



Queensland University of Technology
Brisbane Australia

Project Report No. 1

A Study of the Use of Business Process Modelling at Suncorp

- Initial Insights -

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A Study of the Use of Business Process Modelling at Suncorp. Initial Insights.

Publisher

Business Process Management Research Group

Queensland University of Technology

Brisbane, Australia

November 2011

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Preface

This report is published as part of the ARC Linkage Project “Facilitating Business Process Standardisation and Reuse” by QUT’s Business Process Management Group and Suncorp.

The purpose of the research report is first and foremost to gain initial insights into process modelling use at Suncorp. To that end, Project Report No. 1 specifically examines how a sample of Suncorp’s employees makes use of process models in their day-to-day work and assesses the impact of business process modelling. A survey was designed and deployed to interview Suncorp staff conducting process modelling and interacting with process models.

Case Study Key Facts

Company	Suncorp – The Queensland-based Suncorp Group is one of Australia's largest banks and its largest general insurance group.
Industry	Financial services (Banking, general insurance, life insurance, wealth management).
Current BPM Goals	Up to today, Suncorp has invested substantial resources in the design and maintenance of a vast amount of process models. Recently, the focus changed to increasing the efficiency of the process modelling initiative in order to ensure a return on the investments and enhance the company's performance in the face of current issues and future challenges.
Project Focus	Examination of business process modelling within Suncorp. How do Suncorps' employees make use of process models, and how do they assess the impact of business process modelling on their day-to-tay-work?
Approach	Survey of Suncorp staff conducting process modelling and interacting with process models.
Outcome	The study found a consensus about the value of process modelling by users within Suncorp. Process understanding, process improvement, process communication and process analysis were identified as the key benefits of process modelling. Furthermore, a lack of process model use was discovered.

Background

Company Background

The Suncorp Group of companies offers a range of financial products and services in banking, general insurance, life insurance, superannuation and investment products across Australia and New Zealand. It is a Top 25 ASX listed business with over \$93 billion in assets, has around 16,000 employees and relationships with over nine million customers.



www.suncorp.com.au

Project Background

One of the most pressing management challenges of today's organisations lies in the reuse and standardisation of best practices across different sectors, products or units. This project aims to design and develop an innovative process model repository and appropriate governance structures to efficiently and effectively support the standardisation and reuse of best practices. The project is co-founded by Suncorp, one of Australia's top 25 listed companies and Queensland's largest listed corporation. Suncorp provides a range of banking and insurance products directly to customers through an extensive branch and agency network, call centre operations, on-line facilities, and through intermediaries and corporate partners. The collaboration with Suncorp will offer the opportunity to work with real-life business process models, and the possibility to conduct case studies to validate the outcomes of this research.



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1 Introduction

One of the essential concepts of Business Process Management is visualising existing or future organizational operations using business process models.¹ Business process modelling is an approach to graphically represent business activities, events, flow controls, stakeholders, and their relationships.² It is an important instrument for documenting business operations, facilitating communication between relevant stakeholders and automation as well as execution purposes.³ Additionally, process models enable process change decisions to address cost, compliance and efficiency issues.⁴

For many years, business process modelling has been regarded as a crucial practice that can add significant value to organisations.⁵ However, it also requires substantial investments, for example in form of training, tools – and of course the modelling itself.⁶ It is obvious that the employees are a key factor for the success of any process modelling initiative. If its workforce mishandles process modelling, any organization is much more likely to miss out on the potential benefits.

Suncorp, one of Australia's top 25 listed companies and Queensland's largest listed corporation, provides a range of banking and insurance products directly to customers through an extensive branch and agency network, call centre operations, on-line facilities, and through intermediaries and corporate partners. In the course of years, it has invested time and effort to create and maintain thousands of process models. In order to facilitate the success of the process modelling initiative and to ensure a return on the substantial investments, this study aims to answer the following research questions:

- How do Suncorp's employees make use of process models?
- What are the perceived benefits and occurring problems associated with process modelling?

¹ Davies, Green, Rosemann, Indulska & Gallo (2006).

² Indulska, Green, Recker & Rosemann (2009); Bandara, Gable & Rosemann (2005); Curtis, Kellner & Over (1992).

³ Born, Dörr & Weber (2007); Dehnert & van der Aalst (2004).

⁴ Mendling, Reijers & Recker (2010).

⁵ Mendling, Recker & Reijers (2010).

⁶ Indulska, Green, Recker & Rosemann (2009).

2 Relevant Literature

As the focus of this research is process modelling use in daily practice at Suncorp and the affiliated perception of benefits, three areas of theory are discussed here:

- the behaviours of users who are in contact with process modelling in their day-to-day practice;
- the perceived benefits of using process modelling in day-to-day practice; and
- processing business activities that present challenges to employees as they relate to their usage of business process models.

