starting point for carrying out architecture work*. Approaches will have their own starting points, whether top-down or bottom-up, in designing the domains.
- *Frequency.* Approaches often reveal different paradigms regarding design/alignment/governance frequency. Rip-and-replace vs part of an ongoing activity.
- *Changing/dynamic nature of things*. Enterprises are dynamic and are subject to constant change, and different means need to be defined to deal effectively with these dynamics over

a period of time. The approach needs to be cognisant of the nature of things, and to define the adequate response.

8.3.1 Prerequisites for using EECM

De Vries *et al.* *(2017)* stipulate two guiding indicators for using EECM prior to contextualising the enterprise design/alignment/governance approach.

1. Evaluating if the approach presents a coherent approach and consistent concept of the enterprise and paradigm of value-creation:
    a. Consult the introductory chapters/sections of the published items to search for enterprise definitions and analogies that are used to define the enterprise.
    b. Consult the introductory chapters/sections of the published items to identify the core enterprise design/alignment/governance problems that the approach author(s) intend to address. The approach author(s) usually argue that existing approaches (or frameworks, methods, practices, etc.) are not addressing the core problems sufficiently.
    c. Evaluate the consistency of the concept of the enterprise and value-creation paradigm:
        i. An inconsistent concept of the enterprise exists, especially when approach authors use multiple contradictory definitions and analogies for defining the enterprise.
        ii. An inconsistent value-creation paradigm exists when approach authors intend to address unrelated or different kinds of problems.
2. Evaluating if the approach presents valid design domains:
    Design domains are those aspects of an enterprise that approach authors deem important for design and has been detailed in section 8.2.

    a. Consult content that describes possible design domains that need to be designed/aligned/governed. Different terminology may be used to indicate the existence of a design domain, e.g. components, facets, items, entities, or systems.
    b. Assess the validity of possible design domains against validity indicators:
        i. Indicator 1 – evident design activities are applied cross-structure: Valid design domains are 'functional or constructional system facets for which design activities are required'. Therefore, the approach should clarify design activities or heuristics for designing each design domain across enterprise structures (examples of enterprise structures include departments or business units).
        ii. Indicator 2 – associated concerns (i.e. requirements) are defined: Valid design domains are associated with multiple concerns (functional and non-functional/constructional) that need to be addressed during enterprise design. A concern could be addressed by more than one design domain.
        iii. Indicator 3 – evident architecture descriptions exist: Design activities for valid design domains usually produce architecture descriptions in the form of graphical representations/models. Content that relates to architecture description/models adds evidence for the existence of a design domain.
    c. If possible design domains are invalid according to the assessment in the previous steps, then a single design domain exists, i.e. the entire object system/entity needs to be designed. If, for example, the approach intends to provide design guidance on designing the entire enterprise (as the object system/entity), then the single design domain is the enterprise.

8.3.2 Approach design principles

The conditional use of a design approach needs to be clarified in terms of the prerequisites and demarcated scope. A design approach has the following objectives *(De Vries, 2016)*:

- It is based on a specific conceptualisation of the enterprise.
- It is designed to create value for the enterprise.

- It focuses on designing specific enterprise domains.
- It highlights concerns that may have been overlooked.
- It incorporates different mechanisms and practises that enables value creation for the enterprise.

The summaries in Table 7 include the statement, rationale and implication of eleven design principles to guide the development and construction of a new design approach *(De Vries, 2016)*.

8.4 Creative methods

The main researcher has used lived experiences and creative processes to evaluate the design specifications of certain design domains against the required roles and responsibilities of *process ownership* as described in the literature.

This initial attempt created a design limitation, as well as an evaluation limitation, and is discussed in Chapter 13 as future research.

8.5 Chapter Summary

Answering SQ1, this chapter presented existing theory on the general system development process, enterprise engineering, an enterprise evolution contextualisation model (EECM) and approach design principles.

The purpose was to highlight the theories that will support the definition of functional and constructional requirements for various design domains, associated with the PO function.

The chapter listed the mechanisms and practices for the identified design domains associated with the PO function to ensure that the desired value proposition is delivered.

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CHAPTER 9: CONSTRUCTION OF ESPO AS AN APPROACH

The literature does not highlight a coherent approach to the deployment of *process ownership* as a function at the enterprise. Therefore, the main contribution of this research is to create an approach for effective *process ownership*. The intent is to develop a new approach, called *Enablers Supporting effective Process Ownership* (ESPO), that will enable both the design and management of *process ownership* as a new function at the enterprise.

The purpose of this chapter is to align the knowledge gained about *process ownership* in Chapter 7 with the design guidance detailed in Chapter 8, answering SQ2, i.e. *What is the structure of the coherent approach?* Section 9.1 will illustrate the design scope for every design domain. Section 9.2 will provide design guidance on creating a PO function at an enterprise. Section 9.3 will provide implementation guidance for a PO function at an enterprise. Section 9.4 will align ESPO with the main components of EECM, and section 9.5 will validate the approach with the design principles that guide the development of a new approach. Section 9.6 is validating the DSR process for creating the design artefact according to the guidelines stipulated in Chapter 4.

9.1 ESPO's overall design scope

Figure 39 illustrates how the GDSP was used to create the boundary for the design scope of ESPO. According to the GSDP, the system to be designed is the object system, i.e. the system that provides the *Process Ownership* (PO) function of the enterprise. The PO function of the *enterprise*, as detailed in section 7.1, directs the constructional requirements that need to be addressed by the object system.

In Figure 39 the environment will use the *process ownership* services of the enterprise, where the enterprise also renders a PO function. The ESPO approach focuses on defining how a new function, called PO, should be embedded into the construction of the enterprise.

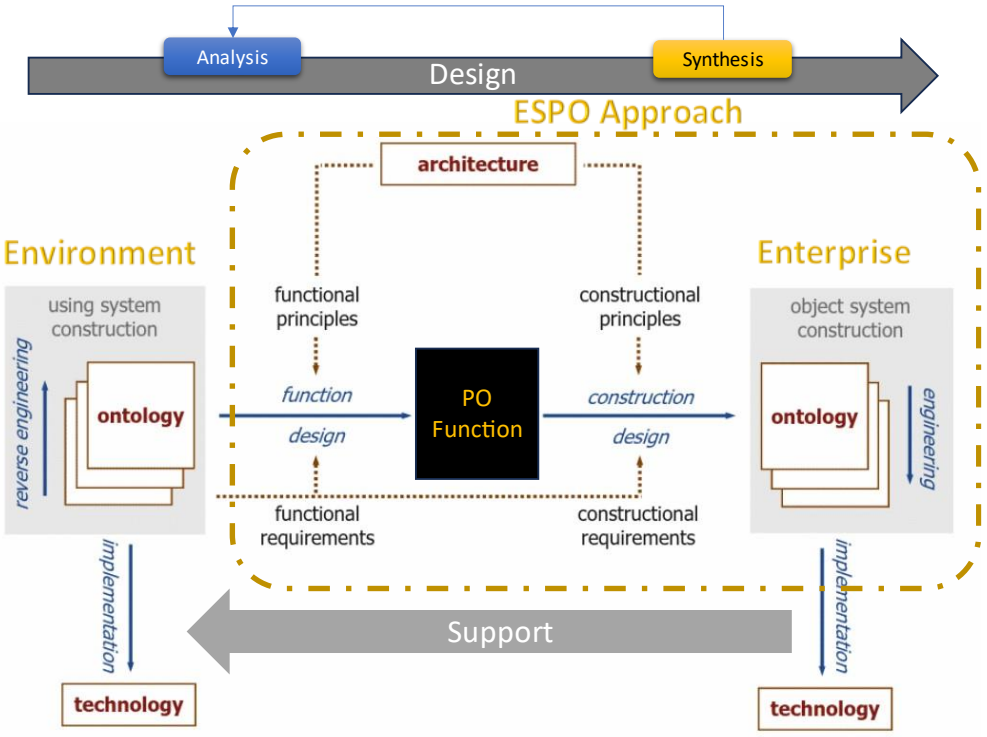

Figure 39:ESPO's design scope using GSDP (author-created image)

A simplified illustration of the PO function is provided in Figure 40 indicating the different design domains. This illustration indicates various GSDP iterative design cycles concurrently through the arrows which imply "providing support". The design process starts with knowledge about the construction of the using system, prior to eliciting functional requirements (analysis) for a supporting object system *(de Vries, 2017)*. Key to design, though, is that architecture principles must be known as it guides the design *(Hoogervorst, 2018)* Knowledge about the need of the using system (problem) is used to define the requirements for the solution, which is then used to specify the design of the provisioning system.

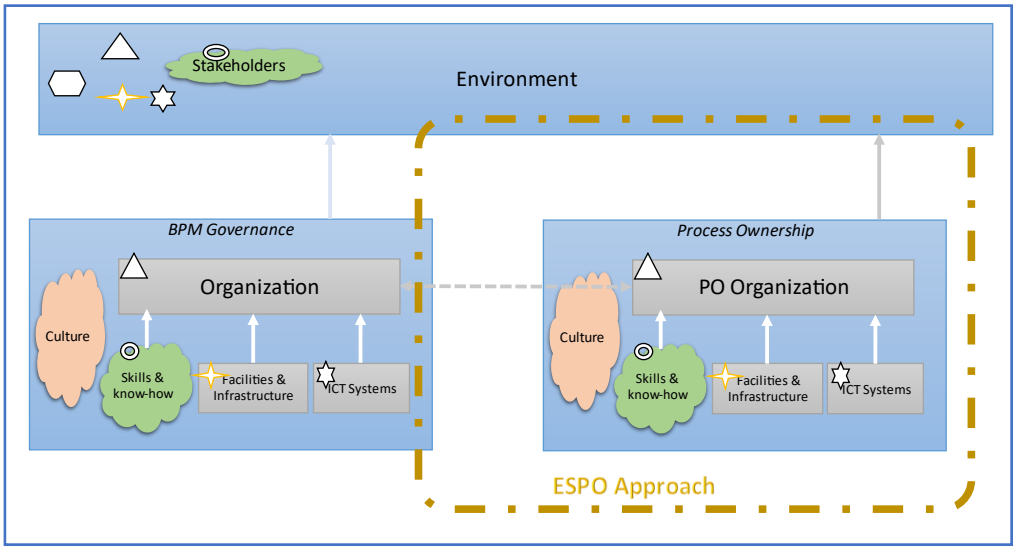

Figure 40:Model of design domains for realizing Process Ownership as a function provided by the enterprise

The PO function of the enterprise, as depicted in Figure 40 as the blue rectangle on the right-hand side named "Process Ownership", needs constructional (re-)design of several design domains, including human know-how and skills, the PO organisation, facilities and infrastructure, and ICT systems. Figure 37 indicates that additional supporting sub-systems need to be designed to support the infrastructure sub-system and ICT sub-system. However, the initial version of the ESPO approach did not elaborate on the additional supporting sub-systems. Therefore, other supporting sub-systems were excluded from the figure for the sake of simplicity.

The blue rectangle on the left-hand side in Figure 40 named "BPM Governance", depicting the BPM governance function, also needs constructional re-design of the design domains, as the PO organisation demands governance practices for the core functions of process management and process performance management. Governance competencies are also required to guide the design of the PO organisation to achieve an aligned state of intentional design *(de Vries et al., 2017)*.

An important architecture principle is that the PO function is serving the environment in delivering their services to customers, and the artefacts created by the PO function should be easily interpreted from a business and service delivery perspective. The PO function is therefore not an extension of an existing ICT organisation. The paradigm of value creation focuses on process, including process management and process performance management, as the main facet, as illustrated in Figure 7, with process as foundational for the creation of competitive advantage in a process partnership with systems, people and data.

A heuristic that is useful in every design cycle whilst iterating between analysis and design, is illustrated in Figure 41. The design cycle starts with knowledge of the functional requirements and architecture principles, which is then used as input for the specification of the construction of the object system. Design principles and concerns or areas of interest could also shape the design specifications.

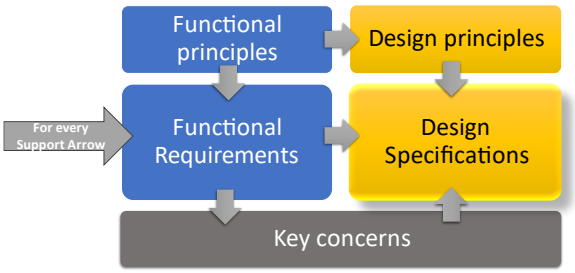

Figure 41: Design heuristic for every design cycle (author-created image)

The overall design scope covered by ESPO is an iterative process to analyse the functional requirements of the PO function as illustrated in Figure 34, Chapter 7, indicating the mechanisms for the PO function for an enterprise.

Table 12 lists the subsequent design domains for ESPO's required guidance, as well as the evaluation strategy, as planned in section 4.3 to further define the scope of this study.

The first version of ESPO was developed being informed by literature and experience. However, the validation phase needs to ensure that the artefact is also evaluated with the participants to assess comprehensiveness and usefulness. Although this study only delivers a formative evaluation on certain elements of the scope, future work is discussed in Chapter 13.

Table 12: Scope of ESPO's required design guidance

Enterprise design scope: System, Design Domain or Design Aspect	**Process Ownership Facet as per Chapter 7**	**Description as per Chapter 7**	**ESPO required guidance**	**Evaluation Scope**
Environment (using system)	NA	Definition of *process ownership* as a solution to the root causes identified in the environment.	Section 9.2.1	Not applicable
Organisation of governance function (design domain)	BPM governance	Discussion of governance required for BPM in a Lean transformation within the financial services environment.	Section 9.2.2	*Out of Scope for initial version*
	Key activities and resources	Roles and Responsibilities of BPM CoE.	Section 9.2.3	*Out of Scope for initial version*
Culture (design aspect)	Culture	Required values and leaderships behaviours to be conducive for *process ownership* in a Lean transformation.	Section 9.2.4	Section 11.3
Organisation of PO function (design domain)	Key activities and resources	Roles and Responsibilities of PO.	Section 9.2.5	Section 11.5
	Methods	Methods to perform key activities within a Lean transformation.	Section 9.2.8	*Out of Scope for initial version*

Enterprise design scope: System, Design Domain or Design Aspect	**Process Ownership Facet as per Chapter 7**	**Description as per Chapter 7**	**ESPO required guidance**	**Evaluation Scope**
	KPI and Rewards	Measurement criteria for performance of PO team.	*Out of Scope for initial version* Initial requirements listed in Chapter **7.**	*Out of Scope for initial version*
	Management practices	Practices required to manage the PO organisation.	*Out of Scope for initial version* Initial requirements listed in Chapter **7.**	*Out of Scope for initial version*
	Process Architecture	Understanding what processes are used within an environment.	*Out of Scope for initial version* Initial requirements listed in Chapter **7.**	*Out of Scope for initial version*
Skills and know-how (design domain)	Competencies	Required knowledge, skills and know-how to perform key activities.	Section 9.2.7	*Out of Scope for initial version*
ICT (design domain)	IT Systems	ICT to support process architecture.	Section 9.2.9	*Out of Scope for initial version*
Inside the legal boundary of the enterprise	Maturity	Requirements to increase maturity levels.	*Out of Scope for initial version* Initial requirements listed in Chapter **7.**	*Out of Scope for initial version*
	Organisational positioning	Discussion around a matrix organisation and its requirements.	Section 9.2.10	*Out of Scope for initial version*
Outside the legal boundary of the enterprise	Key Partnerships	Stakeholders who will support or impact the delivery of the value proposition through execution of the key activities.	Section 9.2.6	*Out of Scope for initial version*

The next sections will elaborate on the functional design requirements as well as the constructional design specifications for the above design cycles, and implementation design as per the three design cycles of the GSDP in Chapter 8.

9.2 ESPO's design guidance for creating an enterprise PO function

In order to design a solution to address the root causes, the environment needs to be understood. According to Dietz and Mulder *(2020)* design must start with a perspective and understanding of the using system, i.e. the environment.

9.2.1 The environment as using system

Taking the guidance from Chapter 8, the design process starts with knowledge of the using system *(de Vries, 2017)*. The problem experienced of poor process performance, for which a solution was designed, has been extensively unpacked in Chapter 2.

The following root causes were identified:

- absence of process performance measures (lack of tangible processes)
- the lack of customer focus
- the lack of a holistic approach
- limited budgets (referring to IT development budgets)

The solution which has been offered and confirmed in the literature review, is to deploy *process ownership*. Sufficient evidence has been provided in section 7.1 to highlight the significance of *process ownership* as a solution. Process management of end-to-end processes, with sufficient process performance management, has been proven to increase process performance (See section 7.1).

9.2.2 BPM Governance principles

The PO function demands governance principles for the effectiveness of the PO function. Governance competencies are also required to guide the design of the PO function to achieve an aligned state of intentional design *(de Vries et al., 2017)*.

Although the BPM governance is not within the mandate of the PO organisation, the BPM organisation inside the boundary would need to be re-designed to achieve the desired interaction with the PO organisation. The understanding of the current organisation is important to specify how the design needs to be adapted. It is therefore listed as a design principle.

The analysis is done using the input from the literature study around the governance principles and standards, as detailed in section 7.2.1, and the governance bodies and practices, as detailed in section 7.2.2. Some knowledge from the BPM CoE using the researcher's lived experience at Co. INS was also added to the requirements. Further analysis is required to tailor the solution per specific deployment.

The design cycle follows the heuristic in Figure 41 as laid out in Table 13 with the various inputs into the design specification.

Table 13: BPM Governance practical implications for design

Input	**Practical implications for design**
Functional Principles (See Figure 42**)**	
Support from senior management.	BPM CoE should have regular conversations with senior management to ascertain buy-in and support. A regular survey to collate unbiased feedback should be implemented.
Lean mindset in the organisational culture.	Discussed as part of the Culture Aspect Design specifications in section 9.2.4
Strategic alignment.	A strategic alignment focus is added to the key activities of the PO function in Figure 34 and discussed in section 9.2.5. System support is discussed as part of the ICT Domain Design specifications in section 0. BPM CoE should also audit the strategic alignment based on the strategic indicators of the business.
Clear definition of roles and responsibilities.	The key activities of the PO function have been discussed in section 9.2.5. The key activities of the BPM governance body (BPM CoE) have been discussed in section 9.2.3.
Full-time process owners.	It is devised in literature that process owners be contracted as a formal capability on a full-time basis.

Input	Practical implications for design
Authority and accountability of the process owners	Discussed in the organisational positioning in section 9.2.10.
Functional requirements (See Figure 42**)**	
BPM CoE should hold the process owners accountable.	Monitor the activities of the process owner with regards to impact they make on the business, as well as process performance in the different teams/environment. Establish the monthly Process Council with a standard agenda. This is typically different to the current community of practice for the certified green belts, and the agenda should be more focused around process performance, improvement project progress and insights during projects. The council should also have executive presence. Facilitate the monthly Process Council. The monthly process council should take note of the IT and data issues related to process, or potential hurdles for process execution, or planned deployments.
Select and contract process owners.	Advertise the available positions in conjunction with the business. Recruit the delegates in conjunction with HR and the business using the competencies as detailed in section 7.2.5. Contract with the delegates to adhere to the governance and execute the roles and responsibilities as suggested in section 7.2.4.
Create process awareness.	Launch culture campaigns with the HR team. Arrange for leadership training revision of the current course material to focus on Servant Leadership.
Maintain the process architecture.	Support the construction of the ICT domain to ensure system support exist for maintaining the process architecture. Audit the process architecture frequently to ensure that it is done and up to date. Reporting a health status on the process architecture of the organisation based on the completeness, performance, and activity on the process architecture.
Publish process performance.	Support the selection of a software system in the ICT domain to encourage process performance reporting and visualisation. Ensure management teams of the environment is committed to having process performance on the agenda for review of the recent performance.
Guide BPM maturity.	Choose a maturity assessment framework.
Design Principles	
Current design and operation of BPM organisation to be understood and aligned.	Align new governance mechanisms with current BPM organisation. • Identify the new required activities. • Contract the new activities with the current BPM organisation.
Key Concerns	
Business contracting with external consultants.	

Figure 42: Governance Supporting Process Ownership (Repeated)

ESPO Limitation: The governance might differ in scale at different enterprises.

The evaluation of this initial version of BPM governance is out of scope for this study and the validation thereof is listed as future work in Chapter 13.

9.2.3 BPM Governance key activities

For the purposes of design specifications, the functional requirements need to be detailed and understood. The activities required of the BPM CoE for governance purposes have already been listed and discussed in section 7.2.2, and are as follows:

Figure 43: Roles and responsibilities of the BPM Center of Excellence (Repeated)

The evaluation of this initial version of key activities of BPM governance is out of scope for this study and the validation thereof is listed as future work in Chapter 13.

9.2.4 Culture for PO

The culture for PO should be intentionally designed and grown or developed, following the guidance of the experts as detailed in section 7.2.3. From a design perspective De Vries *(2017)* concurs with the intentional design and therefore specifications or requirements for facets should be stipulated.

The culture aspect design follows the analogy of an iceberg with visible elements and invisible elements, where the invisible elements largely maintain and influence the visible elements. The visible elements of the culture iceberg consist of the different actions which can be observed, as well as the structures which are in place in a physical environment. The invisible elements are the values and underlying assumptions prevalent in a complex organisation (See Figure 44).

This initial analysis is done by the researcher in the role of process expert at Co. INS by selecting values, actions and structures using lived experiences in a Lean environment. Added to the requirements are cultural elements from the body of knowledge specified in the literature in section 7.2.3. The evaluation of this initial version of the design is in scope as per Table 12 and the evaluated results are discussed in Chapter 11. Further analysis is required to tailor the solution per specific deployment.

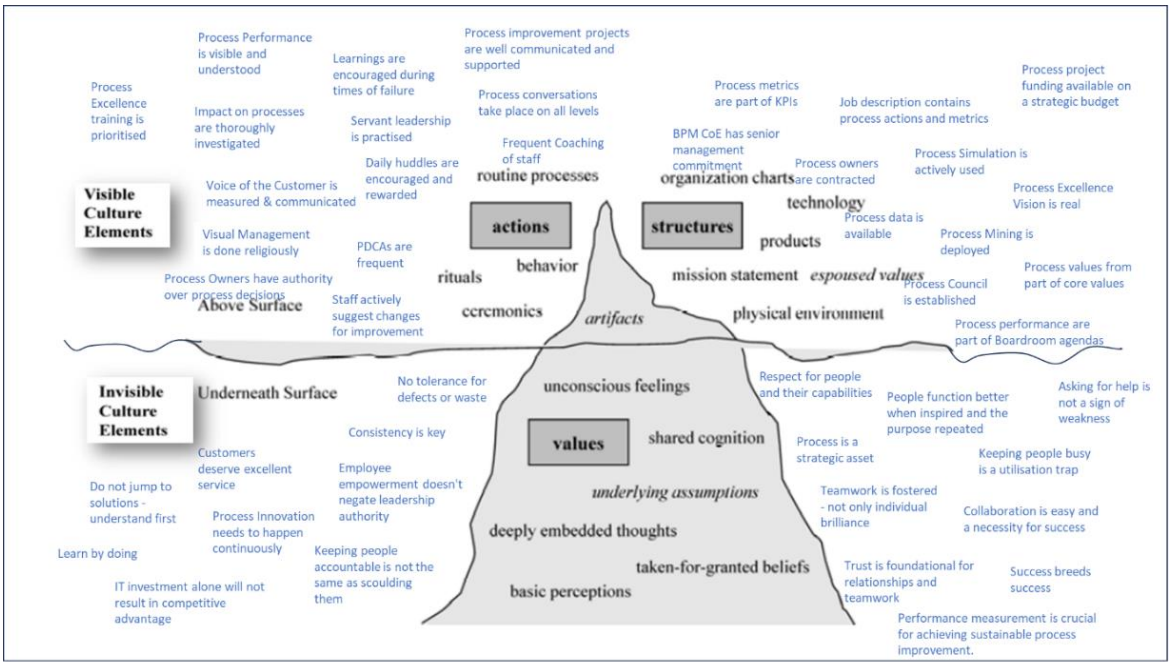

Figure 44: Culture conducive for Process Ownership (repeated)

The design cycle follows the heuristic in Figure 41 as laid out in Table 14 with the various inputs into the design specification.

