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Business Excellence Models as Sources of Benchmarking and Improvement

A thesis submitted in partial fulfilment of
the requirements for the degree of
Doctor of Philosophy

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Declaration

I hereby declare that this submission is my own work and to the best of my knowledge it contains no material previously published or written by another person, or substantial proportions of material which have been accepted for the award of any other degree or diploma at Macquarie University or any other educational institution, except where due acknowledgement is made in the thesis. Any contribution made to the research by others, with whom I have worked at Macquarie University or elsewhere, is explicitly acknowledged in the thesis. I also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistics expression is acknowledged.

Ali Khosravi

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Abstract

There has always been a significant debate about management models and systems in the literature. This thesis focuses on Business Excellence (BE) models, and their impact on the process maturity and performance. Through a case-study and a survey in UK firms, this study shows that utilising and commitment to BE models is significantly related to process maturity and financial performance. Not only BE-active firms were in a better situation than non-BE-active firms, but also within the BE-active companies, those who showed a higher level of commitment, were higher in their process maturity and financial performance.

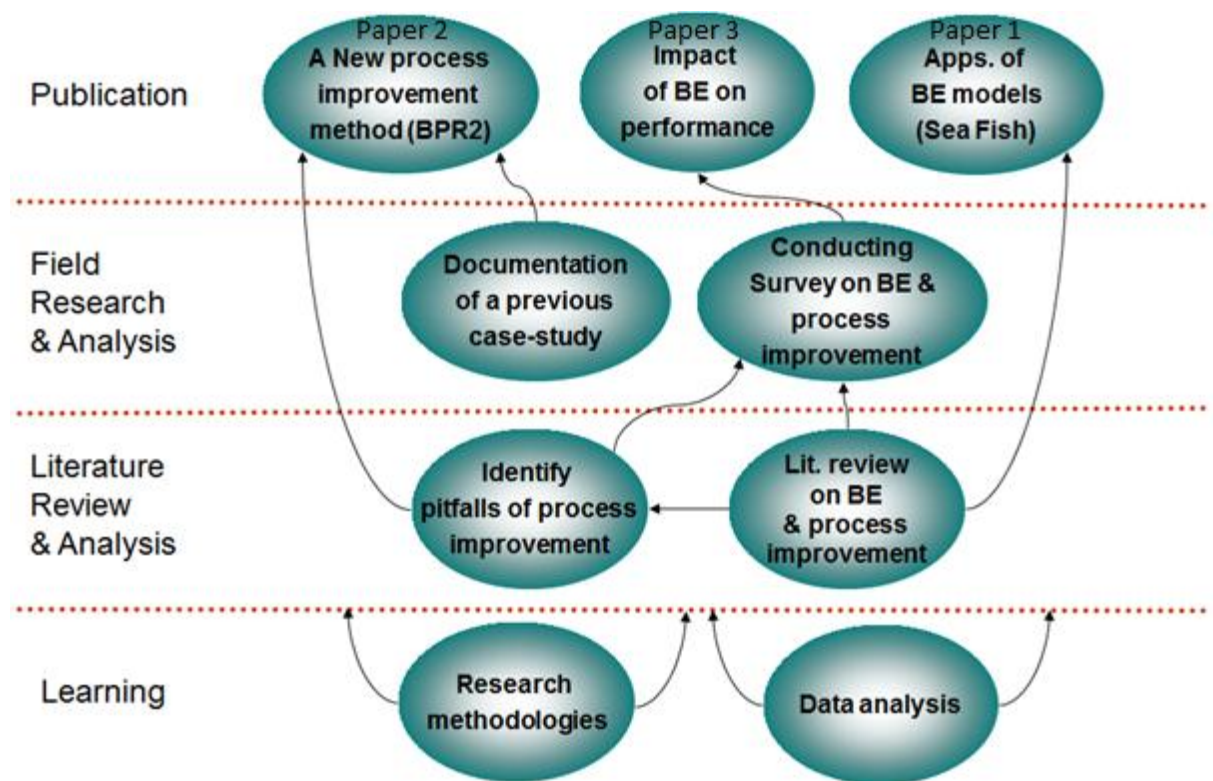
This is a thesis by publication presenting several contributions to the existing knowledge. The literature review has resulted in a conceptual paper including the first comprehensive scientific excellence model. Following the literature review, a case-study is presented in the second paper proposing a new process orientation methodology, namely the 'Business Process Rearrangement and Renaming (BPR2)' boosted by BE. The power of names which has been so far neglected in management literature, has been utilised in BPR2. Instead of destroying the organisational structure and rebuilding it, BPR2 suggests giving each of the existing departments 'a new identity and responsibility' to provide specific products/services for the internal/external customers.

A survey has been conducted on the impacts of commitment to BE which resulted in proposition of the new 'Organized Commitment Model' presented in the third paper. This model provides a platform for top managers who want to establish commitment on highly important issues such as organisational values, strategies, customer relationship, and so on. The Model can be also used by academics who want to measure the impact of commitment to an issue such as commitment to strategies on another variable such as performance.

‘Aiming for Excellence’ is the central focus in the whole thesis. Although people present different definitions about excellence, overall understanding of people about this concept is very similar. Hence, ‘Aiming for Excellence’ can provide a shared vision that brings people together in difficult circumstances.

Chapter 1:

Research Overview



1.1 Introduction

There are several Business Excellence (BE) awards/prizes around the globe that recognise and reward best practice in industry. The most popular BE awards are the Deming Prize in Japan, the EFQM Excellence Award in Europe and the Malcolm Baldrige Award in the USA; each has tens of thousands of organisations as followers or members (Asif & Gouthier 2014, Gómez et al. 2015). To be able to quantify the excellence and recognise the winners, these awards have defined a set of criteria and logic known as BE models. BE models and their actual benefits are the main focus of this PhD research.

While excellence means ‘of the highest superiority’ or ‘the state of being the best’, its practical definition and attributes in organisation management are very complicated. This is where BE models arise and attempt to define the meaning of excellence in management context. BE models normally present a number of fundamental concepts, criteria and scoring logic that together enable the award jurors to decide on the award winner(s). To ensure a precise measurement, BE models define sub-criteria for each criterion and some notes or bullet points for each sub-criterion. Since these criteria are not industry dependent, they can be applied to any firm, regardless of size and sector.

BE award assessors measure the award candidates against the criteria and produce a report which includes the firm’s score, strengths and points for improvement for each sub-criteria as well as the overall points and a score for the firm as a whole (Conti 2002). The firm (sometimes more than one) that receives the highest overall score win the award/prize and those firms that have achieved the highest score in a sub-criterion are acknowledged as role models. Award applicants can then use these reports to improve their practices.

Application of BE models is not limited to selecting the business award winners. Managers can use BE models, conduct a self-assessment and compare their own practices to

the best practices presented in terms of BE criteria. BE models enable organisations to obtain a comprehensive view of their activities and achievements, including their leadership, strategies, human resources, other financial and non-financial resources, processes and services, customer results, HR results, society results and key performance results (Eshlaghy & Kazemi 2009). BE models enable top managers to obtain a holistic picture of their organisation, giving a score for each perspective as well as a score for the organisation as a whole. After such self-assessments, managers develop an action plan and some projects that reflect their priorities for improvement. Commitment to such action plans can potentially result in improvements that may benefit the organisation. Each year the organisation leaders can then trace the changes to find out whether they are making any progress towards excellence or not (Mishra, Garg & Naru, 2013).

Several other applications have been reported in the literature for BE models and there may be many unexplored benefits as well. As an example, recognition of best practices provides the opportunity for benchmarking as reflected in many publications (e.g. Friedli et al. 2013, Hunt & Harden 2016). Other authors have also mentioned BE models' application to help organisations meet their social and environmental responsibilities (e.g. Suciu & Fisher 2014), to manage intellectual capital (Para-González, Jiménez-Jiménez & Martínez-Lorente 2015) and even to value businesses (Pálka, Blahová & Kwarteng 2014). Chapter 2 of this thesis explores the usage of BE models as benchmarks for other excellence awards and management of knowledge at individual and organisational level.

Despite its many potential positive impacts, BE models have their drawbacks as well. Some authors have warned that BE models do not provide complete coverage of Total Quality Management concepts (Wong 2000) and can encourage a 'motivational/directional effect' to fulfil award criteria rather than achieve business goals (Oakland & Tanner 2008).