This discussion of the existing body of knowledge focuses on aspects with a direct or indirect influence on the use of process modelling – such as individuals' evaluations, usage, and perceptions of certain modelling tools or techniques, success factors, advantages, disadvantages, benefits, challenges, and frameworks of business process modelling.

2.1 Business Process Modelling

Recent reviews of the research on process modelling have pointed out that only a small number of studies have discussed the use of process modelling in actual practice.⁷ In addition, the majority of the Information Systems research has focused on the perspective of business process modelling notation and its tools in various uses, process modelling practical guidelines, critical success factors of process modelling, evaluations of process modelling approaches and modelling challenges. In this context, Eikebrokk et al. (2011) have identified three process modelling research streams.⁸ One group of authors examined process modelling users and also reported on process modelling effectiveness. The second group reported on studies of process modelling in enterprises, and the third group focused on developing empirically grounded theories of process modelling from the ground up. Furthermore, Bandara et al. (2005) have argued that most process modelling publications have illustrated the use of certain tools or described modelling language applications.

2.2 Individuals' Behaviours in Process Modelling

Recent research is also concerned with process modelling usages and revealed the influence of users on process modelling. Recker (2010), for instance, has examined

⁷ Eikebrokk, Iden, Olsen & Opdahl (2011); Eikebrokk, Iden, Olsen & Opdahl (2008).

⁸ Eikebrokk, Iden, Olsen & Opdahl (2011).

individuals' behaviours and their uses of modelling grammars. He found that different individual factors significantly influence the use of process modelling grammars, and the existing theories of individual behaviour are relevant in understanding process modelling behaviour. In the same context of individual influence, Eikebrokk et al. (2011) determined an impact from individuals on process modelling relating to the practicality of process models and their ease of use.⁹ As long as a user is satisfied with a modelling technique and finds that it plays a beneficial role in supporting task execution, modelling business operations or designing process improvement, the user will continue to support that modelling technique.¹⁰ Mendling & Strembeck (2008) explored individuals' behaviours in terms of understanding process models. They found three relevant factors (personal, model, content) and confirmed which of these factors led to either an improved or a failed understanding of the associated models. Concerning interactions with process modelling, the authors found that an individual's theoretical modelling background as well as the duration and intensity of their interaction with process modelling affected the understanding of a process model. The research also experimentally confirmed the advantages of simple modelling notations, instructions and appropriate naming tasks, as it increases comprehension even for readers with little experience in process modelling.

2.3 Business Process Modelling Frameworks

A new stream of process modelling research which promises to be relevant and useful for the use of process modelling incorporates modelling guidelines. Becker et al. (2000) provide general techniques for adjusting models based on different types of users and on different purposes of modelling, including correctness, relevance, economic efficiency, clarity, comparability, and systematic design as introduced in the Guidelines of Modelling framework.¹¹ Similarly, Mendling et al. (2010) have introduced seven user-friendly modelling guidelines, especially designed to help solve the modelling issues of larger companies.¹²

2.4 Business Process Modelling Benefits

Indulska, et al. (2009) conducted a Delphi study of academics, practitioners, and vendors and asked them to rank the benefits related to process modelling. Results show that while the groups differ in their understanding of process modelling benefits, there is also a certain level of consensus. Process improvement, process understanding, and process

⁹ Eikebrokk, Iden, Olsen & Opdahl (2011).

¹⁰ Recker (2007).

¹¹ Becker, Rosemann & von Uthmann (2000).

¹² Mendling, Reijers & van der Aalst (2010).

communication are seen as important benefits in all three groups.¹³ Similarly, Kesari et al. (2003) argue that increased process understanding and process improvement are crucial advantage of process modelling.¹⁴ This has been disputed by Indulska et al.'s (2009) research. Both studies, however, agree that process modelling effectively facilitates process communication within the organisation. In the same context, Kesari et al. (2003) verify a significant benefit from visualising business processes through modelling, for example to recognize the impact of a given process on the other processes.

2.5 Pitfalls and Future Challenges of Process Modelling

On the other hand, a critical article by Rosemann (2006a) discusses a number of disadvantages related to process modelling and the role of the modeller. He found that every model has to be linked to one or more critical business issues – otherwise the model will be futile and the organisation should discontinue using it. Another problem is the lack of skilled modellers who are able to translate business requirements into graphical process models. Moreover, modelling tool limitations might constrain the choice of process granularity or dictate what part of the process has to be modelled. It is critical to know how much detail is appropriate for a process model, as overanalysing might take a very long time and make the process difficult to be reviewed, maintained and understood.¹⁵

Other research notes that the perceived issues and future challenges vary depending on the group of stakeholders.¹⁶ However, a holistic view reveals the current top three issues as well as key future challenges of process modelling in the next few years: standardisation, value of process modelling and model-driven process execution.

