



Integrating Social Media and Business Process Improvement: Value Propositions and Opportunities for Corporates

MMIM592

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Abstract

The pervasiveness of social media and the pressure for corporates to be more agile in delivering to customer needs and expectations has led organisations to more business process improvement initiatives. Social Media's features can drive organisation responsiveness to customer needs and change. Although social media is used aggressively in many businesses across the world, integration with business process improvement has not been researched. This research focuses on the integration of social media into the business process improvement lifecycle to alleviate the current problems experienced in business process improvement.

This research explores the current business process improvement issues and challenges and the value propositions of social media. A qualitative approach was used to collect data via multiple rounds of questionnaires with experts in business process improvement and social media.

A conceptual research framework is proposed. Results are interpreted against the framework, leading to findings that include challenges and limitations. In practical terms, the research shows the possibilities and potential of social media in business process improvement by facilitating transparency, ease of communication and reducing cost during economic downturns.

Despite extensive research in social media and business process improvement in their own right, there has been little progress on how the social media can be used as a tool in delivering business process improvements for organisations. Social media is an excellent collaboration tool for collecting valuable information for analysis and design from a larger stakeholder group. This paper addresses a gap in the literature relating to some of potential benefits of social media in business process improvement.

Keywords: Business process improvement, Social Media

Paper type: Research paper

Preface

The author wishes to acknowledge the following people for their support:

This research project has been momentous and intriguing and marks a milestone in my life. I would like to acknowledge my family and friends for their support during this triumphant period.

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I certify that the report is my own work and all references are accurately reported.

Ameera Durga

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Chapter 1. Introduction

Increasing competition, changes in stakeholder requirements and new technologies are driving business organizations towards rapid and significant changes. In order to respond to such changes and to survive in the complex business environment, business organizations are constantly striving to improve and manage their Business Processes (BPs) (Seethamraju & Marjanovic, 2009). Design and management of business processes have increased in importance over the last decade (Hammer, 2006; Smith & Fingar, 2003).

Companies use Business Process Improvement (BPI) to keep pace with the changing, client needs, markets or more general the business environment, which means adapting their business processes to persistent technological, organizational, political and other changes (Davenport & Perez-Guardado, 1999; Coskun, Basligil & Baracli, 2008). So, it is not surprising that improving business processes was “number one priority” among the top ten business priorities in 2009 in a Gartner survey covering more than 1,526 Chief Information Officers (Auringer, 2009).

By focusing on continuous improvement of business processes, organisations can establish a solid competitive advantage by reducing cost, improving quality, improving service, increasing revenue, and enabling adaptation to changing requirements.

As technological advances alter the corporate world, many companies are also experiencing a shift in how they develop their information-gathering processes for BPI. Social media is at the centre of this change. BPI is a continuous activity, where information elicitation/gathering is vital for iterative improvement. Social media can play a key role in this broad trend of using social data that can be integrated into the BPI lifecycle. Given that the business environment is constantly changing at an unprecedented pace, collaboration tools like social media are essential to integrate knowledge of clients, stakeholders into the business process. Social media is ubiquitous and increasingly, an important communications channel that can facilitate the information-gathering processes. Hence, increases the integration of information from multiples sources – information fusion.

Berg-Weger and Schneider (1998) defined collaboration as “an interpersonal process through which members of different disciplines contribute to a common product or goal”. Collaborative business processes are increasingly driven by business agility, adaptability, and flexibility (Xie, Xu & de Vrieze, 2010). There is increased pressure to design quickly in order to respond to increasingly dynamic situational needs of the business.

Furthermore, inadequate importance attributed to the information gathering among individuals, especially in administration and services sector that heavily involve knowledge-based activities, is one of the major reasons for the failure of BP improvement projects (Smith & McKeen, 2004).

The main objective of this research is to investigate how social media may provide better integration of a wider range of stakeholders (internal and external) and process knowledge into the business process improvement lifecycle. In addition it investigates how social media can increase the integration of valuable information throughout the process lifecycle.

The research question for this study is: *How can business process improvement initiatives benefit from social media?*

Chapter 2. Justification for this research

Process improvement initiatives should go deeper than currently achieved, by involving a wider range of stakeholders and customers voices from inside and outside of the organisation. By leveraging social media, organisations can tap into a larger set of resources to help discover and improve business processes.

There is no existing body of literature on the use of social media in process improvement. The intention of this research is to fill the gap by understanding how social media can be used to increase the integration of information from multiple sources, as discussed in Chapter 1. Often, not all stakeholders are included in the design process, due to a lack of funding, time or location constraints. The research will investigate how social media might reduce the gap of loss of valuable information by including a larger set of sources for continuous process improvement. Thus, process stakeholders will be part of the innovation and not just forced to accept processes created for them.

Chapter 3. Literature Review

This chapter reports our literature review, and, although there is limited research in this area, it will help form the conceptual foundation for the research. We also clarify some of the terminology used.

3.1. Business Process Management

Business process management (BPM) provides organisations with a means of increasing competitiveness and sustainability in times of market uncertainty, increasing globalisation and constantly changing business conditions (Doebeli et al., 2011). BPM requires organisations to shift to process-centric thinking, and to reduce their reliance on traditional territorial and functional structures (Doebeli et al., 2011).

BPM has been defined in literature in a variety of different ways. A study conducted by DeBruin & Doebeli (2009) discusses a number of definitions:

- BPM as a solution for a business using software systems or technology to automate and manage processes;
- BPM as a broader approach to managing and improving processes that focus on the process lifecycle; and
- BPM as an approach to managing an organisation by taking a process-view.

The commonality in the definitions above is that BPM is a management discipline.

3.2. Business Process Improvement

Business Process Improvement (BPI) is gaining significant momentum as 21st century's organizations continually seek to optimize their underlying processes to achieve higher quality at reduced cost and cycle time (Zellner, 2011). Process improvement focuses on improving one or more characteristics of a process such as cycle time, quality and cost (Pyzdek, 2003). The ability to manage business processes

as efficiently and flexibly as possible has become one of the most critical success factors for today's companies (Hammer, 2006; Smith & Fingar, 2003; Wegner, 1997).

The need to improve customer service, to bring new products and services rapidly to market, and to reduce cost inefficiencies have been pushing BPs and BPI to the top of business organizations' priority list (Gartner Research, 2006; Davenport & Short, 1990). BPs are an effective way to manage an organization at any level and support its overall goals. Consequently, they are now considered the most valuable corporate asset (Gartner Research, 2006) and their continuous improvement has become an imperative for many business organizations. Therefore companies are striving to optimise and deliver best customer value through Business Processes Improvement Initiatives (BPII). Aiming to move from a product-centric to a more customer-centric approach.

Key issues in BPI

Customer focus has increasingly become a corporate mantra. It refers to meeting customers' expectations in products and services. Because of the dynamic expectation of customers, organisations need to continually survey and identify their customers' expectations. The key to customers' centricity knows what customers' needs and expectations are, as part of the process of collecting and gathering information necessary for BPI.

Through continual process improvement, organisations are expected to behave proactively on customer feedback. By keeping track of customer complaints and causes of dissatisfaction, process improvement initiatives proactively address the root causes of customer dissatisfaction (Schmidt & Finnigan, 1992). The chief purposes of BPII are restructuring business programs in such a way as to make business processes more efficient, effective, and flexible. However, process improvement that is both efficient and effective can only occur only if organisations understand their customers' needs and wants through real time information collection and monitoring.

Relationship with Knowledge Management and BPI

Increasingly, researchers have begun to note the benefits of incorporating knowledge management considerations in the efforts to improve the performance of business

processes (Seeley, 2002). Dalmaris, et al. (2007) asserts that the objective of process improvement is achieved by improving the way by which the process knowledge is managed. Therefore it is clear that information and knowledge form a key part of process improvement.

3.3. Challenges and problems with current BPI

The problem of BP improvement has often been reduced to a modelling problem, typically performed by a process analyst whose experience is limited to the explicit knowledge expressed by process models (Seethamraju & Marjanovic, 2009).

The experiential knowledge of individual domain experts as well as the collective “know-how,” however, is often neglected during BPI projects as they continue to focus on the explicit knowledge that is normally captured by business process models (Seethamraju & Marjanovic, 2009). In addition, not all stakeholders may be involved in contributing valuable information. But BPI is a complex; knowledge-intensive, collaborative process that consists of a set of coordinated, contextualized knowledge management (KM) processes (Seethamraju & Marjanovic, 2009). Hence, the diversity in the method we use to collect information is lost and a lack of implicit information.

Many authors such as Davenport and Short (1990) argue that process innovation remains more an “art than science”. The result is a lack of methodology that incorporates information and knowledge of all stakeholders into the process.

Conforming to the rigid requirements prescribed in a given methodology may be contrary to the improvement philosophy a firm would like to embed in their organisational culture. Clouded by the undue focus on project management and organizational change aspects, the challenge to develop an improved process is relegated to the bottom (Reijers & Limam Mansar, 2005).

The process orientation implicit in the process knowledge that is possessed by the owners and users will facilitate process improvement (Reijers, 2003). Therefore, involvement of individuals in process improvement initiatives will allow them to exploit their core talents, skills, process knowledge and experience, and leverage them

into process improvements (Beckett, 2004). This involvement, will in the long run increase the coordination of each individual's efforts with the company's business operations in their day-to-day execution. In fact, the embedded practices and norms at the operational level characterized by the process knowledge will help sustain beneficial outcomes of the process improvement (Beckett, 2004).