Some companies have found BE models too complicated, time-consuming and costly to put into practice (Arasli 2012) and most organisations fail to implement the strategic initiatives recommended by the models (Asif et al. 2009). Moreover, my literature review, presented in Section 1.3.3 and in more detail in Chapter 4, categorises the publications on the benefits of BE practices into three main groups and shows that there is insufficient empirical evidence on the actual benefits of committing to Business Excellence and implementing BE models. To address this gap, this PhD research explores the benefits of BE models and through the literature review, a case study and a survey, contributes to the BE body of knowledge.

1.2 Ontological and epistemological context

Identification of the ontological and epistemological context is a highly important step that should come in the early stages of research. In this context, researchers are led towards deeper thinking about their own paradigms in research. Paradigms are a set of rules inside ourselves which define the boundaries of what we view as real, what we expect from ourselves and how we regard others and relate to them (Cowan 1992). Researcher paradigms are embedded in their ontology (belief about the nature of truth and reality) and epistemology (belief about how knowledge comes into being) (Anderson & Ellenbogen 2012). The researcher's ontological and epistemological positions influence the research process (Ravenswood 2011) at every step, even the literature review. Thus, developing a good understanding of such impacts may significantly reduce the risk of bias.

I come from a consultancy background where I actively advocated Business Excellence and its related activities for several years. Management consultants use management models as tools to facilitate their work in the same way as tradespeople use customised tools. Having a practical background provides a deep understanding of the BE models, their

related activities and their application within firms. However, it also increases the risk of bias and early judgment. With such a background, I feel offended when reading articles that call management models fads or fashions made by greedy consultants. In my research however, I decided to take a neutral role. Moreover, the design of my research also required me to question and criticise Business Excellence activities. As a result, I took many precautions in my literature review, case study and survey.

In the literature review I searched very hard for challenges, drawbacks, criticisms, critiques and flaws in BE models and BE self-assessments and critically reviewed the articles that were defending BE as well. I found hundreds of publication on the benefits of BE models and only a very few resources on weaknesses. Therefore, I went into details of the pro-BE papers, identified the flaws in the descriptions of the benefits, categorised them and found the gaps in the existing literature.

My case study was adopted from one of the practical cases in which I had a consultancy role. In the firm under discussion, which was a power plant, I conducted five BE related projects that proved to be highly successful in terms of helping the firm achieve a high rank among similar firms in the region. This success was defined not only in terms of perception measures such as satisfaction rates, but in terms of strong key performance indicators (KPIs) that were specific to the industry, including thermal efficiency, load factor and yearly operating time.

My survey also had some aspects that reduced the risk of bias. First of all, I tried not to include subjective questions in the questionnaire. For example, instead of asking the respondents to rate management commitment, I asked if the CEO attended BE-related meetings. Instead of asking about managers' involvement, I asked for the percentage of managers who were involved in BE-related activities. The survey was developed online to

reduce the risk of errors and bias in data collection. Moreover, an independent organisation was assigned to collect the data, leaving no opportunity for mistakes in data entry or my misrepresentation of the respondents. The survey results were so strong that there was minimal chance of any misinterpretation.

From the academic perspective, I have been influenced by the positivist paradigm. Oates (2009) defines positivism as a scientific method inherited from the natural sciences that believes in an ordered and regular world view that can be studied objectively. Positivist research tends to assume that the characteristics of a population are well understood such that a sample may be drawn in an unproblematic way (Downward., Finch & Ramsay 2002) and focuses on testing hypotheses (Richey 1998). The more I searched the literature and read high-ranking journals, the more I found this paradigm to be dominant in academia. For my PhD, therefore, I chose the same path, presented some hypotheses and tested them through a survey. Such a path may be attributed to my positivist paradigm. Fortunately, in this research I managed to present a case study, which gave me enough courage to propose and publish practical models beyond hypothesis and sampling and testing frameworks.

The Conclusion chapter, which includes a description on the research outcomes, provides a discussion on whether my precautions were successful in preventing my paradigms from having an impact on the research outcomes.

1.3 Preliminary literature review

This research aims to identify the benefits of Business Excellence models. Important subjects in this research are:

- BE models, their structure and how they are developed

- self-assessments with BE models
- rise and utilisation of BE models
- impact of BE-related activities on performance
- impact of BE-related activities on process improvement.

The following sections present a summary of the literature review on each of the above-mentioned subjects.

1.3.1 Business Excellence models

Attention to customers and quality of products on an industrial scale first became paramount in mid-19th century. This attention first appeared in the form of quality control (QC) (Feigenbaum 1951), which included checking products and statistical measurements. After a while, management practitioners suggested that checking the quality at the end of production line would be too late, and quality control should happen at every stage of the product/service development. As a result, QC was renamed Total Quality Control (TQC) (Feigenbaum 1961). After a while, authors suggested that quality was everyone's responsibility (e.g. Crosby 1967), and in the mid-1980s authors started to recommend that in order to exceed customers' satisfaction, a Total Quality Management (TQM) system should be put in place to create organisation-wide participation in planning and implementing a continuous improvement process (Coate 1990, Akao (1991), Juran (1995), Foley & Sarasohn 2004).

In another stream, the Business Excellence (BE) awards and models came into being to encourage firms to implement management best practice. The Deming Prize, developed in the 1950s in Japan, was the first BE award. This prize was named to commemorate the Dr

William Edwards Deming, who contributed greatly to Japan's proliferation of statistical quality control after World War II (JUSE 2016). Such an award did not happen in other countries until the 1980s, when a TV program alerted American audiences to Dr Deming's work and the impact of the Deming Prize on improving Japanese quality standards and processes in the post-war years (Crainer & Dearlove 2006). Following this alert, several other BE awards appeared around the globe, such as in Canada in 1983, Australia in 1987, the USA in 1987 and Europe in 1992.

The rise of Business Excellence award models coincided with the fall of TQM (Dahlgaard-Park et al. 2013, Khandekar & Sulakhe 2014). TQM authors realised that other stakeholders, such as shareholders, suppliers and employees, were also internal customers and highly important to a sustainable business and therefore added them into their definitions of TQM (e.g. Eriksson & Hansson 2013). As a result, the BE stream and TQM stream were completely mixed. Today, although Business Excellence and TQM are not the same (Gómez, Martínez Costa & Martínez Lorente 2015), they follow a similar path and some authors use them interchangeably (e.g. Fonseca 2015).

As mentioned earlier, each BE award uses a specific BE model which is a set of criteria and scoring logics to determine the award winner(s). BE models can quantify the excellence of organisations regardless of their size and industrial sector (Conti 2002, Khosravi & Chavan 2012). Organisations choose and utilise a BE model as a diagnostic tool to find the gaps and provide a roadmap for their journey toward excellence (Mishra, Garg & Naru, 2013). BE models provide a comprehensive view of the organisation and prioritise the improvements they are going to make (Eshlaghy & Kazemi 2009). The Deming Model, EFQM Model (European Foundation for Quality Management) and the Malcolm Baldrige Model are the most popular BE models in the world (Gómez et al. 2015, Heras-Saizarbitoria et al. 2012,

Metaxas & Koulouriotis 2014) and tens of thousands of organisations around the globe use these models on their journey toward excellence (Asif & Gouthier 2014, Khosravi & Chavan 2012).

BE models interpret the meaning of ‘Business Excellence’ in terms of some quantifiable concepts and criteria. As an example, the EFQM point of view describes Business Excellence in eight core concepts, such as ‘achieving results that delight all the organisation’s stakeholders’, ‘creating sustainable customer value’ and ‘Excellence is managing through structured and strategically aligned processes using fact-based decision making to create balanced and sustained results’. Based on these concepts, the EFQM Model defines nine criteria, as shown in Figure 1.1.