2.6 Process Modelling Success Factors

What can lead to the successful use of process modelling? Past literature in the field of Information Systems introduced process modelling success factors, which could be very useful for practitioners in planning, conducting and efficiently using business process modelling. The most critical success factors include project management, modeller expertise, and modelling information resources.¹⁷ Individual success factors further include leadership, communication, user competence, and user participation.

¹³ Indulska, Green, Recker & Rosemann (2009).

¹⁴ Kesari, Chang & Seddon (2003).

¹⁵ Rosemann (2006b); Kesari, Chang & Seddon (2003).

¹⁶ Indulska, Recker, Rosemann & Green (2009).

¹⁷ Bandara & Roseman (2005).

3 Study

3.1 Approach

This report examines the process modelling-related behaviours and opinions of Suncorps' employees. A survey was used for this purpose as it allows targeting a large number of people and asking them numerous questions about a specific topic.¹⁸ The survey was particularly developed in order to examine the use of process models in day-to-day operations. It contains 31 questions which examine individual information about the participants and furthermore investigate the use of process models, users' experiences with process modelling, and the usefulness and perceived benefits of process modelling from an end-user's point of view. Additionally, there was room for suggestions from employees on how to improve the use of process models at Suncorp. To increase the validity of the survey, it relies on established items used in previous research, when applicable.¹⁹

3.2 Participants

Fifteen employees completed the survey (12 using the printed survey and 3 using the electronic survey). The participants are heterogeneous based on their length of employment at Suncorp, their roles and modelling experience (see Table 1). However, the majority has a high level of experience with process modelling and was in frequent contact with process models. The surveyed employees were asked to elaborate on their experiences in process modelling.

Based on these findings, the employees were divided into two groups:

- High level of experience in process modelling (11 participants): Most members of this group have used ARIS as a modelling tool (participants number 2, 4, 5, 6, 7, 10, 14, and 15). More specifically, the participants mentioned process modelling experiences in the areas of process improvement, process automation (2, 5, and 7), process documentation (4, 6, 13, 14, and 15), process analysis (10) and process controlling (1).
- Low level of experiences in process modelling (4 participants): there was no deep interaction with process modelling for participant number 8. Included in this group are those participants who have had no experiences in process modelling at all (9, 11, and 12).

¹⁸ Lawrence (2003).

¹⁹ Indulska, Green, Recker & Rosemann (2009); Rittgen (2010); Rosemann (2006a).

No	Role at Suncorp	Duration of employment (in years)	Details of process modelling experience	Level of experience
1	Operational performance specialist	6.5	9 years. Varying degrees of activities. 6 years process focus auditor and 3 years on project or process improvement	High
2	Claims support leader	5	I have done this to map all investigative processes in preparation for new claims software launch.	High
3	Support officer	4.5	I have attended a training session and have made some minor changes to process maps.	High
4	NA	11	3-4 years ARIS and EPC mapping.	High
5	Project leader	8	One year process mapping to resource, remove handoffs	High
6	Business improvement advisor	4	4 years using ARIS models	High
7	Leader	9	2 years process maps using ARIS for IT projects.	High
8	Software engineer	10.5	part Mmm workshops	Low
9	Test analyst	5	Inexperienced	Low
10	Manager	6	5 years modelling for project and analysis	High
11	Team leader	NA	Inexperienced	Low
12	Developer	1.5	Inexperienced	Low
13	Solutions analyst	4.5	We document our processes in our team	High
14	PI Release coordinator	15	3 years writing processes for team	High
15	Leader	24	ARIS mapping of Mmm claims process	High

Table 1. Overview of survey participants.

The results indicate that the participants possess a rather high level of experience in process modelling. Nevertheless, some of them appear to have a rather general idea about process modeling than a deep level of understanding of its concepts. For example, most of the participants with a high level of experience used the phrase “mapping” instead of “modelling”. However, mapping is only a part of the modelling procedure. This could refer to a lack of comprehension and an unclear of process modelling.

4 Findings & Analysis

4.1 Usefulness of Process Modelling

Here, the participants' opinions about the usefulness of process modelling in the workplace are discussed and linked with their level of experience in process modeling. The majority of both groups (high/low level of modelling experience) agree that process modelling is useful in the workplace. However, in total six out of fifteen participants disagree; they perceive a low level of usefulness concerning process modelling in daily operations (see Figure 1).