Information and knowledge in process improvement should be considered as a focal point. The exchange of information and knowledge is a key part of process improvement. Furthermore, inadequate importance attributed to the BP knowledge among the individuals, especially in the administration and services sector that heavily involve knowledge-based activities, is one of the major reasons for the failure of BP improvement projects (Smith & McKeen, 2004). Thus a lack of collaboration results in a lack of information and knowledge which ultimately results in failed BPI projects.

3.4. Social Media

Social media (SM) refers to a group of Internet based applications that allow the creation and exchange of user-generated content (Kaplan & Haenlein, 2010). Social Media contains Internet-based operations that are based on Web 2.0 technology, enabling users to interact and exchange the content or information (Kaplan et al., 2010). In other words, social media is any online media platform that provides content for users and also allows users to participate in the creation or development of the content in some way (Sinha et al., 2012). The Tax Institute (2012) defines social media as an umbrella term that encompasses any media, generally online, that facilitates social networking – the interaction and sharing of content and user experiences.

Blogs and platforms like Facebook, Twitter, Myspace and LinkedIn, are some of the popular social networking channels allowing users to post enormous amount of information that can be easily shared, explored, endorsed, augmented etc. (Sinha et al, 2012).

Features of Web 2.0 are enabling remarkable opportunities regarding access to information, data sharing, communication and collaboration in comparison with what was possible a decade ago (Varga, 2010). In addition, social media encourage active and interactive Internet usage. It provides users with online networks and communities for multi-directional communication and knowledge exchange and allows them to publish and share digital content (Redecker, Ala-Mutka & Punie, 2010).

3.5. BPI and Social Media

With the advent of the Web 2.0, citizens and business users perform an ever - increasing proposition of their everyday activities online and consequently, organizations from all sectors (commercial enterprises, public administration bodies, health and education institutions, etc.) are more and more deploying their business processes on the Web, with the aim of better reaching their customers, employees and stakeholders and of reducing their total costs (Brambilla, Fraternali & Vaca Ruiz, 2012).

Brambilla et al. (2012) assert that social extension of a business process can be regarded as a process optimization phase, where the organization seeks efficiency by extending the reach of a business process to a broader class of stakeholders. Brambilla et al. (2012) articulate the different optimization goals, which constitute the motivation of the process socialization effort:

- “Exploitation of weak ties and implicit knowledge: the goal is discovering and exploiting informal knowledge and relationships to improve activity execution.
- Transparency: the goal is making the decision procedures internal to the process more visible to the affected stakeholders.
- Participation: the goal is engaging a broader community to raise the awareness about, or the acceptance of, the process outcome.
- Activity distribution: the goal is assigning an activity to a broader set of performers or to find appropriate contributors for its execution.

- Decision distribution: the goal is eliciting opinions that contribute to taking a decision
- Social feedback: the goal is acquiring feedback from a broader set of stakeholders, for process improvement.
- Knowledge sharing: the goal is disseminating knowledge in order to improve task execution; at an extreme, this could entail fostering mutual support among users to avoid performing costly activities (e.g., technical support)”

The integration of BPI and social media will help transforming organisations from a closed to a collaborative and participative community system. In classical, business process improvement initiatives requirements are gathered centrally and processes are optimised with a limited stakeholder group. This closed world approach can be opened with social features at different levels of control (Brambilla et al., 2012).

3.6. Summary

Prior literature demonstrates that BPII conforms to restrictive and rigid means of gathering requirements and information. The requirements elicitation phase is closed, and the stakeholders groups tend to be a small number of limited participants. The integration of social media and business process improvement fosters the fusion of BPI practices with socialisation features, as discussed by Bramilla.

Although there is some literature on Social BPM, there is no literature or research that shows the value propositions benefits of integrating BPI and SM. The current status of Social BPM research is still in its infancy: even the biggest BPM players only provide minor loosely coupled social features (Brambilla et al., 2012).

Based on the literature review, it is apparent that there is a gap in the research area of BPI and SM. This study aims to better understand the challenges in BPII and how the combination with SM can benefit organisations.

Chapter 4. Framing the Problem

In this section, the research model is developed as explained below.

In order to assess and understand the current issues/problems of business process improvement lifecycle and how SM may reduce the impact on BPI, a framework needs to be instantiated. A model developed by Erol et al. (2010) was used as a basis on which to develop the framework and identify the constructs, with adaptations made to enable analysis of BPI and SM relationships. The issues were sufficient since they are closely related to design of new or improvement of processes. The framework (Figure 1) also shows the characteristics of Social Media and how this may reduce the impacts of process issues for BPI. The constructs of the framework are described in detail below (Figure 1).

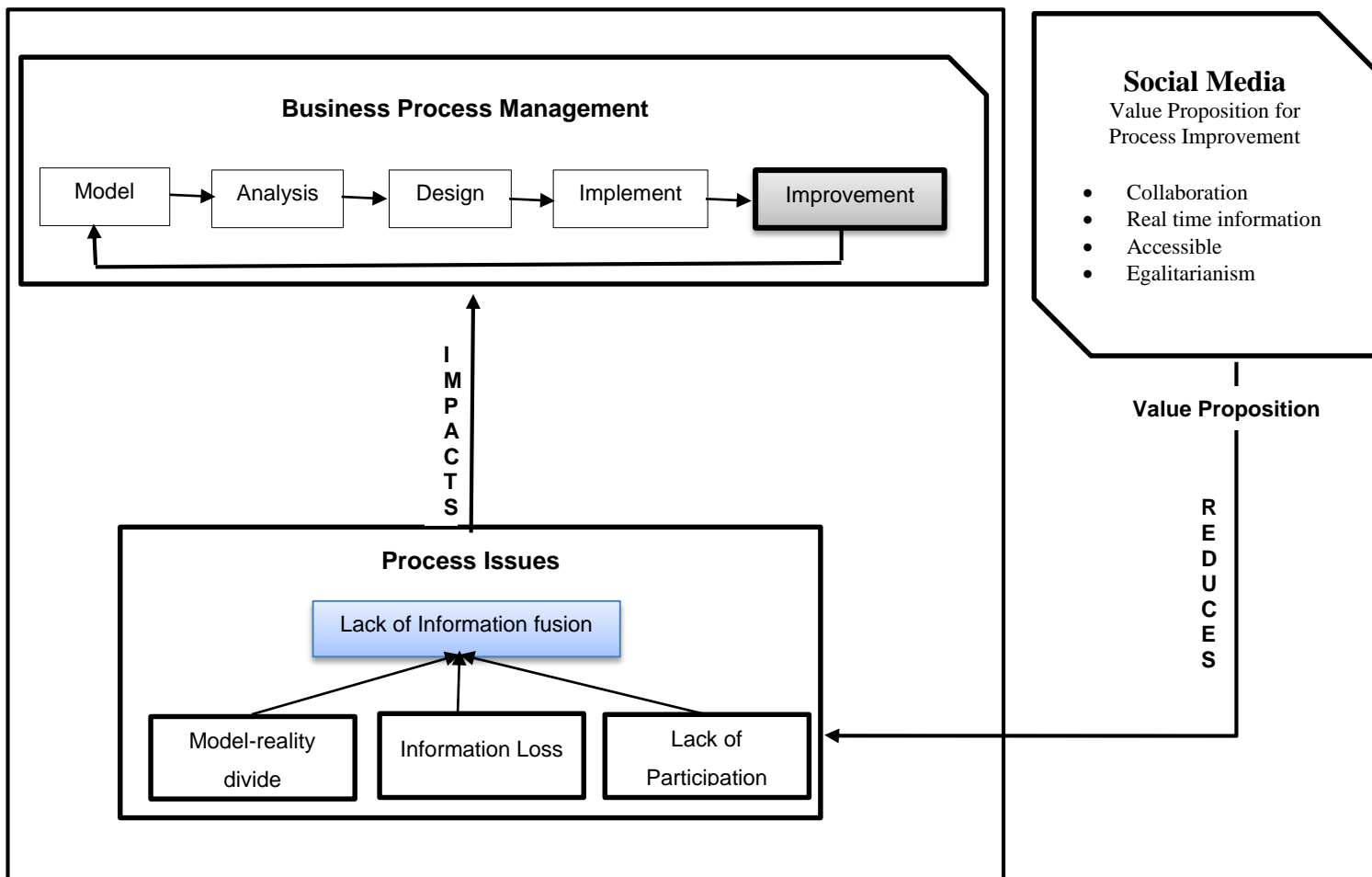


Figure 1: Conceptual Research Framework

2.1. Business Process Lifecycle

The business process lifecycle represents a generic, traditional 5-step approach that steers the business process design team in development of and improvement of business processes.

In spite of their significant differences, most of the existing BP improvement methodologies in the literature typically consist of some or all of the following stages – process modelling, process analysis and design (Adesola & Baines, 2000; Bateman, 2005). All these stages of BP improvement are generally presented in linear and sequential with varying emphasis on a particular stage of the process of improvement in each of those methodologies. Many BP lifecycle methodologies include phases that closely resemble those of a software development lifecycle. For example, they typically start with analysis and design and finish with BP implementation and post-implementation phases that are executed in a sequential order (Seethamraju & Marjanovic, 2009).