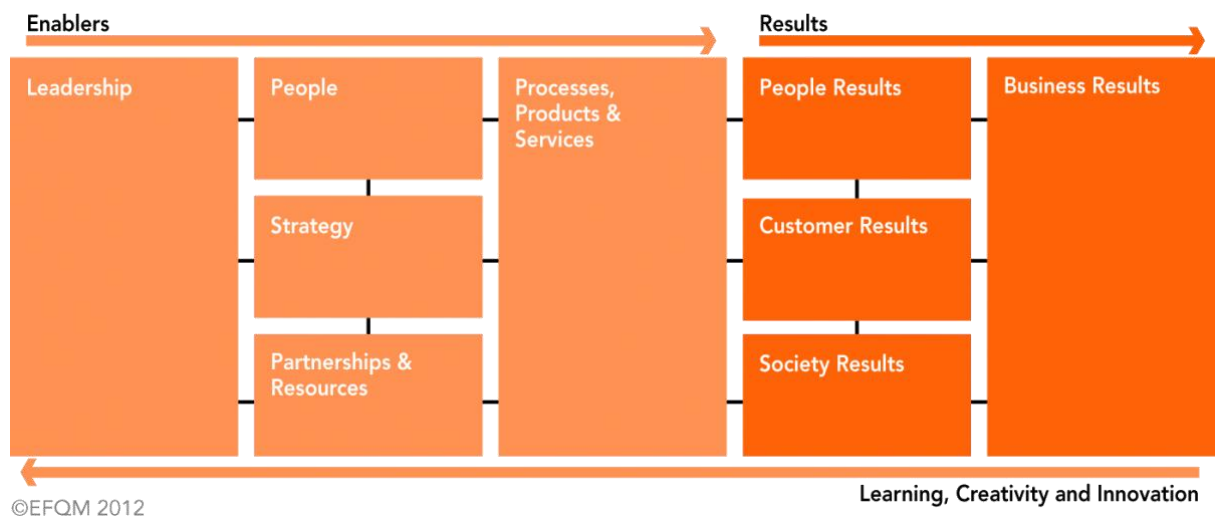


Figure 1.1. The EFQM Business Excellence Model (adopted from EFQM 2016d)

Similar to the EFQM Model, other BE models have clearly defined criteria that enable them to make a quantitative judgment between companies. As shown in Figure 1.2, each criterion has a set of sub-criteria and each sub-criterion is provided with a set of areas to address. Criteria at such a level of detail can be used either as a scoring model for

distinguishing the winners of the BE awards, or as a self-assessment tool that can be used by any organisation wishing to know its own strengths and areas for improvement, as well as quantifying its progress toward excellence.

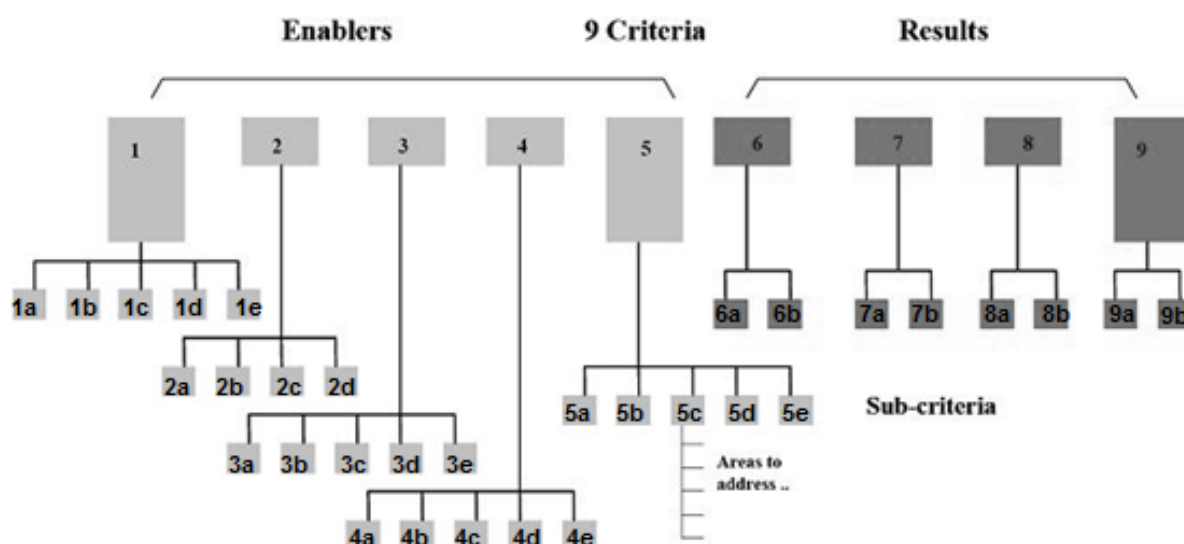


Figure 1.2. Schematic pattern of the EFQM Business Excellence Model (adopted from UK National Probation Directorate 2002)

Using a BE model, an organisation can make quantified comparisons between itself and other organisations and make benchmarking much easier. Many companies in the world plan for a better score in their own national quality award processes and seriously compete for the award. Since core values and criteria are not dependent upon the industrial sector, BE models are applicable to any organisation regardless of industrial sector, be it automotive, airline services or even health.

Business awards involve a thorough process. Prior to the assessments, assessors receive many hours of training on the model and the scoring logic and then undergo a calibration process. In that process, they assess a sample case-study and their scores are compared to a standard and any significant deviation from the standard will result in a repeat of the calibration process. The calibrated assessors are called 'assessed assessors' and

each of the applicant companies for the award is assessed by a team of these assessed assessors. The size of the assessors' team depends on the size of the applicant company and the level of excellence they have applied for.

The ability of a BE model to quantify the excellence of an organisation with all of its complexities, regardless of type and size, with high accuracy can be used as a point of reference. If two different teams of qualified assessors of the EFQM Model give score to an organisation, the difference between the two scores will be less than 50 out of 1000. Quantification of performance is the first step towards performance improvement, and precision in quantification of such a complicated subject can be used as an exemplar for quantifying performance of any aspect. The comprehensive view obtained from BE models can be used to quantify excellence on much larger scales, such as excellence in a city, state or a country, or on smaller scales, such as personal excellence as a citizen or the research excellence of a scholar. Although BE models have a history of more than six decades, a benchmark of this method of quantification is still unexplored. Specifically, there is a lack of research on how to benchmark the BE models for other excellence awards. These comprehensive excellence models are highly important and inspiring and deserve the attention of researchers and authors.

1.3.2 Self-assessment with BE models

The journey toward business excellence involves several activities. It needs a leader, initial planning, resource provision, execution, monitoring, continuous review and improvement. The activities start with organising and training teams of managers and employees to conduct self-assessment and to provide comprehensive feedback. Self-assessment can be classed as a health check, where an initial analysis against the Model

provides information and evidence against which improvements can be made. As learning and understanding progresses, use of the Model becomes more integrated into the way of working. EFQM (2016) defines self-assessment as 'a comprehensive, systematic and regular view of an organisation's activities and results referenced against the Excellence Model. It is critical that self-assessment is viewed as an integral part of the journey towards Excellence, rather than a stand-alone exercise or a "one-off."

The following steps are recommended by the EFQM (2016) for a successful self-assessment:

1. Gain and retain management commitment.
2. Develop and deploy the communications strategy.
3. Plan for self-assessment.
4. Select and train people directly involved in the process.
5. Conduct self-assessment.
6. Consider outcomes and prioritise.
7. Establish and implement.
8. Monitor action plan progress and review the self-assessment process.

1.3.3 Rise and utilisation of BE models

It was previously written on the JUSE website, which is the official website for the Deming Prize, that the Deming Prize was a prize for individuals and companies related to knowledge and application of TQM. This description led some academics to argue that the Deming Prize was not the original 'Business Excellence Model'. In the new version of the JUSE (2016) website TQM has been removed, and we read that "the Deming Prize that is given to organisations, has exerted an immeasurable influence directly and indirectly on the

development of quality control/management in Japan.” Although in this description there is no reference to BE nor there is any claim of originating BE models, since prior to the Deming Prize there was no other known BE model, we can suggest that it was the first BE model. In fact, as mentioned in Section 1.3.1, Total Quality Management came into existence after 1980. Hence, when Deming Prize could not have been given to companies in accordance to their practices in 1950s.

In the literature review for the birth and development of BE models we should also mention the work of Peters and Waterman (1982) which some authors suggest as the cusp of the birth of Business Excellence models. They published a book titled 'In Search of Excellence' in 1982 which sold several million copies. In that book they described their study of 43 successful companies in the late 1970s and the following eight common themes they found to be responsible for the success of those corporations:

1. A bias for action, active decision making - 'getting on with it'. Facilitate quick decision making & problem solving tends to avoid bureaucratic control
2. Close to the customer - learning from the people served by the business.
3. Autonomy and entrepreneurship - fostering innovation and nurturing 'champions'.
4. Productivity through people- treating rank and file employees as a source of quality.
5. Hands-on, value-driven - management philosophy that guides everyday practice - management showing its commitment.
6. Stick to the knitting - stay with the business that you know.
7. Simple form, lean staff - some of the best companies have minimal HQ staff.