Table 14: Culture Aspect practical implications for design

Input	**Practical implications for design**
Functional Principles	
Culture must be conducive for *process ownership.*	Organisational campaign to further the narrative around process ownership, especially the esteemed values.

Input	Practical implications for design
Functional requirements	
The design starts with *a list of the required invisible values or beliefs*, or even underlying assumptions that are influencing the way people behave or respond. These values determine the degree of maturity or adoption of *process ownership* in a services environment, specifically the financial sector where this study has been conducted: • No tolerance for defects or waste. • Consistency is key. • Employee empowerment doesn't negate leadership authority. • Respect for people and their capabilities. • Process is a strategic asset. • Asking for help is not a sign of weakness. • People function better when inspired and the purpose repeated. • Do not jump to solutions - understand first. • Learn by doing. • Customers deserve excellent service. • Process innovation needs to happen continuously. • Teamwork is fostered - not only individual brilliance. • Keeping people busy is a utilisation trap. • Collaboration is easy and a necessity for success. • Keeping people accountable is not the same as scolding them. • Trust is foundational for relationships and teamwork. • Success breeds success.	Reports should contain a metric for "number of defects". Deployment actions of the PO function should highlight and foster these values.
The *actions* in a culture conducive for *process ownership* are very much related to the activities of a PO as discussed in section 9.2.5, amongst others. The culture is also exhibited by the people within the environment and not by the PO only: • Process excellence training is prioritised. • Process performance is visible and understood. • Impact on processes is thoroughly investigated. • Learnings are encouraged during times of failure. • Servant leadership is practised. • Process improvement projects are well communicated and supported. • Process conversations take place on all levels. • Voice of the customer is measured and communicated. • Visual management is done religiously. • Daily huddles are encouraged and rewarded. • Frequent coaching of staff. • Process owners have authority over process decisions. • Staff actively suggest changes for improvement.	The appointment of POs would foster these actions. Leadership training to be aligned with these values and actions. Deployment actions of the PO function should highlight and foster these actions.
The *structures* visible in the physical environment to be conducive for *process ownership* is as follows • Process metrics are part of individual's KPIs. • BPM CoE has senior management commitment. • Job descriptions contain process actions and metrics. • Process project funding available on a strategic budget. • Process simulation is actively used. • Process owners are contracted. • Process excellence vision is tangible. • Process data is available. • Process mining is deployed. • Process council is established. • Process values form part of core values of the company. • Process performance is part of boardroom agendas. • Process Excellence training is available.	Deployment actions of the PO function should highlight and foster these values and structures.

Input	Practical implications for design
Design Principles	
Design of the culture must be aligned with the culture considerations and activities within the HR team for the bigger organisation. The culture campaigns for *process ownership* must be aligned with the values of the organisation.	Plan implementation with HR.
Key Concerns	
Timeframe to achieve results.	Do a few activities in parallel to create the "tipping point".

ESPO Limitation: The culture elements added to the above illustration were selected from a Lean environment and might not be applicable to all enterprises.

The evaluation of this initial version of ESPO design scope is in scope for this study and discussed in Chapter 11.

9.2.5 PO key activities

Based on the understanding of the using system, the environment will benefit from a *process ownership* solution founded in the fundamental belief that process is a strategic asset. The literature largely informs the solution and key activities of *process ownership* as the management and optimisation of business processes for improved performance. Following the advice of Weitlaner *et al.* *(2012)*, *process ownership* should be complemented with process performance management.

Also added as a requirement for *process ownership* is the recent experience at Co. INS, and guidance from Smart *et al.* *(2009)* and Maddern *et al.* *(2014)* to identify the process architecture of a business, i.e. configuring the process heatmap, to strategically select processes for process management. Being more strategically aligned, ensures the focus of process management on the critical few processes.

The literature in Chapter 7 informs the functional requirements of the PO Function with the key activities required being:

- Maintain process architecture
- Manage processes (with a holistic approach)
- Review process performance
- Manage process improvements
- Foster key partnerships

From the research, the four essential entities which a process owner must produce and maintain as the initiator and/or executor of transactions of production kinds are listed below, each with their own set of transactions (processes) to maintain the entity:

1. Process architecture
2. Process models
3. Process performance publications
4. Process improvement projects

Taking guidance from De Vries *(2017)* to create an identity statement for the PO function, it is suggested as:

> *"Aiming to sustain process excellence and enhance competitive advantage, the process ownership team offers holistic process management of strategically selected processes, and endeavours to make processes and their performance visible."*

Figure 45 illustrates the suggested identity statement and key activities of a PO function:

Figure 45: Identity statement and key activities of the PO function (author-created image)

The roles and responsibilities of a process owner has been discussed at length in section 7.2.3 based on the existing body of knowledge.

In Figure 46 production acts required by a process owner are indicated as an initial attempt to identify the potential processes of the PO function on different levels using the guidance in the discussion on process architecture in section 7.2.14. Further analysis is required to tailor the solution per specific deployment.

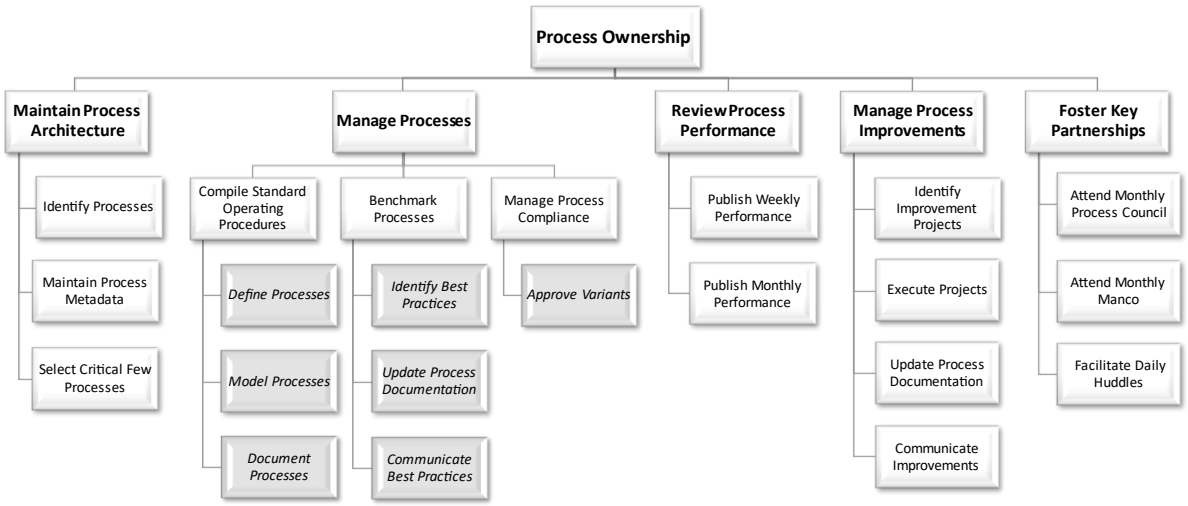

Figure 46: Production acts of a PO function (author-created image)

Further analysis is required to apply the ALPHA and OMEGA theories in specifying the constructional and operational requirements of the *essential production tasks* to classify the production acts as original, informational and documental as per the design guidance in Chapter 8.

The *concerns/interest* would be the authority of the process owner, budget concerns, and the overlap of duties with current roles (e.g. product owner, business analyst).

An important *architecture principle* applicable to the entities created by process owners for business, is that business must be able to interpret, read and follow the detail represented in these entities, and

it must represent the detailed service delivery process in an easy-to-understand format. The principle of "ease to interpret" concurs with the Lean principle of visualization of processes, measures and performance.

9.2.6 Key partnerships supporting PO

Since the enterprise is a complex system consisting of human beings forming relationships that either draw towards or push away, a stakeholder analysis is important to know which relationships to forge and treasure. Key partnerships are critical to deliver the value proposition and execute on the key activities. They fall outside of the design scope, however, it is still important to understand the partnerships required for effective PO.

Figure 47 indicates an *initial version* of stakeholder analysis by evaluating the stakeholder relationships required per task, stipulated in section 7.2.3 or Figure 46. The analysis is done by the researcher in the role of process expert at Co. INS, and the lived experiences following a creative process by selecting the appropriate stakeholder relationship required per detailed task of the initial list of tasks. Further analysis is required to tailor the solution per specific deployment.

The evaluation of this initial version of the design of key partnerships is out of scope and the validation of the strength of each relationship is listed as future work in Chapter 13.

The analysis is based on the count of the specific stakeholder being selected for the specified task of *process ownership* and indicates, as an initial version of the analysis, that the BPM CoE and the first line managers (FLM, or team leaders) are critical and most often interacted with, and therefore a key partnership.

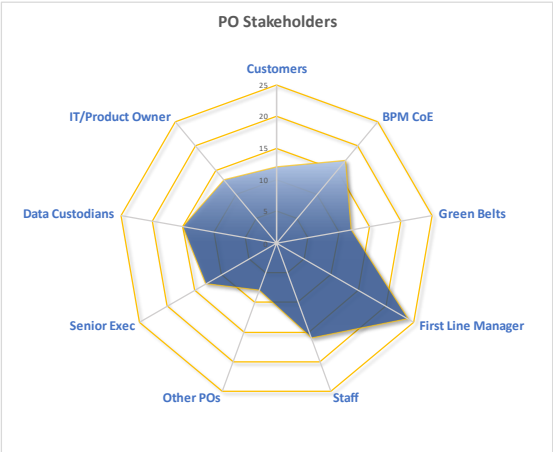

Figure 47: Example of highlighting stakeholder engagement and relative importance for process ownership (author-created image)

ESPO Limitation: The stakeholders indicated in Figure 47 are composite transactors (TARs) at Co. INS. Some of these composites may include a different set of elementary TARs for a different enterprise.

The evaluation of this initial analysis by the research participants is out of scope and the validation thereof is listed as future work in Chapter 13.

9.2.7 Competence, skills and knowledge of PO

An aspect cannot be designed using the design heuristic as illustrated in Figure 41, but clear requirements can be stipulated for the required skills and know-how of PO based on the required tasks and activities of a process owner as stipulated in section 9.2.5.

For practical reasons the skills, competence and knowledge would only be referred to as 'competency'.

From the literature in section 7.2.5 the PO would need the following competencies:

- Expertise knowledge of the listed processes
- Facilitation Skills
- Knowledge of Process Management
- Communication skills
- Leadership Skills and Experience
- Systems Thinking (Perception of interdependencies)
- Social and Emotional Intelligence
- Decision-Making Ability
- Resilience
- Proficiency to Visualize process data
- Problem Solving Ability
- Knowledge of Change Management
- Knowledge of Project Management
- Coaching Ability

Some analysis was done by the researcher in the role of process expert at Co. INS and used lived experiences in a creative process using a matrix and selecting the required competencies to complete a specific task. Further analysis is required to tailor the solution per specific deployment.

The matrix in Figure 48 is a first attempt to evaluate the competencies required per task as stipulated in section 9.2.5. The analysis is done by identifying the usage of the specific competency selected for the process owner to perform a certain task. An overall count per competency is then calculated to identify the relevant usage of the competencies to execute the key tasks and activities.

Process Ownership Roles & Responsibilities	Knowledge of Process	Proficiency to Visualize process data	Knowledge of Project Management	Expertise knowledge of the listed processes	Leadership Skills & Experience	Systems Thinking (Perception of interdependencies)	Problem Solving Ability	Decision-Making Ability	Facilitation Skills	Knowledge of Change Management	Coaching Ability	Communication skills	Social & Emotional Intelligence	Resilience
Maintain Process Architecture														
Identify Processes				x										
Maintain Process Metadata				x					x			x	x	x
Select Critical Few Processes				x				x	x			x	x	x
Manage Processes														
Compile Standard Operating Procedures														
Define Processes	x			x		x			x	x		x	x	x
Model Processes	x	x				x								
Document Processes	x			x		x								
Benchmark Processes														
Identify Best Practices						x	x	x	x			x		
Update Process Documentation	x	x						x						
Communicate Best Practices				x	x	x			x	x	x	x	x	x
Manage Process Compliance														
Approve Variants				x	x			x				x	x	
Review Process Performance														
Publish Weekly Performance	x	x		x	x				x					
Publish Monthly Performance	x	x		x	x				x					
Manage Process Improvements														
Identify Improvement Projects									x			x		
Execute Projects			x		x	x	x	x	x	x			x	x
Update Process Documentation	x		x	x										
Communicate Improvements	x	x		x	x						x	x		
Foster Key Partnerships														
Attend Monthly Process Council	x				x	x			x			x		
Attend Monthly Manco	x		x		x	x	x		x	x		x	x	
Facilitate Daily Huddles	x			x	x	x	x	x	x		x	x	x	x

Figure 48: Skills, Competencies and Knowledge required for Process Ownership activities (author-created image)

The synthesis in Figure 49 illustrates the relative dependency/usage/importance of the different competencies.

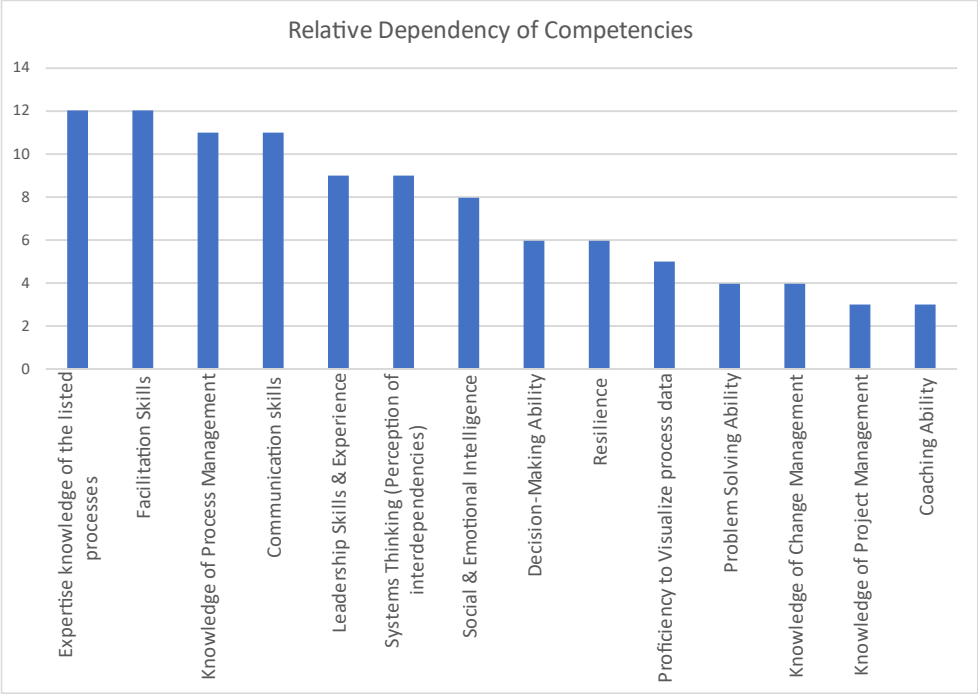

Figure 49: Relative dependency of the competencies for Process Ownership (author-created image)

The synthesis of the literature in section 7.2 highlighted and stressed the importance of the authority of a process owner. The identification of the expertise knowledge of the listed processes (referring to the process architecture of the environment for which the service is delivered), facilitation skills, knowledge of process management, communication skills and leadership skills concurs with the notion of required authority.

Further analysis is required to tailor the solution per specific deployment. The human skills and know-how aspect should be acquired during initial implementation and further developed to support the culture and maintain the asset.

The *concerns/interest* would be the career path, development journey, and job grade amongst others. *The evaluation of this initial analysis by the participants is out of scope and the validation of the competencies is listed as future work in Chapter 13.*

9.2.8 Methods used by PO

Methods used by a process owner have been stipulated in section 7.2.7 based on the literature review.

Some analysis was done by the researcher in the role of process expert at Co. INS and used lived experiences to list the required methods for the PO key activities as an initial attempt:

- Methods used frequently:
  - Process Improvement Methodologies
    - DMAIC (Six Sigma Methodology including Define, Measure, Analyse, Improve, Control).
    - Industrial Engineering methods to understand the relationship between the inputs and outputs.
    - Root Cause Analysis
    - Takt time analysis to determine the pace of the process delivery, and the resultant capacity required.

        - Failure Modes and Effect Analysis (FMEA) to identify and mitigate the failure points in the process.
    - Lean process principles
        - Identify value and remove waste.
        - Value stream mapping (to visualise how value flow through the process)
        - Creating flow using the different flow principles.
        - Establish pull by using customer measures and an outside-in perspective
        - Continuous Improvement methods
    - Continuous Improvement methods and tools
        - PDCA (Plan-Do-Check-Act for projects with low complexity)
        - 5 Why's
        - Error Proofing
        - Visual Management
        - 5S to declutter the process and using environment of the process
        - Kanban reporting to focus on work flowing through the process
    - Visual Management
        - Graphical tools to visualise performance (e.g. boxplot, runchart, histogram, scatterplot).
        - Visualisation tools to communicate different perspectives of the process.
        - Data analysis
    - Process Modelling
        - Flowcharting the process in swim lanes using BMPN as guideline.
    - Change Management
        - Impact assessment
        - Readiness assessment
        - Stakeholder analysis
        - Change communication plan

- Methods used less frequently
    - Prioritisation and Strategic Alignment (Process HeatMap) – twice a year
    - Activity Based Costing – ad hoc
    - Process Simulation – understand the impact of the intended change
    - Process Mining
    - Process Benchmarking
    - Project Management Methods

Further analysis is required to tailor the solution per specific deployment.

ESPO Limitation: Selected methods may not be applicable to all enterprises. The list of methods might also not be conclusive and is more apparent in the financial sector.

The evaluation of this initial analysis by the participants is out of scope and the validation of the methods is listed as future work in Chapter 13.

9.2.9 Systems supporting PO

To design the ICT domain construction requirements, it is necessary to use the design heuristic in Figure 41. The design specifications in this initial version were collated from current experience of the researcher at Co. INS. The requirements and specification could also be collated using demonstrations, questionnaires or small group sessions. The search for an appropriate system is currently ongoing, but ethical clearance was unfortunately not obtained for this domain. Further analysis is therefore required to tailor the solution per specific deployment.

Table 15 is an initial attempt to list some requirements as input to design specifications. Further analysis is required to tailor the solution per specific deployment.

Table 15: ICT Domain practical implications for design

Input	Practical implications for design
Functional Principles	
Models and visuals and reports must be easy for business to interpret.	System must be chosen by representatives from business (amongst others), using a "ease of interpretation" rating. The system must allow the selection of different templates/activities/diagrams. The system must be able to present visualisations of different entities which the PO would be maintaining. The system must have a dashboard for easy reporting.
Functional requirements for supporting software	
Create a Heatmap: • List value chain components. • List process for each value chain component. • Add SOP detail per process. • List performance metrics for each process • Rate the strategic alignment of each process based on frequency of use, Risk to business if performing poorly, how important the process is for the current strategy deployment. • Rate the performance for each strategically aligned process based on the customer experience, business partner compliance, internal efficiencies and data quality and -availability. • Obtain ranking within heatmap of each process. • Visualise the heatmap.	Functional Requirements for HeatMap platform: *(Only a few examples; hence the requirement listed here are incomplete)* Refer to the entity relationship diagram (ERD) in Figure 50 to see the different fields required, as well as the structure of the data. The ERD displays five tables consisting of: 1. Table where the Value Chain components are listed (tbl_VC) a. Names on tbl_VC should be added, sorted, and also removed, or renamed if required. 2. Table where the processes are listed per value chain component and described with metadata. (tbl_Proc) a. Processes on tbl_Proc should be added, sorted per value chain component, and also removed, or renamed if required. b. Processes on tbl_Proc should allow for many different processes per same value chain component. c. The processes on tbl_Proc should allow for metadata such as date of last Standard Operating Procedure (SOP), 3. Table with performance data for each process (tbl_ProcKPI) a. Processes on tbl_ProcKPI should be selected from tbl_Proc and a key performance indicator should be added with measurement description, performance target and date of last measurement. b. The processes on tbl_ProcKPI should allow for many different metrics per process. 4. Table where strategic alignment is calculated and selected per process. (tbl_StAl) a. Processes should be selected from tbl_Proc for strategic alignment, with a date stamp of selection. b. As strategy is changing, the table should allow for many selections per process c. Importance to business is an indication of severity if the process is not performing. d. Frequency indicator is an indication of frequency of use. e. Strategic Alignment indicator is an indication of importance to deploy the current strategy of the environment.

Input	Practical implications for design
	f. The calculation for <selection result> on tbl_StAl is a multiplication of <importance to business> x <frequency indicator> x <strategic alignment>. g. The <selection result> should also be displayed as a boolean when above a certain threshold. 5. Table where the performance rating of each selected process is done based on a weighted scale between number of given parameters. (tbl_Perf) a. The processes should be able to have a red-amber-green (RAG) status for performance. The RAG status should be defined by the user upfront and not per process. b. The rating of each of the four criteria is then based on a RAG status. c. The weighting of the four criteria on tbl_Perf is a % contribution to the total calculation of the weighted score. The weighting should be defined by the user upfront and not per process. d. The assessment result is a "sum-product" calculation of the ratings per process and the weightings defined. e. The heatmap ranking is a ranking of the assessment result in descending order. Reporting should be available to list all the process per value chain component, with their individual heatmap illustration. A report for the entire area should also be possible. The metadata added to each process on tbl_Proc should be maintained on an ad hoc basis. *(more specifications are available beyond the purposes of this study)*
Model processes	An easy-to-use system for modelling of the processes by swimlane using the BPM notation as guideline. The processes should be able to be printed, or scaled, and exported as diagrams.
Benchmark processes	Benchmarking should allow for identifying the date of benchmarking, the platform/institution used for benchmarking, the identification of best practices, place for extensive comments, the creation of tasks to colleagues, and a final outcome status.
Approve process variants	*Out of scope for this study*
Monitor process performance	*Out of scope for this study*
Manage Process Improvement	*Out of scope for this study*
Design Principles	
Ease of Use	Navigation should be intuitive and easy for users to foster a faster adoption and reduce queries and wasteful time spent on navigation hurdles.
Must have a cloud platform	The solution must be cloud-based to allow easy sharing with the environment and its stakeholders.
Enterprise license	The license agreement must not be named resource licenses.