The descriptions of the steps are as follows:

The preliminary step of BPI includes, understanding the business needs that entails understanding the vision and strategic objectives for BPI.

Modelling

With an objective of developing an “as-is” model, a typical BP improvement methodology normally commences a modelling phase. BP modelling typically involves acquisition and transfer of explicit knowledge from domain experts (i.e. people actually executing these processes) to process analysts and representation using an adequate process model notation (Seethamaraju & Marijanovic, 2009). Business processes can be expressed through modelling at different levels of detail, from abstract to detailed.

Analysis

Process analysis will involve a variety of individuals internal and external to the organisation. Analysis involves locating the key domain expertise and understanding the reasons for, and sources of different versions of the same process that may have

evolved over time (Seethamaraju & Marijanovic, 2009). Establishing the scope of the process is a critical part of the analysis phase.

Design

Seethamaraju and Marijanovic (2009) assert that the design of the “to-be” model is a knowledge co-creation process that uses collaborative exploration of different scenarios and contexts. The outcome of this phase is a collection of future state processes ready to be adopted by the target organisation.

Implementation

Implementation of the future state processes is a key goal of this phase. In the implementation step, the recommended changes are introduced into the organisation through technologies and behavioural changes (Dalmaris et al., 2007). Once the changes are implemented, they become operational within the business.

Improvement

As previously defined is an approach to increase the effectiveness and efficiency of business processes that provide output to internal and external customers (Harrington, 1991). This phase looks to incorporate changes and redesign of the business processes, which invokes the lifecycle iteratively.

2.2. Process Issues

BP lifecycle is impacted by several process issues described below.

Lack of information fusion

Lack of information fusion is an umbrella term often stem from not all stakeholders are involved in BPI. The constructs of lack of information fusion and model-reality-divide are derived from a model developed by Erol et al. (2012) which is described below.

Model Reality Divide

Erol et al. (2012), assert that “model–reality divide” is the divide between abstract process models and the executed processes. Even though business process models are structures and may be well designed, they are not usually adopted/followed during the enactment of business processes: the modelled and the executed (real) processes may diverge in both detail and broader aspects, like fail to be adopted as modelled. The dichotomy between theory and practice is often evident, as employees tend to follow their own cognitive processes - humans are not mechanical in nature and privilege creativity and flexibility. These differences are often not made apparent, which contributes to a lack of information fusion.

Information Losses

Information losses contribute to the umbrella problem of information fusion. Process information is often captured during workshops, with domain experts through face-to-face interactions. The scripter may add their own biases when capturing the information. Further, some aspects of implicit and explicit knowledge may get lost, first during knowledge codification by the domain experts, second, in the transfer to the process analysts, and third, during process modelling (Seethamraju & Marjanovic, 2009).

Once process information is captured, it tends to be frozen and there is no mechanism to keep the information current. This means that users cannot submit their ideas iteratively (Erol et al., 2012). Valuable insights are therefore lost during the process improvement lifecycle.

Lack of participation

Traditional BPI projects largely focus on system implementation detail in contrast to the time spent on process analysis and design. The result is that the stakeholder group is limited and constrained in contributing to the project. Besides, not all stakeholders may be properly involved in business process modelling (Erol et al., 2012). Bruno, Dengler, Jennings, Khalaf, Nurcan, Prilla, Sarini, Schmidt & Silva (2011) point out

that the time required to plan develop and deploy highly detailed business processes conflicts with the current needs of agile enterprises.

2.3. Social Media Features

SM provides a set of features that are elaborated below. These features can be used in BPI and represents a spectrum of possibilities.

Real-time information

Content from different contributors can be gathered and augmented continuously and becomes immediately visible to the group of users.

Collaboration

The collaborative nature of social media allows users to connect with people they might not otherwise meet. This sharing of information, ideas and resources ultimately contribute to an increased level of productivity among the group because of learning and expanding the knowledge base (Walaski, 2013).

In addition, process terminology is developed collaboratively and not imposed by an expert or a group of experts.

Accessible

Social media provides an accessible format for communicating in real time with the types of messages audiences are seeking (Walaski, 2013).

Egalitarianism

“Social software realizes egalitarianism by abolishing hierarchical structures, merging the roles of contributors and consumers and introducing a culture of trust. Social software relies highly on the idea of giving all participants the same rights to contribute. This is done with the intention of encouraging a maximum of contributors

and of getting the best solution by fusing a high number of contributions. In the same way all participants have the right to contribute; they also have the duty to contribute. It is no longer possible to delegate tasks, which the participant could do themselves” (Bruno et al., 2011).

Chapter 5. Research Methodology

This chapter describes the method used to study the research problem. The data collection strategies are explained with regard to the research questions and the data analysis procedure. This study can also be seen as an investigation of current problems with existing business process improvement initiatives (e.g. lack of information fusion) and the value that social media offers to solve these problems. The study requires gathering knowledge from people who have an understanding of business process improvement problems and people who understand the possibilities that social media brings forth. The study adopts the Delphi method for gathering knowledge from experts.

6.1. Delphi Method

As already stated integrating social media with business process improvement is a fairly new concept and has not been explored with great depth in academic literature. An exploratory qualitative study is considered an appropriate method in this case: “An exploratory study is undertaken when not much is known about the situation at hand, or no information is available on how similar problems or research issues have been solved in the past” (Sekaran & Bougie, 2010, p.103).

Reflecting the exploratory nature of this research, we adopted a qualitative method. Delphi was adopted as the data collection method. This method helps exploring the variables/constructs in the conceptual framework, allowing the researcher to gain a deeper understanding of the proposed relationships.

Dalkey and associates, at the Rand Corporation, originally developed the Delphi technique in the 1950s, and named it after the ancient Greek temple where the oracle could be found (Grisham, 2008). This is a forecasting method that uses a cautiously selected panel of experts in a systematic, interactive manner (Sekaran & Bougie, 2010, p.103).

Linstone and Turoff (1975) captured common characteristics of Delphi in this description: “Delphi may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem. To accomplish this “structured communication” there is provided: some feedback of individual contributions of information and knowledge; some assessment of the group judgment or view; some opportunity for individuals to revise views; and some degree of anonymity for the individual responses.”

The Delphi method is a multistage process designed to combine individual opinions into group consensus (McKenna, 1994). The process considers:

- Pilot testing – using a small group.
- Initial questionnaire – qualitative comments solicited.
- Initial feedback – may be quantitatively reported after statistical analysis of initial opinions.
- Subsequent questionnaire – qualitative comments are solicited again.
- Subsequent feedback – may be quantitative after statistical analysis. This provides participants the opportunity to change/alter their opinions.

However, for the purposes of this research and due to time limitations, the adopted process steps included only the following steps:

- Selection of experts group, i.e. Social Media and BPI experts.
- Initial questionnaire, where qualitative comments were solicited from each group member.
- Subsequent questionnaire to elicit further comments and giving an opportunity for participants to change their opinions.
- Subsequent questionnaire to rank the factors solicited from previous rounds.

6.2. Participants Selection

6.2.1. Procedure for selecting experts

Delbecq, Van de Ven and Gustafson (1975) provided detailed guidelines on how to solicit qualified experts for a nominal group technique study, making it clear that this procedure could also be applied to a Delphi study. Okoli and Pawlowski (2004) assert that the Delphi study does not depend on a statistical sample which attempts to be representative of any population, as it is a group decision mechanism requiring qualified experts who have deep understanding of the issues under discussion. Hence, it is critical that the selection of qualified experts be guided by the requirement to have a deep understanding of the issues experienced in BPI and knowledge in SM.

The panel was divided into two expert groups: 1) participants with expert knowledge in business process improvement; and 2) social media experts. The social media and BPI panels consisted of 5 experts each, a total of 10 participants. The literature recommends between 10-18 experts on a Delphi panel (Okoli & Pawlowski, 2004). The panels' members were anonymous to each other, ensuring that integrity was maintained in the participants' ability to provide different perspectives.

The experts were identified through a multi stage process;

6.2.1.1. Step 1. Identifying the experts

The experts were initially selected using LinkedIn, and then classified into in two categories: academics and practitioners. Organisations or locations were irrelevant at this stage as the contributions were collected online. The keywords used to search experts were simply 'social media' and 'business process improvement'. The search culminated in more than 30 experts being identified in each category. The experts had both academic and practitioner skills in each of the areas. However, some experts had a greater depth of experience with BPI and SM and they were given priority over the candidates with less experience.

6.2.1.2. Step 2. Ranking the experts

Okoli and Pawlowski (2004) suggest ranking the experts based on their qualifications. However, in this research, experts were ranked by qualification in association with their practitioner capabilities. This was to ensure that the relevant experience regarding organisational issues was solicited from on the ground experience rather than just from an academic perspective.

6.1.1.1. Step 3. Inviting the experts

Based on the rankings in the previous step, the experts were categorised for each panel. Initially each panel consisted of 10 experts but due to attrition, the final count per category was reduced to five members per category. The panellists were contacted by email with an explanation provided about the research subject, the process of collecting information and the time required for completing the task.

The panellists were asked to commit between 15-20 minutes per questionnaire round and in completing and returning them within a week over a period of 3 months. One of the constraining factors we found was that 50% of the panellists were overseas, which meant that they were in different time zones to New Zealand, which caused some confusion with the survey software that controlled the close off date for each of the surveys.