8. Simultaneous loose-tight properties - autonomy in shop-floor activities plus centralised values.

Although the modern BE models look very different to Peters and Waterman, there are some common grounds such as the customer focus and leadership. Although the work of Peters and Waterman attracted millions of audiences in academia and industry, lack of quantification capabilities did not qualify it as a BE model, and there is no significant sign of its usage in today's world.

As of 2011, there were approximately 100 BE models were used across the world (Talwar, 2011) with most of them being based on major BE models including Deming Prize, the Malcolm Baldrige National Quality Award (MBNQA) and the European Foundation for Quality Management (EFQM) Model. According to Saunders, Mann, and Grigg (2008a), the MBNQA and EFQM models have been widely adopted in more than 80 countries.

To examine the international use of business excellence (BE) models and the practices used by BE framework (BEF) custodians to encourage use, Saunders, Mann & Grigg (2008) conducted three surveys, a series of focus groups and key informant interviews were conducted. Their study involved input from 16 countries and was part of a larger study of how BEFs are designed, reviewed, promoted and deployed within and across nations. Only two of 16 BEF custodians had a formal measurement system in place to objectively measure the use of BEF by organisations over time. The use of the Australian BEF was lower than previously estimated at 1.3 percent and global use between 4 and 15 percent of organisations. They presented the results as shown in Figure 1.3 in terms of the percentage of organisations within each country reportedly using BE.

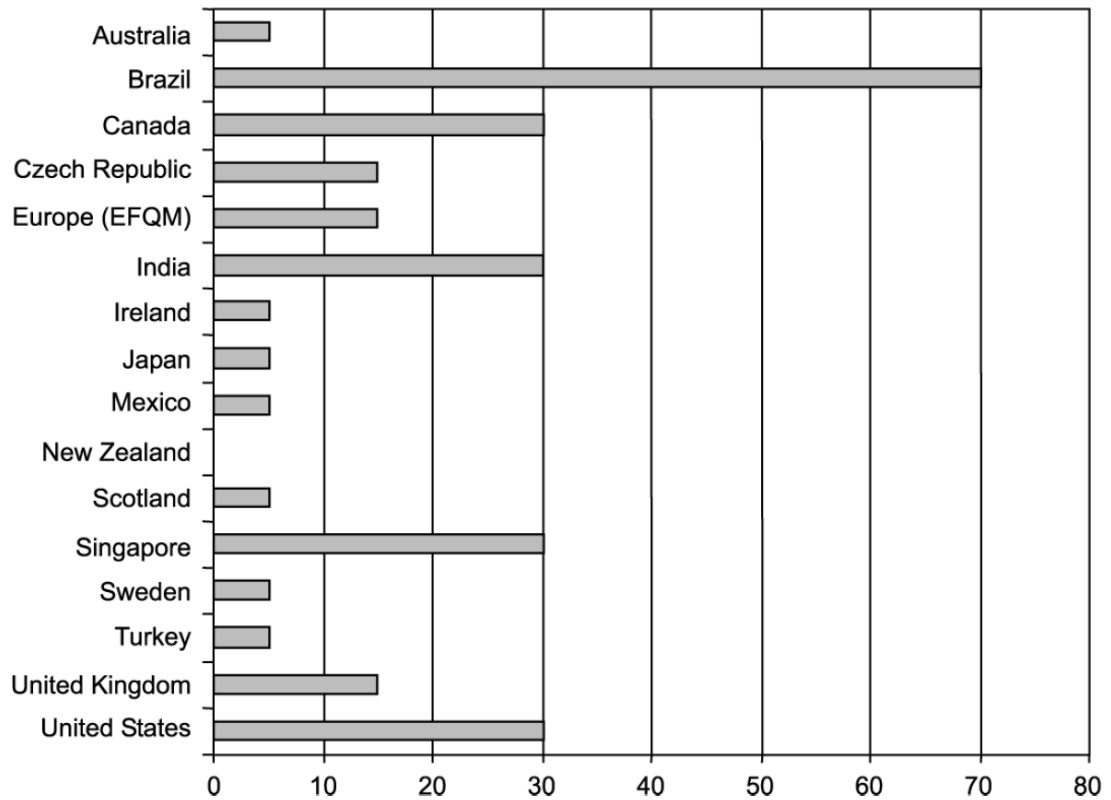


Figure 1.3 Percentage of organisations using BE by nation, median average across all organisation sizes [adopted from Saunders, Mann & Grigg (2008)]

As shown above, pattern of BE models' utilisation in the world is another relevant point to address in this thesis. In fact, spread and popularity of BE models is highly variant in the world. One interesting subject for research can be to investigate the level of industrial or economic growth in countries that have had a longer experience on BE and / or higher level of BE popularity in comparison to the other countries. Another interesting field to explore is the trend of BE popularity in countries versus the trend of economic and industrial growth.

1.3.4 Impact of BE-related activities on performance

There are many articles in the literature investigating the impact of BE models on organisations' improvement and growth. As an example, Hendricks and Singhal (2003) state that their statistical tests provide strong evidence that firms that have won quality awards outperform the control firms on operating income-based measures. Their study found that Baldrige award winners experienced increased income, sales and total assets during their respective post-implementation periods compared with their control companies. In a similar study sponsored by the EFQM and British Quality Foundation of 120 award winners, it was found that the winners outperformed comparison companies similar in size and operating in the same industries over an 11-year period (Mann & Voss 2011). Macleod and Baxter (2001) have also clearly demonstrated the contribution of BE models in restoring failed improvement initiatives in three industrial case studies. In Australia, Hausner (1999) examined the performance of 15 manufacturing firms that participated in the Australian Quality Awards (not just award winners). He asked the 15 firms to list the 10 most important performance indicators and provide quantitative data in respect of those KPIs over an eight-year period. He found a strong positive correlation between KPI improvement and total BE score.

Most empirical research on the impact of BE on performance can be categorised into three main groups based on the methods and variables they use in their studies. The first group (e.g. Gupta 2013, Heras-Saizarbitoria et al. 2012, Kömürcü 2008, Kristensen et al. 2001, Moon et al. 2011, Oakland & Tanner 2008, Tanner 2004, Terziovski 2003, Tutuncu & Kucukusta 2006) measure BE as a variable which consists of other variables such as leadership, strategies, human resources and other resources management, processes and

products/services. The second group (Boulter et al. 2013, Capon et al. 1991, Centre for Quality Excellence 2005, Fasil & Osada 2011, Hendricks & Singhal 2003, Mann et al. 2011, Mann, Adebajo & Tickle 2011, Modd & Matanda 2006) consider excellence as the state of being recognised as a BE award winner and compare the performance of the award winners to non-award-winners. All of those studies have so far indicated the positive impact of BE on organisational performance. Although the investigations of both of those groups are relevant, there are valid criticisms of both types of studies. The third group (e.g. George, Cooper & Douglas 2003, Khosravi 2016, Li & Yang 2003, Samuelsson & Nilsson 2002) present case-studies showing the positive impacts of BE practices. Although those case-studies are highly encouraging, generalisability is an issue to consider.

The study conducted by Oakland & Tanner (2008) is an example of the group that measures the BE as a function of variables such as leadership, strategies, processes and so on. Investigating the relationship between Business Excellence and organisational performance, they conducted a survey using Kanji and Sa's Leadership Excellence Model as a measure of business excellence maturity. Their survey showed a positive relationship for all types of organisations. As another example with a similar survey, Moon et al. (2011) investigated the causal relationship among categories in the Korean National Quality Award (KNQA) model. Their survey instrument consisted of 79 questions from the seven KNQA categories. Structural Equation Modeling (SEM) was used to analyze the empirical data and estimate the path coefficients among KNQA categories. Their research showed that the Human Resource Focus directly affects Process Management, Process Management directly affects Customer Satisfaction and Customer Satisfaction directly affects Financial Results.