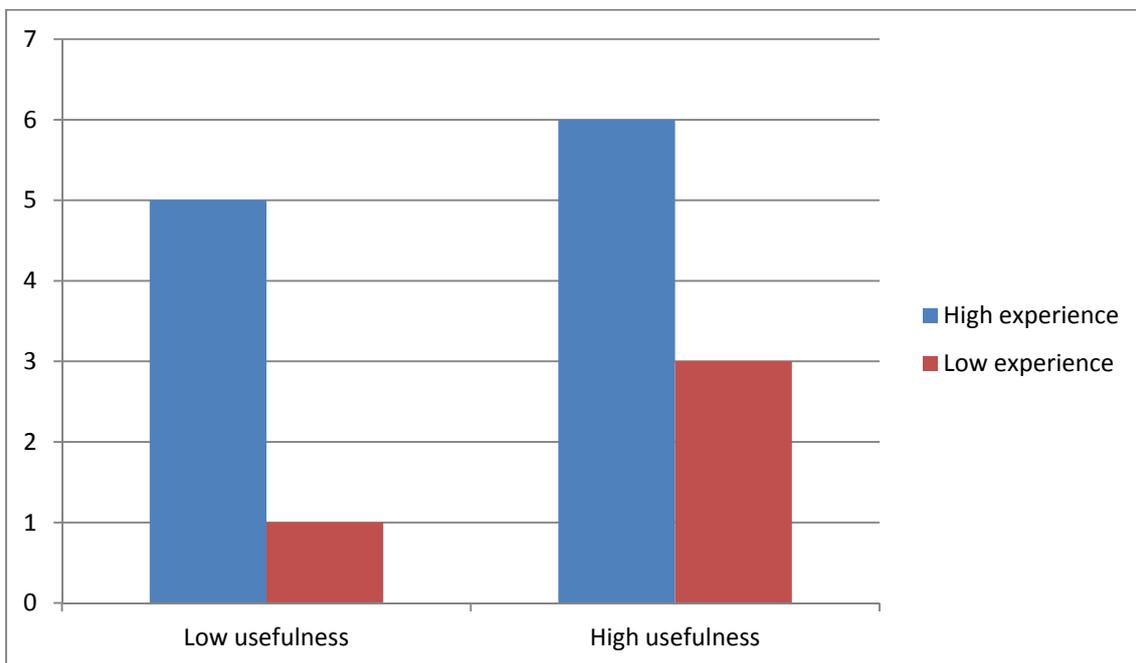


Figure 1. Summary of participants' opinion about the usefulness of process modelling.

The following reasons could explain a low level of process modelling usefulness:

- A lack of process modelling background. As one participant stated, there was a *“lack of information in my area, more information required”*, which causes a low perception of process modelling usefulness. Also, it might be helpful if process modelling benefits were communicated to the staff to a higher extent. Some of the interviewed employees seem to have a rather narrow opinion about the benefits of process modelling. As one participant stated: *“I think is valuable for some purposes, e.g. system design, to ensure is incorporates business processes functions”*.
- The vague nature of some process modelling benefits, which result in difficulties concerning their demonstration and communication – especially at the early stages

of a modelling project.²⁰ One participant with a management role, for instance, expressed his concerns about process modelling usefulness by saying, "I don't believe we really experience any benefit from the existing process models."

4.2 Perceived Benefits of Process Modelling

The participants were furthermore categorised based on their perception of the advantages derived from process modelling. While one group of employees recognized process modelling to be beneficial, the other did not see any advantages in using process models in their day-to-day work. The results are then again linked to the level of user experience (high/low) in process modelling. The overwhelming number of interviewed employees – both with high and low levels of modelling experience – agrees to the notion that business process modeling promises substantial benefits for organizations and its members (see Figure 2).