Input	Practical implications for design
Key Concerns	
Budget limitations for new software	Selection of system that have a wider scope of functionality Selection of systems within the budget range.

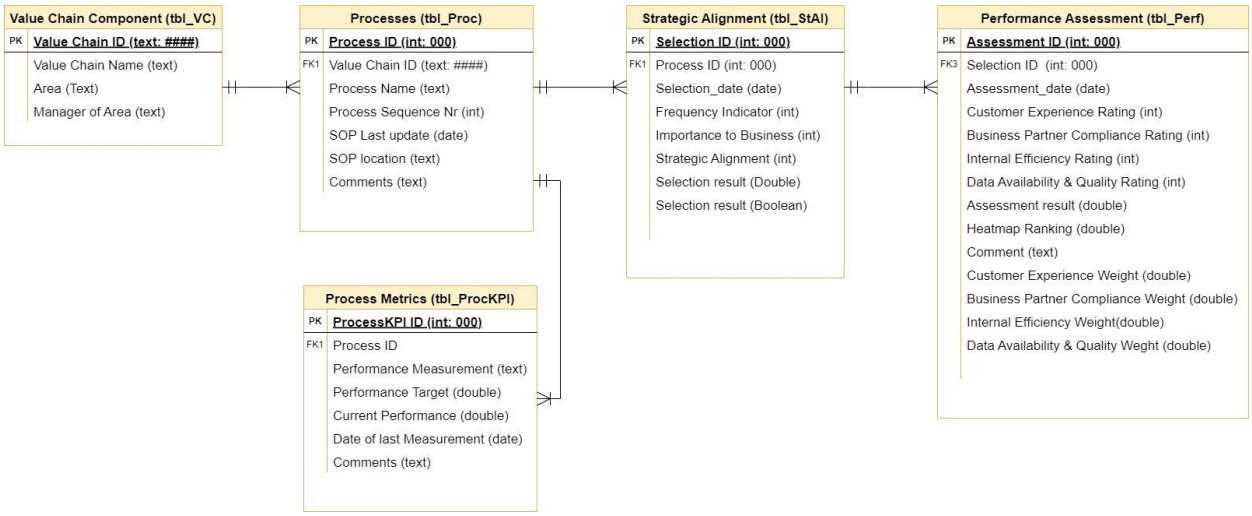

Figure 50: Elementary ERD for HeatMap Software

ESPO Limitation: The identified specifications may not be applicable or conclusive to all enterprises.

The evaluation of this initial analysis is out of scope and the validation of the ICT systems is listed as future work in Chapter 13.

9.2.10 Organisational positioning of PO

The PO will be reporting into the organisational structure of the environment, with a dotted line reporting to the BPM CoE who holds the governance by which a PO would need to adhere to.

The design cycle follows the design heuristic in Figure 41 as laid out in Table 16 with the various inputs into the design specification.

Table 16: Organisational positioning practical implications for design

Input	Practical implications for design
Functional Principles	
A crucial functional principle for this design is that the PO is a *full-time and dedicated capability*, and not shared with other duties. The *relationship with the first line managers* is crucial as a key partnership (discussion in section 9.2.6).	Keep close to first line manager Full-time contract with a dedicated responsibility
Another important principle that influences the design of the organisational positioning of the PO, is the fact that the PO *must have authority* in the environment. The authority is established in many ways, e.g. the placement of the PO role on the job grading scale, or the operational and tacit knowledge the PO has of the process. Both needs	Same as above Operational knowledge of process must be a requirement on the skills domain. (discussion in section 9.2.7) The design of the organisational positioning is very much dependent on the availability of competent staff within the team, unless the budget allows for a new position to be created. The following

Input	Practical implications for design
to be in place, as the experts in the body of knowledge agree (section 7.2.13) that a PO should not be bullied into changing processes if the customer impact or cost of the process is negatively impacted.	discussion elaborates on three possible structural deployments of the contracted PO role: 1. A new position should be *at least on the same level as the first line managers or higher.* See configuration "A" in Figure 51. 2. If the available staff is more junior, a chief PO must be appointed within the job grade level of the first line managers or higher. The junior staff member should then be placed in the full-time role as the process owners reporting to the chief PO, who should represent *process ownership* on a management level. See configuration "B" in Figure 51. 3. Yet, another possibility is if the organisation is, or want to be, structured around processes and are considering a horizontal structure as configuration "C" in Figure 51, the PO organisation could consist of a chief PO (on the same level as the departmental heads) with a number of process owners reporting to the chief PO.
Functional requirements	
Not specified	
Design Principles	
HR related activities to be aligned	Discussions with HR to align the journeys
Key Concerns	
Budget for additional staff	
Availability of current staff for this position	

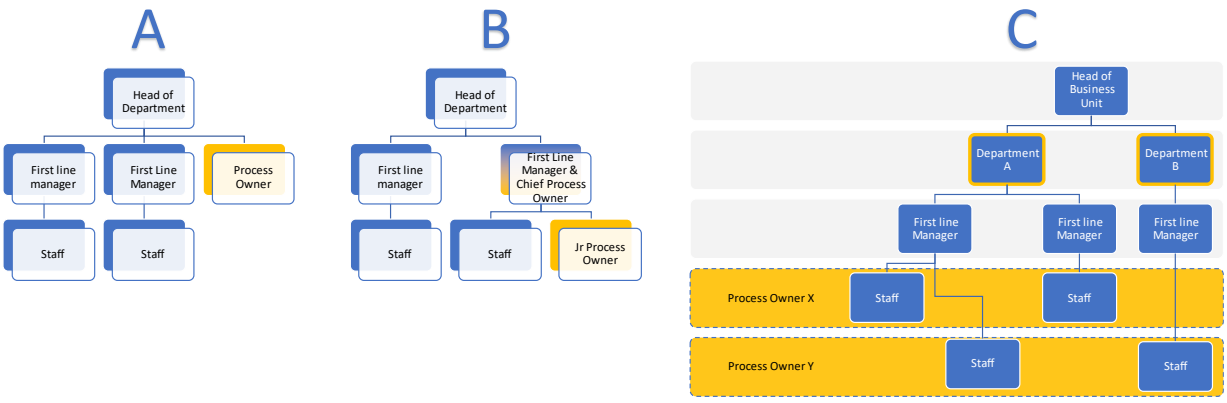

Figure 51: Possible organisational structures for PO

ESPO Limitation: The identified configurations may not be applicable or conclusive to all enterprises.

The evaluation of this initial analysis is out of scope and the validation of the organisational positioning is listed as future work in Chapter 13.

9.3 ESPO's implementation guidance on creating an enterprise PO function

Design implementation, also called *engineering*, ends with a detailed specification of a possible implementation *(Dietz and Mulder, 2020)*. Since ESPO guides the (re-)design of the enterprise so that the

enterprise as an object system that provides a PO function, this section presents a deployment construct that guide possible implementation of the PO function.

The implementation guidance of ESPO aims to specify the deployment of the "building blocks" when creating a PO function at an enterprise as discussed in the preceding sections. The requirements are based on the researcher's lived experience at Co. INS, as well as some knowledge extracted from literature. The methodology used is based on the 5 key "application components of BPM" *(Smart et al., 2009)* and illustrated in Figure 52.

The deployment of *process ownership* would happen in a specific team, either identified or requested. The context of that team is the focus of this deployment discussion.

1. *Process strategy*: Develop strategic intent
    a. Conduct a readiness assessment of the culture of the enterprise, the level of support from senior management and the establishing of the centralised BPM unit as the chief process office, or BPM Centre of Excellence (CoE). The readiness of the CoE centres around capacity and governance. If the cultural readiness, executive support or governance is lacking, the deployment effort might be in vain.
    b. Change management is required to create *process ownership* awareness and motivate the intent. The values of process orientation need to be embedded in the organisational culture to some degree, as indicated in section 9.2.4.
    c. Compile the governance framework to be hold by the BPM CoE as specified in section 9.2.2.
2. *Process Architecture*: Understanding the environment
    a. Identify potential candidates as process owners, having the required competencies, skills, and authority to support the deployment of ESPO in the short term, and potentially fulfil the process owner role in the long term, in accordance with the guidance given in section 9.2.
    b. Ensure the construction of the ICT domain so that IT software is available for process architecture prior to continuation.
    c. Creating the process architecture involves the identification and development of the process models, the strategic alignment of processes, the development and setting of targets, and the subsequent identification of selected processes to be assigned to process owners.
3. *Process Ownership*: Create accountability
    a. Contract the process improvement with the functional management and contract the role of process owner, elaborated in section 9.2, with the specified individuals, as well as the desired performance, as guided in section 7.2.10.
    b. Select the processes from the architecture and allocate each end-to-end process to a process owner. The literature is not forthcoming on the number of processes to be allocated to a process owner. It should be left to the prerogative of both the process owner(s) and the management team of the environment as a collective to decide on the number of processes allocated to each process owner.
    c. The BPM CoE needs to facilitate regular (monthly) process council meetings to serve as a platform for progress feedback, collaboration and change management, to ensure the cultural influencing required for ESPO, to stay intact for sustainable process excellence, as elaborated in section 9.2.2.

4. *Process Measurement*: Visualise the performance
    a. Establish the baseline performance of the allocated processes.
    b. The process owner(s) need to execute the roles and responsibilities as contracted on a full-time basis to ensure process improvement.
    c. The process performance results need to be published in regular and consistent intervals where senior and functional management and process staff can readily comprehend the level of process performance, as elaborated in section 7.2.9.
5. *Process Improvement*: Optimise performance to realising the benefits
    a. The different improvement projects could potentially be done by executing large improvements, or smaller and less complex improvements. The methods, systems and key partnerships required to deliver the improvements have been specified in section 9.2.
    b. An important cultural aspect is the ritual of daily huddles to ensure the process narrative and awareness, servant leadership, and recording of hurdles for the fostering of a continuous improvement mindset.

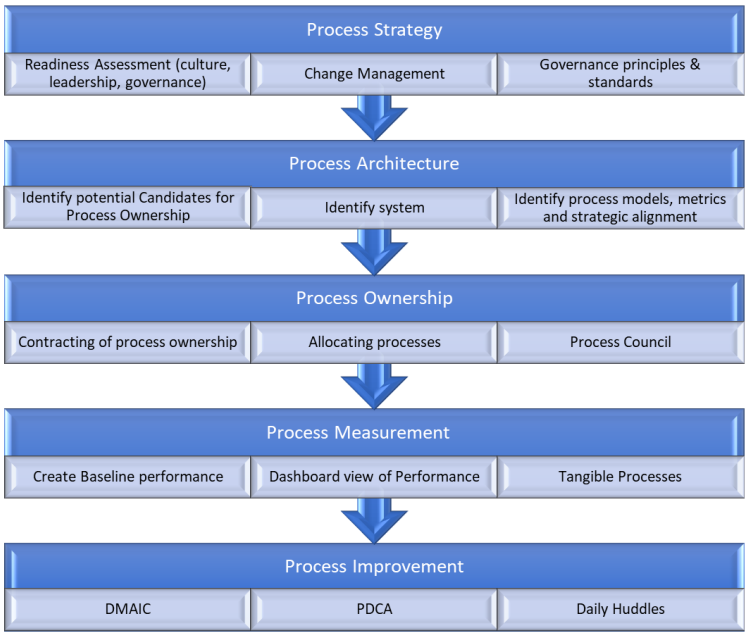

Figure 52: ESPO's implementation guidance for the deployment of a PO function (author-created image)

ESPO Limitation: The approach might vary at different enterprises for every deployment as a result of size of the enterprise or maturity of a process culture.

The evaluation of this initial version of process ownership deployment is done through the demonstration episode as discussed in Chapter 10.

9.4 ESPO as an EECM Instantiation

The previous sections detailed ESPO as the guidance in creating and deploying *process ownership* as a new function at an enterprise. The illustrations in Figure 53 illustrate the three design cycles of functional and constructional design iterations, as well as the implementation design of the provisioning system. Even though the design is concerned with enterprise-wide integration and alignment, the complex nature of enterprises due to human interaction is noted. Hence a more systematic and holistic approach is needed to govern ad hoc design attempts.

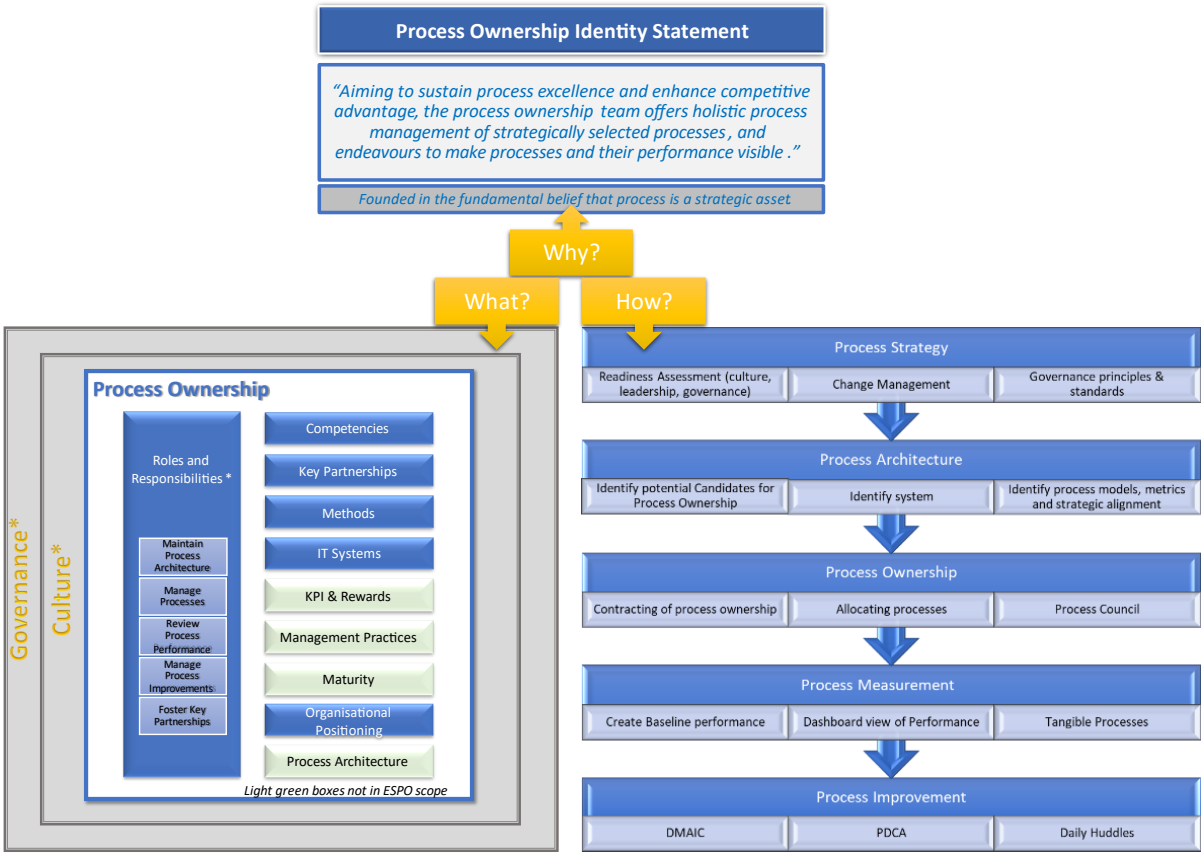

Figure 53: ESPO constructs and scope indicated (repeated)

Prior to using EECM as an instantiation, the guidelines to use EECM should be considered as detailed in the discussion in section 8.3.1:

1. Evaluate if the concept of the enterprise and paradigm of value creation is consistent and coherent:
   - The literature does not highlight a coherent approach to the deployment of *process ownership*. Yet, with the development of ESPO, this study will provide an explicit paradigm of value-creation.
2. Evaluating possible design domains:
   - The existing body of knowledge on *process ownership* does not provide explicit demarcation of design domains.
   - With the development of ESPO, the study re-structures existing knowledge according to the design domains demarcated in De Vries *et al.* *(2017)*. The study identified two functions with associated design domains and aspects (See Figure 54, a repeated illustration for ease of reading):
     - The PO function:
       - PO human skills and know-how aspect
       - PO organisation design domain
       - PO ICT organisation design domain
       - PO Culture aspect
     - The BPM Governance function

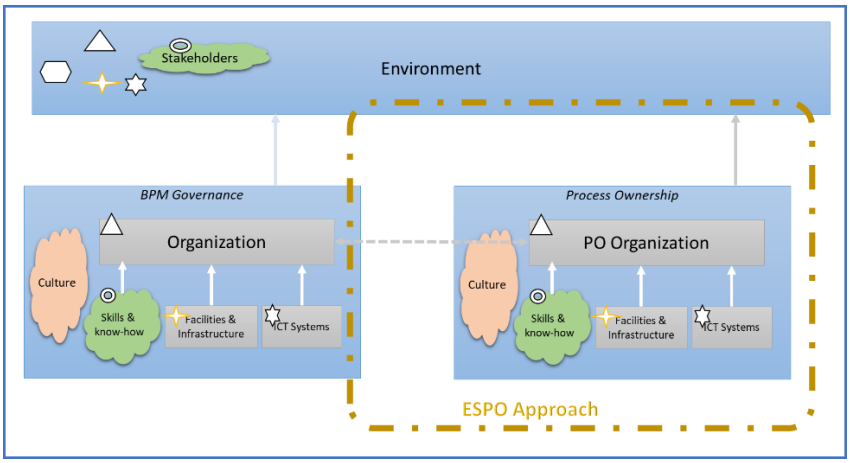

Figure 54:Model of design domains for realizing Process Ownership as a function provided by the enterprise (repeated)

- Design Validity Assessment:
  - Indicator 1: Evident design activities are needed to establish *process ownership* as a new function at the enterprise.
    See ESPO's design guidance requirements in section 9.2
  - Indicator 2: Associated concerns (i.e. requirements) are defined per associated design domains or aspects.
    See ESPO's design guidance requirements in section 9.2
  - Indicator 3: Evident architecture descriptions exist where tasks could be mapped to competencies.
    See ESPO's design guidance requirements in section 9.2.7

In the light of the above guidelines, EECM could be used as a reference model for a design approach and is therefore configuring ESPO in Table 17 as a summary of the design cycles in Chapter 9. The approach is configured using the literature results as a starting point, but also adding from lived experiences as the main researcher also fulfil the role of process specialist at Co. INS.

Table 17: The ESPO approach

EECM constructional guidance	**ESPO guidance to the practitioner**
Why evolve?	
What is the paradigm for value creation?	The researcher has the foundational belief that processes are strategic assets that should be nurtured and protected, as process is at the heart of the organisation creating competitive advantage. The process guides the partnership and defines the "art and science" of what the business delivers and how it is done *(Hrabal et al., 2021, Trkman, 2010, Van Looy et al., 2014).* The vision for Process Excellence (as illustrated in Figure 6) is two-fold: 1. Strategic Alignment: Commitment to manage process as strategic assets. 2. Sustained Process Excellence: Leadership with a deep commitment to develop people, systems and culture to achieve sustained process excellence.
What is the concept of the enterprise?	The enterprise is perceived as a complex service organisation with a network of people and systems interacting and coordinating to create acts and facts, always learning, and adjusting because of uncertainties *(Liker, 2023)*. ESPO would serve as a basis for designing a solution to address poor process performance as a result of this changing nature of the business.

<table>
<tr><th>EECM constructional guidance</th><th>ESPO guidance to the practitioner</th></tr>
<tr><td colspan="2">What to evolve?</td></tr>
<tr><td>What are the design domains?</td><td>
As detailed in section 9.1 the organisation domain is the most relevant domain within the ESPO approach, with human skills and know-how inherent in people, and culture (with appraisal and leadership style) as the two main aspects that need to be designed.

The organisation domains are supported by the ICT domain, infrastructure domain and human skills and know-how aspect to deliver the value proposition and key activities associated with process ownership as detailed in Figure 53.

The human skills and know-how aspect refers to skills inherent in human beings, where human beings are social entities with different agendas, traits, personalities, influences, and communication styles. Therefore, several competencies for process ownership are required. Operational process knowledge and facilitation skills are paramount and is a non-negotiable competency. Section 9.2.7 contains the detail.

The culture aspect should foster a Lean mindset, using the iceberg–analogy (Hines, 2010). This involves the values and behaviours of people aligned with process orientation and the structures in the physical environment to foster process orientation. (See Figure 44).

Culture has been highlighted as a separate aspect in the design domains as it emerged as a key enabler for PO, and is therefore also critical in creating unity, integration, and alignment.

The ICT domain supports the value proposition and key activities with software systems and the required hardware. The system for the business process architecture has been informed with a few design examples.

The domains/aspects listed in Table 12 are the following:
<table>
<tr><td>PO Organisation</td><td>Key activities and resources * #</td><td>Section 9.2.5</td></tr>
<tr><td></td><td>Methods *</td><td>Section 9.2.8</td></tr>
<tr><td>BPM Governance Organisation</td><td>BPM governance *</td><td>Section 9.2.2</td></tr>
<tr><td></td><td>Key activities and resources *</td><td>Section 9.2.3</td></tr>
<tr><td>PO Skills and know-how</td><td>Competencies *</td><td>Section 9.2.7</td></tr>
<tr><td>PO ICT</td><td>IT Systems *</td><td>Section 9.2.9</td></tr>
<tr><td>PO Culture</td><td>Culture * #</td><td>Section 9.2.4</td></tr>
<tr><td>Inside the legal boundary of the enterprise</td><td>Organisational positioning *</td><td>Section 9.2.10</td></tr>
<tr><td>Outside the legal boundary of the enterprise</td><td>Key partnerships *</td><td>Section 9.2.6</td></tr>
</table>
*Within the design scope
Within the Evaluation scope of this study
</td></tr>
<tr><td>What are the concerns?</td><td>
The major concerns addressed by ESPO is the cultural readiness of the environment, and the availability of resources, as budget is limited, including new systems to be acquired. Clear roles and responsibilities when comparing process ownership, key tasks with other existing roles, is also a concern.

Each of the design domains have their own concerns and performance areas.
<table>
<tr><td>Key activities and resources</td><td>Authority of the process owner, budget concerns, and the overlap of duties with current roles (e.g. product owner, business analyst)</td></tr>
<tr><td>Methods</td><td>None</td></tr>
<tr><td>Organisational positioning</td><td>• Budget for additional staff
• Availability of current staff for this position</td></tr>
<tr><td>Competencies</td><td>Career path, development journey, and job grade amongst others</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>EECM constructional guidance</th><th>ESPO guidance to the practitioner</th></tr>
<tr><td></td><td><table>
<tr><td>Systems</td><td>Budget limitations for new software</td></tr>
<tr><td>Culture</td><td>Timeframe to achieve results</td></tr>
<tr><td>BPM governance</td><td>Business contracting with external consultants</td></tr>
</table></td></tr>
<tr><td>What is the scope?</td><td>ESPO focuses on the internal scope, i.e. the illustrated PO enterprise as a legal entity framed by some BPM governance.