Although the articles in the first group try to show the impact of Business Excellence on performance, there is a significant flaw in all of them. The point is that none of those studies

measure the level of Business Excellence effort in participating firms. In other words, practising BE involves developing commitment to a BE model, involving managers to assess their own activities according to the criteria of the selected BE model (self-assessment), documenting the assessment outcomes, providing an agreed action plan, progressing through the action plan and regularly updating the self-assessment programs. Attention to all of those activities and their impact on performance is the main point still missing from the identified literature. From this perspective, measuring BE as a function of variables such as leadership, strategy, human resources and so on, is actually measuring the mediating variables instead of the main independent variable, namely the level of commitment and effort that the firm dedicates to the BE. Until now, what we know is that making improvement in leadership, strategy, HR and process orientation leads to better performance; however, the existing literature still does not tell us if it is worthwhile to follow a BE model and spend so much effort on BE self-assessments.

A much-cited example for the second group of studies that consider BE as the state of being a BE award winner is the study conducted by Hendricks and Singhal (2003). The authors studied 600 worldwide quality award-winning organisations over five years. The results were compared to a control group of companies of similar size and industrial sectors. Hendricks and Singhal (2003) concluded that the firms that had won quality awards outperformed the control firms on operating income-based measures. In a similar study sponsored by the EFQM and British Quality Foundation of 120 award winners, it was found that the winners outperformed comparison companies similar in size and operating in the same industries over an 11-year period (Mann et al. 2011).

The most important flaw for the second group who consider BE as the state of being an award winner is that those award winners had already demonstrated better approaches as

well as better performance to the award jurors. Thus, finding that those firms continued to outperform others, only proves the relative fairness of the award processes, not the effectiveness of the Business Excellence activities.

A study that included non-award winners in the sample was conducted by Hausner (1999). He examined the performance of 15 manufacturing firms that participated in the Australian Quality Awards (not just award winners). He requested the 15 firms to list the 10 most important performance indicators and provide quantitative data in respect of those KPIs over an eight-year period. Although he found a strong positive correlation between KPI improvement and the total BE score, unfortunately, this study did not compare non-award-participants with award participants to investigate the benefits of participating in award processes. Acknowledging the fact that being a non-award participant may be related to lack of interest in award processes rather than not practising BE, such a comparison could be interesting.

In similar research, Van der Wiele, Dale & Williams (2000a) conducted a survey among companies that were members of the European Foundation for Quality Management (EFQM), questioning the benefits of BE self-assessments. As expected, their survey arrived at the judgement that 'self-assessment against an excellent model can help organisations move towards higher levels of excellence.' Unfortunately again, as in the Hausner study above, this study did not compare EFQM members with non-members to investigate the performance outcomes of being involved in BE activities and measured only the perceptions of the EFQM members about the benefits of self-assessment. Given the fact that EFQM membership is voluntary and involves membership costs, only satisfied firms continue to hold their membership and dissatisfied members leave. As such, a satisfaction survey from EFQM members cannot prove the benefits of the model.

The only identified study that focused on the impact of BE 'implementation' was conducted by Fernández Díaz et al. (2014). Using a survey within primary and secondary schools in Spain, they measured the impact of that implementing a quality management system, such as the EFQM model. Their results show that implementing quality management systems has a notable positive impact on schools' communications and external relations. Although they found that such positive impacts increase in higher number of years of practice, they found the impacts to be weak in some other subjects, such as schools' systematic review. While presenting extensive arguments on effectiveness, Fernández Díaz et al. (2014) do not mention whether they measured the efficiency of such implementations on key measures, such as students' scores.

The literature review presented in this section tells us that BE models are relatively reliable for measuring the level of organisational excellence and the firms that following these models are satisfied with them. We also learn from the literature that companies with a higher score in leadership, strategy and human resource management show higher performance. However, while BE self-assessments and other related activities are costly and time-consuming, there is not enough evidence to convince that BE self-assessments and other BE-relevant activities lead to better performance. This is a gap to be addressed in this thesis.

1.3.5 Impact of BE related activities on process improvement

In the traditional division of work, each customer or other stakeholder's enquiry passes through a series of departments until it gets resolved. The Marketing and Sales Department receives customer enquiries and forwards them to the Engineering Department to provide the Bill of Materials (BOM) and production instructions. The Production Planning Department receives the BOM and instructions and provides the required materials and production plans and sends them to the Production Department for the actual production. Products are then forwarded to the Marketing and Sales Department to be delivered to the customers. In such a functional orientation, each department has its own paper work, errors and delays, making the whole operation very slow and inefficient. By contrast, in process orientation, products, rather than functions, are divided between departments and it is possible for a stakeholder enquiry to be managed from start to finish within one single department.

One of the most important aspects of BE practices in firms is that they promote process orientation. Process orientation, which is considered as the horizontal method of management based on end-to-end processes, contrasts with the traditional hierarchical approach (Ghoshal and Bartlett 1995, Hammer 2007, Paim 2008, Palmberg 2010, Rummier and Brache 2013). There are many studies in the literature suggesting that having a process orientation results in enhanced products/services, a decrease in costs and faster functions (Hinterhuber 1995, Terziovski 2003, Hammer 2007, Kohlbacher 2010, Khosravi 2016). As all BE models advocate process orientation, the firms that practise BE are more likely to pursue this orientation, which in turn will have a positive impact on their performance.

Existing studies on the impact of BE on performance have neglected the mediating impact of process orientation and do not clarify the main stream in the performance improvement. In other words, there seems to be a lack of clarity in the literature on the

mechanism of this performance improvement: how much does BE contribute to the process orientation? How much of the performance improvement is related to process orientation, and how much of the performance improvement is related to factors other than the process orientation? Both of the Malcolm Baldrige and the EFQM models have 'process management' as one of their fundamental concepts and, as shown in Figures 1.1 and 1.4, both of these BE models have 'Process Management' as one of their main criteria. They both suggest that 'management by processes' has a significant role in the success of an organisation and in converting the enablers into results. The significance of this has been identified as another gap in the literature and is tested in this research.

1.4 Research questions

The research questions arising from the gaps identified are listed below. This research employs both qualitative and quantitative methods, including a case study and a survey to address the questions. These research questions are as follows:

RQ1. How can BE award models be used as a source of benchmarking? This includes:

- a. What is Excellence?
- b. What is Business Excellence (BE)?
- c. What is called a BE model?
- d. What are the similarities and difference between different BE models?
- e. What is the origin and history of BE?
- f. How have BE models been used in the literature as sources of benchmarking?
- g. In which other ways can we use BE models as sources of benchmarking?

RQ2. Does following and commitment to a BE model facilitate Process Improvement in organisations? This includes:

- a. What is involved in following and commitment to a BE model?
- b. What is involved in Process Improvement in organisations?
- c. How can following and commitment to a BE model facilitate process improvement in organisations?

RQ3. Does following a BE model and commitment to it lead to improved performance?

This includes:

- a. What is involved in performance improvement in organisations?
- b. How can following and commitment to a BE model impact customer values and financial performance?

RQ4. How significant is the mediating role of process maturity in the impact of BE on financial performance? This includes:

- a. What is the process maturity?
- b. What is the relationship between BE and financial performance?
- c. What is the relationship between BE and process maturity?
- d. What is the relationship between process maturity and performance?
- e. Does the process maturity have a significant mediating role in the relationship between BE and performance?
- f. Would the BE have a significant impact on financial performance if controlled for the process maturity?

To answer RQ1, I have presented an example case of benchmarking from BE models in Chapter 2. RQ2 and RQ3 are also first answered using an existing implementation case study from my own experience (Chapter 3) and then through a survey (Chapter 4). In addition to RQ2 and RQ3, the survey also provided answers to RQ4. Full detail of the methodology is presented in the following sections.



Figure 1.4 Malcolm Baldrige National Quality Award (MBNQA) Model (NIST 2017)

1.5 Research design and methodology

1.5.1 Research design

One of the main objectives of this PhD research was to determine the impact of Business Excellence on process maturity and financial performance in firms and share the knowledge through publication in peer-reviewed journals. To achieve this goal, several objectives were achieved in four years of PhD research, as mapped in Figure 1.5. In designing this map, the strategy mapping methodology presented in the Norton and Kaplan (2004) Balanced Score Card model was used.