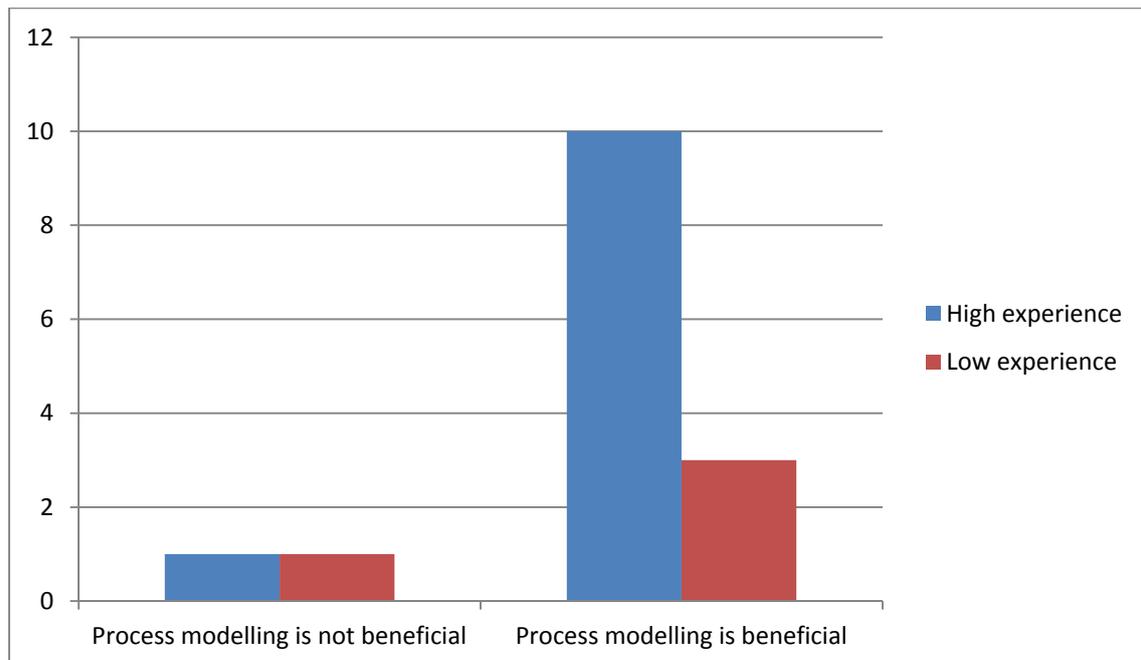


Figure 2. Summary of participants' opinion about the benefits of process modelling.

In fact, the expressed agreement about the benefits of process modelling might positively affect the employees' opinions about the usefulness of process models, as Eikebrokk et al. (2011) concluded in their study.²¹ This should further encourage the staff to continue and intensify the use of process models and attain significant benefits in their day-to-day work.

²⁰ Indulska, Green, Recker & Rosemann (2009).

²¹ Eikebrokk, Iden, Olsen & Opdahl (2011).

But what exactly did the employees mean when they mentioned the “benefits” of process modelling? Here are some examples from the interviews (see Table 2):

ID	Business process modelling benefits
B-01	Modelling is a great way to understand our business.
B-02	Enables us to improve our processes.
B-03	We can understand impacts to other departments with any changes made.
B-04	Helps me identify "hand offs" to create a leaner process.
B-05	Very useful to identify areas for improvement as well as to explain what happens in our department to others, e.g. to explain the claims process to sales.
B-06	Extremely useful to get whole team on the same page. Know what is expected and how to achieve, add most value.
B-07	Enables a standardized approach that is consistent across the organisation.
B-08	I think it will be very useful to increase productivity and continually develop more efficient processes.
B-09	Promotes consistency, efficiency, and adherence.

Table 2. Participants’ examples of process modelling benefits.

Comparing these findings with the top ten benefits of business process modelling²² reveals that Suncorps’ employees mention four out of these ten, namely:

- process understanding (B-01, B-05, B-07);
- process improvement (B-02, B-04, B-05, B-08, B-09);
- process communication (B-03, B-05, B-06); and
- process analysis (B-06, B-09).

To further examine the advantages of business process modelling, the participants were asked to rank the top ten benefits of from a given list. In the next step, the top benefit mentioned by each participant was identified and associated with his/her process modelling experience (see Table 3).

²² Indulska, Green, Recker & Rosemann (2009).

		Level of experience with business process modelling.		
		Low	High	Total
Participants' ranking of the top 10 benefits of business process modeling.	Change Management	0	1	1
	Process Communication	0	2	2
	Knowledge Management	0	1	1
	Process Analysis	1	2	3
	Process Improvement	2	0	2
	Process Performance Measurement	0	1	1
	Process Simulation	1	0	1
	Process Understanding	0	4	4
	Σ	4	11	15

Table 3. Top process modelling benefits, as ranked by all participants.

The top benefit for highly experienced employees is process understanding (see Figure 3), whereas participants with little modelling experience selected process improvement as the key benefit (see Figure 4). The most important benefit, as ranked by all participants with either a high or low level of experience, is again the increased understanding of business processes (4 votes), followed by process analysis (3) and the improvement as well as communication of processes (2 votes each). Comparing these findings to the Delphi study of Indulska et al. (2009), which examined academics, vendors and practitioners, shows interesting congruency.²³ The advantages of process modelling – as ranked by Suncorps' employees – are among the top benefits of business process modelling as identified by research. This assessment of benefits is due to the daily and direct experiences with process modelling and portrays the expectations of organizations using process modelling. However, these benefits are also for the most part intangible and thus not easily quantifiable.

²³ Indulska, Green, Recker & Rosemann (2009).