The major purpose of ESPO is to deploy process ownership within a certain governance framework and identified culture in order to address the poor performing processes. The enablers of the PO function are illustrated in Figure 53</td></tr>
<tr><td colspan="2">How to evolve? (Mechanisms & Practices)</td></tr>
<tr><td>What is the architecture description, reference models and modelling practices for design domains?</td><td>The Insurance Application Architecture (IAA) is an IBM Financial Services architectural framework developed in conjunction with over 40 insurance companies mapping to the ACORD framework (Huschens and Rumpold-Preining, 2006). The ACORD Reference Architecture provides an enterprise architecture framework for describing the organisation domain of the insurance industry and is thus suggested, but not prescribed for ESPO.

TOGAF and Zachman frameworks are also being used by the enterprise architects and may be considered as alternative frameworks, but not prescribed by ESPO.

The modelling practices of ESPO suggests Porter’s Value Chain analysis and the SCOR process architecture of the business services with the normal role-activity diagram (RAD) illustrations of the processes in swim lanes per role using the basic constructs of BPMN notations. In the process architecture discussion (section 7.2.14), the case study mentions the use of IDEF$_0$ as a possible notation.

Additional guidance is given in section 7.2.14.

<table>
<tr><td>Key activities and resources * #</td><td>A functional decomposition structure is used to organise activities.
Future research should focus on using ALPHA and OMEGA theories.</td></tr>
<tr><td>Methods *</td><td>Using a matrix to map the methods to detailed tasks as per the literature study.
Strategic alignment of business processes to value chain activities, using prioritisation.</td></tr>
<tr><td>Organisational positioning *</td><td>Horizontal (matrix) vs Vertical business structures</td></tr>
<tr><td>Competencies *</td><td>Using a matrix to map the competencies to detailed tasks as per the literature study</td></tr>
<tr><td>Systems *</td><td>ERD, and detailed functional specification using the current HeatMap as a reference model.</td></tr>
<tr><td>Culture * #</td><td>Using the values, actions and structures of a Lean transformation and present that on the Iceberg model.</td></tr>
<tr><td>BPM governance *</td><td>List of principles from body of knowledge</td></tr>
</table>
ESPO limitation is that architecture models have not been investigated as part of the design cycles in the previous sections of this Chapter.</td></tr>
<tr><td>Selection and measurement of concerns</td><td>ESPO does not give guidance on how concerns should be derived.</td></tr>
<tr><td>Methodologies</td><td>Future research should focus on using ALPHA and OMEGA theories to extract the essence of the organisation and to provide the foundation for modelling interaction, interstriction and interimpediment, using a Coordination Model.

The generic steps to enact the value creation within the design domains and aspects are depicted in Figure 52 based on a combination of literature review and reflection via lived experiences.</td></tr>
</table>

EECM constructional guidance	**ESPO guidance to the practitioner**
	The approach to the deployment of PO will be different for each team depending on the process maturity and cultural readiness *(Jurczuk, 2021, de Boer et al., 2015, Buh and Stemberger, 2016, Štemberger et al., 2018, Weitlaner et al., 2012).* The sequence of execution is more important than the duration. The methodology is based on the 5 key themes of BPM: *(Smart et al., 2009)* and detailed in section 9.3: 1. Process strategy: Develop strategic intent 2. Process Architecture: Understanding the organisation 3. Process Ownership: Create accountability 4. Process Measurement: Optimise performance through the prioritisation of corrective action 5. Process Improvement: Realising the benefits
Governing Principles and Standards	Several governing principles and standards have been listed and should be considered for successful deployment of *process ownership*: The BPM CoE should exist to some degree to govern and support the ESPO approach. The following governance principles should be in place: • Support from senior management • Lean mindset in the organisational culture • Strategic alignment capability • Clear definition of roles and responsibilities • Process owners must be contracted on a full-time basis • Process owners must have authority and accountability (See section 9.2.2 for design guidance)
Governing Bodies and Governing Practices	Centralised BPM governance body should be created to: • Create process awareness. • Maintain the process architecture. • Publish process performance. • Guide BPM maturity. • Establish and facilitate the monthly process council to ensure strategic alignment and delivery of the value proposition. • Prioritise process improvement initiatives. • Full-time contracted process owners to deliver the value proposition. • Manage and monitor process performance. (See section 9.2.3 for design guidance)
Transformation Roadmaps	The initial version of ESPO is not guiding transformation roadmaps.
Analysis	The initial version of ESPO is not guiding the analysis.
Maturity Models	The initial version of ESPO is not guiding maturity model.

EECM constructional guidance	ESPO guidance to the practitioner
Skills/Learning Requirements	The competencies required for the new PO function at an enterprise has been stipulated in section 9.2.7, and are as follows in order of dependency to execute the key activities of the PO function: • Expertise knowledge of the listed processes • Facilitation skills • Knowledge of process management • Communication skills • Leadership skills and experience • Systems thinking (perception of interdependencies) • Social and emotional intelligence • Decision-making ability • Resilience • Proficiency to visualize process data • Problem solving ability • Knowledge of change management • Knowledge of project management • Coaching ability
Software tools and/or guidance	Every enterprise should select applicable software for process modelling and architecture. Some guidance is given in section 9.2.9. Note: The modelling software must be an easy-to-use tool for business in the first place. Business- and systems analysts should translate the process requirements into a more technical requirements on the platforms within the IT space.
Organisational positioning (Additional, i.e. not included in EECM)	The positioning of the process owner(s) has been discussed in section 9.2.10 and pivots around capacity and authority. A full-time and dedicated capability is required with sufficient authority not to get stuck in potential conflict between middle management and process owners which could derail the efforts towards a successful BPM deployment.
Key Stakeholders and Partnerships (Additional, i.e. not included in EECM)	Identification of key partnerships are a very important activity for a PO function as there is a high degree of dependency on the delivery of the key activities on parties outside of the legal boundary of the enterprise. The literature review detailed the importance of partnerships in section 7.2.6 The PO need to foster strong relationships with the Process Council, including BPM CoE, the management team of the environment, as well as the process transactors within the environment amongst others. (See section 9.2.6 for design guidance)
Change Management (Additional, i.e. not included in EECM)	Stakeholder analysis and readiness assessment of the underlying culture is critical. A culture with the intention and commitment towards process orientation becomes "real" through the narrative of *process ownership* *(Kohlbacher and Gruenwald, 2011a)*. (See section 7.2.3) The use of CERT-values to assess the readiness of the environment is highly recommended to be used. Shafagatova and Van Looy *(2019)* state the need for a culture that includes focus on the customer, continuous improvement/excellence and innovation, responsibility/accountability and teamwork/collaboration, i.e. the so-called CERT values, as an acronym referring to these major values underpinning BPM deployment *(Schmiedel et al., 2013, Schmiedel et al., 2015).* Customer orientation (C) refers to a proactive and flexible approach to the needs of the customer, or the recipient of the deliverables of the process. Excellence (E) refers to an attitude of innovation and continuous improvement to constantly aim for a better and more consistent performance of processes. Responsibility (R) refers to the ownership of the process and dedication to the objectives of the process, especially the strategic objectives. Teamwork (T) refers to the acceptable and inspiring engagement or collaboration with cross-functional teams and leadership on different levels to foster positive engagement towards BPM success and process thinking.

The approach could be tailored in the following ways:

- The governance might differ in scale at different enterprises and could be adjusted for practical reasons. It is important that governance must be in place for effective *process ownership.* If a BPM CoE is not in place, it is strongly suggested to contract the responsibility prior to the deployment of a PO function.
- Culture components might look different depending on the readiness of the using system, i.e. the environment.
- The industry could be different, in which case the architecture considerations would be different.
- The process improvement methodologies might be different than DMAIC or Lean, in which case the methods would be different.
- Different systems, or even requirements for systems, might exist. The ESPO guidance with regards to IT systems aims to create focus to support the key activities of the PO function.
- The enterprise might not be ready to contract with a full-time process owner. In that instance, the job description should be adjusted to allow sufficient time for process owner activities and participation.

9.5 Validating ESPO against Design Principles

De Vries *(2016)* listed the principles to guide the development of new approaches to be useful and contribute to the existing EE knowledge base. This section validates the ESPO approach as laid out in Table 17 according to these principles.

Table 18: Validating against Approach Design Principles *(De Vries, 2016)*

Principle	Explanation	Adherence
Principle A: Explicit concept of the enterprise	A design approach should indicate how an enterprise is perceived or conceptualised, such as machines, biological systems, and psychic prisons, as it influences on how an approach author demarcates design domains, while it also provides a descriptive representation of the enterprise. Provide a description of the enterprise using analogies, together with the underlying theory for the enterprise contextualisation.	The enterprise is seen as a complex service organisation. (See Table 17) The enterprise is perceived as a complex service organisation with a network of people and systems interacting and coordinating to create acts and facts, always learning, and adjusting because of uncertainties *(Liker, 2023)*.
Principle B: Explicit Phenomenon	A design approach should provide evidence for a phenomenon or class-of problems, or similar kinds of problems. If a phenomenon is not fully understood, it cannot be properly addressed and improved. Produce sufficient evidence that an existing phenomenon or class-of-problem exists, but that it is inadequately addressed by theory or application.	Research Question DQ2 has been answered in section 7.1 to illustrate the evidence that a similar kind of problem occurs frequently in the body of knowledge and is therefore recognised as a general phenomenon. Although there is much talk about process owners, there is little or no guidance on the design of a deployment approach.
Principle C: Explicit paradigm of creating value	A design approach should state a paradigm of value creation as a testable proposition to address an existing phenomenon or class-of-problems. State the paradigm of value creation in the form 'if the approach is instantiated, it will achieve the intended value'.	The belief that process is a strategic asset that should be carefully nurtured to remain delivering value and competitive advantage, elaborated in Table 17. *"Aiming to sustain process excellence and enhance competitive advantage, the process ownership department offers holistic process management of strategically selected processes, and endeavours to make processes and their performance visible."*

Principle	Explanation	Adherence
Principle D: Explicit means (ways) of demarcating and representing design scope	A design approach should clearly define and motivate the way to demarcate design scope (enterprise scope, design domains, and concerns/requirements) that is relevant to the approach. Define the way to demarcate design domains, as well as the concerns per design domain.	The ESPO approach is based on the demarcation of design domain as per De Vries *(2017)*. The enterprise scope and design domains have been tabled in Table 12 and section 9.2 elaborates the design per scope element.
Principle E: Well-demarcated and well-defended design scope and using scope	A design approach should define and defend the intended design scope to achieve the intended value creation. A clear distinction between inside-the-boundary complexities versus outside-the-boundary complexities, design domains, and areas of concern for the intended industry.	Value creation is paramount when monitoring process performance and it is directly influencing the customer experience, especially in a service delivery business. The main user, i.e. deployer of the design approach, would be the BPM governance body, whereas the major beneficiary would be the end customer. The culture in every team would be different, and therefore the inside-the-boundary scope would need to be designed accordingly. In every implementation the design domains would need to be addressed as specified. ESPO can be used to create a *process ownership* function at a financial services enterprise. The centralised BPM governance body in step 1 of the methodology (See section **Error! Reference s ource not found.**.), will use this approach, with the support from senior management, to affect the culture and practices in the selected enterprise towards the deployment of ESPO within the boundaries of that legal entity, depending on the size and readiness of the enterprise
Principle F: Representations of design scope	A design approach should clearly define and motivate notation standards that are used to describe/represent the design scope adequately. Define notations to describe design domains and motivate any deviation from the standard.	The representation of the design scope should be simple enough for the business to understand it. Therefore, a departing point is recommended as the value chain concept, which is also easier for the business to maintain on a continuous basis.
Principle G: Approach form and function	A design approach should clearly define the constructs and features of the approach, for example using the four EECM components as a metamodel to identify and define the constructs of an approach. Define the overall structure and organisation of the approach, together with the mechanisms, practices, and roles.	ESPO as an approach, is structured according to the three components of EECM, presented in Table 17: why to evolve, what to evolve, and how to evolve. One of the mechanisms of ESPO, the methodology of deployment, as illustrated in Figure 52, is based on practical execution, and therefore reflection would be required prior to continuing to the next step in the methodology. Adherence to governance as provided by the CoE would be important throughout the execution. A pilot approach as an initial summative deployment is recommended as per the valuation strategy in 4.1.
Principle H: Justificatory knowledge	A design approach must provide explanatory knowledge that links the paradigm of value creation with its constructional components. Define kernel theories on which the approach is based.	The first version of ESPO was developed inductively from existing literature on *process ownership* and the extracted knowledge was re-structured according to EECM (See section 9), to create a coherent approach for deploying ESPO, using design theories.

Principle	Explanation	Adherence
Principle I: Approach mutability	A design approach should clearly state the possibilities for tailoring the approach within the pre-defined design scope. Identify possibilities for tailoring the approach	Culture components might look different depending on the readiness of the using system, i.e. environment. Readiness assessment should be done on the culture of each organisation and the journey should be shaped accordingly. The specific industry of the enterprise could be different, in which case the architecture considerations would be different. The process improvement methodologies might be different than DMAIC or Lean, in which case the methods would be different. The enterprise might not be ready to contract with a full-time process owner. In that instance the job description should be adjusted to allow sufficient time for process owner activities and participation. A fully fledge BPM governance organisation might not exist, in which case a governance mandate must be contracted with an executive. A BPM governance must exist in some form.
Principle J: Principles of implementation (conditional)	A design approach may incorporate guidance for implementing the approach. Consider the pre-defined design scope and decide whether additional advice would add value, e.g. additional advice may be required if the approach has been designed for the health industry.	A fully fledge BPM governance organisation might not exist, in which case a governance mandate must be contracted with an executive. A BPM governance must exist in some form for the deployment of this approach. Change management is critical to prepare the culture, leadership and process awareness.
Principle K: Expository instantiation (optional)	A design approach may incorporate an instantiation. A realistic implementation of an approach contributes to the identification of potential problems in its design, also demonstrating its worth.	A Pilot deployment in a small team is planned, but beyond the scope of this study.

9.6 Validating artefacts in DSR

A design artefact is complete and effective when it satisfies the requirements and constraints of the problem it was meant to solve. Therefore, the evaluation phase and/or framework provide essential feedback to the construction phase to ensure improved quality of the process and the actual design of the artefact *(Hevner et al., 2004).*

Table 19: Validating against Design Guidelines during DSR *(Hevner et al., 2004)*

Guideline	Description	Adherence
Guideline 1: Design as an artefact	DSR must produce viable artefacts in the form of a construct, a model, a method, or an instantiation. The capabilities of the artefact (whether it is in an IT, people, organisational or social context) are crucial and DSR efforts are required for their creation. The artefact must be described effectively, enabling its implementation and application in an appropriate domain.	The artefact provides guidelines for *process ownership* deployment using the recognised EECM artefact as a reference model for a "make plan" and a "use plan" according to Weigand's ontology *(Weigand et al., 2021)*.

Guideline	Description	Adherence
Guideline 2: Problem relevance	Thus, even though DSR includes IT artefacts as designed objects, according to Hevner et al. *(2004)*, Hoogervorst *(2018)* argues that DSR is also applicable to enterprise engineering as a research process.	The discussion on the problem is clear and relevant (Section 2) and it has been proven to be an important and relevant problem. (Section 7.1 where the problem has been described as a general phenomenon) The solution will be implemented. (Section 11.7 states the verbatim buy-in from the BPM governance body)
Guideline 3: Design evaluation	The utility, quality, and efficacy of a design artefact must be rigorously demonstrated via well-executed evaluation methods	The evaluation strategy informed the evaluation events where the evaluation events are discussed in section 11.
Guideline 4: Research Contribution	Effective DSR must provide clear and verifiable contributions in the areas of the design artefact, design foundations, and/or design methodologies.	The current literature does not have a coherent approach to deploy *process ownership*. Neither does a consolidated PO functional description exist. ESPO has been created as a verifiable contribution.
Guideline 5: Research Rigor	DSR relies upon the application of rigorous methods in both the construction and evaluation of the design artefact.	Rigorous methods have been used, as discussed in section 4.5. The methods used to accomplish this study is supported by the recommended rigor as found in the body of knowledge. (section 4.5) Some methods, however, draws from "lived experiences" and therefore may not be generalizable. A rigorous evaluation, however, is beyond the timeline of this study.
Guideline 6: Design as a search process	The search for an effective artefact requires utilising available means or processes to reach desired ends while satisfying laws in the problem environment.	The process of designing ESPO was an iterative process in search for requirements. Construction of ESPO was based on design guidance, literature extraction and "lived experiences".
Guideline 7: Communication of research	Design-science research must be presented effectively both to technology-oriented as well as management-oriented audiences.	The research has prepared an article submission to an accredited journal. It has also been demonstrated to Co. INS during the research.

9.7 Chapter Summary

This chapter answers SQ2, i.e. *"What is the structure of the coherent approach"?* ESPO was structured into a coherent approach, using the design guidance in Chapter 8. The design scope consists of the organisation domain for the PO function, the supporting human skills and know-how domain, the supporting ICT domain and the supporting culture aspect. The organisation domain for the BPM governance function is also within the boundary of the ESPO.

The production organisation has been developed consisting of key activities and an identity statement to summarise the key functions and the illustration in Figure 55 repeated here for ease of reading this dissertation.

The organisational design scope includes a definition of production and coordination tasks, that need to be performed by the PO function. Based on the key activities and subsequent processes the operational process knowledge and expertise, facilitation skills, knowledge of process management, communication skills and leadership skills were rated as the most needed competencies for the PO function, i.e. the human skills and know-how design specifications.

The culture aspect design specifications were analysed using the iceberg model comprising of the values as invisible elements, and actions/behaviours and structures in the physical environment as the visible elements. Change management using the CERT-values (Customer orientation, excellence, responsibility and teamwork) is strongly recommended to identify the readiness of the enterprise prior to the deployment of the PO function.

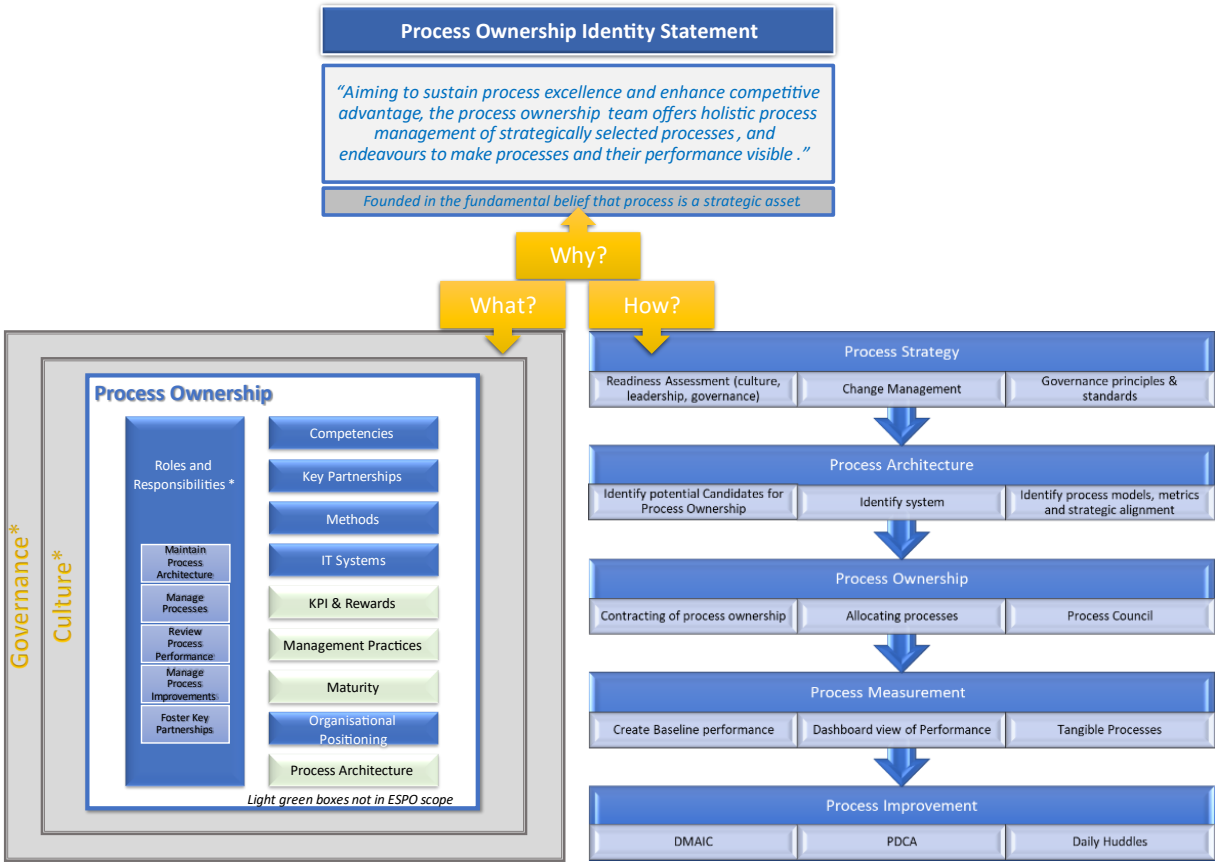

Figure 55: ESPO constructs to guide the design and deployment of a PO function (repeated)

The ICT design scope includes systems to support the process owner's production tasks. Some of the production tasks include the identification of key activities to create a heatmap for strategic alignment, modelling processes, benchmarking processes, approving process variants, monitoring process performance, and managing process improvement. Design specifications have been listed for the creation of a heatmap using an entity relationship diagram (ERD) and detail functional requirements.

The BPM governance body design specifies the governance principles for the ESPO approach.

Lastly the implementation design has been specified from literature and lived experiences.

The functional design, constructional design and implementation design were then used to define ESPO as an approach that guides the development of a PO function at an enterprise, validating ESPO as an approach, using EECM as a holistic reference model.

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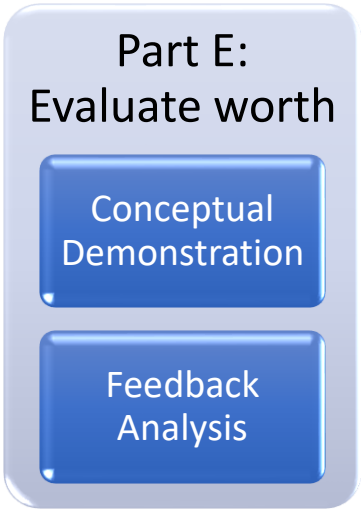
PART E: EVALUATING THE WORTH

"It is not the mountain you climb that wears you down, but the pebble in your shoe."