The panellists were required to have email and web access: email for the purposes of receiving notification, about the process and the Web was required to complete the questionnaires online.

6.3. Data Collection

6.3.1. Panellist structure

Using the Delphi method, the primary data collection instrument consisted of 3 rounds of questionnaires. The questionnaires were administered using Qualtrics – a

research suite. The respondents were anonymous to each other and were located in different countries i.e. Australia, Dubai and NZ. The panellists stayed fairly consistent during each iteration, until the final questionnaire, where an additional respondent contributed to the ranking. The questionnaires were password protected to ensure data privacy.

6.3.2. Round 1 – Collection of factors

The first questionnaire (Appendix D) consisted of open-ended questions to elicit ideas about BPI and SM. The social media part consisted of 4 open-ended questions, where respondents were asked to list factors for each of the questions that would address the research question and elicit ideas about the features of social media

The BPI part consisted of 5 open-ended questions to solicit ideas and factors that would address the research question and challenges experienced in the business process improvement domain.

All surveys had to be completed within seven days, this excluded weekends, before the second round could be initiated.

6.3.3. Round 2 – Validation of factors

This round comprised consolidating the factors and logically grouping them where possible based on the conceptual framework proposed in Chapter 2. Questionnaire 2 listed all the factors gathered with Questionnaire 1, with brief a definition of the factors. Round 2 asked the experts to verify the factors based on our interpretation, and in addition gave the opportunity to suggest additional factors that may have not been considered in the initial round. Schmidt (1997) asserts that without this step, there is no basis to claim that a valid, consolidated list has been produced.

6.3.4. Round 3 – Ranking the factors

This round required the experts of both SM and BPI to rank the factors. For this phase we used a nominal scale for soliciting the ranking order. The factors from the framework were also included in the list to be ranked. This ranking gives an indication of the panel's level of consensus based on the value of the factor. Although Schmidt (1997) has a drawn out iterative approach for ranking and multiple revisions thereby showing consensus across the panellist, we have deviated slightly from the approach. The outcome of this stage for this research is 1) to illustrate gaps in the conceptual framework; and 2) to rank the factors that resonate in the panel's view.

Although this research has not applied the rigorous method suggested by Schmidt (1997) and other Delphi experts, it was able to both assess the conceptual framework and gathering the relationships between factors suggested by the conceptual framework. The Delphi method calls for multiple rounds of ranking until consensus is reached, this research used a single round for ranking.

6.4. Data Analysis Method

According to Miles and Huberman (1994), there are generally three steps in qualitative data analysis: data reduction, data display, and drawing of conclusions.

Data reduction refers to the process of coding and categorizing the data (Sekaran & Bougie, 2010). The constructs from the questionnaire were allocated according to the research framework.

Data display refers the ways of presenting the data. The gaps between the factors in the framework and the information solicited were identified and the framework updated in the Chapter 7. All the surveys were administrated and managed in Qualtrics.

6.4.1. Round 1 – Factor Collection Analysis

The first round looked for participants to answer the research questions (see Appendix D) based on their knowledge and experience in their domain of expertise.

6.4.2. Round 2 – Categorisation Analysis

Results from the first round were analysed to ascertain which factors aligned to the conceptual framework and what gaps emerged. The first round data was also inspected to determine which factors were associated to the umbrella terms “information fusion”, its root causes, and the value propositions for social media. The two lists were then consolidated and duplicate factors removed, and terminology unified.

Then, the second round asked the panellists to confirm that the list of factors was an accurate interpretation of their responses. They were also given a chance to add more factors if there were noticeable gaps. New factors were incorporated into the lists, refined and consolidated to be presented for round 3.

6.4.3. Round 3 – Ranking Analysis

The third rounds asked the panellists to rate and rank the factors from the second round. The ranked factors were then analysed and a summary of the analysis is displayed in tables of how the participants have ranked each factor. Excel was used to analyse the data from Qualtrics. Multiple rounds of analysis ensured that the data was correctly analysed and interpreted, which reduced the risk of potential flaws. However, a residual risk remains as the researcher conducted this without support or verification.

Chapter 6. Findings

This chapter summarises the findings from each round of the Delphi study. We provide information on: Country analysis, factors analysis for BPI and Social Media, categorisation analysis and ranking analysis.

6.1. Country Analysis

Among the 10 respondents, a number of panellists were from various countries. Figure 2 illustrates the diverse locations the panellists are from for BPI and Social Media. However, 50% of the experts were from NZ.

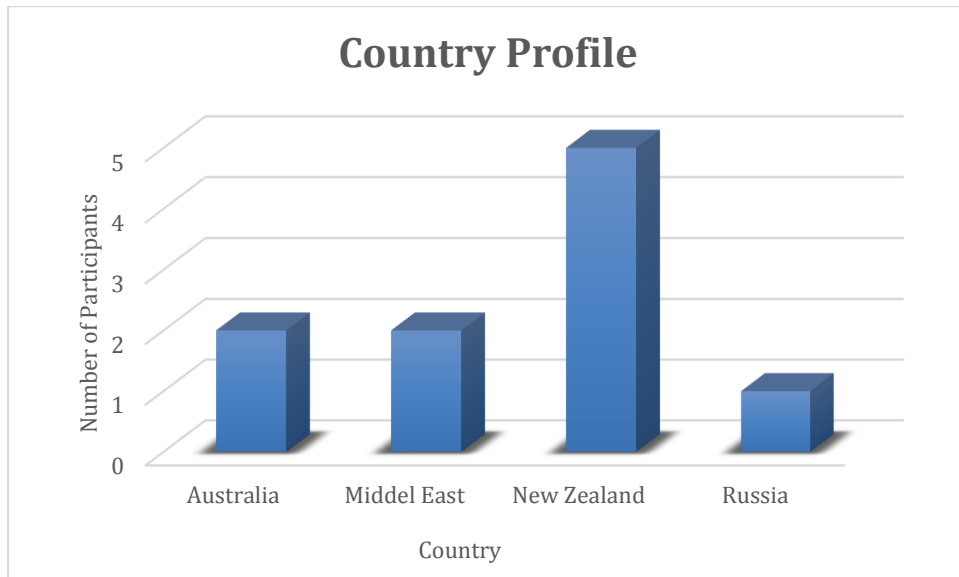


Figure 2: Country Profile

6.2. Factor Analysis

The goal of the factor analysis stage was to elicit elements that closely aligned to the conceptual framework umbrella terms (e.g. model-reality divide), thus allowing to assess the validity of the conceptual framework by asking the experts to validate the researchers' interpretation and identify gaps. The questions in this round went beyond just the solicitation of the constructs but also included obtaining a much deeper understanding of the domain under analysis. We show commentary per question for

responses that varied from the conceptual framework. Sources of the quoted responses are denoted in the following formats:

BPI panellist – [BPI Participant #],

SM panellist – [SM Participant #].

6.2.1. Business Process Improvement

The goal of questions 1 and 5 (see Appendix D) was to ascertain process issues that align to the construct of ‘*Lack of participation*’. The analysis showed that there was a multitude of varied responses based on the experience of the panel members. Some of the comments extracted from the questionnaire results include:

- “1. Stakeholders are not identified appropriately for process areas
- 2. Insufficient communications
- 3. Their requirements are not taken into account.
- 4. Insufficient leadership support” [BPI Participant 1]

- “1. Lack of understanding of the process
- 2. Inability of departments to understand the flow on effects
- 3. Lack of involvement and buy in, into the process” [BPI Participant 2]

These comments were selected to illustrate where the response varied from the conceptual framework and with other BPI participants.

Question 2 was designed to confirm and to elaborate the construct of ‘Information Loss’. Commentary showed that process requirements across multiple organisations are captured similarly either in models or captured as static content in documentation.

- “1. As Is, To Be, Gap Fit Analysis
- 2. Sequence Process Maps (Diagrams)
- 3. Use Cases 4. User Stories
- 5. Benchmarking” [BPI Participant 2]

- “1. Interviews
- 2. Workshops

- 3. *Issue logs*
- 4. *Online surveys” [BPI Participant 5]*

These results show a multitude of methods used to capture process documentation in organisations.

Question 3 assessed which factors or tools can contribute to maintaining requirements for continuous improvement. The goal was to raise the awareness or possibility of multidirectional communication. Using any of the social media tools, both customers and internal stakeholders can share and exchange information with each other. The commentary exemplifies that responses were similar and with little deviation.

- “1. *Use of collaboration tools such as Google,*
- 2. *Use of Doc management tools*
- 3. *Workflow tools such as JIRA, HP QC, etc.*
- 4. *Blogs” [BPI Participant 2]*

- “1. *Centralised repository*
- 2. *Workflow where document can be shared among all stakeholders*
- 3. *Collaboration tools*
- 4. *Customers’ satisfaction surveys” [BPI Participant 5]*

The objective of Question 4 was to establish linkage to the construct ‘Model –Reality divide’. The responses show factors that underpin model-reality-divide.

- “1. *Lack of understanding of the true process*
- 2. *Poor problem solving techniques*
- 3. *Poor or Incorrect data analysis*
- 4. *Lack of understanding of customer requirements and experience*
- 5. *No buy in or support from the business” [BPI Participant 3]*

6.2.2. Summary of Results

Table 1 is a summation of the major factors identified from the BPI panellist for each question post round 1. These factors are shown pre-categorisation. The definitions and findings are discussed in Chapter 7.