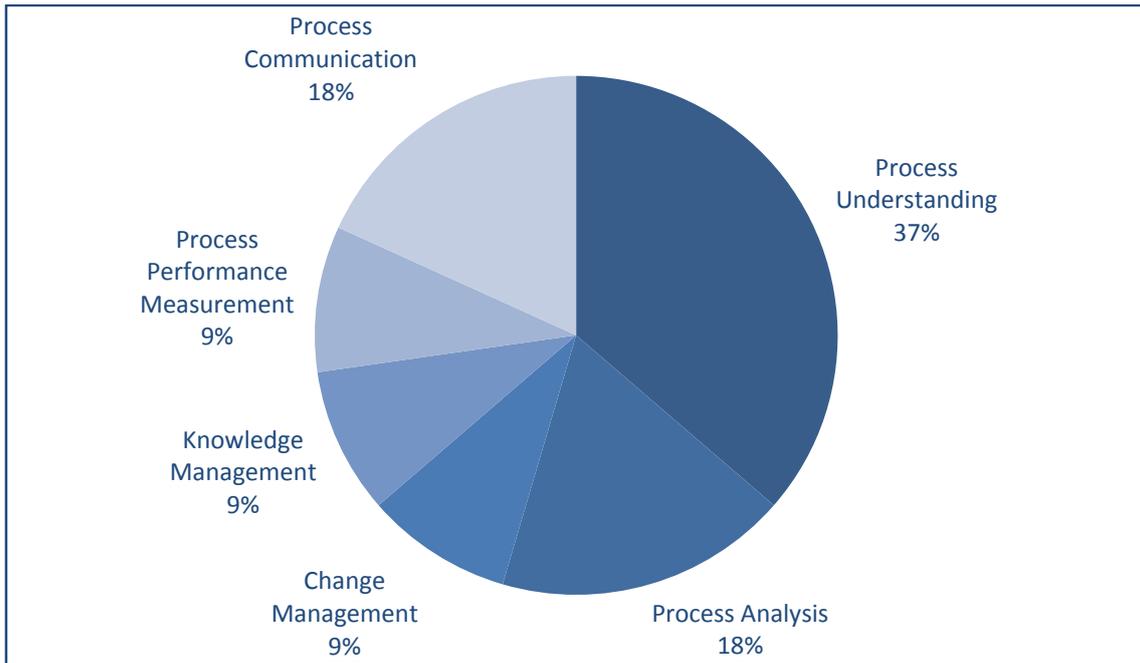


Figure 3. Ranking of modelling benefits by highly experienced participants.

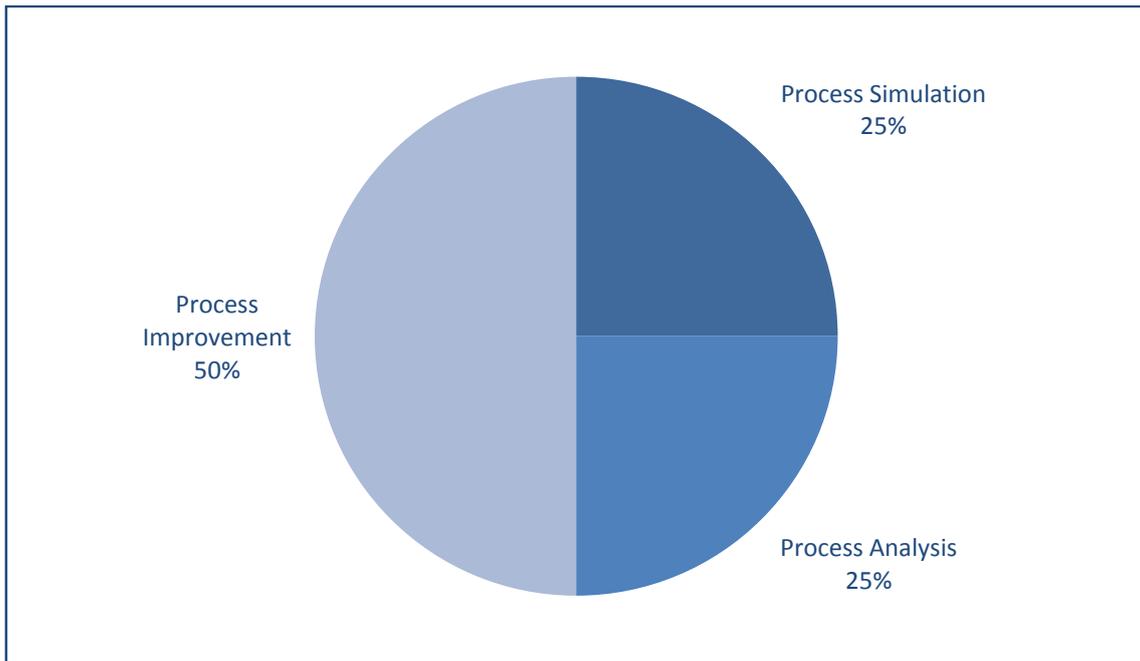


Figure 4. Ranking of modelling benefits by low-experienced participants.

4.3 Business Process Model Use

The data showed a general agreement among the surveyed staff, believing that business process modelling was useful and beneficial for their day-to-day work. But to what extent do the involved employees use business process models in their workplace? According to Recker (2007), whenever the users believe in the usefulness of a modelling technique, or find that it plays a beneficial role in supporting their job, they will continue to support that

modelling technique. However, results indicate that the use of process models appears to be rather low and thus less than what it should be in terms of the participants' positive opinions about the usefulness and perceived benefits of business process modelling (see Figure 5).