The most important objectives in this research that resulted in publication are:

- A literature review and simulation– to answer RQ1
- Case study – to answer RQ1 to RQ3
- A survey – to answer RQ2 to RQ4

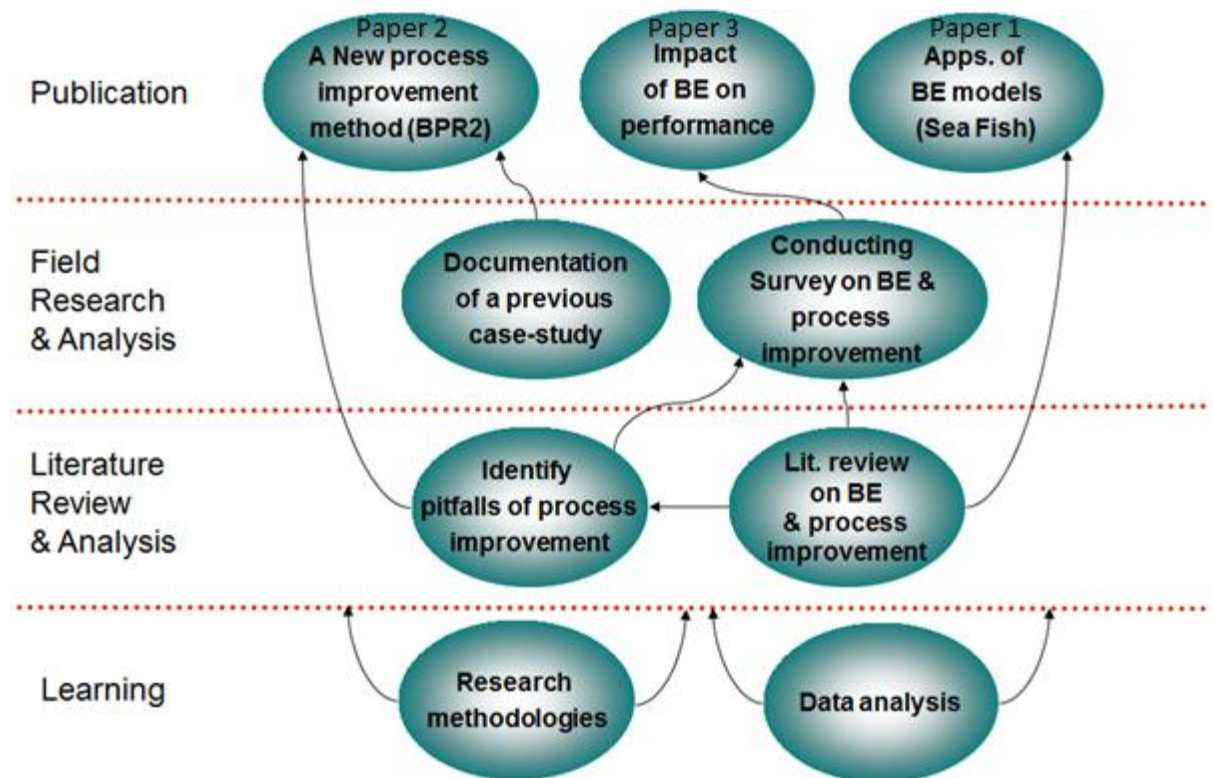


Figure 1.5 The research strategy-map

1.5.2 Research strategy

Research methods are most commonly divided into two groups: quantitative and qualitative. Qualitative research methods focus more on the depth of sampling, whereas the quantitative methods focus on the breadth and quantity of samples (Patton 2002). Qualitative methods make a profound study on a limited number of samples while the quantitative methods study a limited set of characteristics within a large sample size (Choy 2014). Surveys and short interviews are mostly regarded as quantitative methods, whereas long interviews, case studies and focus groups are more regarded as qualitative methods.

Quantitative methods have some strengths and weaknesses. In quantitative approach, the researcher aims to capture the knowledge through measurements and numeric tools

such as averages and standard deviations, and generalise the findings to the larger population. By doing so, researchers formulate general 'laws' free of specific constraints (Shimahara 1988) in a way that is meaningful to audience. Assumption is that if we test a sample that is a fair representation of the whole population, the finding will be the same as if we test the whole population. However, we should note that any claim to generality can be argued. Variables are consistently changing and many important characteristics of samples such as identities, perceptions, and beliefs cannot be meaningfully reduced to numbers or adequately understood without reference to the local context or area in which samples act (Choy 2014). Added to the fact that surveys cannot take account of organisational context, limitations in resources and difficulty in finding samples, normally make it challenging for researchers to provide a large sample size that can adequately represent the whole population.

Qualitative research methods also have some strengths and weaknesses. Rather than testing a few variables on a large sample, qualitative researchers try to capture the behaviour and relationships of more variables on a smaller sample size. Tests conducted in this method are more in-depth and more complicated, and aim to explore knowledge, attitudes, and beliefs, and are particularly appropriate when studying complex situations or interactions (Marriott et al. 2001). The focus in qualitative approach is on patterns that give meaning to phenomena and contribute to understanding the experience as a whole (Ferreira et al. 2016). The drawback for this method is that the studied phenomena are even more specific to the samples, and generalisation will be even more difficult. According to Choy (2014), in qualitative methods, important issues could be overlooked or unnoticed, interpretations are limited, and personal experience and knowledge influence the observations and conclusions. Also, because qualitative inquiries are generally open-ended, participants have more control over the content of the data collected.

Given the above arguments, no single qualitative or quantitative approach could address the requirements in my research. The first challenge in my study was that although the Business Excellence is a popular phrase in advertisements and work places, most people do not have a good understanding of what it involves. In such a context, only talking about the numbers and statistics would not clearly reflect the detail of BE activities and how it can impact the processes and performance. I needed 'rich' primary data in addition to statistical evidence. The other challenge was the need to reflect the reality and the context in a way that could not be influenced by my paradigms.

A combination of the qualitative and quantitative methods could best address such challenges. In fact, although most researchers choose either the quantitative or the qualitative method, many authors suggest that a combination of both research methods in a study may have more reliable results (Myers 1997). Such a combination in research methods is also known as triangulation of data which is taken from navigation and military strategy that use multiple reference points to locate an object's exact position (Jick 1979). With a triangulation strategy, a structured literature review and conceptual discussion, a case study and a survey were conducted and resulted in three journal papers as shown in Figure 1.6. These three papers are explained in details in the following sections.

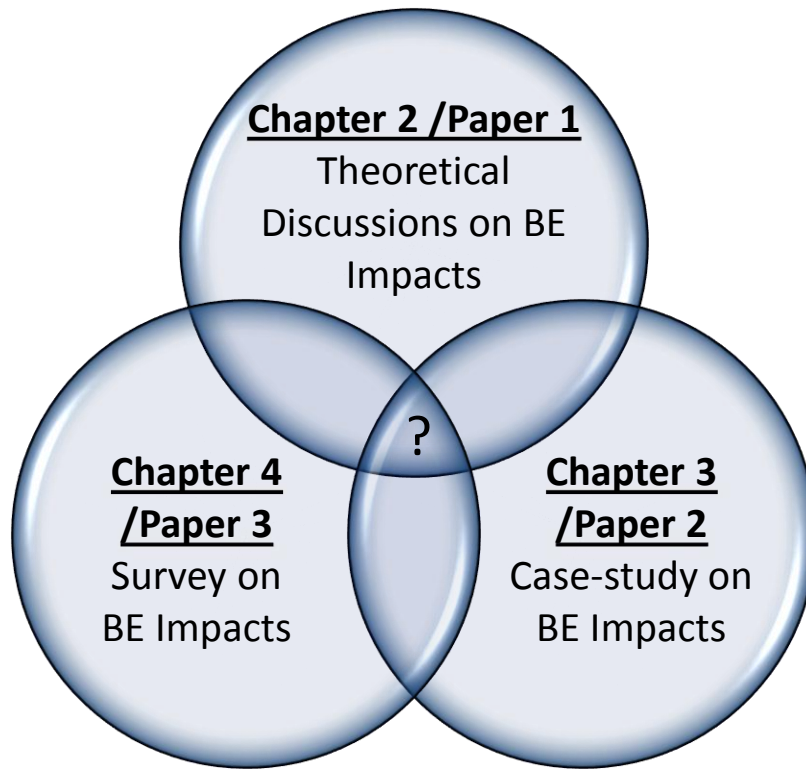


Figure 1.6 Triangulation of data

1.5.2.1 The literature review

The structured literature review aimed to provide a comprehensive review on the existing literature on the impact of BE activities on process improvement and performance. To have a rigorous view on the mechanism of such performance improvements, critical issues and pitfalls of process management were also searched and studied as shown in Figure 1.5. The main search engine in this study was the Google Scholar which is the most comprehensive engine (Ortega 2015).