— Muhammed Ali

Part E of the dissertation is the actual demonstration and evaluation of the idea or concept to experts in practice, to get an unbiased and meaningful evaluation to increase the usefulness, and consider things that might derail the focus of the intention:



- Chapter 10 provides the conceptual demonstration to prove the worth.
- Chapter 11 provides the feedback analysis as per the research participants.

CHAPTER 10: DEMONSTRATION

Following the guidance of Peffers *et al.* *(2007)* as detailed in Chapter 3, the demonstration phase focuses on the *usefulness and efficiency of the artefact to solve the problem*. This could be an experiment, simulation, case study, proof, or other activity.

This chapter indicates that the functional requirements of ESPO are sufficient, demonstrating the ESPO retroactively using a comparison with the successful green belt (GB) certification journey in Co. INS. The chapter answers SQ3, i.e. "*What demonstration provides evidence indicating that the functional requirements of the designed approach are sufficient"?*

10.1 Brief explanation of the green belt journey

The GB journey at Co. INS started in 2016 and to date has resulted in 95 certified GBs'. Each of the GBs' must provide evidence of significant process improvement as a pre-requisite for certification. They must attend training, as well as improving a process within their environment with a fair amount of sustainability, i.e. improvement which is consistent over a long term.

The GBs' are applying for the training, and 15 delegates are selected through a rigorous process of assessing their aptitude and skills. Upon selection, they enrol on the training via a contract being signed by them and their manager. Parallel to the training they need to select a process which needs fixing. This is mostly done in collaboration with their managers. They then use the DMAIC methodology for the process improvement, which concerns the targeted performance in comparison with the actual performance. Throughout their journey they are coached to support progress and rigor of analysis. They also get access to statistical software for the "Analyse" phase in DMAIC. During the journey, the GBs' often encounter resistance from several stakeholders. It is then when they turn to the BPM CoE for advice or support to overcome this hurdle. During the journey there is opportunity to present to steering committees to showcase the progress or results. Visual management to indicate process performance is expected as a key output throughout the journey. The duration of the journey is expected to be one year. Thereafter the GBs' are only doing projects when they are mandated or tasked with a project, which does not happen frequently.

Successful Results of the GB journey

Of the 150 enrolments since 2016, 95 certifications were awarded (68%), which indicates a degree of success to create the systemic capability in addressing poor process performance.

The results of focused *process ownership* are evident in the following examples of process performance:

- The % reviews on policy wording schedules for compliance, improved from 23% to 95%.
- The turnaround time to cancel a policy within 150 days improved from 0% capability to 80% capability.
- The turnaround time for resolving incidents logged improved from 26 hours on average to 16 hours on average on a consistent basis.

The above results provide evidence that the GB journey is successful in addressing the problem of poor process performance.

10.2 Aligning ESPO with the green belt journey

The ESPO implementation guidance, as repeated in Figure 56 for ease of reading this dissertation, would be the focus of the demonstration of the ESPO approach, only focusing on process performance monitoring.

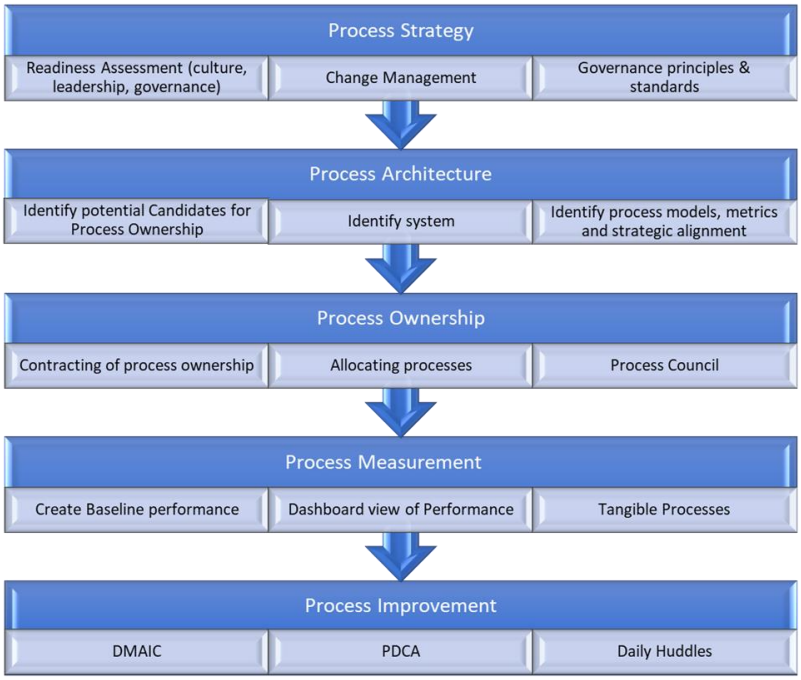


Figure 56: ESPO's implementation guidance for the deployment of a PO function (repeated)

Using the above successful GB journey in section 10.1 to demonstrate the usefulness of the ESPO methodology guidance to deploy a PO function, the following alignment is noted in Table 20 using green font to indicated similarities, orange font for slight differences and red font where clear differences are identified:

Table 20: Demonstration of ESPO implementation guidance compared to the actual GB Journey

ESPO Methodology Guidance	**Actual GB Journey**	**Comparison Notes**
Process Strategy		
- Readiness Assessment (culture, leadership, governance)	An assessment of the target area is done. • The target area for potential GBs' is strategically selected based on the process culture of the area. The BPM CoE manages this process with the existing governance in place. • Governance is ready (since 2016).	The iceberg model of ESPO defines the culture in section 7.2.3. An assessment is required initially. The BPM governance organisation must be in place to some degree (Section 9.2.2 details the design specifications). Similar execution in both journeys.
- Change Management	Change Management is required upfront to contract time with management and selecting a project.	What was learned from the literature, is that it should be done much earlier in the process to affect the correct culture and management commitment up-front. Similar execution in both journeys.

ESPO Methodology Guidance	**Actual GB Journey**	**Comparison Notes**

- Governance principles and standards	GB journey governance includes:
	• Support from senior management for the GB journey to happen.
	  • Since 2016
	• Lean mindset in the organisational culture.
	  • This is why process excellence training started, as it was apparent that the team around the GB was not supporting and understanding the GB journey.
	• Strategic alignment capability.
	  • This is not always the case. Sometimes the GB selects any process in need of improvement.
	• Clear definition of roles and responsibilities.
	  • No conflict as the role is not permanent.
	• Process owners must be contracted on a full-time basis.
	  • The GBs' really struggle to balance the priorities between the project and their normal job. It is therefore evident that part-time contracting is not sufficient.
	• Process Owners must have authority and accountability.
	  • It is evident that GBs' without sufficient authority do not manage to improve the process, and hence they seldom certify.
		ESPO Governance principles and standards include:
		• Support from senior management.
		• Lean mindset in the organisational culture.
		• Strategic alignment capability
		  • This is not a governance principle on the GB journey.
		  • *Perhaps it is too big a request to have a part time novice GB pay attention to a strategic project.*
		• Clear definition of roles and responsibilities.
		• Process owners must be contracted on a full-time basis.
		• Process Owners must have authority and accountability.

Process Architecture		

- Identify potential Candidates for Process Ownership	Selection of delegates is based on rigorous selection:
	• management approval
	  • Authority in team
	• self-nomination (passion)
	• seniority
	• aptitude for leadership
	• EQ and resilience assessment
	• data analysis proficiency
	  • Data analytics proficiency to some degree is required
	• Interview
	Anyone is not accepted. Selection is a thoughtful and detailed process.
		Selection is based on the required Competencies:
		• Expertise knowledge of the listed processes
		• Facilitation Skills (part of GB Curriculum)
		• Knowledge of Process Management (part of GB Curriculum)
		• Communication skills
		• Leadership Skills and Experience
		• Systems Thinking (Perception of interdependencies)
		• Social and Emotional Intelligence
		• Decision-Making Ability (part of GB Curriculum)
		• Resilience
		• Proficiency to Visualize process data (part of GB Curriculum)
		• Problem Solving Ability (part of GB Curriculum)
		• Knowledge of Change Management (part of GB Curriculum)
		• Knowledge of Project Management
		• Coaching Ability
		Similar execution in both journeys
		Some competencies are acquired during the GB training, whereas ESPO require it upfront
		New skills required – *which might not negatively affect the ESPO guidance*

ESPO Methodology Guidance	Actual GB Journey	Comparison Notes
- Identify system	Currently using Excel.	ESPO guides similar system requirements for strategic alignment. Similar execution in both journeys.
- Identify process models, metrics and strategic alignment	Currently using Excel.	ESPO list and rate processes for strategic alignment in the same way as currently being done. Similar execution in both journeys.
Process Ownership		
- Contracting of process ownership	Contract is signed to complete the training part-time. • Process Ownership not contracted.	ESPO contracts ownership on a full-time basis. *Ownership contracting on a full-time basis will not negatively impact ESPO success, but rather provide sufficient time for process work.*
- Allocating processes	1 x Project added to KPIs.	Probably portfolio of processes – *ESPO is not specific.* *Portfolio of processes might not negatively impact ESPO success, unless the process is performing really poor or too many poor processes allocated to process owner.*
- Process Council	Steering committee feedback to provide feedback on progress and insights in project.	Monthly Process Council to provide feedback on process performance, progress on improvement projects, and insights in projects. Similar execution and accountability in both journeys.
Process Measurement		
- Create Baseline performance	The targeted performance is articulated.	The targeted performance is articulated. Probably portfolio of processes – *ESPO is not specific.* *Would portfolio of processes dashboard negatively impact ESPO success?*
- Ensure process optimisation	Key Tasks contracted: • Create a process heatmap ○ Involved afterwards if done by BPM CoE • Create process models • Report on process performance • Manage process improvements	Key Tasks contracted: • Create a process heatmap (Done by some green belts after certification) • Create process models • Benchmark processes (new task in ESPO) • Approve processes variants (new task in ESPO) • Report on process performance • Manage process improvements *Additional tasks will not negatively impact ESPO success if approached as a matter of maturity and only when process owner has been established for some time.*
- Regular communication of process performance	Gemba Walks Process Maps Visual Management	Gemba Walks Process Maps Visual Management (Dashboard)

ESPO Methodology Guidance	Actual GB Journey	Comparison Notes
	Frequent project meetings	Frequent project meetings Manco Meetings Team Coaching *Additional "communication" will not derail ESPO if done infrequently*
Process Improvement		
- Realising the benefits	Deployment of Solutions (DMAIC) PDCA and Huddles to sustain improvements	Deployment of Solutions (DMAIC) PDCA and Huddles to sustain improvements Similar execution in both journeys

The differences between the two journeys led to the following considerations with regards to the potential success of ESPO's implementation guidance:

- Would 'ownership' contracting negatively impact ESPO's success?
- Would portfolio of processes negatively impact ESPO's success?
    - Contracting
    - Dashboard view
- Would additional tasks negatively impact ESPO's success?
- Would a stronger, or more focused, governance negatively impact ESPO's success?
- Would different competencies negatively impact ESPO's success?
- Would additional "communication" negatively impact ESPO's success?

In the absence of a potential burden when comparing the successful GB journey to that of ESPO deployment, the demonstration of one requirement in ESPO indicates the potential sufficiency of the functional requirements of ESPO for guiding the deployment of a PO function.

There are a few provisors from the demonstration that is important to note:

1. Ensure sufficient time for "settling in" and change management, i.e. Do not allocate too many processes to begin with.
2. Do regular check-ins with the process owner to monitor time commitments and -constraints
3. Do "DMAIC on DMAIC" and continuously improve the process of deployment by understanding the hurdles and blockers and removing them.
4. Allocated processes must be strategic in nature to overcome additional governance restrictions.

The specifications not yet defined in the ESPO approach, would need to be defined in the next evaluation event as part of the planned pilot.

10.3 Chapter Summary

Answering SQ3, the demonstration compares the ESPO deployment with the successful journey of deploying green belts on a part-time basis for a year on one project to optimise and communicate process performance.

The comparison provided evidence of a high likelihood of success of improved process performance if a process owner is contracted on a full-time basis to a portfolio of strategically aligned processes.

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CHAPTER 11: EVALUATION AND FEEDBACK

The evaluation of the artefact is the next step in the DSR methodology as illustrated in Figure 14. The purpose of evaluation is to observe and measure how well the artefact addresses the problem. This includes the comparison of objectives with actual observations.

The chapter presents *evaluation* results, providing evidence that ESPO can prioritize process management to ensure *improved process performance* answering SQ4, i.e. *"What evaluation results provide evidence that the newly designed approach can prioritize process management to ensure improved process performance"?*

An evaluation study was devised using the guidance of Venable et al. *(2016)*. A Human Risk and Effectiveness strategy was selected, and the evaluation events planned in section 4.1 and 4.4. A descriptive method was chosen to create an informed argument from literature to evaluate the artefacts utility, organisational fit and effectiveness.

11.1 Evaluation events

In section 4.4 the evaluation events are planned to use the Human Risk and Effectiveness strategy. The evaluation strategy is depicted in Figure 57 for ease of reading this dissertation. It consisted of five events.

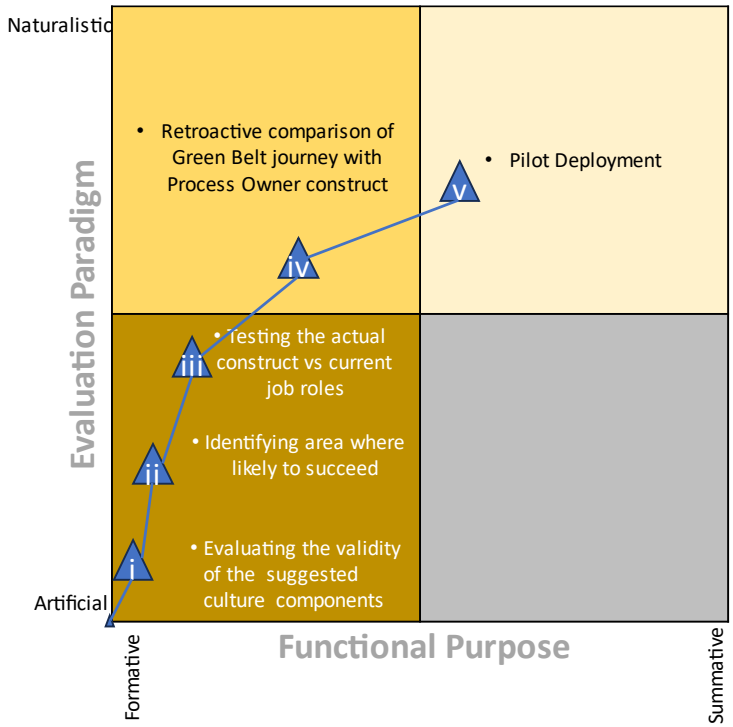

Figure 57: DSR evaluation strategy for this study - based on *(Venable et al., 2016)* (Repeated)

A preliminary demonstration (event "iv") to the BPM CoE resulted in a positive evaluation overall, with a requirement for more detail around the process architecture and the strategic alignment of processes, as that needs to be included in the governance practices.

The next step in this research study at the time of submission (event "v") is to demonstrate this approach to obtain evaluation from process experts and functional management within a certain cultural setting. The unbiased evaluation of the approach is dependent on the cultural readiness within the business. A readiness assessment has been done on the cultural components of different teams within Co. INS to inform the planned pilot as a near summative assessment, which is beyond the scope of this study.

The next sections will discuss the events and the results. As depicted in Figure 57 and highlighted in Table 12 elaborating on the ESPO design scope, the essential tasks and cultural elements are included in the scope for evaluation.

11.2 Launch the research

The launch of the research used a questionnaire to obtain background information around the participants. The participants were certified Green Belts in the community of practice, as well as their management team, and/or colleagues who had exposure to process improvement initiatives.

The questionnaire contained the following high-level questions:

- Demographic info of participant
    - Name
    - Department
    - Team
    - Services delivered by the team
    - Job grade
    - Groups applicable to the participant's role
        - Green belt
        - Product Owner
        - Manager
        - Data Owner
        - Business Analyst
        - BPM CoE
- Process Involvement
    - Level of process training
        - Certified green/black belt (active)
        - Certified green/black belt (inactive)
        - Process Excellence training
        - None
    - Level of Process Proficiency (Likert scale: 1 – 10)
    - Experience in Process Management (0 -3 years, 3 – 5 years, 5+ years)
    - Assumed Process Role
        - Process Expert
        - Process Owner
        - Process Participant
        - Process Steward

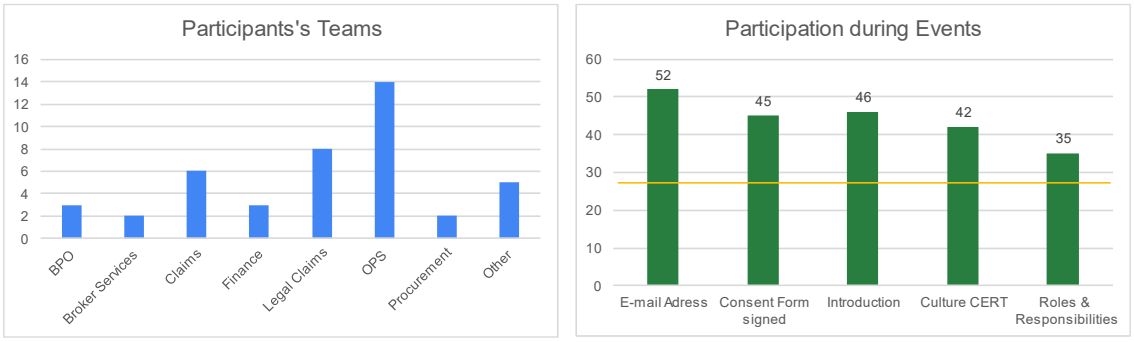

Figure 58: Participants distribution across teams throughout the evaluation journey

The team distribution above is indicating that a number of people across the business expressed intent to participate.

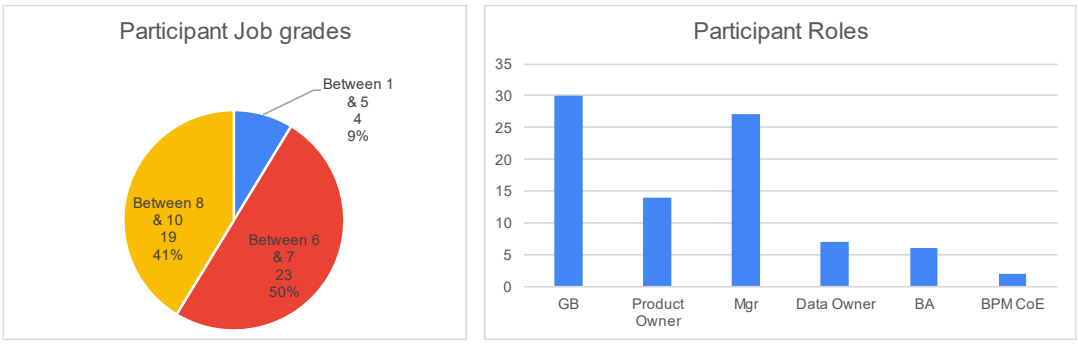

Figure 59: Job composition of participants

The job grade (JG) dispersion in the above visualisation indicates that 59% of the participants are senior people between JG1 - JG7, whilst the majority of the participants associates with a managerial position and/or a green belt. JG1 is the level of the CEO of Co. INS, whereas JG6 – JG7 is senior management and JG 8 – JG10 is regarded as middle management.

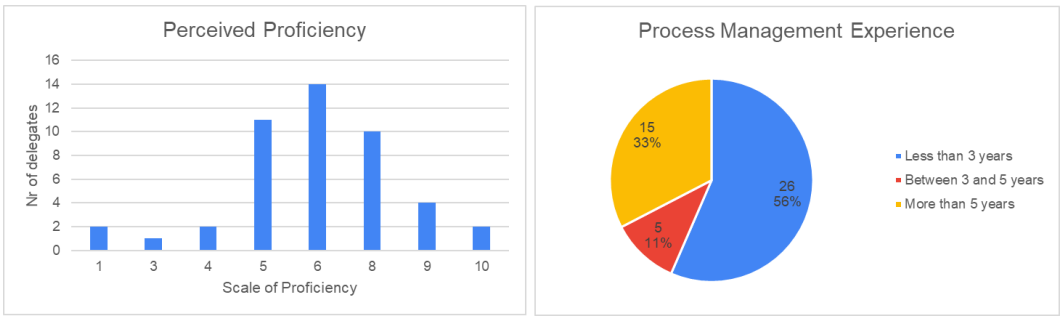

Figure 60: Process proficiency and experience of participants

The process proficiency in the above visualisation seems relatively high, whereas the experience with process management seems to be mostly less than 3 years. This correlates as the green belts who recently certified, have not yet “lost the skill” and still perceive themselves as very proficient.

The participants in this study are therefore credible, knowledgeable and their input matters.

However, only 28 people eventually participated consistently on a continuous basis in all the episodes detailed in the following sections. This sample is then used as it is the only available participants in Co. INS with sufficient knowledge and expertise to be able give meaningful input.

11.3 Evaluating the validity of culture components (Event "i")

The evaluation episode to assess the validity of the culture components was done on the 3 components of the iceberg model: actions, structures and values. (See Figure 29).

The participants were asked to rate the following on all 3 components:

- The maturity of each component in their teams (Current Rating out of 4)
  "Rate to what degree are these actions visible in your department currently"

- The relative importance of each component as part of a potential top 10 actions for *process ownership* (Selection – a count)
  "Which of the items in the list would you select as important for a process world?" (Min 10)

11.3.1 Actions

The analysis is done for all the input received, but then only the top 5 actions as selected by the experts. The experts are participants with more than 5 years' experience, and the participants with a proficiency between 8 – 10.

Figure 61: Cultural actions selection and maturity

The key finding from this analysis as indicated in Figure 61 is that there is not a specific action that dominates the rest, or a specific action that needs to be removed from the priorities. The most selected action, "Process Performance is visible and understood" scored very low on the rating with regards to current maturity, which means process performance is not shared or visualised as a rule. Another obvious low maturity item is the action of "Daily huddles are encouraged and rewarded", which means that daily huddles are not being encouraged as a rule.

The top 5 actions selected by the experts are indicated in the yellow stars above each action in order of priority for implementing the specific practice.

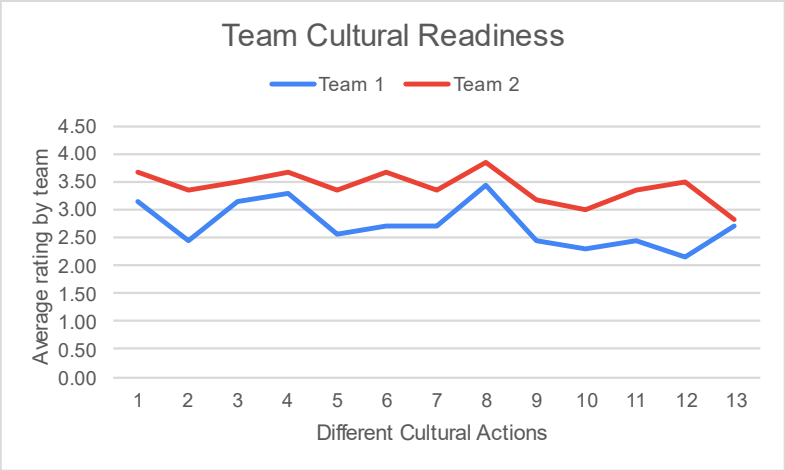

Figure 62: Cultural readiness for actions

In the visual comparison indicated in Figure 62, the cultural elements have been hidden as it is the comparison between the teams that are important, and not the actual action. Team 1 and Team 2 are from different departments, which may not be declared as the research has promised anonymity. From the comparison it is clear that Team 2 is perceived to be more mature than Team 1 regarding cultural readiness. (Note: only 2 teams have been used due to volumes per team).