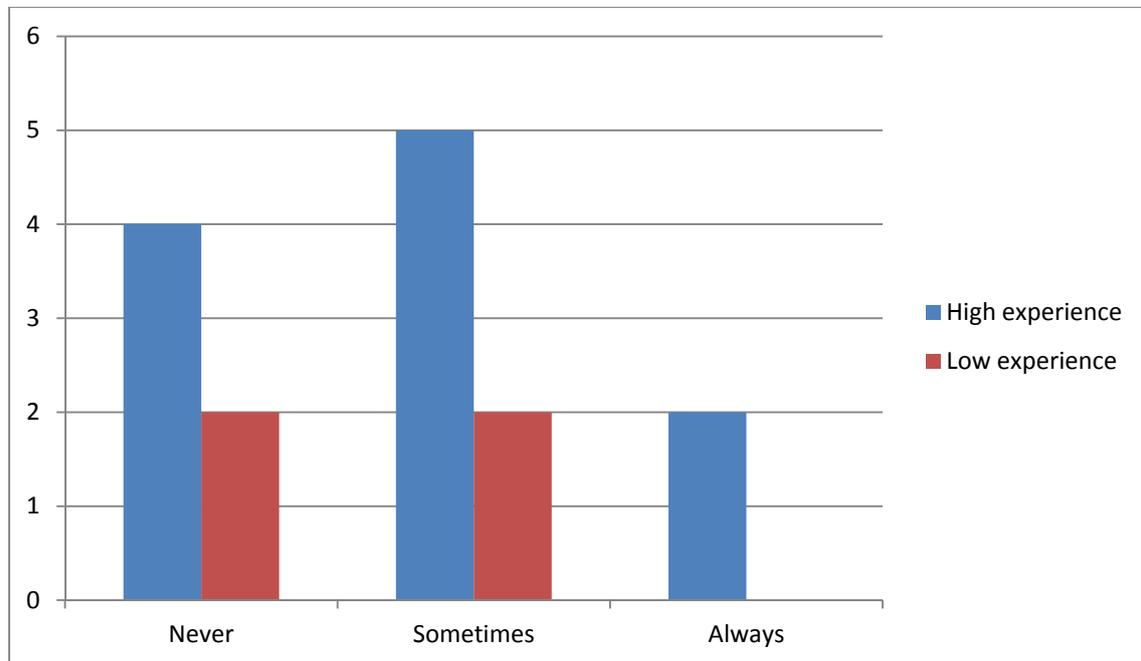


Figure 5. Summary of participants' use of process modelling.

Further investigations into the ease of use of process models show that the majority of the participants found process models at least sometimes difficult to use in their workplace (see Figure 6). This opinion about process model accessibility seems to contribute to the employees' denial of process model use and thus aligns with results of previous research.²⁴ Other problems regarding process model use were stated by the participants, including:

- A lack of knowledge about business process models;
- a lack of applicability of business process models to the job rule; and
- the maintenance of business processes, meaning as one participant stated:

“I only write (process models) for projects and I don't believe they are reviewed regularly... because processes change so frequently.”

²⁴ Recker (2007).

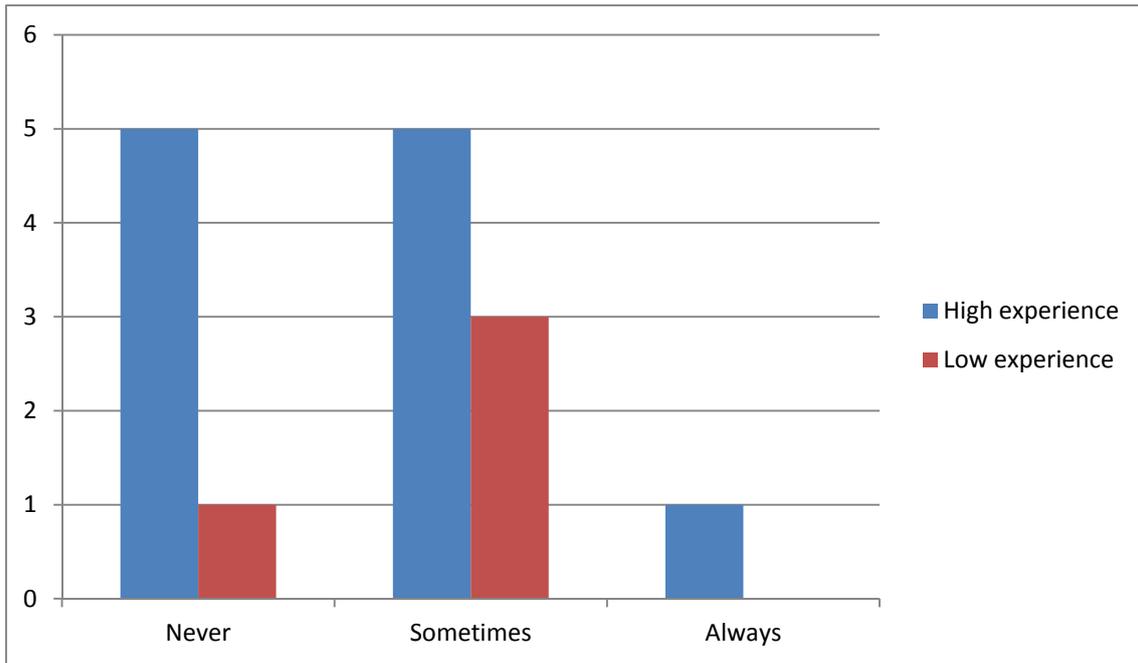


Figure 6. Summary of participants’ opinions about the ease of use of process modelling.