Ref.	Factors Identified
RQ1	Factors that contribute to lack of stakeholder involvement
	<ul style="list-style-type: none"> – Lack of understanding of the process – Inability of departments to understand the flow on effects – Lack of involvement and buy in, into the process – Lack of engagement/understanding – Stakeholders are not identified appropriately for process areas – Insufficient communication
RQ2	Stakeholder needs/requirements are capture
	<ul style="list-style-type: none"> – Process Maps (As Is, To Be, Gap Fit Analysis) – On the job observations (real time) – Sequence Diagrams, Use Cases – Benchmarking – Interviews – Workshops – Issues log – Online surveys – Process documentations – Time and Motion study
RQ3	Factors that contribute to maintaining requirements
	<ul style="list-style-type: none"> – Embedding continuous improvement culture – Researching other similar organisations operations – Review of customer satisfaction results – Use of collaboration tools such as Google drive. Dropbox, Use of Doc management tools, Doc Versioning – Tracking changes/audit trail – Workflow tools such as JIRA, HP QC, Social Media, etc. – Blogs
RQ4	Problems experienced post process deployment
	<ul style="list-style-type: none"> – Lack of understanding of the true process – Lack of understanding of customer requirements and experience

<ul style="list-style-type: none"> - No buy in or support from the business - Staff Training - Insufficient training of users to adopt new processes - Poor communication - Stakeholder expectation with deployment in terms of accepting change - Understanding of process workflow - Some requirements being overlooked - Lack of maintaining the process infrastructure - Lack of maintaining and upgrading the process asset 	
RQ5	Reasons why less time is spent on process analysis & design in comparison to implementation
<ul style="list-style-type: none"> - Incomplete problem/root cause analysis - Absence of information or data - Rejection of the process by the operations staff - Poor awareness of the where the problems exist - No management support - People want to see something tangible working as soon as possible - No need to analyse and document "the obvious" - when stakeholders think they have a good understanding of the future state already - To meet deadlines considering stakeholders and program sponsor have more interest in seeing it - Budget and timelines constraints - Unreal estimation of project timelines for process analysis and design - Implementation takes a lot of time / Implementation needs to be analysed and thought of whereas process analysis requires documentation of current state - Stakeholders always want to jump to solution as opposed to analysis the process or capturing requirements 	

Table 1: Summary of Results for BPI

6.2.3. Social Media

There were three open-ended questions used in the Social Media survey to solicit ideas. The questionnaire asked three basic questions, each corresponding to the advantages, features and adoption of social media.

RQ 1 addressed the advantages of using social media to facilitate collaboration with customers or stakeholders. This question sought to generate a list of social media advantages. The responses reveal some interesting points on social media.

- 1. *“It is a way to establish a dialogue with the customers*
- 2. *It is a way to understand the needs of the customers*
- 3. *It is a way to receive feedback 4. understand the level of interest” [SM Participant 3]*

- 1. *“Real time feedback*
- 2. *2 way communication with customers*
- 3. *transparent - if done correctly can improve your brand consideration*
- 4. *voice of the customer [SM Participant 5]*

RQ 2 aimed to solicit ideas that demonstrate the features or attributes of social media. The features were aimed to further underpin the value proposition constructs. This question helped extend the value propositions based on the experience and observation of the participant.

- 1. *“blogging - sharing, liking, commenting*
- 2. *establishing groups/ communities/ hashtags that represent your product or niche*
- 3. *ability to join groups/communities and share your message” [SM Participant 2]*

- 1. *“ability to filter information immediacy*
- 2. *Social Fast sharing of information Less formal*
- 3. *Wider distribution of information - mobile - in the moment -*
- 4. *massive reach - self moderating - additional info and contribution from others” [SM Participant 1]*

RQ 3 asked the participants what factors would influence the adoption of social media in business process improvement. Responses were detailed and ranged from single

words to multiple sentences. The responses from this research question will further extend the value proposition and benefits of integrating social media with business process improvement. The responses below reveal some interesting ideas on what factors shall influence the adoption of social media in business process improvement.

- *“1. Social media staff within an organisation being empowered to make quick decisions*
- *2. having access to knowledge/ability to refer to right person within organisation*
- *3. knowledge how social media fits with other communication efforts of organisation” [SM Participant 4]*

Additional comments included:

- *“a lot of companies are adopting internal social media (like internal Facebook) which is a great tool to engage employees as well as improve internal communication.” [SM Participant 2]*

6.2.4. Summary of Results

Table 2 is a summation of the major factors identified from the SM panellist for each question post round 1. These factors are shown pre-categorisation. The definitions and findings are discussed in Chapter 7.

Table 2: Summary of Results for SM

Ref.	Factors Identified
RQ1	Advantages of using Social Media
	<ul style="list-style-type: none"> - Way to receive feedback and understand the level of interest - Immediacy allows customers to choose the way they like to engage - Lowers barriers between organisation and customers / humanises organisations - Two way communication - More knowledge about customers / stakeholders - Wider and faster / instant collaboration - Real time feedback - Transparent - voice of the customer
RQ2	Key features/attributes of Social Media

- A way to establish a dialogue with the customers
- A way to understand the needs of the customers
- A way to receive feedback and understand the level of interest
- Immediacy
- Social
- Fast sharing of information
- Wider distribution of information
- Mobile

RQ3	Factors that influence the adoption of SM in BPI
------------	---

- | | |
|--|--|
| | <ul style="list-style-type: none"> - Confidentiality and information protection - ability to control the appearance in social media - Social media (like internal Facebook) which is a great tool to engage employees - Improve internal communication. - Quick decisions - Transparency |
|--|--|

6.3. Categorisation Analysis

The results from the first round – factor collection were analysed and used in the construction of round three. The responses were coded into categories based on the themes and constructs in the conceptual framework; where factors could not be grouped under the umbrella terms, new factors were created. Categorization is the process of organization, arranging and classifying coding units (Sekaran & Bougie, 2010, p.374). The factors for each question are summarised in Table 1 and Table 2 below for BPI and SM respectively.

6.3.1. Business Process Improvement

The responses from round 1 were grouped and classified where there was commonality. Where responses were unclear, participants were asked by email to clarify or explain their responses. The second round asked the experts to verify if the interpretation of their responses from round 1 were correct. Table 3 shows the categorised list of factors already validated.

RQ 1
1. Inability of departments to understand flow on effects
2. Lack of buy-in
3. Lack of understanding
4. Restrictive change process
5. Stakeholders incorrectly identified
6. Insufficient communication
7. Requirements pass-on threshold
8. Insufficient leadership or support
RQ 2
1. Observation (real-time)
2. Process Maps
3. Process documentation Interviews
4. Workshops
5. Issue logs
6. Online surveys
RQ 3
1. Model-reality divide
2. Lack of meeting customer requirements and experience
3. Insufficient training
4. Staff support
5. Roles not revised
6. Lack of communication
RQ 4
1. Technology centric
2. Assumed future state understanding
3. Operational focus
4. Lack of Budget
5. Aggressive time-lines
RQ 5
1. Customers satisfaction surveys
2. Research
3. Collaboration tools (Blogs, Twitter, Google Blogger or Facebook)
4. Centralised documentation repository
5. Workflow tools

Table 3: BPI Categorisation List

A few participants changed their responses after reviewing the categorisation, and then asked to explain if their responses differed significantly from the categorised list.

6.3.2. Social media

As with the BPI categorisation phase, the same tasks were undertaken for the participants of the SM panel. Table 4 shows the validation of the categorised list of factors for the three questions.

Question 1
1. Collaboration
2. Communication Channel
3. Real time Information
4. User created content
5. Accessibility
6. Egalitarianism
7. Knowledge exchange and storage
8. Transparency
Question 2
1. Sharing
2. Immediacy
3. Increased Participation
4. Mobility
5. Far-reaching
Question 3
1. Increased participation (wider stakeholder group involved)
2. Increased Innovation (increase in knowledge transfer and application)
3. Confidentiality and information protection
4. Information pass-on (knowledge / ideas are passed on)
5. Transparency

Table 4: SM Categorisation List

There were no changes made to the initial categorised list by any of the participants.

6.4. Ranking Analysis

The goal of the final phase was to rank the relevant factors that were confirmed in the categorisation phase for each panel. An ordinal scale was used to rank the factors according to relevancy and preference, where the most important factor was ranked as

1, the next important as 2, and so on, with the least importance ranked as the highest number. Both qualitative and quantitative methods were used to analyse the data for each question.

6.4.1 BPI Ranking – relevant factors

The BPI panel was presented with a list of factors and the ranking for each factor per question is shown in the latter part of this section. The panel was asked to rank the factors listed in Table 3.

RQ1 asked panellist to rank factors that contribute to lack of stakeholder involvement. There were two factors ‘Lack of communication’ and ‘Stakeholders incorrectly identified’ which was ranked as most important by 75% of the participants. ‘Lack of understanding’ was ranked as important by 50% of the participants. However, ‘Insufficient communication’, ‘Insufficient leadership or support’ and ‘Inability of departments to understand flow on effects’ showed a relatively high dispersion which denotes little or no consensus reached between participants on these factors.