11.3.2 Structures

This analysis considered all the input received, but then the top 5 actions as selected by the experts only were highlighted. The experts are participants with more than 5 years' experience, and the participants with a proficiency between 8 – 10.

This specific analysis was considering the chosen structures to be deployed in order to guide the influencing of the culture during the deployment of the specific practice.

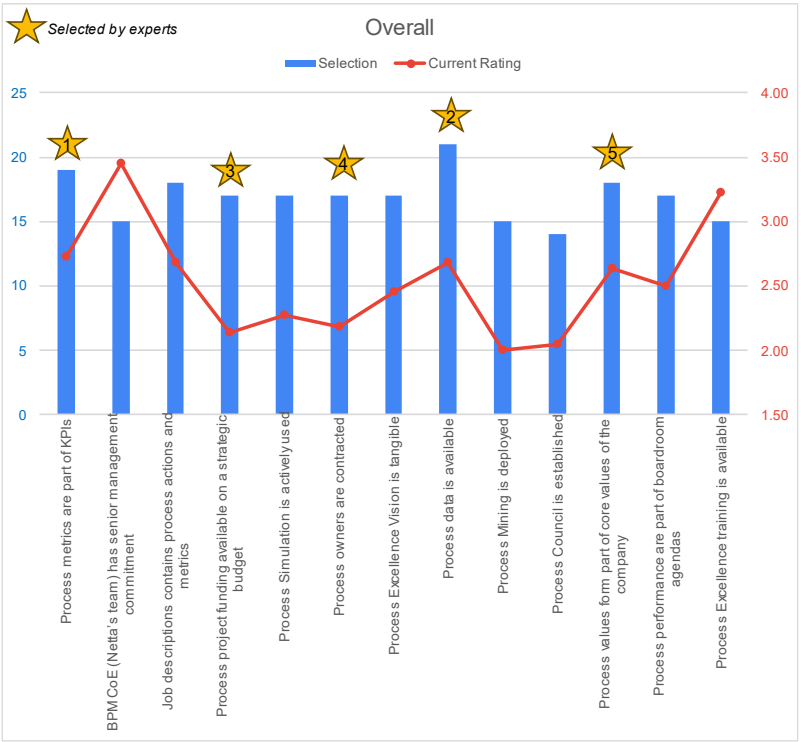

Figure 63: Cultural structures selection and maturity

The key finding from this analysis is that there are a few structural items which are less mature, e.g. process mining and process council that are not executed in reality. The most selected structure by the experts is "Process metrics are part of KPIs".

The top 5 structures selected by the experts are indicated in the yellow stars above each structure in Figure 63 in order of priority for implementing the specific practice.

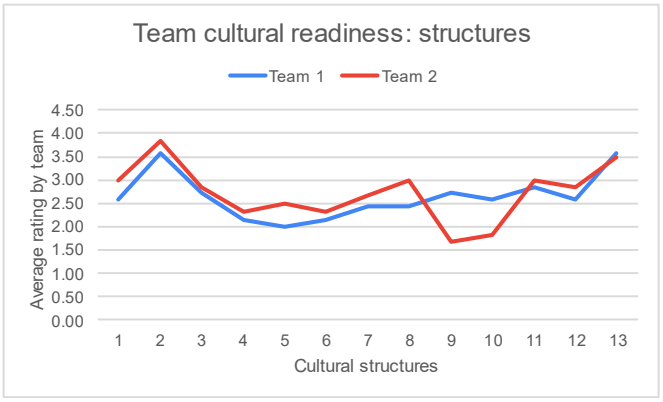

Figure 64: Cultural readiness for structures

In the visual comparison above, the cultural elements have been hidden as it is the comparison between the teams that are important, and not the actual structure. From the comparison it is clear that Team 2 is perceived to be more mature than Team 1. (Note: only 2 teams have been used due to volumes per team).

11.3.3 Values

The analysis is done for all the input received, but then only the top 5 actions as selected by the experts. The experts are participants with more than 5 years' experience, and the participants with a proficiency between 8 – 10.

This specific analysis was considering the chosen cultural values to be deployed in order to guide the influencing of the culture during the deployment of the specific practice.

Figure 65: Cultural values selection and maturity

The key finding from this analysis is that "no tolerance for defects" is low on the maturity rating, which is contradictory to a Lean mindset. It is perhaps due to the definition of "defects" which are not visible or agreed upon in Co. INS. The lowest selected value, "Keeping people busy is a utilisation trap" shows the systemic belief that people should work harder for process improvement. People's productivity has been a key measure for years, and it seems as if they do not want to engage in that conversation by ignoring it.

The top 5 values selected by the experts are indicated in the yellow stars above each value in Figure 65 in order of priority for implementing the specific practice.

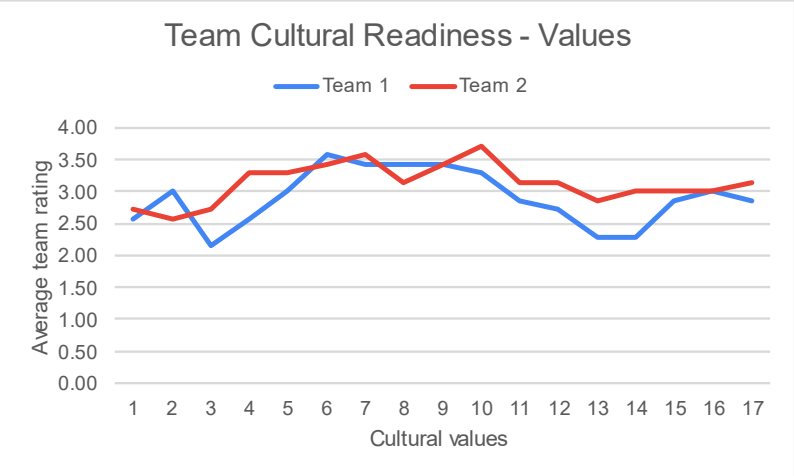

Figure 66: Cultural readiness for values

In the visual comparison in Figure 66, the cultural elements have been hidden as it is the comparison between the teams that are important, and not the actual value. From the comparison it is clear that Team 2 is perceived to be more mature than Team 1. (Note: only 2 teams have been used due to volumes per team).

11.4 Evaluating cultural readiness (Event "ii")

The CERT-values has been discussed in section 7.2.3 and recommended as a guide to assess the readiness of the enterprise.

A questionnaire was used to rate the maturity of the given CERT values on a four rate Likert scale ranging from:

- Not at all
- Maybe
- Fair amount
- Definitely

The individual values were described by certain behaviours.

The analysis was done by the team in order to confirm the readiness of the different teams.

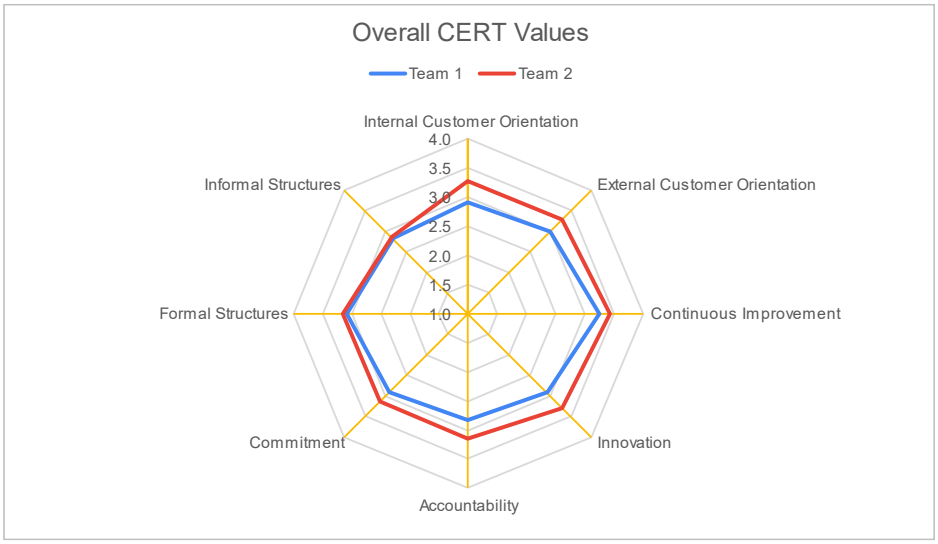

Figure 67: CERT values assessment

Team 2 seems to be more ready with a higher average rating on all the components in the assessment, except for teamwork component, consisting of teamwork across formal structures and teamwork across informal structures.

The key finding from this evaluation confirms the readiness of Team 2 for the pilot. This confirms the results in the previous sections, which then also mean the individual actions, structures and values are good indicators for culture as the results correspond with the CERT value assessment.

This then indicate Team 2 as the team where the pilot in episode “v” should take place.

11.5 Evaluation of roles and responsibilities (Event “iii”)

The next assessment was done on the validity of the roles and responsibilities. Three viewpoints were extracted:

- Which functional requirements overlap with the current role?
- Which functional requirements do not belong with process owner?
- Which function should be added to the roles and responsibilities of the process owner?

11.5.1 Overlapping responsibilities

Since a number of the participants are informally contracted as process owners on a part time basis, there would be some overlapping responsibilities.

This analysis did not result in any meaningful feedback. The next step would be to compare the stated roles and responsibilities with that of the product owner and business analyst.

11.5.2 Responsibilities to be deleted

The responsibility with the highest selection for removal was “Cost the process through the application of activity-based costing”. There is a strong opinion that the costing of the processes should be done by finance (Cost analysis).

The next responsibility to remove is “Identify, coordinate and lead a team of process participants (including coaching/training)”. The participants feel that the first line manager should be doing that and not the process owner. It is possible that participants interpret this responsibility as the normal managerial function of team management, where it focuses on the “leading of improvements”.

Another responsibility to be removed according to the participants, is the "Model, Define and Document processes" as participants feel that the activity belongs with a business analyst and not a process owner.

Action taken from this analysis, is that the context of the key activities of a process owner need to be reviewed during the pilot.

11.5.3 Responsibilities to be added

A few participants added a "risk assessment plan for the processes", to be added to the responsibilities of a process owner.

11.6 Evaluation of the ESPO approach (Event "iv")

The demonstration of the ESPO approach in Chapter 10 is an indication that full-time process ownership can successfully prioritise process performance. When referring to ESPO's potential success, the reference to a potential successful implementation guidance is made.

The ESPO approach differs in comparison to the successful green belt journey towards certification, raising the following questions:

- Would 'ownership' contracting negatively impact ESPO's success?
- Would a portfolio of processes negatively impact ESPO's success?
    - Contracting
    - Dashboard view
- Would additional tasks negatively impact ESPO's success?
- Would a stronger, or more focused, governance negatively impact ESPO's success?
- Would additional "communication" negatively impact ESPO's success?

The main researcher, also being a process expert at Co. INS, believe that the questions highlighted above will rather lead to a more successful journey than the previous green belt journey, but a real-world implementation of ESPO would be required to obtain evidence regarding this belief.

There are a few lessons learned from the demonstration that is important to note for refining the ESPO implementation guidance:

1. Ensure sufficient time for "settling in" and change management, i.e. Do not allocate too many processes to begin with.
2. Do regular check-ins with the process owner to monitor time commitments and -constraints.
3. Do "DMAIC on DMAIC" and continuously improve the process of deployment by understanding the hurdles and blockers and removing them.
4. Allocated processes must be strategic in nature to overcome additional governance restrictions.

The specifications not yet defined in the ESPO approach, would need to be defined in the next evaluation event as part of the planned pilot.

11.7 Feedback from BPM CoE

Supplementing the preliminary findings on the partial evaluation of ESPO, this section includes feedback from the BPM CoE on the significance of establishing process ownership at an enterprise, using an approach, such as ESPO.

Main Researcher: "Why does the Process Ownership study matter to Co. INS?"
Manager of BPM CoE: The Business Process Optimization team was established in 2014 with a clear purpose to enhance business output and competitive advantage through exceptional service experiences by assisting businesses in improving their process capabilities. This purpose is supported by the following competencies within the team: workflow enablement, process automation, process improvement, and process simulation initiatives. Over the past decade, the Lean and Sim team developed various services aimed at driving process improvement and fostering process-centric thinking within Co. INS. These consists of the delivery of Lean Six Sigma (LSS) projects, training Green Belts in the LSS methodology, Lean training, fostering a Community of Practice, offering process consultation, and conducting process simulation. While the team achieved significant milestones and savings, our focus is now on advancing to the next level of maturity: Strategic Alignment and Sustained Process Excellence. We believe that establishing clear *process ownership* will propel us towards achieving this goal and position processes as strategic assets within our organisation. At Co. INS, *process ownership* is pivotal for several reasons: 1. **Accountability**: Establishing ownership ensures accountability for process outcomes and performance, aligning directly with customer needs and organisational objectives. 2. **Efficiency and Effectiveness**: Process owners will drive the optimization of processes, implementing improvements that enhance efficiency and effectiveness, ultimately leading to improved service delivery and customer satisfaction. This approach ensures alignment of process metrics with customer-centric priorities. 3. **Consistency**: Process owners will ensure consistent adherence to processes across teams and departments, reducing defects, misunderstandings, and variability in service delivery commonly observed in the servicing industry. 4. **Communication and Coordination**: By serving as the primary point of contact, process owners facilitate communication and collaboration across the organisation, fostering a cohesive approach among different teams involved in the value chain. 5. **Risk Management**: Process owners will identify and mitigate risks associated with processes, ensuring compliance with regulations, policies, and standards. This proactive approach minimizes operational and regulatory risks for the organisation. 6. **Employee Engagement and Empowerment**: Process ownership empowers employees by assigning them responsibility and fostering a sense of ownership. This encourages proactive engagement in continuous improvement initiatives and enhances overall organisational pride and commitment. In conclusion, implementing *process ownership* at Co. INS will promote efficiencies, continuous improvement, and accountability. These attributes are essential for delivering high-quality service and maintaining a competitive advantage in our industry.

The feedback above is evidence that the artefact is useful, and that it is effective. It is not yet an organisational fit as no summative evaluation has been done, but it gives input into the next evaluation event to design a better fit.

11.8 Chapter Summary

Answering SQ4, the evaluation was done using a group of credible and senior people with high process proficiency across the business. ESPO was only evaluated partially, using 5 evaluation episodes.

The first evaluation episode involved the rating of the three cultural elements, i.e. actions, structures and values, to assess the validity of the provided cultural elements to create a culture conducive for process ownership. The results were useful to adjust the approach guidance of ESPO for creating a culture for a Lean mindset.

The participants were also requested to rate each value, action and structure with regards to maturity in their own teams. Two teams were compared due to volumes of participation, and Team 2 consistently scored higher on the cultural maturity assessment for values, actions and structure.

The second evaluation episode was then done to use the CERT - values in identifying the cultural readiness of the different teams. The results were confirmed with the assessment during the first episode, which confirmed that Team 2 should be used for the pilot and last evaluation, but also that the cultural elements in ESPO are fine.

The third evaluation was to assess the tasks of a process owner. The costing of processes was highlighted to be removed, as well as the "Identify, coordinate and lead a team of process participants (including coaching/training)" as they felt that it is the duty of the first line manager and not the process owner to coach the staff.

Another task they felt must be removed, is "Model, Define and Document processes" as they felt that that is the role of the business analyst. This will need to be reviewed in the next engagement as it was highlighted as an essential task of the process owner.

The fourth evaluation episode was the demonstration as discussed in Chapter 10.

The manager of BPM CoE department has lastly evaluated the study thus far and has expressed positive support.

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PART F: FINAL THOUGHTS

"Success is never final; failure is never fatal. It's courage that counts."

— John Wooden

Part F of the dissertation is the reflection on the study, and the motivation to master the courage needed to continue the work:

- Chapter 12 provides the discussions in reflection on the study.
- Chapter 13 provides the limitations and future work as a result of the study.
- Chapter 14 provides the conclusion of the study.

CHAPTER 12: DISCUSSION

The main contribution of this research was to create an approach for effective *process ownership*. The intent was to develop a new approach, called *Enablers Supporting effective Process Ownership* (ESPO), that would enable both the design and implementation of *process ownership* as a new function at the enterprise.

12.1 Addressing the research questions

The first contribution of the research was to extract knowledge from the existing knowledge base, inductively and deductively extracting themes from the *process ownership* body of knowledge.

As a second contribution, the knowledge was re-structured using the existing body of knowledge on enterprise design and using a contextualisation model, namely the enterprise engineering contextualisation model (EECM). The intent was to design an approach in a systematic way, highlighting the main design domains that should be re-designed for a PO function, identifying gaps within the existing knowledge base regarding *process ownership*, and to use the contextualised knowledge to develop a new approach, called ESPO.

Table 21: Research questions mapped to content (repeated)

Type	Nr	Research Questions	Answered
Discovery	DQ1	What are the reasons for process management not being prioritized at Co. INS?	Chapter 2
	DQ2	What knowledge exist in the current body of knowledge to describe *process ownership* within the financial sector?	Chapter 5, 6 and 7
Secondary	SQ1	What *theory* informs the structure of the coherent approach?	Chapter 8
	SQ2	What is the *structure* of the coherent approach?	Chapter 9
	SQ3	What *demonstration* provides evidence indicating that the functional requirements of the designed approach are sufficient?	Chapter 10
	SQ4	What *evaluation* results provide evidence that the newly designed approach can prioritize process management to ensure *improved process performance*?	Chapter 11

Answering DQ1, repeated in Table 21, the study unpacked the root causes for poor process performance using illustrations of a current reality tree and interrelationship diagram in Chapter 2

Answering DQ2, repeated in Table 21, the study has confirmed the significance of *process ownership* as foundational for effective Business Process Management, a key contributor to organisational performance. Process ownership creates a narrative which embodies an intentional culture of commitment towards process as a strategic asset. The study has confirmed that in the absence of *process ownership*, BPM efforts would hit the proverbial ceiling and result in "gradual degradation into ad-hoc performance" *(Danilova, 2019)*.

The study synthesised the practical enablers required for successful execution and contracting of *process ownership* with the lens and experience granted from a financial services environment

deploying Lean Six Sigma (LSS) as a strategy for process improvement. Key enablers for *process ownership* have been identified as governance and a culture that embrace servant leadership and a continuous improvement mindset, highlighting key roles and responsibilities of a process owner.

Answering SQ1, repeated in Table 21, the theory used to inform the ESPO design is the general system development process indicating functional design, constructional design and implementation design *(Dietz and Mulder, 2020)*. Enterprise engineering was used to demarcate appropriate design domains *(de Vries, 2017)*, and lastly the enterprise evolution contextualisation model was used *(de Vries et al., 2017)* to create the useful artefact, ESPO, for potential researchers that would like to deploy a process ownership enterprise.

Answering SQ2, repeated in Table 21, the existing knowledge on *process ownership* has been re-structured, following approach design principles *(De Vries, 2016)* into a new approach called ESPO.

ESPO can be used to guide practitioners in deploying process ownership *to enable processes to be regarded and nurtured as strategic assets.*

Answering SQ3, repeated in Table 21, a retrospective approach was followed, reflecting on one requirement identified during the design: *the requirement and specifications of how the deployment plan should look like.* The successful journey of the green belts from application to certification were used in reflection and comparison to provide evidence of the utility of the ESPO methodology. Although the demonstration is reflective and still formative, the next event (beyond the timeline of this study) will be a summative assessment with a naturalistic approach, which includes a pilot.

Answering SQ4, repeated in Table 21, the evaluation strategy developed using the guidelines from Venable *et al.(2016),* presented three goals for evaluation: (1) potential efficacy, (2) understanding the readiness of the culture, and (3) the efficiency of the evaluation allowed for during this study. Efficacy, and readiness of the culture has been proven through the evaluation using questionnaires and interviews.

The instruments ensuring rigour of the study, have been documented in section 4.5, using triangulation methods and the use of existing theory and guidelines to ensure a rigorous process in developing the ESPO. Danilova *(2019)* has rightfully highlighted the lack of theory around *process ownership.* In addition, the lack of appropriate governance to support and enable effective *process ownership* has been highlighted. The opportunity exists to build theory on *process ownership* and the main enablers through a practical application and confirmation of the suggested ESPO approach, as elaborated in the previous sections, specifically for an environment which adopted Lean Six Sigma.

The next step is to test the ESPO with evaluation feedback from process experts and functional management after demonstrating the ESPO approach in a pilot event in a naturalistic approach.

12.2 Reflection on the process of developing ESPO

A class-of-problems exist in which the lack of contracted full-time *process ownership* results in non-sustainable process improvements. A thorough Design Science Research method was followed *(Peffers et al., 2007)* to design a descriptive *process ownership* function, using literature as input, as well as the development of an approach, called ESPO, for the deployment of process ownership.

Root Cause Analysis, with guidance from Doggett *(2005)* was used to create more context around the problem of poor process performance and reasons for misalignment in the process partnership between process, people, systems, and data. A detailed literature review, guided by Okoli *(2015),* was done in answering some of the research questions, followed by a thematic analysis, guided by several authors *(Guest et al., 2011, Lochmiller, 2021, Bingham, 2023),* to inform the *process ownership* function. The

key enablers for *process ownership* are found to be culture, governance and defining clear roles and responsibilities for process owners. There is no evidence in the literature of a coherent approach to guide the design of a *process ownership* function at an enterprise, and hence the main contribution of this study was to develop a new approach, called *Enablers Supporting effective Process Ownership* (ESPO), that would enable both the design and implementation of *process ownership* as a new function at the enterprise.

The design of the ESPO approach was influenced by the General Systems Development Process, guided by Dietz and Mulder *(2020).* The demarcation of design domains was guided by De Vries *(2017)* as well as using the enterprise evolution contextualisation model (EECM), described by De Vries *et al.* as a reference model to design the ESPO as an approach artefact. The evaluation of ESPO followed a Human Risk and Effectiveness strategy, using formative assessments in the natural environment as guided by Venable *et al. (2016).* A descriptive approach was used to build an informed argument from literature to obtain feedback on the utility, efficiency, and organisational fit of the artefact and mechanisms that form part of ESPO. A retrospective approach was used to demonstrate the utility of ESPO.

The main user of ESPO at Co. INS, the manager of the BPM CoE, found the study significant and useful enough to include the research in the vision for Process Excellence at Co. INS for future deployment.