These reasons could affect the users’ frequency of process model use. Additionally, the outcomes do not show any issues related to modelling notations or their complexity.

In summary, seven out of fifteen participants used process models sometimes, and six out of fifteen never used process models at all. This lack of process model use was due to:

- The conviction of almost half of the participants that process models are not easy to use;
- a lack of process modelling knowledge and experience;
- the belief that the process models were not applicable to job rules, so there was no need to use process models; and
- difficulty in using process models as the business processes change frequently.

5 Discussion

5.1 Conclusion

The existing body of research shows that process modelling is indeed very significant for organisations. Process modelling assists organisations in gaining benefits through process documentation, communications, execution, and automation, among others. The majority of the research studying end-user perspectives has focused on guidelines for using a particular modelling tool, methods, frameworks, and examining those influences related to modellers' behaviours, decisions, or modelling grammars.

The interaction of individuals with business processes is an important field of study that can assist organisations in determining the adequate methods of interacting with process models, the issues that are related to the application of process models, how to best address those issues, and how to find opportunities to achieve potential process improvement.

This report studied the interaction of staff with process models at Suncorp. It also revealed the involved employees' opinions about the perceived value and benefits of process modelling. The study revealed consensus among all participants about the helpfulness of process modelling at the workplace. The identified key benefits of process modelling were process understanding, process improvement, process communication, and process analysis. This report furthermore discussed the employment of process models in day-to-day operations and found evidence for a lack of process model use.

5.2 Recommendations

Based on the findings and the opinions of the surveyed employees – which are to be treated cautiously and considered in the context of its limitations – it is nevertheless possible to address existing issues with the following recommendations:

- With respect to the purpose of the research questions, further investigations using similar research methodology – especially involving larger groups of survey participants and a less restrictive time horizon – would increase the validity of the results.
- Multiple data collection methods would further add to the validity of the findings. In this context, the interview data could be combined with and confirmed by primary sources of information, e.g. documents concerning process modelling use or the impact of process modelling on the employees' day-to-day work.

- Institutionalised professional training would significantly improve the staff's experiences in the field of process modelling. This might also facilitate a better understanding within the organization about the benefits of process modelling.
- The data showed several ways to access process models; however, providing one way to store the models, such as a process repository, could prove valuable by ensuring availability to all stakeholders. Moreover, it might help to provide standardised modelling notations for each department and simplify version control to reduce confusion and dispute about process model versions.²⁵
- Increasing the relevance of process models to the job rules could assist the employees in fully reaping the benefits associated with process modelling. This could be achieved by including appropriate people who are in contact with the work environment into the modelling team. The combination of modellers and business representatives would result more accurate process models and an increased likelihood of process model use.²⁶
- By introducing process modelling trainings not only for modellers, but for all relevant stakeholders – including top and middle management – would significantly increase process modeling awareness and communicate both the tangible and intangible benefits of process modelling.
- In order to mitigate the encountered difficulties of process model use, modellers should clearly describe and name activities. This allows the establishment of a set of meaningful activities to be used by any employee at Suncorp – even those who have little modelling experience.²⁷ Specifically, the introduction of a modelling framework would support the tasks of the modeller and as a result lead to more comprehensible models for end-user purposes.
- The study shows that the key benefits in the context of process modelling, as ranked by Suncorps' employees, are largely intangible and thus not easily quantifiable. Additionally, it is crucial to keep in mind that these results solely reflect the perception of the employees. It is important to consider the measurement or at least estimation of mentioned benefits, like process understanding or process communication, and to examine the de facto benefits from process modelling.

²⁵ Kesari, Chang & Seddon (2003).

²⁶ Rosemann (2006a).

²⁷ Mendling, Recker & Reijers (2010).

5.3 Limitations

This type of research needs a high number of survey participants and a large amount of data in order to precisely study users' behaviours and to be representative. Unfortunately, with regard to the current research, data was limited (small sample size of fifteen responses). Consequently, this affects the quality of the research results and leads to restricted evidence about process modelling utilization at Suncorp.

Further factors limiting the results of this research are the restricted time frame and the coverage of job positions and departments. Thus, the sample might not provide a thorough picture of Suncorps' process modelling use. A transfer problem of generalizing the findings beyond the population of interviewed employees to the entire organization and the time horizon of the interviews might exist.

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