For BE and process improvements, Google Scholar search produced more than 3000 results for *(process or performance)* AND *(EFQM or Baldrige or Deming)*. Those 3000 results were studied by their short Google summary. References that seemed to be relevant in that summary were further tested by their abstract. About 60 peer reviewed papers were then

selected for the full paper review. Although none of those 60 papers reported negative or no impact for BE, there were some weaknesses in them as mentioned in the Preliminary Literature Review section.

For the process management impacts and pitfalls also the same approach was adopted. I searched Google Scholar once for performance impacts of business processes and once for the failures of business process management. Numerous results of more than 20,000 were produced for “business process AND (impact or influence or failure or pitfall or drawback or weakness or issue)”. Since such a large number of results were not feasible to review, I searched business and management databases such as ProQuest, ScienceDirect, EBSCOhost, Emerald, and Taylor and Francis by keyword within their title and abstract. More than 110 papers were selected for further review.

1.5.2.2 The case-study

The case study was taken from one of the companies where I had a consultancy role. This experience, which started in October 2007 and finished in June 2008, shows a genuine process improvement in a government company initiated by Business Excellence self-assessment. The case company, BPG, is an electric power generation company. BPG burns mazut (low quality fuel oil) and gas to generate electricity. The whole story is presented in Chapter 3 of this thesis.

Selection of BPG was for the following reasons:

1. I could conduct a complete set of BE and process improvement projects in BPG.
2. Results do not often appear very quickly, and need at least three years. Timing was very suitable for this case.

3. After completion of projects it is not possible to obtain data for the company. In BPG case, there were public data accessible online. More interestingly, the public data were on the business key performance indicators, and not just the implementations or people perceptions.
4. BPG was a public owned company. A successful process improvement in public organisations which are bound to many limitations is regarded as a greater achievement than private companies.
5. The most interesting fact was that BE activities in BPG happened under the parent holding's compulsion and not by choice. This shows that such forces can be beneficial.

1.5.2.3 The survey

To answer the research questions RQ2 to RQ4, I used a quantitative approach through a survey of UK firms in different industry sectors. This survey aimed to measure the impact of BE-related activities on process improvement and performance in different manufacturing and service firms.

Although qualitative studies such as interviews and focus groups are more in-depth, it is difficult for the qualitative methods to involve a large group of people and make generalisations. Quantitative methods enable greater control to be applied over the collected and analysed data and help increase the measurement of objectivity, accuracy and generalisability (Harris 2011). Quantitative methods enable researchers to determine relationships, whereas the qualitative methods enable researchers to explore how individuals perceive their own experience within a specific context (Blain-Moraes et al. 2012). Another advantage of quantitative methods is that the accumulation of multiple

observations allows researchers to minimise measurement error when examining correlations (Brown & Langer 2012). Finally, when measuring the factors related to this research, quantitative methods enable a numeric figure to be generated (Taylor, Wray & Gibson 2010), which is not achievable through qualitative studies.

The survey involved the development of an on-line questionnaire and recruitment of the survey panel providing company, data gathering, data analysis and the survey report. Following initial literature reviews and a conceptual study, an online questionnaire was developed and a panel provider company in the UK was recruited for the data collection. The UK was selected for the survey because of the relative popularity of BE in UK firms (Saunders, Mann & Grigg 2008), which in turn would provide enough responses for comparison purposes. Respondents from manufacturing or services firms were involved in the survey. Managers from more than 200 firms were surveyed to obtain a partial last square regression.

The survey is presented in Appendix A and its flowchart is presented in Figure 1.6. The questionnaire consisted of six parts split into different pathways. Respondents were directed to their designated pathway according to their answers about the level of Business Excellence in their firm. Following approval from the relevant ethics committee, the questionnaire was sent to the survey company for data collection. The survey was launched online and received 209 complete responses from all over the UK. A full description of the survey is presented in Chapter 4 of this thesis.

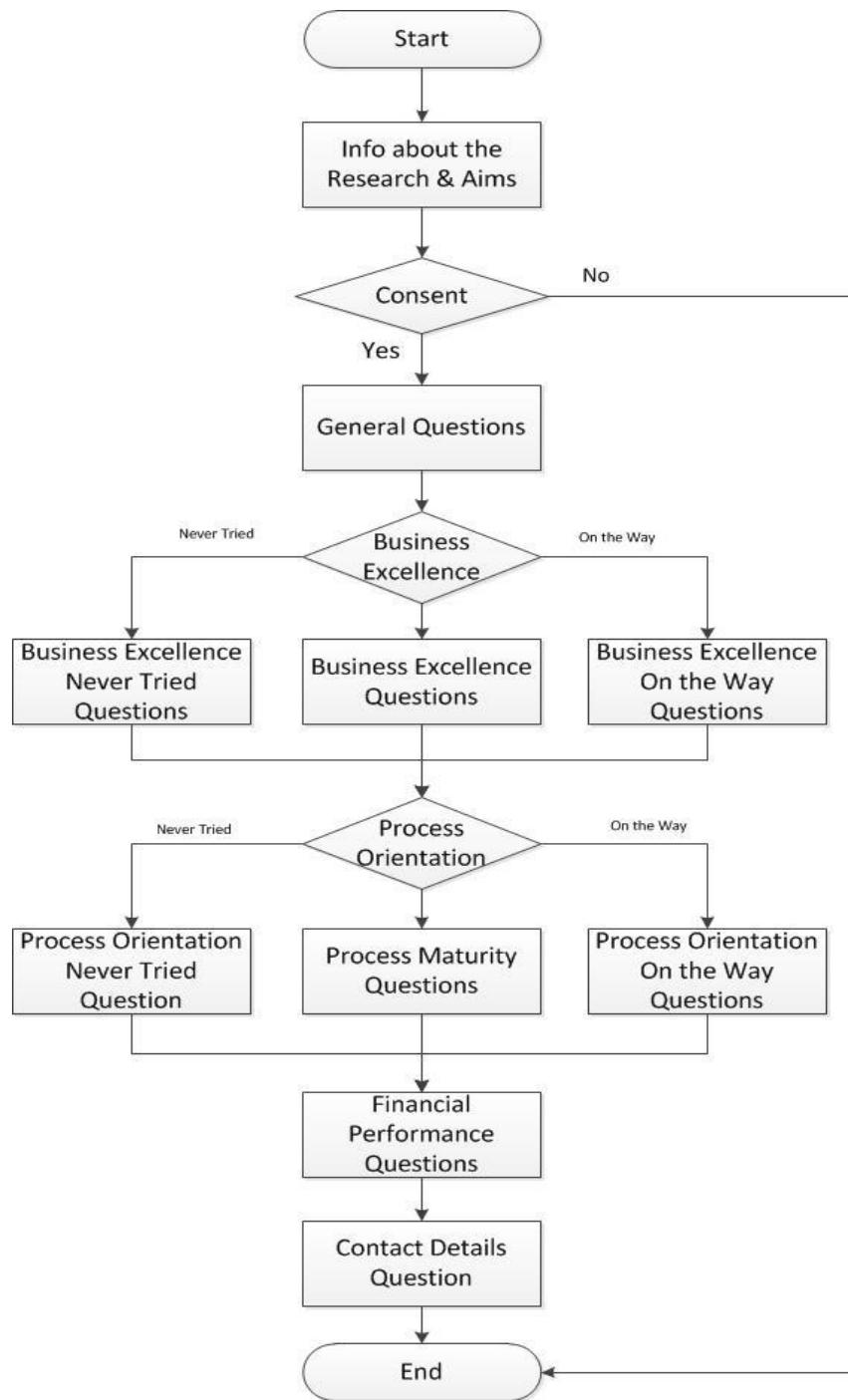


Figure 1.6 The survey questionnaire flowchart

1.6 Thesis structure

To facilitate knowledge sharing and communication, I present my PhD research as a thesis by publication. The focus is around a broad research question asking what benefits can be achieved from BE models and how. In the next three chapters I present three papers that were published in, or submitted to, peer-reviewed academic journals and the final two chapters (5 and 6) includes the overall discussions and conclusions. A detailed description of three papers is presented below.