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CHAPTER 13: LIMITATIONS AND FUTURE WORK

The lack of references to the importance of data quality and data ownership as required for *process ownership*, as well as systems support, is apparent in the existing knowledge base. Another gap and potential opportunity for future work is an approach to align processes to strategic objectives to guide the development of the process architecture.

Limitations in the study is the formative nature of the evaluations, as well as the lack of rigorous methods to define design specifications.

Although this study only delivers a formative evaluation on certain elements of the scope, future work is discussed in Chapter 13. The first version of ESPO was developed, informed by literature and experience. However, the evaluation phase needs to ensure that the artefact is also evaluated with the participants to assess comprehensiveness and usefulness.

Some limitations of the ESPO approach are as follows:

- The stakeholders used in the ESPO approach are composite transactors as discussed in section 8.1. Some of these composites may include a different set of elementary transactor roles for a different enterprise than the PO function.
- Selected methods in ESPO may not be applicable to all enterprises. The list of methods might also not be conclusive and is more apparent in the financial sector.
- The culture elements in the iceberg illustration were selected from a Lean environment and might not be applicable to all enterprises.
- The governance might differ in scale at different enterprises.
- The ESPO deployment approach might be slightly different at different enterprises for every deployment as a result of size of the enterprise or maturity of a process culture.
- Architecture models have not been investigated as part of the design cycles for use as reference models for design input.
- Mechanisms for selection and measurement of concerns have not been investigated as part of ESPO.

This initial attempt created a design limitation, as well as an evaluation limitation, and therein presents opportunities for future research. The opportunities are indicated in the table below:

Table 22: Scope of ESPO's required design guidance (Repeated)

Enterprise design scope: System, Design Domain or Design Aspect	**Process Ownership Facet as per Chapter 7**	**Description as per Chapter 7**	**ESPO required guidance**	**Evaluation Scope**
Environment (using system)	NA	Definition of *process ownership* as a solution to the root causes identified in the environment.	Section 9.2.1	Not applicable
Organisation of governance function (design domain)	BPM governance	Discussion of governance required for BPM in a Lean transformation within the financial services environment.	Section 9.2.2	*Out of Scope for initial version* Future research

Enterprise design scope: System, Design Domain or Design Aspect	**Process Ownership Facet as per Chapter 7**	**Description as per Chapter 7**	**ESPO required guidance**	**Evaluation Scope**
	Key activities and resources	Roles and Responsibilities of BPM CoE.	Section 9.2.3	*Out of Scope for initial version* Future research
Culture (design aspect)	Culture	Required values and leaderships behaviours to be conducive for *process ownership* in a Lean transformation.	Section 9.2.4	Section 11.3
Organisation of PO function (design domain)	Key activities and resources	Roles and Responsibilities of PO.	Section 9.2.5	Section 11.5
	Methods	Methods to perform key activities within a Lean transformation.	Section 9.2.8	*Out of Scope for initial version* Future research
	KPI and Rewards	Measurement criteria for performance of PO team.	*Out of Scope for initial version* Initial requirements listed in Chapter **7.** Future research	*Out of Scope for initial version* Future research
	Management practices	Practices required to manage the PO organisation.	*Out of Scope for initial version* Initial requirements listed in Chapter **7.** Future research	*Out of Scope for initial version* Future research
	Process Architecture	Understanding what processes are used within an environment.	*Out of Scope for initial version* Initial requirements listed in Chapter **7.** Future research	*Out of Scope for initial version* Future research
Skills and know-how (design domain)	Competencies	Required knowledge, skills and know-how to perform key activities.	Section 9.2.7	*Out of Scope for initial version* Future research
ICT (design domain)	IT Systems	ICT to support process architecture.	Section 9.2.9	*Out of Scope for initial version* Future research

Enterprise design scope: System, Design Domain or Design Aspect	**Process Ownership Facet as per Chapter 7**	**Description as per Chapter 7**	**ESPO required guidance**	**Evaluation Scope**
Inside the legal boundary of the enterprise	Maturity	Requirements to increase maturity levels.	*Out of Scope for initial version* Initial requirements listed in Chapter **7.** Future research	*Out of Scope for initial version* Future research
	Organisational positioning	Discussion around a matrix organisation and its requirements.	Section 9.2.10	*Out of Scope for initial version* Future research
Outside the legal boundary of the enterprise	Key Partnerships	Stakeholders who will support or impact the delivery of the value proposition through execution of the key activities.	Section 9.2.6	*Out of Scope for initial version* Future research

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CHAPTER 14: CONCLUSION

This study has confirmed the significance of Process Ownership as a critical success factor for effective Business Process Management (BPM). BPM is a key contributor to organisational performance, and a key component of the multidimensional nature of the construct of process orientation. Process ownership creates a narrative which embodies an intentional culture of commitment towards process orientation, but it also demands a certain governance and close collaboration with the BPM Centre of Excellence. The study has confirmed that in the absence of *process ownership*, BPM efforts would hit the proverbial ceiling.

The impact of this study and design of the artefact demonstrated the practical enablers required for successful execution and contracting of *process ownership* with the lens and experience granted from a financial services environment deploying Lean Six Sigma as a process improvement strategy. It is a guideline for the actual deployment of *process ownership* to enable processes to be regarded and nurtured as strategic assets, the ultimate goal of the Process Excellence vision for Co. INS.

Using Gregor & Hevner *(2013)* to reflect on the research, it is concluded that the innovative combination and use of both descriptive knowledge (i.e. how systems *are*) from prior research, as well as prescriptive knowledge in designing and guiding a new approach (i.e. how systems must *become*), predicated a successful design research project. The objective of the research was to present a baseline of knowledge on process ownership, and partially evaluate a new artefact, ESPO.

ESPO could therefore be seen as a solution to a known problem, and hence be used as an improvement strategy to non-sustainable process excellence. The study provided initial evidence regarding the thesis statement, i.e.

The holistic development and deployment of

Enablers, Supporting effective Process Ownership (ESPO)

will prioritize process management to ensure improved process performance, and subsequently also support the realisation of increased competitive advantage in a financial services environment.

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CHAPTER 15: REFERENCES

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APPENDICES

The following appendices elaborate on the concepts mentioned and referred to in the study as further reading material for a better understanding of the context of the study.

A. Process heatmap Overview

The purpose of the heatmap is to indicate the health of the processes which are within the strategic scope of the organisation at that time. The health of the process is indicated as red, amber or green based on a weighted score calculated at the end of the compilation of the heatmap. The heatmap supports the selection of the critical few processes vs the useful many.

A subsequent advantage of the heatmap is that processes are made visible.

The heatmap is created using Excel. It is done during a few sessions with the business team where processes are listed, selected and scored – both from an internal perspective and an external perspective.

The underlying principle of the heatmap is that the business team interacting during these sessions know the business well enough, and therefore data is not needed to proof the performance of the processes. They work with the data every day, and hence they know if it is performing on a red, amber or green level. The discussions indicate the pain points and highlights very quickly where the process performance is failing. These discussions are then used to create consensus on the rating of the process.

The first step in the heatmap process is to identify the value chain – the major focus areas of the department, ie the “house”.

Then the processes are listed by the business team for each of these focus areas, or value chain component. There is often a question about the level of the processes to be listed, but amongst the team they quickly find the level on which to focus. And they can always go back and add more processes or remove previously listed processes.

The second step in the heatmap process is to select the more “important” processes, or the critical few. The selection is based on a factor using 3 criteria: 1) Strategy focus, 2) Frequency of use, and 3) Risk to the business of this process not performing well. Strategy changes every few years and therefore the process might not be within the scope of the operational strategy at that time. Some processes are used more often than other process, creating more demand for the process and is more exposed to potential variation. The risk of a “broken” process talks to the severity to the business if a process is not performing well. That could be creating a poor reputation with customers, or it could be loss of income or unnecessary expenses, or it could be creating rework for example.

Once the critical few processes are separated from the useful many –many teams opted to select all the processes if it is less than 50 in that specific business environment – the next step is to rate the selected processes. The rating is based on a good, average, poor selection, with good =1, average = 3 and poor = 9 to highlight or discriminate against the “broken processes”.

The process rating is calculated as a weighted score based on 4 criteria: 1) customer satisfaction, 2) process data quality and availability, 3) internal efficiency and 4) business partner compliance to process. The business team can adjust the weights for each criterion. Some processes do not have business partner involvement, in which case the weighting is set to 0% and the rest of the weights – totalling 100% - adjusted accordingly.

The team is then also encouraged to get a rating of the process outside of the group discussion, e.g. someone who receives the deliverables of this particular process on a regular basis.

Once the processes are rated, a pivot table is compiled of the process ratings and sorted according to the ratings from high to low, which displays the worst performing selected processes at the top. Those are the processes which should be focused on.

B. Process Excellence Vision Overview

Lean Culture elements: Artefacts (rituals?), values, beliefs *(Amaro et al., 2021)*

Px Vision Driver	Px Vision Component	Description
Training and Development	**LSS training**	GB Certification training (1 year) following the DMAIC methodology incl special tools for Santam Curriculum e.g. ABC/BOC, Customer moment map. Dedicated coaching throughout the year. 15 selected candidates (out of 50+ applications) doing a real-life project within Santam + simulated project in class. Each successful delegate gets a certificate. 69% certification rate. Added a special Change Management chapter at every module to increase the rate of deployment of projects. The culture is such that people being sent on training seldom implement any changes. GBs' struggled with deployment and hence the added module. Using SigmaXL for statistical analysis on LSS projects - even after certification.
	GB Certification	
	Change Management	
	Statistical Analysis	
	Px training	Lean training over 3 half days including Lean tools and concepts + Lean leadership. Certificate of Attendance to people attending all 3 sessions. Activity based training online and in-class. Selected Lean tools with simulated LEGO process. (no project required) Reaching 100+ people per year with 2 trainers doing about 5 waves each per year. People request training + being selected from HR list. Expectation is for Px Leaders to support GBs' and to look at processes differently and use the Px tools in practice.
	Lean Tools and Concepts	
	Lean Leadership	
	Community of Practice	New capability for all certified GBs'. (2023) Every 2 weeks to review tools e.g. VSM, process mapping etc, but also to talk and train on new concepts and tools (e.g. heatmap, simulation concepts, etc) During the CoP we aim to also review current projects or concerns the GBs' experience in their GB execution.
	Sharpen the saw	
	Review and Support	
Leadership	**Lean Leaders**	Leadership should ensure that the quality of Lean Leaders are upheld to ensure they fulfil the responsibilities allocated to them The Process Specialists perform internal consulting (and training) to facilitate the awareness, content and knowledge around Process Excellence, and the ongoing application of the Lean tools. The Green Belts who are responsible to execute on the Px concepts, rituals and projects Px Leaders who should enable the culture of process excellence. *"If the leaders don't show interest, it won't get done"*. Px Leaders should hold GBs' accountable and Process Owners who should protect the processes from losing value and who are accountable to manage processes as strategic assets The GBs' perform the execution of LSS tools and behaviours with Px Leaders, who hold the GBs' accountable and participate with them in initiatives. The Process owners manage and measure and govern process performance - M-Study detail
	Process Specialists	
	Green Belts	
	Px Leaders	
	Process Owners	
	Lean Strategic Alignment	The Lean leader recognizes the need for systems and structure to align with strategy and creates a process of redesign. Therefore, the alignment of Lean transformation to the overall strategy is important so that process excellence is not just seen as only a philosophy, but the way we work. Leadership is accountable for the Lean implementation across business units and different processes. Lean implementation goes hand in hand with maturity of the Px tools and concepts. Leadership is responsible to bridge the Lean transformation with IT priorities and align strategies.
	Lean Implementation	
	IT Priorities	

	Continuous Improvement Strategy *Encourage Px Rituals* *Process Performance Metrics*	The leadership of the organisation should have continuous improvement as part of their long- and short-term strategy for business agility, and they need to drive their management teams to achieve this, i.e. keep them accountable. Leadership needs to define the culture and values that underpins this behaviour and focus as part of their strategy, as change does not happen in isolation. Leadership needs to plan for it to happen. They should encourage their leadership teams to drive the deployment of Px Rituals (Huddles and PDCA's) It needs to become part of the Manco agenda and narrative. Leadership should monitor and define the ideal levels of process performance.
Lean Culture	**Servant Leadership** *Lean values* *Daily Huddles*	The Lean culture needs to create, define and embody the required behaviours to support process excellence. A Culture is always created – intentionally or unintentionally. Servant leadership is an intentional culture required for achieving Process Excellence, ie it is planned, communicated, talked about and visible. "How can I help" is at the heart of servant leadership, which is underpinned by the Lean values of e.g. teamwork rather than individual brilliance, no tolerance for defects, etc. Servant leadership is embodied through daily huddles to ascertain how the leader can remove hurdles and empower the team to maintain the Lean vision. "Respect for people" is a pivotal Lean value as we fix processes - not people.
	Employee Engagement *Empowerment* *Coaching and Development*	Employee Engagement is the result of a culture that empowers employees to do their best and encourage participation in process excellence initiatives. At Harley Davidson e.g. they have Continuous Improvement Cards where anyone can complete a card with issues and suggestions, and those cards gets discussed weekly. That created the collaborative approach to advance the Lean culture. Process issues should not be hidden in fear for retribution - it needs to be recorded, prioritized and discussed in order to remove the hurdles. Intrinsic Motivation is leading to more engagement and happy employees when they are coached and developed to master their own performance. Happy people also lead to happy customers.
	Learning Organisation *Rules of Engagement* *HR practices*	A learning organisation embraces failures as learning opportunities and do not start shouting if the course of events derail, but rather learn from the situation. A Lean culture defines the expected behaviours of people as guiding principles, and iterates the Lean values underpinned by Servant Leadership. HR Practises (e.g. Job descriptions, recruitment, reward and performance management) is highly affected by the intention to be a learning organisation. The values of the company underpin a Lean transformation and leaders with that attitude and demeanour are employed and developed.
Process as Strategic Asset	**Process Visibility and Design** *Visual Management* *Process Mining* *Process Simulation*	Another key principle of Lean transformation is making the process and its performance control visual. Visual management of the process is key: Process perspectives (map, VSM, etc), hurdles, ideas for improvement, data (boxplots, pie charts, etc), kanban, etc Process Mining is a key enabler to make all the variants of a process visible to understand the voice of the process. (visualisation on historic data) Process Simulation also visualise the effect of certain changes on the process - predict the intended and unintended consequences of planned changes. (experimentation)
	Customer Focus *KPI and Rewards* *Voice of the Customer*	Customer focus is the starting point, and no process can be unpacked without knowing the customer needs and expectations. Customer obsessed companies leverage design thinking and incentivise customer satisfaction. So, contracting and rewarding customer focus and satisfaction is critical to a Lean organisation. Subsequently important is knowing what the customer is actually saying by obtaining the voice of the customer.

	Process Capability	Focusing on the capability of the process to actually make the set target or customer promise, is the purpose of a Lean transformation or the LSS project. It needs to be measured on an ongoing (daily) basis. The improvement initiatives and LSS projects should focus on processes with a low capability and the aim is to improve the capability. The heatmap is a tool to assess the maturity of the process based on a weighted average of 4 different components of process capability: Customer satisfaction, internal efficiencies, data availability for process management, and broker/supplier compliance.
	LSS Projects	
	heatmaps (Maturity Assessment)	
	Relentlessly Reduce Waste	The relentless drive to identify and remove waste is a key Lean value, and it needs to be visible and actioned. Waste should not be tolerated. It should be visible where in the process the waste is taking the processes hostage and create bottlenecks (VSM). The action of removing waste on a continuous basis, without huge interventions required, is the PDCA of regular checking, experimenting and learning.
	VSM	
	PDCA	

C. ***List of Primary Studies identified***

Article/Book	Year	Author	Times cited[10]	Process Owner	Governance
A conceptual framework and classification of capability areas for business process maturity.	2014	Van Looy, Amy	167	x	
How to go from strategy to results: Institutionalising BPM governance within organisations.	2017	Joao Dias	124	x	x
Propositions on the interaction of organisational culture with other factors in the context of BPM adoption.	2018	Štemberger, Mojca Indihar	46	x	
Approach towards BPM adoption under hierarchy-market culture.	2016	Buh, Brina	4	x	
Human factor in business process management modelling competencies of BPM roles.	2021	Hrabal, Martin	26	x	x
Process ownership, process performance measurement and firm performance.	2011	Kohlbacher, Markus	92	x	
Process owners in business process management.	2019	Danilova, Kjersti Berg	52	x	x
Barriers to implementation of business process governance mechanisms.	2021	Jurczuk, Arkadiusz	3	x	x
Making *process ownership* work: Evidence from a global Delphi study.	2018	Danilova, Kjersti Berg	13	x	x
Process orientation conceptualization and measurement.	2011	Kohlbacher, Markus	221	x	
The joint impact of *process ownership* and continuous process improvement on financial performance and customer satisfaction.	2018	Weitlaner, Doris	3	x	
Understanding the Alignment of Employee Appraisals and Rewards with Business Process.	2019	Shafagatova, Aygun	4	x	
Capabilities for managing business processes: a measurement instrument.	2020	Van Looy, Amy	48	x	
The critical success factors of business process management.	2010	Trkman, Peter	1550	x	
The effects of process-oriented organisational design on firm performance.	2013	Kohlbacher, Markus	177	x	
The effects of process orientation: a literature review.	2010	Kohlbacher, Markus	452	x	
End to end process management implications for theory and practice.	2014	Maddern, Harry	73	x	
Experiences of implementing process management: a multiple-case study.	2010	Palmberg, Klara	174	x	
Assessment model for organisational business process maturity with a focus on BPM governance practices.	2015	De Boer, Fernanda Gobbi	57		x
Understanding Business Process Management: Implications for Theory and Practice.	2009	Smart, Andy	318	x	x

[10] By Google Scholar

D. Questionnaires used during evaluation events

Interaction·#1:¶
Team·and·Process·Background¶

Method:·Questionnaire¶

Purpose·of·this·questionnaire¶

- The·purpose·of·this·questionnaire·is·to·establish·the·group·of·people·who·would·be·able·to·participate·in·next·series·of·questionnaires.¶
- Another·purpose·is·to·establish·the·landscape·in·which·a·process·owner·would·be·deployed,·ie·how·many·managers·and·on·what·level·of·seniority.¶
- Another·potential·outcome·is·to·establish·how·many·processes·need·to·be·managed·in·a·department.¶
- Also·the·perceived·number·of·informal·process·owners·being·contracted·in·the·company.¶

Cover·letter·(see·separate·document)¶

Questions¶

Please·answer·the·questions·as·truthful·as·possible:¶
¶

YOU·WITHIN·YOUR·DEPARTMENT¤		
1.·Name·of·Respondent¤	Short·text¤	¤
2.·Select·Your·department¤	Options·Provided¤	• Claims¶ • Policy·Maintenance¶ • Sales¶ • Underwriting¶ • IT¶ • Finance¶ • HR¶ • Product·Development¶ • Risk·Management¶ • Procurement¶ • Other:-_____¤
3.·What·is·your·current·job·grade?¤	Options·Provided¤	• Between·1·and·5¶ • Between·6·and·7¶ • Between·8·and·10¤
4.·Select·the·group(s)·applicable·to·your·job·or·position?¤	Check·boxes·Provided¤	• Green·Belt¶ • First·Line·Manager¶ • Product·Owner¶ • Manager¶ • BPO·CoE·Team¶ • Data·Owner¶ • Business·Analyst¶ • HR·Representatives¤

YOUR PROCESS EXPOSURE		
5. What is your level of process training?	Check boxes Provided	• Certified Green/Black Belt (active) • Certified Green/Black Belt (not currently active) • Attended Process Excellence Training • Other: _____ • None
6. What is your level of process proficiency?	Likert Scale	1 – 10 1 = Nothing 10 = Expert level
7. What is your experience in process management?	Options Provided	• less than 3 years • Between 3 and 5 years • More than 5 years
8. Select the Process Role most applicable to you?	Options Provided	• Process participant: *Execute customer requests as my main responsibility (agent/consultant)* • Process steward: *Manages a team that interacts with the customers* • Process owner: *Responsible for process decisions and improvements, and actively monitor and manage process performance* • Process expert: *Execute process simulation, process mining, process training or LSS projects in collaboration with business* • None of the above
SELECTED DEPARTMENT		
9. Select the department as your so-called "understudy":	Options Provided	• Claims: Specialist Claims • Claims: Motor • Claims: Non-Motor • Claims: Management • Operations: Policy Maintenance • Operations: Sales • Operations: Other • Operations: Management • Finance: Business Enablement • Finance: Group Reporting • Finance: Operations • Finance: Management

Event·#1:¶
Values·conducive·for·BPM¶

Method:·Questionnaire¶

Purpose·of·this·questionnaire¶

Only·the·Process·Experts,·Process·Owners·and·active·Green·Belts·will·be·selected·as·participants·for·this·survey.¶
¶

- → The·purpose·of·this·questionnaire·is·to·establish·the·values·according·to·the·lived·experiences·of·the·audience·(process·experts·and·process·owners)¶
- → Another·purpose·is·to·establish·the·cultural·readiness·in·which·a·process·owner·would·be·deployed.¶
- → Another·potential·outcome·is·to·establish·what·needs·to·be·done·to·ensure·cultural·readiness.¶

Cover·letter·(see·separate·document)¶

Questions¶

Refer·to·the·diagram·below·–·specifically·the·values·section.¶
Please·answer·the·questions·as·truthful·as·possible:¶
¶

GENERAL¤		
1)→ **Name·of·Respondent¤**	Short·Text¤	¤
Values¤		
2)→ **Which·of·the·values·are·currently·at·play·in·this·selected·department:¤**	Rating:¶ Not·at·all¶ Maybe¶ Fair·Amount¶ Definitively¤	• → No·tolerance·for·defects·or·waste¶ • → Consistency·is·key¶ • → Employee·empowerment·doesn't·negate·leadership·authority¶ • → Respect·for·people·and·their·capabilities¶ • → Process·is·a·strategic·asset·¶ • → Asking·for·help·is·not·a·Sign·of·weakness¶ • → People·function·better·when·inspired·and·the·purpose·repeated¶ • → Do·not·jump·to·solutions·–·understand·first·¶ • → Learn·by·doing¶ • → Customers·deserve·excellent·service¶ • → Process·Innovation·needs·to·happen·continuously¶ • → Teamwork·is·fostered·–·not·only·individual·brilliance·¶ • → Keeping·people·busy·is·a·utilization·trap¶ • → Collaboration·is·easy·and·a·necessity·for·success·¶ • → Keeping·people·accountable·is·not·the·same·as·scolding·them·¶ • → Trust·is·foundational·for·relationships·and·teamwork·¶ • → Success·breeds·success·¤