Table 5: Lack of Stakeholder Involvement

Rank	Factors
1	Lack of communication
1	Stakeholders incorrectly identified
2	Lack of understanding
3	Restrictive change process
3	Requirements pass-on threshold
4	Insufficient communication
5	Insufficient leadership or support
6	Inability of departments to understand flow on effects

Scale: 1 = most important to 8= least important

RQ2 asked participants to rank which mechanism is used to capture requirements, based on the list from round 2. Over 80% of the participants ranked ‘Workshops’ and ‘Process Maps’ as the main ways of capturing stakeholder requirements or needs, which indicated consensus among participants. However, ‘Process documentation interview’ has the second highest ranking with 75 % of participants ranking it. Factors like ‘Issue logs’ and ‘online surveys’ had low rankings as shown in Table 6 below.

Table 6: Process Requirements Capture Approaches

Rank	Factors
1	Workshops
1	Process Maps
2	Process documentation interviews
3	Observation (real-time)
4	Issue Logs
5	Online Surveys

Scale: 1 = most important to 5 = least important

RQ3 focused on problems that were experienced post BP deployment. ‘Roles not revised’ showed a significant high dispersion and was not included for further analysis. ‘Lack of communication’ was ranked by 100% of the participants and which was scored between 1 and 2. The results are shown in Table 7. ‘Lack of meeting customer requirements and experience’ had a high ranking but the dispersion was relatively high, given it an overall high ranking. However, 100% of the participants ranked ‘Insufficient training’ which culminated in an overall rating of 2, illustrating that there was consensus amongst participants.

Table 7: Post Process Deployment Issues

Rank	Factors
1	Lack of communication
2	Insufficient training
3	Lack of meeting customer requirements and experience
4	Model-reality divide
5	Roles not revised
6	Staff support

Scale: 1 = most important to 6= least important

RQ4 asked participants to rank the factors, based on the list from round 2 on reasons for less time spent on process analysis. ‘Assumed future state understanding’ and ‘Technology centric’ showed a low dispersion and high scoring as illustrated in Table 8. ‘Aggressive time-lines’ was ranked as an important factor that contributes to less time, however ‘Operational focus’ and ‘Inability of departments to understand flow on effects’ was not seen as important factors that contributed to reasons for less time spent on process analysis and design.

Table 8: Reasons for less time spent on process analysis and design

Rank	Factors
1	Assumed future state understanding
1	Technology centric
2	Aggressive time-lines
3	Lack of budget
4	Operational focus
5	Inability of departments to understand flow on effects

Scale: 1 = most important to 5 = least important

RQ5 asked participants to rank the factors, based on the list from round 2 on how stakeholders can maintain requirements for continuous process improvement. ‘Workflow tools’, ‘Centralised documentation repository’ and ‘Collaboration tools’ was ranked as the relatively important tools to maintain requirements for continuous process improvement by respondents. ‘Customer satisfaction surveys’, the dispersion was relatively low and which was ranked by 50% of respondents. ‘Research’ was ranked as least important as shown in Table 9 below.

Table 9: Collaboration Tools

Rank	Factors
1	Workflow tools
2	Centralised documentation repository
3	Collaboration tools (Blogs, Twitter, Google Blogger Facebook)
4	Customer satisfaction surveys
5	Research

Scale: 1 = most important to 5 = least important

6.4.2 Social Media

As above, the members of the SM panel were presented with a list of factors for each question to rank. The data reveals some interesting points about social media.

RQ1 asked participants to rank the factors, based on the list from round 2 on the advantages of using social media to facilitate collaboration with customers/stakeholders. Table 10 show the response rates. ‘Real time information’ and ‘Communication channel, was ranked by 75% of respondents with a value of 1 and 2 making it the two highest ranked factors. ‘Egalitarianism’ was ranked as an

important factor, whereas ‘Transparency’ and ‘Accessibility’ was ranked as less important. ‘User created content’ and ‘Knowledge exchange and storage’ had less than 50% responses and ranked as least important factors.

Table 10: Advantages of Social Media

Rank	Factors
1	Communication channel
2	Real time information
3	Egalitarianism
4	Transparency
5	Accessibility
6	User created content
7	Knowledge exchange and storage

Scale: 1 = most important to 7 = least important

RQ2 asked participants to rank the factors, on the features of social media. Table 11 shows the responses. ‘Mobility’ was ranked by 75% of the respondents as the most important factor with consensus among the participants. ‘Sharing’ was also ranked as most important with some level of dispersion. ‘Immediacy’ and ‘Far-reaching’ was ranked as slightly less important feature of social media. However, ‘Increased Participation’ was ranked as least important.

Table 11: Features of Social Media

Rank	Factors
1	Mobility
1	Sharing
2	Far-reaching
2	Immediacy
3	Increased Participation

Scale: 1 = most important to 3 = least important

RQ3 asked participants to rank the factors, which would influence the adoption of SM in BPI as shown in Table 12. The results were interesting. ‘Increased Participation’ was ranked by 50% of respondents as being the most important factor. While ‘Transparency’ and ‘Information pass-on’ were also reflected as important factors. ‘Increased Innovation’ was ranked as slightly less important and ‘Confidentiality and information protection’ as least important.

Table 12: Factors that influence the adoption of SM in BPI

Rank	Factors
1	Increased participation (wider stakeholder group involved)
2	Transparency
2	Information pass-on
3	Increased innovation
4	Confidentiality and information protection

Scale: 1 = most important to 4 = least important

Chapter 7. Discussion

This research aimed to validate the constructs of the conceptual research framework by soliciting opinions/view/perspectives from practitioners /academics active in the field of BPI and SM. In this chapter, we discuss how the findings relate to the conceptual framework constructs and, where possible, to the previous literature. If there are deviations from the research framework or new insights from the findings, these will be discussed and incorporated into the framework for completeness. Unsupported factors based on the analysis are also removed from the framework, including factors that showed high dispersion with little or no consensus.

7.1. Findings compared to research framework for BPI

Model-reality divide

Lack of communication, insufficient training of users and lack of meeting customer requirements are all factors that contribute to process issues and to the construct of model-reality divide. Three factors are the root causes of the divide between modelled and executed process. The model-reality divide was supported by this research as commentary clearly stated by the panel experts:

Insufficient training of users to adopt new processes – [BPI Participant 3]

Lack of understanding of the true process due to a lack of communication – [BPI Participant 5]

To improve business processes, the staff's knowledge and skills are seen as the core resource, and learning is viewed as the important mean (Wang & Yang, 2009). Borner, Moormann and Wang (2012) assert that it is therefore crucial for organizations to develop effective learning and training solutions with a view towards involving staff and encouraging awareness and participation in process improvement. Borner, Moormann and Wang (2012) go on to add that, well-trained and committed employees play a crucial role in business processes.

Meeting customer requirements was another important factor contributing to model-reality divide. If requirements are not being met through process improvements then improvements remain unrealised. The outcome, the implemented process differs from customers' needs and staff are inclined to execute different processes to the one designed to meet customer expectations. Thus, a model-reality divide is generated (Erol et al., 2010) and a lack of information fusion is also created.

It is emphasised in previous research and corroborated in this research that issues on poor collaboration, insufficient training and meeting customer requirements were key reasons that culminate in or contribute to model-reality divide.

Information Loss

Unsurprisingly, workshops and process documentation, (including process maps), which can be grouped as 'Formal modelling' emerged as the key ways that information is captured but it is apparent that these mechanisms contribute to information loss. This is due to information becoming stale and not iteratively being updated. Most of the BP improvements involve knowledge-intensive collaborative processes that cannot be captured and prescribed by a process model (Seethamraju & Marjanovic, 2009).

Lack of Participation

A multitude of new factors emerged in this study regarding lack of participation: 'Lack of communication', 'stakeholders incorrectly identified', 'lack of understanding, requirements pass-on threshold' and 'restrictive change process' were all identified as key factors for lack of participation that contribute overall to the lack of participation and ultimately information fusion.

'Lack of communication' was deemed as one of the key factors that contribute to lack of participation. Lack of communication stems from the lack of stakeholder engagement that results in a lack of communication when crucial information is not communicated, it generates, lack of information infusion.

Another factor that was considered important is that of stakeholders being incorrectly identified. Erol et al., (2010) recognise that the result of incorrect stakeholders

identified is a loss of innovation, where knowledge exists in the organisation but is not applied and possible optimisations are omitted.

Lack of understanding was mentioned by a couple of participants as important. As explained by a participant, the lack of understanding results in a lack of engagement by stakeholders which in turn results in the overall lack of participation.

Requirements pass-on threshold and restrictive change process were considered as important factors that contribute to lack of participation. Ideas for improvement are not passed on to those responsible because this creates too much effort for the process owner or the user, ideas cannot also be submitted easily (Erol et al., 2010). As a consequence, stakeholders do not readily participate in BP improvement.

Further factors that contributed to the lack of participation were: 'assumed future state understanding', 'technology centric', 'aggressive time-lines' and 'lack of budget' and were considered important by the participants:

'Assumed future state understanding' was mentioned a few times as a key reason for less time being spent on process analysis and design in comparison to implementation which reduced the number of participants in the analysis and design phases. The consequence is a lack of participation.

No need to analyse and document "the obvious" - when stakeholders/ process owners think they have a good understanding of the future state already – [BPI Participant 2]

Although this factor emerged as very important by the respondents in this research, there is no evidence of this factor in existing literature.