3) Which of the values would you select as important for a process world? (Select at least 10)	Selection boxes Provided	• No tolerance for defects or waste • Consistency is key • Employee empowerment doesn't negate leadership authority • Respect for people and their capabilities • Process is a strategic asset • Asking for help is not a Sign of weakness • People function better when inspired and the purpose repeated • Do not jump to solutions -- understand first • Learn by doing • Customers deserve excellent service • Process Innovation needs to happen continuously • Teamwork is fostered -- not only individual brilliance • Keeping people busy is a utilization trap • Collaboration is easy and a necessity for success • Keeping people accountable is not the same as scolding them • Trust is foundational for relationships and teamwork • Success breeds success
4) Which additional values would you add as critical for Process Excellence? (not listed above)	Paragraph	
5) Creating a culture is difficult. Please elaborate on how you would go about influencing the culture to affect the specific values and beliefs you have selected as important? In other words, how would you make sure those values and beliefs are part of the foundation of the Process Excellence culture?	Paragraph	

Event·#1:¶
Actions·conducive·for·BPM¶

Method:·Questionnaire¶

Purpose·of·this·questionnaire¶

Only·the·Process·Experts·and·Process·Owners·and·active·Green·Belts·will·be·selected·as·participants·for·this·survey.¶
¶

- → The·purpose·of·this·questionnaire·is·to·establish·the·actions·according·to·the·lived·experiences·of·the·audience·(process·experts·and·process·owners)¶
- → Another·purpose·is·to·establish·the·cultural·readiness·in·which·a·process·owner·would·be·deployed.¶
- → Another·potential·outcome·is·to·establish·what·needs·to·be·done·to·ensure·cultural·readiness.¶

Cover·letter·(see·separate·document)¶

Questions¶

Refer·to·the·diagram·below·–·specifically·the·actions·section¶
Please·answer·the·questions·as·truthful·as·possible:¶
¶

GENERAL¤		
1)→ **Name·of· Respondent¤**	Short·Text¤	¤
Actions¤		
2)→ **Which·of·the· actions·are· currently·at·play·in· this·selected· department:¤**	Rating:¶ Not·at·all¶ Maybe¶ Fair·Amount¶ Definitively¤	• → Process·Excellence·training·is·prioritised¶ • → Process·Performance·is·visible·and·understood·¶ • → Impact·on·processes·is·thoroughly·investigated¶ • → Learnings·are·encouraged·during·times·of·failure·¶ • → Servant·leadership·is·practised·¶ • → Process·improvement·projects·are·well·communicated·and·¶ supported·¶ • → Process·conversations·take·place·on·all·levels·¶ • → Voice·of·the·Customer·is·measured·&·communicated·¶ • → Visual·Management·is·done·religiously·¶ • → Daily·huddles·are·encouraged·and·rewarded·¶ • → Frequent·Coaching·of·staff¶ • → Process·Owners·have·authority·over·process·decisions·¶ • → Staff·actively·suggest·changes·for·improvement·¤

3)→ **Which of the actions would you select as important for a process world?** ¶ **(Select at least 10)** ¤	Selection boxes Provided ¤	• → Process Excellence training is prioritised ¶ • → Process Performance is visible and understood ¶ • → Impact on processes is thoroughly investigated ¶ • → Learnings are encouraged during times of failure ¶ • → Servant leadership is practised ¶ • → Process improvement projects are well communicated and supported ¶ • → Process conversations take place on all levels ¶ • → Voice of the Customer is measured & communicated ¶ • → Visual Management is done religiously ¶ • → Daily huddles are encouraged and rewarded ¶ • → Frequent Coaching of staff ¶ • → Process Owners have authority over process decisions ¶ • → Staff actively suggest changes for improvement ¤
4)→ **Which additional values would you add as critical for Process Excellence? (not listed above)** ¤	Paragraph ¤	¤
5)→ **Creating a culture is difficult.** ↵ **Please elaborate on how you would go about influencing the culture to affect the specific actions you have selected as important for Process Excellence? In other words, how would you make sure those actions are becoming a reality?** ¤	Paragraph ¤	¤

¶

Event·#1:¶
Structures·conducive·for·BPM¶

Method:·Questionnaire¶

Purpose·of·this·questionnaire¶

Only·the·Process·Experts,·Process·Owners·and·active·Green·Belts·will·be·selected·as·participants·for·this·survey.¶
¶

- → The·purpose·of·this·questionnaire·is·to·establish·the·structures·according·to·the·lived·experiences·of·the·audience·(process·experts·and·process·owners)¶
- → Another·purpose·is·to·establish·the·cultural·readiness·in·which·a·process·owner·would·be·deployed.¶
- → Another·potential·outcome·is·to·establish·what·needs·to·be·done·to·ensure·cultural·readiness.¶

Cover·letter·(see·separate·document)¶

Questions¶

Refer·to·the·diagram·below·–·specifically·the·structures·section¶
Please·answer·the·questions·as·truthful·as·possible:¶
¶

GENERAL¤		
1)→ **Name·of· Respondent¤**	Short·Text¤	¤
Structures¤		
2)→ **Which·of·the· structures·are· currently·at·play·in· this·selected· department:¤**	Rating:¶ Not·at·all¶ Maybe¶ Fair·Amount¶ Definitively¤	• → Process·metrics·are·part·of·KPIs·¶ • → BPM·CoE·(Netta's·team)·has·senior·management·commitment¶ • → Job·descriptions·contain·process·actions·and·metrics·¶ • → Process·project·funding·available·on·a·strategic·budget·¶ • → Process·Simulation·is·actively·used·¶ • → Process·owners·are·contracted·¶ • → Process·Excellence·Vision·is·real·¶ • → Process·data·is·available·¶ • → Process·Mining·is·deployed·¶ • → Process·Council·is·established·¶ • → Process·values·form·part·of·core·values·of·the·company¶ • → Process·performance·are·part·of·boardroom·agendas·¤

3)→ **Which·of·the·structures·would·you·select·as·important·for·a·process·world?·¶ (Select·at·least·10)¤**	Selection·boxes·Provided¤	• → Process·metrics·are·part·of·KPIs·¶ • → BPM·CoE·(Netta's·team)·has·senior·management·commitment¶ • → Job·descriptions·contains·process·actions·and·metrics·¶ • → Process·project·funding·available·on·a·strategic·budget·¶ • → Process·Simulation·is·actively·used·¶ • → Process·owners·are·contracted·¶ • → Process·Excellence·Vision·is·real·¶ • → Process·data·is·available·¶ • → Process·Mining·is·deployed·¶ • → Process·Council·is·established·¶ • → Process·values·form·part·of·core·values·of·the·company¶ • → Process·performance·are·part·of·boardroom·agendas·¤
4)→ **Which·additional·values·would·you·add·as·critical·for·Process·Excellence?·(not·listed·above)¤**	Paragraph¤	¤
5)→ **Creating·a·culture·is·difficult.↵ Please·elaborate·on·how·you·would·go·about·influencing·the·culture·to·affect·the·specific·structures·you·have·selected·as·important·for·Process·Excellence?·In·other·words,·how·would·you·make·sure·those·structures·are·becoming·a·reality?¤**	Paragraph¤	¤

Event·#2:¶
CERT·values·assessment¶

Method:·Questionnaire¶

Purpose·of·this·questionnaire¶

All·delegates·would·be·requested·to·participate·in·this·questionnaire.¶
¶
- → The·purpose·of·this·questionnaire·is·to·establish·the·readiness·according·to·the·CERT·values·–·a·spider·diagram·would·indicate·the·areas·of·concern.¶
- → Another·purpose·is·to·get·input·from·all·participants·around·this·critical·element¶

¶

Cover·letter·(see·separate·document)¶

Questions¶

In·this·Questionnaire·there·are·4·major·values·being·scored:¶
- → Customer·Orientation¶
- → Excellence¶
- → Responsibility¶
- → Teamwork¶

¶
Please·answer·the·questions·as·truthful·as·possible:¶

CERT·Values¤		
1) → **Name·of·Respondent**¤	Short·Text¤	• → ¤
CUSTOMER·ORIENTATION¤		
Customer·Orientation¶ *Refers·to·the·proactive·attitude·and·responsiveness·of·internal·and·external·customer·needs:*¶ •·The·core·business·processes·of·our·organization·are·focused·on·satisfying·our·customers.↵ •·Our·organization·incorporates·customer·expectations·into·its·business·processes.↵ •·Our·organization·uses·customer·complaints·as·an·opportunity·to·reflect·on·the·redesign·of·business·processes.↵ •·Our·organization·includes·our·customers·in·the·design·of·our·business·processes.↵ •·Our·organization·understands·the·processes·of·our·customers·that·lead·to·an·interaction·with·our·organization.↵ ↵ •·Our·organization·defines·internal·customers·for·all·business·processes.↵ •Employees·of·our·organization·focus·on·the·requirements·of·colleagues·who·receive·their·work.↵ •·Employees·of·our·organization·have·a·good·understanding·of·who·their·internal·customers·are.↵ •·Managers·of·our·organization·encourage·employees·to·meet·the·needs·of·colleagues·who·receive·their·work.↵ •·Employees·treat·people·within·our·organization·as·customers·when·providing·them·with·internal·services.¶ ¤		

2) → Rate Customer Orientation in your department?	Rating Not at all Maybe Fair Amount Definitely	• → Internal Customer Orientation • → External Customer Orientation
EXCELLENCE		
Excellence *Refers to the orientation towards optimality and perfection in process performance through discipline, quality awareness and sustainability:* • Our organization regularly evaluates its business processes for improvement opportunities. • Employees of our organization strive to improve our business processes continually. • Our organization regularly implements best practices that improve business processes. • Managers of our organization regularly invite ideas from our employees on ways to improve business processes. • Our organization regularly uses performance indicators to find ways to improve business processes. • Team leaders in our organization honour cutting-edge ideas for the innovation of business processes. • Our top management rewards employees who present pioneering ideas for enhancing the performance of business processes. • Our organization welcomes concepts for fundamental innovations that increase the performance of business processes. • Our organization encourages thinking "outside the box" to create innovative solutions in business processes. • Managers of our organization are open to radical changes that enhance the performance of business processes.		
3) → Rate Excellence in this department?	Rating Not at all Maybe Fair Amount Definitely	• → Continuous Improvement • → Innovation
RESPONSIBILITY		
Responsibility *Refers to the commitment to process objectives and the accountability for process decisions:* • Process owners of our organization have the authority to make decisions on business processes. • Managers of our organization are rewarded based on the performance of the overall business processes for which they are responsible. • Responsibilities for business processes are clearly defined among members of our management board. • Process owners of our organization are accountable for the performance of business processes. • Our organization appoints process owners for all business processes. • Employees of our organization go above and beyond their formally defined responsibilities to achieve the objectives of business processes. • Our organization highly values personal dedication to reaching performance targets of business processes. • It motivates employees of our organization that their actions contribute to the achievement of business process objectives. • Our organization uses current achievements to encourage employees' commitment to process objectives. • Employees of our organization feel an inner obligation to attain the performance goals of business processes.		

4) → Rate·Responsibility·in·this· department?¤	Rating:¶ Not·at·all¶ Maybe¶ Fair·Amount¶ Definitely¤	• → Accountability¶ • → Commitment¶ ¤
TEAMWORK¤		
Teamwork¶ *Refers·to·the·positive·attitude·towards·cross-functional·collaboration·(informal·structures)·as·well·as·the· formal·structures·within·a·functional·organisation:*¶ ↵ •·Our·organization·properly·aligns·the·goals·of·the·departments·that·are·involved·in·one·business· process.↵ •·Managers·of·our·organization·routinely·arrange·cross-departmental·meetings·to·discuss·current·topics· of·business·processes.↵ •·The·overall·goals·of·a·business·process·in·our·organization·are·binding·on·all·departments·involved·in· that·particular·business·process.↵ •·Our·organization·does·well·in·coordinating·the·tasks·of·the·departments·that·are·involved·in·one· business·process.↵ •·It·is·the·policy·of·our·organization·that·employees·share·their·process·knowledge·with·those·in·other· departments.↵ ↵ •·Employees·of·our·organization·enjoy·working·with·their·process·colleagues·from·other·departments.↵ •·Employees·of·our·organization·have·many·opportunities·for·informal·interaction·with·their·process· colleagues·from·other·departments.↵ •·Employees·of·our·organization·not·only·identify·with·their·department·but·also·with·their·process· team.↵ •·Employees·of·our·organization·informally·exchange·information·about·current·topics·in·business· processes.↵ •·Our·organization·encourages·informal·activities·that·break·down·departmental·barriers.¶ ¤		
5) → Rate·Teamwork·in·this·department?¤	Rating:¶ Not·at·all¶ Maybe¶ Fair·Amount¶ Definitely¤	• → Within·Formal·Structures¶ • → Across·Informal·Structures¶ ¤

¶

Event·#3:¶
Roles·&·Responsibilities·of·PO¶

Method:·Questionnaire¶

Purpose·of·this·questionnaire¶

Only·the·Process·Experts,·Process·Owners·and·active·Green·Belts·will·be·selected·as·participants·for·this·survey.¶
¶

- → The·purpose·of·this·interaction·is·to·establish·the·buy-in,·support·and·boundaries·of·process·ownership·within·the·company.¶

Cover·letter·(see·separate·document)¶

Questions¶

Please·answer·the·questions·as·truthful·as·possible:¶
¶

GENERAL¤		
1)→Name·of·Respondent¤	Short·Text¤	¤
Roles·&·Responsibilities¤		
2)→What·is·your·current·role/job·description?¤	Short·Text¤	¤
3)→How·does·the·suggested·roles·&·responsibilities·of·a·Process·Owner·overlap·with·your·current·role?¤	Paragraph¤	¤

4) What (if any) would you REMOVE from the suggested responsibilities of a Process Owner? *(Implying that someone else other than the process owner is supposed to execute that activity.)*	Selection boxes Provided	• Model, Define and Document processes • Benchmark processes & identify best practises • Standardise processes & authorise process variants • Determine and review process metrics & key performance indicators • Establish requirements for expertise & quality execution within the process • Cost the process through the application of activity-based costing • Monitor the process performance vs planned targets • Visualise & communicate the process results • React on bad process performance • Align processes performance with overall strategy and goals of the business • Identify improvement opportunities within the process • Elicit and understand the pain points in the process • Facilitate & evaluate process improvement suggestions & innovations (prior to deployment) • Propose & communicate process improvements to the business • Deploy & own process improvements • Take accountability for process improvements and guide the effort • Update the process repository (documents/models) with any changes • Identify, coordinate & lead a team of process participants (incl coaching/training) • Acts as a change agent for process improvement and changes & ensure future process success • Facilitate the dialogue with IT to ensure proposed changes are beneficial to the process • Collate customer requirements for processes • Implement & adhere to the governance and vision deployed for effective process ownership • Collaboration with other process owners • Maintain strong relationships with senior management • Engagement & negotiation with functional managers, eg Team leaders
5) Please elaborate on the activities which you have removed. Who in your opinion should be doing them?	Paragraph	
6) What would you add to the list of what a process owner should be doing?	Paragraph	
7) What concerns do you have with regards to the long term sustainability of this role?	Paragraph	

E. Transcriptions of Group discussions and Interviews

Table 23: Group discussion at community of practice with certified Green Belts (1 Mar 2024) on the value of process ownership

Speaker	Discussion
Speaker 1	"When you're talking about it, I was thinking quite simply 'Well, just imagine the opposite.' I mean that's why we chose certain projects for our greenbelt projects. It was because something wasn't working. …. I just even look in at the process that I chose. There were so many customer complaints. There were so many issues. Hence the project was chosen, but that's exactly what happens when a process is left and it just, it doesn't get maintained, or it starts falling apart and people just add to it as it goes along. So, the opposite of having no sort of process management and ownership and focus is actually at the end of the day just moving towards chaos."
Speaker 2	"When we appoint someone new [in the contact centre], we spend minimum six weeks where they are in induction with shared services, but we spend the majority of that six weeks talking about policy wording. Okay! A small amount of time where they learn to navigate systems and that's it. And then when they hit the floor the only thing they have to deal with is process and then subject to that where the system comes in play. And it links right back to the strategy that you guys are proposing, because for years we've been getting feedback in the contact centre, because it's a specialist environment, that the ease of doing business is where we lose business and ease of doing business in some time is process." So, I 100% concur. I think …we (*need to*) explore a better induction where they actually get trained on the case studies of the actual work they're going to be doing, because that's left behind. And when you talk about *process ownership* and do risk management and governance and all the beautiful things in the financial industry, *process ownership* goes right down to that IC [new employee] that's been working here for one day. They need to be able to take command of the process. And that is severely lacking in operations. … So what I also want to add is I think if we we have to take stock of what processes are there with the heatmaps. We need to look at the offline processes that's not on a system as well, you know and heatmap that. And then a very big big need is our process documentation is not up to standard. Those SOPs miss the detail but a process is about the detail process steps so that's not being transferred to the new people."

Table 24: Group discussions to identify root causes for poor process performance.

Speaker	Narrative
1st Session	
Facilitator	"Is poor process performance something that you guys also see in your environment? Why would you say that happens?"
Speaker 1	"Yeah, I can say definitely yes. Reason for that is: what you do see is that everyone is looking for quick wins. They're not actually unpacking the processes the way the process should be unpacked. And you know, the budget timelines are extremely tight. So these days, they're kind of looking for any quick wins. And looking for those quick wins might actually mean that exactly what you're mentioning now is: it's going to be a poor process because the process is not really going to actually address what's happening within the business. And those are the type of risks that you do actually have if you're looking for those quick wins."
Speaker 2	"I think it's been the trend many a year in business where we're all looking at the quicker wins. Budgets are tight. So I mean, I can't add more to it, other than the very important points is that we tend to look at the quick wins or consider the quick wins favourably, because this is the bang for buck type of scenario. Budgets do perform, in fact, play a significant role in our ability to, you know,

Speaker	Narrative
	thoroughly and fully unpack processes. I mean, I make reference to processes all the time, but when you sit back and think about it, do I actually understand and can fully unpack and articulate this process to the nth degree with ensuring that we, you know, achieve the desired objectives? So yeah, to his point, he's absolutely 100% correct. We've got a lot of factors that hinder our ability to fully articulate any process. And with the processes that we have, in most instances of processes that we have, we're always looking at, okay, so what is the quick win out of this? You will always hear business refer to, okay, so where can we make a quick win? We know what we're in for, but where can we make a quick win? And I think that is a mind shift that needs to happen that when we are actually developing a process or unpacking a process, that it's not a bang for buck scenario, rather than a long-term sustainable initiative that will, you know, benefit the business."
Facilitator	"Why do you say people are looking for quick wins rather than if they know they take a little bit longer, they're going to get a better solution?"
Speaker	"I mean, it's either it's human nature or it's just the way we've been conditioned as a business to look at the quicker wins rather than to say, you know what, if I spend, if this quick win is going to take six months, you know, to materialize, I'm happy to do that than to take 12 months to have six years of benefit, you know, and that's, I think, a mental condition…. managers are conditioned to rather focus on the quick wins rather than to think of the long-term benefits. And the holistic approach, I mean, that is a general trend in business….., I guess the climate we are also in, you know, looks at how do we solve for things very quickly. …. I'm very familiar with it [new system]. I'm very familiar with its shortcomings. If you take a step out of it and you look at the real essence of the solution, all right, it has the benefits there, but what did we do as a business to get the solution in? We've needed to take, we've taken shortcuts. We really, you know, took something that is built to take time to implement and done it as very quickly as we possibly could. And now we've needing to find those workarounds and those contingent methods of, you know, making the things work."
2nd Session	
Facilitator	"Why do we see processes not performing? Why do we have processes that's not performing?
Speaker 1	"I think for me, often the problem comes in with people's behavior and for me, often processes fail simply because people do not behave the way they should and do not follow the process as it was designed. Because it's easier. I'm just thinking back to when I did my green belt and that's not to say it will be the case for all processes, but often it's just easier to do things that's simpler than actually to follow the process that is as it was designed. For example, you could, it might be easier for you to reach your target as an example, because it's quicker instead of doing five more steps."
Facilitator	"So do you think our processes are overly complex?"
Speaker 2	"I think there's a lot of complexity in our processes and I would almost want to refer to that as a part of that, as a technical debt, because we don't implement a full solution. So now we need to create a lot of workarounds to be able to, you know, to match that."
Speaker 3	"I think definitely for me, if I reflect on the multiple kind of process changes that we've tried to implement and since joining the company, I think the key thing that we miss is the importance of change management. And I think that's why we don't have a sustainable process change that happens. And for some reason, the change management as an organisation seems to, I don't want to, like, lacking sounds harsh, because I mean, I know that we've got huge resources that we, that we punt towards change management. But even if I look at the most recent kind of attempt at a process change, and let me take [new system] as an example. And then maybe that is something that encapsulates maybe my thoughts around process generally. We have spent hundreds of millions of rands on the system. And we've got BAs that are supposed to look at the process, etc. But I think that we have become so internalised in the way that we do things. And we don't think that's the beauty of a

Speaker	Narrative
	green belt is yes, it's process improvement, but it keeps the customer or the client at the centre of that and measures the value. I think the thing that's lacking is that there wasn't a clear metric around what is the value add number one to the employee and number two to the client. If there are things in that process that create the blockages, that is what prevents us from adding value to the client. And it means that we start doing weird and wonderful things in terms of workarounds and, you know, it's the things that we need to do to get to the target. But there's an easier way potentially, I go and find workarounds in the system, so that I can deliver what is expected of me. But yeah, because maybe I don't want to say it's the system that's the problem. It's, you know, kind of saying, okay, well, this is new, maybe it does work, but I've still got this target, I still need to deliver this. So now I try and find a quick and easy way to get around what I should be doing.
Speaker 4	"There were a lot of relevant points that were raised, and I have to agree with. Number one, obviously, being that we have lost focus on the client. I mean, sometimes the client at the center of the business, but whether the staff actually does it is questionable, because yes, we have targets that we need to reach. Yes, there are processes that we need to follow, but in between, you lose complete sight of why you are actually doing it and how you are actually doing it, but mainly why you are doing it. What is the value that you are adding to the process? And it is a shame, but at the end of the day, that is actually, it is a fact. The other point that I also want to raise is yesterday, for example, we have a new employee that started or staff member that started with Santam, and now just explaining the SOP, just looking at the SOP, it was crazy, because I think we sat with a 10 or 12-pager with a whole lot of detail, but how do you bring that information across to that new staff member? It must have been frightening to her. Do you really expect me to read through everything and make sure that as I go through my daily tasks that I am following the process and that I am looking at each aspect of that claim, or do you just want me to follow or get to the target or reach my target? And the last point that I would also like to raise when it comes to change management, a lot of people struggle with change. You get the old schoolers that are used to the old way of doing things and they are not easily adaptable to that change, especially when it is to a new system. If you have a negative attitude already, then the chances of you actually coming to the party and following the process, doing the things on the system, it is going to be difficult to get that person's buy-in. So they do find workarounds, they do find easier methods of working or getting through the process that could perhaps result in negative consequences.
Speaker 3	"I think the targets are made to suit a particular business, business need, not to suit the customer demand."
Speaker 5	"I think we see a delivery as a success, but then we don't actually, you know, like intentionally measure the success or failure of that project afterwards. So we do a lot of work building up, but I think at the end of the run, we don't really go back and say, how can we make it better? So it's not like we're not looking at it, but I think a lot of emphasis is at working towards the delivery of a process."