'Technology centric' is supported by other researchers like McManus (2000). Systems professionals generally acknowledge that the quality of a product is very much influenced by the quality of the processes used to build it (McManus, 2000). It is evident in McManus assertion, that it is generally acknowledged rather than time spent on process analysis and design is absolutely essential. Process improvement is a paradigm based on the use of processes to develop software and based in turn on

continuous improvements on the processes. The goal of process improvement (and quality) is to obtain processes of higher quality, which in return will lead to software products of higher quality (McManus, 2000). Therefore, although process analysis and design are key to software implementation, more time is spent on a working solution and is clearly supported by commentary in this research.

‘Aggressive time lines’ was another factor that contributed to a lack of participation. It was clear that from commentary that due to project timeframes and budgetary concerns, the result, fewer stakeholders and process owners are involved in contributing to the analysis and design phase.

‘Lack of Budget’ is another crucial factor that contributes to the lack of participation. The key reason here is a lack of funding travel and the exclusion of key stakeholders. Thus, the users are only consumers who are forced to accept the processes created for them (Erol et al., 2010). The consequence creates a lack of participants and also contributes to model-reality divide in business process improvement.

7.1.1 Summary of BPI Findings and Corresponding Literature

Table 13 is a list of the factors identified from the participants and the related literature.

Table 13: BPI Findings and Literature

Process Issues Identified	Ranking	Literature Review Comparison
Lack of communication	Most Important	New Factor
Insufficient training of users	Important	Moormann & Wang (2011)
Lack of meeting customer requirements	Fairly Important	New Factor
Restrictive change process	Fairly Important	Erol et al., 2010
Formal modelling	Important	Erol et al., 2010
Stakeholders incorrectly identified	Most Important	Erol et al., 2010
Requirements pass-on threshold	Fairly Important	Erol et al., 2010
Assumed future state understanding	Most Important	New Factor

Technology centric	Most Important	New Factor
Aggressive time-lines	Important	New Factor
Lack of budget	Fairly Important	New Factor

7.2. Findings compared to research framework for SM

Advantages and Features of Social Media (Value Propositions)

The concepts of advantages and features blur the lines of differentiation, sometimes they are used interchangeably, and so too in this research. Therefore, the value proposition of social media has been extended to include advantages and features due to their similarity in nature.

Communication channel, transparency far-reaching, mobility, immediacy and sharing were all new factors that emerged from this study.

Communication channel was mentioned by a number of participants as an important factor. Social Media is now becoming an incredibly popular and rapid channel of communication (Sinha, Subramanian, Bhattacharya & Chaudhuri, 2012). Blogs and platforms like Facebook, Twitter, Myspace and LinkedIn, are some of the popular social networking channels allow users to put enormous amount of information that can be easily shared, explored, endorsed, augmented etc. (Sinha et al., 2012).

Transparency was deemed relatively important by most of the participants. The corporate use of blogs and other Web 2.0 social media tools not only increases transparency, but helps customers see that the organization is more than one-dimensional or monolithic: There are actual people behind the products (McKay, 2008). Transparency is cited by many researchers as being one of the key features of SM.

Sharing was ranked as one of the most important features of social media. Kaplan and others have cited and support 'sharing'. Social Media contains Internet-based operations that are based on Web 2.0 technology, enabling users to interact and

exchange the content or information (Kaplan & Haenlein, 2010). In other words, social media is any online media platform that provides content for users and also allowing users to participate in the creation or development of the content in some way. In the social media arena, people are encouraged to participate with the content by sharing and commenting on the media (Sinha et al., 2012).

Sharing together with mobility was one of the key factors which was considered as one of the top features of SM. Unsurprising, as whether it be Facebook, Twitter or LinkedIn, these applications are available on our mobile devices, allowing users to engage and share information irrelevant of the geographic location or time. However, Grabowicz et al. (2013) do mention that there is a lack of studies coupling social interactions and mobility.

Far-reaching and immediacy were considered important by the participants. One of the participants elaborated on ‘far-reaching’ as follows:

Wider distribution of information, which has a massive reach – SM Participant 3

Immediacy refers to providing a near real-time experience between individuals and in fostering ease of communication. It is therefore apparent why this factor was mentioned by a few participants. The ubiquitous nature of SM removes all barriers of physical location and allows the exchange of information.

7.2.1 Summary of SM Findings and Corresponding Literature

Table 13 is a list of the factors identified from the participants and the related literature.

Table 14: SM Findings and Literature

Value Propositions	Ranking	Literature Review Comparison
Communication channel	Most Important	Sinha et al., 2012
Transparency	Fairly Important	New Factor
Far – reaching	Fairly Important	New Factor
Immediacy	Fairly Important	New factor

Mobility	Most Important	New Factor
Sharing	Most Important	Kaplan et al., 2010

7.3. Findings on the Integration of BPI and SM

The largest part of this study sought insights of participants on BPI current issues and value propositions of SM. Equally important was to solicit from the BPI and SM experts their perceptions and opinions on the integration of BPI and SM, although this question was not explicitly tested, question 3 for both BPI and SM posed this to some degree.

Interestingly, the BPI participants revealed the importance of collaboration tools, workflow tools and centralised documentation repositories as fundamental ways in which requirements and information can be maintained for continuous process improvement.

SM participants were asked to list the key factors for the adoptions of SM in BPI. Surprisingly, the features of SM revealed similarity, except for two: increased participation and innovation. These two factors have been mentioned in a number of SM journal and articles. Brambilla (2012) aptly refers to participatory design in his article that suggests that SM opens process design to multiple actors. Either the stakeholders can actually participate in the definition of the process model or multiple process versions are fused into one shared process model (Brambilla, 2012).

Increased innovation is the mantra of social media. Sloane (2011) asserts that the most obvious uses of social media for innovation fall under the broad umbrella of

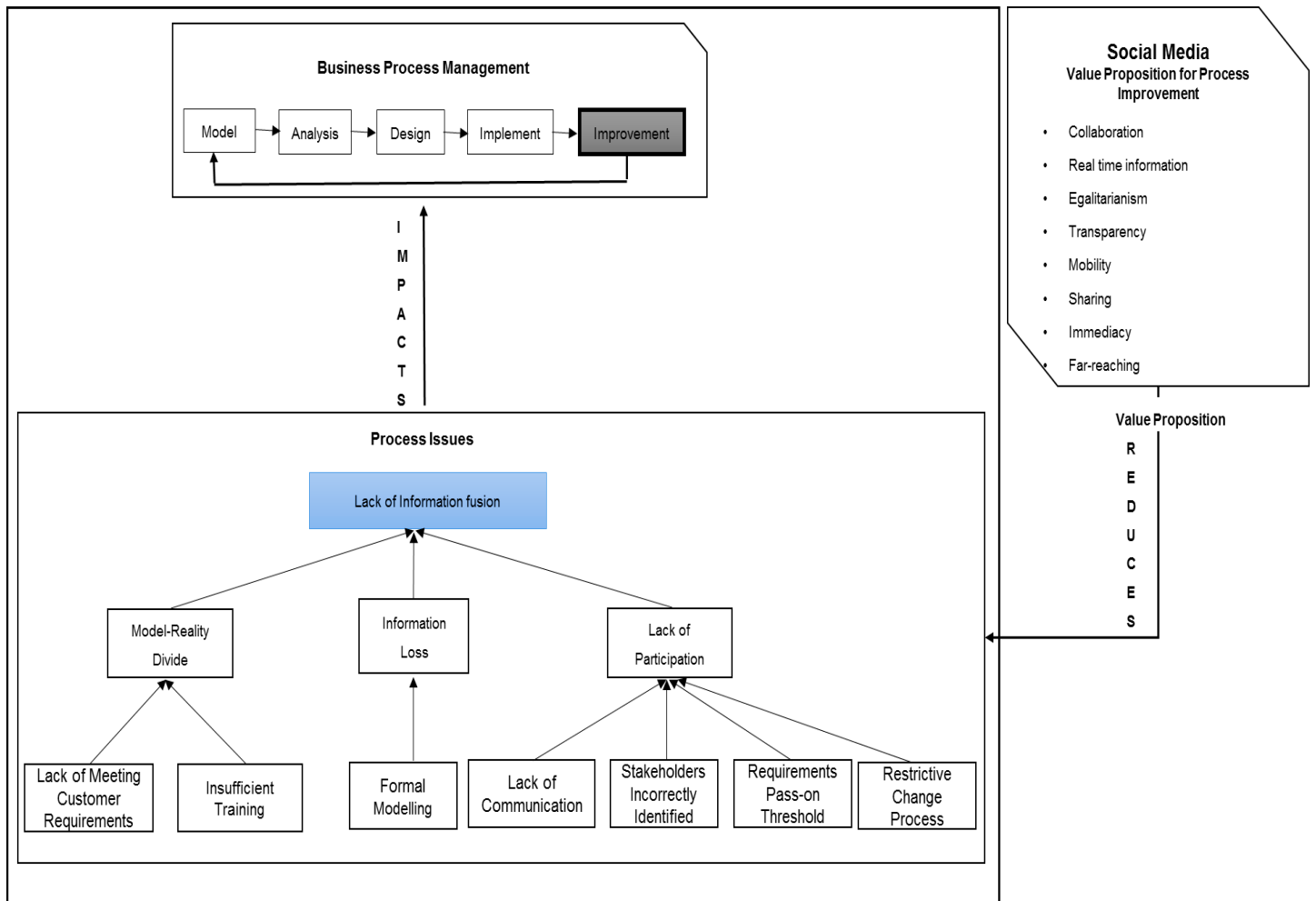


Figure 3: Updated Conceptual Research Framework

"open innovation." While open innovation includes a whole host of efforts to reach beyond the corporate firewall, social media can leverage a previously difficult to reach source of new ideas the public. And, as Surowiecki (2004) asserts that the public can be surprisingly smart.

Based on the findings in this research, the conceptual framework has been updated with the new concepts already defined in Sections 7.1 for BPI and 7.2 for SM.

The new concepts have been added to each of the umbrella term constructs: ‘Model-Reality Divide’, ‘Information Loss’ and ‘Lack of Participation’. The following

concepts emerged as surprises from this study: 'Lack of meeting Customer Requirements', 'Insufficient Training' and 'Stakeholder Incorrectly Identified'.

'Technology centric', 'Assumed future state understanding', 'Aggressive time-lines' and 'Lack of budget', indirectly contributed to all 3 umbrella term constructs. Therefore, they were not included in the updated framework.

'Accessible' was removed from the SM value propositions as it appeared to be unsupported by majority of the respondents. While new concepts like: 'Transparency', 'Mobility', 'Sharing', 'Far-reaching' and 'Immediacy' were added to the conceptual framework.

Chapter 8. Challenges and Limitations of the Research

This research was not without shortcomings, and required some decisions to be made due to competing priorities. Notably, the Delphi method was compressed due to time constraints and need to sustain participation in all rounds. Due to the lack of a number of rounds, consensus for all factors could not be reached. Another problem was related to definitions, which lead to confusion and participants had to query some definitions by email.

There was a high attrition rate which prolonged the time between rounds, as they could not be closed until all responses were received to ensure reliability.

Two other factors that limit this study is that it was conducted by a single researcher. Foremost of these, the researcher has an in-depth knowledge of business process improvement challenges, which brings some bias in interpreting the experts' responses. Secondly, the research was conducted with only 10 participants in total for both BPI and SM. Although there may be a relatively limited number of experts with knowledge about the research questions, the ideal Delphi panel size requirements are modest, and it would be practical to solicit up to four panels from 10 to 18 members in size (Paliwoda, 1983, pp. 31–38).

Chapter 9. Direction for Future Research

As previously affirmed, that there is limited research in the area of BPI and Social Media. The work presented here provides many opportunities for further exploration and research.

The area of this research focused primarily on integration of SM with business improvement lifecycle. Media richness, content richness was not explored as part of this research. This is another area that requires further research to confirm and verify if there are implications of integrating SM with BPI.

Another area of research would look to use a different method to recruit participants and analyse the findings from this study instead of the Delphi method. The research used a small number of participants, future research should look extend the number of participants.

New concepts that emerged in the research like 'Technology centric', 'Assumed future state understanding', 'Aggressive time-lines' and 'Lack of budget' needs further research to develop a deeper understanding with regards to reasons for BPI initiative failures.

Chapter 10. Conclusion

In this paper we constructed a conceptual framework that underpins the objective of this research to investigate how social media may provide better integration of a wider range of stakeholders (internal and external) and process knowledge into the business process improvement lifecycle. We employed the Delphi method which was versatile in theory building and contributed immensely to the conceptual framework validity. We provided a brief demographic profile of the participants and they were asked to answer questions that related to their experience in BPI and SM. We focused on the challenges and issues of BPI and the value propositions of SM.

The literature review shows that BPI initiatives conform to restrictive and inflexible methods to elicit requirements from a limited set of stakeholders. In addition to what appears in literature, the analysis of the responses reveals unique process issues and challenges which do not seem to be evident in existing literature. The process issues include: stakeholders incorrectly identified, requirements pass-on threshold, restrictive change process. Assumed future state understanding, technology centric, aggressive timelines and lack of budget also augmented the issues of BPI initiatives.

New factors that emerged with respect to SM value propositions include: communication channel, immediacy, transparency, mobility and sharing. Although common to various literatures, they were new to the conceptual framework and this study. SM experts also clarified the benefits, advantages and potential reasons for the integration of SM and BPI.

It is apparent from this study that SM has the potential to foster better collaboration and process knowledge by improving the exchange of information and including a wider stakeholder group. The benefit of integrating SM with BPI is an approach that allows for inputs of voices from inside and outside of the organisation into the process improvement lifecycle. Thereby, allowing business process improvement initiatives to benefit from SM.

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Appendix A

MMIM 592- Research Project in Information Management

Participant Information Sheet

Project Title: Integrating Social Media and Business Process Improvement: Value Propositions and Opportunities for Corporates

I am carrying out this research is to investigate what factors of social media may contribute to better integration of all stakeholders (internal and external) and process knowledge into the business process improvement lifecycle. In addition, another important aim of this research is to investigate the challenges experienced during the business process improvement lifecycle and how social media may reduce the loss of valuable information throughout the process lifecycle, given the fast pace of business process improvement initiatives. For this reason, I would like to invite you to participate in my research.

This research will employ the Delphi technique with two separate panels' i.e. social media and business process improvement experts. The structure of the Delphi study involves a three-step process: (1) the initial round will have open-ended questions to identifying a set of concepts/constructs; (2) the second round will seek to categorise and consolidate the concepts/constructs from the first round and ask experts to verify and refine the categorisation and (3) the third round will look to participants to rank the concepts/constructs.

The survey for each round will take no more than 15 minutes to complete and subsequent email will be sent as reminders as each round is completed to part take in the next round. Your participation in this research is voluntary. The findings of this research will be presented in a way that no individual or company will be identified. If, for any reasons, you decide to withdraw from the study, you have a right to do so prior to 30 November 2013 when data analysis commences. In the event of withdrawal, any data collected from you will be destroyed and omitted from the study.

Thank you for your time and help in making this study possible. If you have any questions, please contact me on 02102255809 or email durgaamee@myvuw.ac.nz. You may also wish to contact my supervisor Pedro Antunes, on +64-4-463-5525 or email Pedro.Antunes@vuw.ac.nz.

Best Regards

Ameera Durga

Appendix B

Email to Participants

Dear <Name>,

You are being invited to take part in an intriguing research study. Before you decide it is important for you to understand why the research is being conducted and what it will involve. Please read the attached information carefully, and take time to decide whether or not you wish to take part. You have been selected from a chosen few to provide your insights and experience in Social Media or Business Process Improvement (one to be selected in the relevant email).

The Research Information Sheet contains the reason and objectives for conducting the study. Your participation in this research is voluntary and will be completely confidential and data will be averaged and reported in aggregate. Although your participation in this research may not benefit you personally, it will help us understand how organisations may benefit for the following reasons:

- new opportunities to involve customers in the business process life cycle.
- the opportunity for collection of information for continuous process improvement throughout the lifecycle
- the opportunity to include a larger stakeholder groups in the business process lifecycle
- the opportunities of combining Social Media with Business Improvement

To take part in the research, please visit the following website: www.xxxxxx, where by completing and submitting the first survey, you are implying that you consent to participating in this study.

Please do not hesitate to contact us if you have any questions as you read over this material. We are happy to review any of this with you and answer any questions you may have. If you would like to

Speak with the supervisor of the researcher, please contact Pedro Antunes, on +64-4-463-5525 or email Pedro.Antunes@vuw.ac.nz.

Thank you for your time.

Sincerely,
Best Regards
Ameera Durga

<p>Ameera Durga School of Information Management Victoria University of Wellington Email: durgaamee@myvuw.ac.nz Mobile No: 02102255809</p>	<p>Pedro Antunes Victoria University of Wellington School of Information Management 23 Lambton Quay, Wellington 6140 New Zealand Email: Pedro.Antunes@vuw.ac.nz</p>
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Appendix C

Questionnaire information & Consent

The main objective of this research is to investigate what factors of social media may contribute to better integration of all stakeholders (internal and external) and process knowledge into the business process improvement lifecycle. In addition, another important aim of this research is to investigate the challenges experienced during the business process improvement lifecycle and how social media may reduce the loss of valuable information throughout the process lifecycle, given the fast pace of business process improvement initiatives.

By completing and submitting the survey, you are implying that you consent to participate and that you understand the following:

The survey for each round will take no more than 15 minutes to complete. Your participation in this research is voluntary. The findings of this research will be presented in a way that no individual or company will be identified. If, for any reasons, you decide to withdraw from the study, you have a right to do so prior to 30 November 2013 when data analysis commences. In the event of withdrawal, any data collected from you will be destroyed and omitted from the study.

Appendix D

Survey Questions

Social Media

- 1. What are the advantages of using social media to facilitate collaboration with customers/stakeholders (list between 4-5 advantages)?**
- 2. List 4-5 the key features/attributes of social media that may increase information sharing?**
- 3. What factors would influence the adoption of social media in business process improvement (list between 4-5 factors)?**

Business Process Improvement

- 1. List 4-5 factors that contribute to the lack of stakeholder's involvement throughout the process improvement life-cycle?**
- 2. List 4-5 ways in which stakeholder needs/requirements are captured during the process improvement life-cycle?**

- 3. List 4-5 factors on how stakeholders can maintain requirements for continuous process improvement (i.e. a mechanism that allows stakeholders to keep adding or amending their requirements)?**

- 4. List 3-4 problems that are experienced post business process deployment?**

- 5. List 3-4 reasons why less time is spent on process analysis and design in comparison to implementation?**