1.6.1 Paper 1: A comprehensive view on research excellence

Paper 1 (Chapter 2) is a conceptual paper that explores how BE models are built. It also highlights the impact of following a comprehensive excellence model as a benchmark and demonstrates how BE models can inspire and improve the knowledge and research processes.

With millions of knowledge resources available for any subject area, there is no one particularly efficient way to measure or rank them. Measuring and scoring the overall performance of researchers can be beneficial both by encouraging researchers to enhance their research performance on a continuous basis, and by enabling them to identify high-quality publications using the authors' ranking. This paper argues that the current measures of research/scientific excellence are incapable of providing a comprehensive and logical score. I portray deficiencies of the Nobel Prize compared to a business excellence award and build on the successful experience of business excellence models to demonstrate how to develop a comprehensive scientific excellence model to be used by national/international scientific organisations to confer scientific awards or by researchers to assess their own performance and standing.

This paper, including the literature review, methodology, the Sea-Fish Model, discussion and conclusion, was wholly and completely written by myself and reviewed by Dr Meena Chavan (who also significantly contributed in the paper design, 25% contribution) and Dr Juliet Lum. It is published in the *Total Quality Management and Business Excellence Journal*, 23(5-6), 2012.

1.6.2 Paper 2: Business Process Rearrangement and Renaming - a new approach to process orientation and improvement

Paper 2 (Chapter 3) presents a new methodology for process improvement initiated and induced by BE. In this paper, which includes a case study, 'aiming for excellence' is introduced as the first step toward the process improvement. The case study shows how a BE suite of projects leads to better process structure and performance in a power generation company and explains the impact of Business Excellence on process improvement activities.

Process orientation, which involves managing organisations based on horizontal end-to-end processes, has been shown to increase the quality of products/services, decrease costs and make business function faster and more reliably. However, current process orientation methods are radical and destructive, leading to failure in most cases and the purpose of this chapter is to present a non-destructive method of implementation. Supported by a literature review and two case studies, this chapter presents a new process orientation methodology, named Business Process Rearrangement and Renaming (BPR2).

Existing process management methodologies aim mostly to provide a comprehensive view of the main activities involved in process management and strategic alignment; they have little focus on mitigating the risk of failure in their redesign stage. In contrast, every

step in the methodology presented in this chapter, including the design phase, aims to reduce the risk of failure.

Name is the most communicated characteristic of a department; however, this most communicated characteristic of a departments has always been its most neglected characteristic as well. For the first time in the literature, this chapter provides a description of how to use the power of departmental names to promote the main customer values expected from each department.

Added to a detailed guideline on the new process design and process names, this chapter presents a new marketing mix model with a process-oriented delegation-of-authority view, which may be of interest to marketing researchers and practitioners.

This paper, including the literature review, methodology, the BPR2 Model, discussion and conclusion, was wholly and completely written by myself, and reviewed by Associate Professor Peter McGraw, Dr Erik Lundmark, Professor Daryll Hull and Professor Raymond Markey. It is published in *Business Process Management Journal*, 22(1), 2016.

1.6.3 Paper 3: Aiming for Excellence – commitment matters

Paper 3 (Chapter 4) presents the survey that tested the impact of BE-related activities on process improvement and performance in UK industries where, as mentioned in Section 1.5.2.3, BE is relatively popular.

There is a significant debate about management systems and models in the literature; one side refers to them as management fads or fashions and the other side talks about their positive impacts. Focusing on BE models, this paper examines the impact of commitment to BE-related activities on firms' process maturity and financial performance. Results obtained

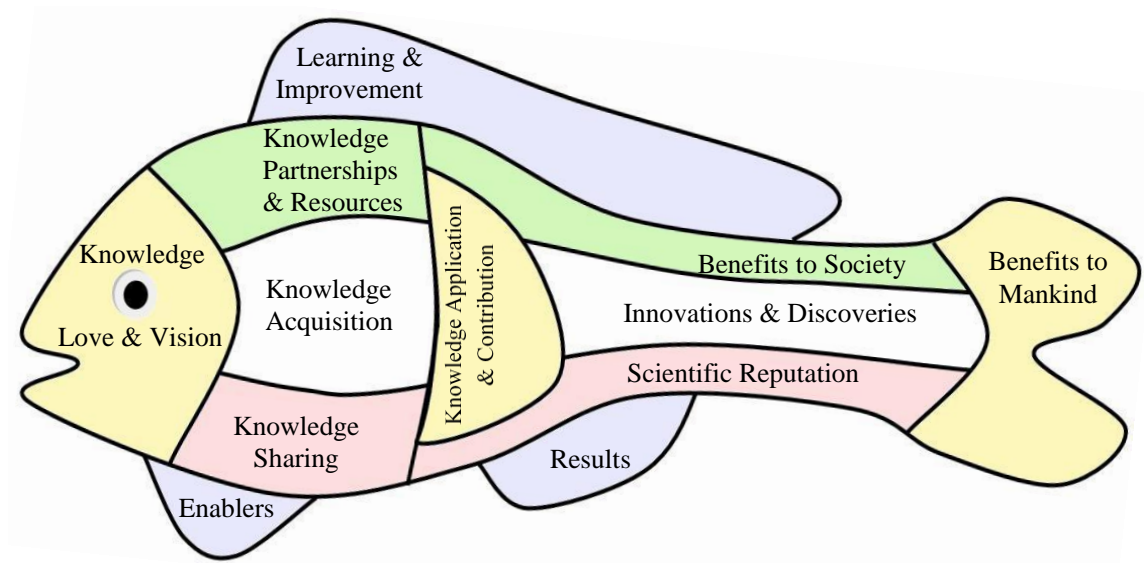
from the online survey in the UK indicated that BE-active firms significantly outperform companies that do not practise BE. Another interesting finding of this research is that receiving awards or certificates for business/organisational excellence does not appear to have as much impact on process maturity and financial performance as other BE-related activities.

In addition to the Business Excellence and Business Process Management discussions, a new 'Organised Commitment Model' is presented in this paper that can be of interest to the researchers and practitioners who want to measure or develop 'commitment' in any other subject.

This paper, including the literature review, methodology, the Organised Commitment Model, discussion and conclusion, was wholly and completely written by myself, and reviewed by Associate Professor Peter McGraw, Dr Erik Lundmark, Professor Daryll Hull and Professor Raymond Markey. It has been submitted for publication to the *Total Quality Management and Business Excellence Journal*.

Chapter 2:

A Comprehensive View on Research Excellence *



* A modified version of this chapter has been published in the *Total Quality Management and Business Excellence Journal*.

Citation: Khosravi, A., & Chavan, M. (2012). A comprehensive view on research excellence. *Total Quality Management & Business Excellence*, 23(5-6), 507-521.

Abstract

With millions of knowledge resources available for any subject area, there is no one particular efficient way to measure or rank them. Measuring and scoring the overall performance of researchers can be beneficial in both encouraging researchers to enhance their research performance on a continuous basis, as well as in helping knowledge seekers by enabling them to classify publications in accordance with an authors' scientific rank. This article argues that the current measures of research/ scientific excellence are incapable of providing a comprehensive and logical scoring. We portray deficiencies of the Nobel Prize compared to a business excellence award, and build on the successful experience of business excellence models to demonstrate how to develop a comprehensive Scientific Excellence Model to be used by national/international scientific organisations to confer scientific awards or by the researchers to assess their own performance and standing.

Keywords: research performance; scientific excellence; knowledge management; Nobel Prize

2.1 Introduction

Research is a never-ending journey. An achievement may provide answers to a few questions, but uncovers many other questions. During a long journey, awareness of the milestones along the way can be greatly encouraging. Therefore, one way to recognise researchers' efforts and encourage them in their difficult and never-ending journey is to help them know their current location on the way toward excellence, and how far they are from being recognised as a role model.

It is suggested in this chapter that current research performance measures and scientific awards are not able to provide these measures or milestones for researchers. We use the fundamental concepts of Knowledge Management in a simulation of an esteemed business excellence model, the European Foundation for Quality Management (EFQM) model, and describe how such milestones can be provided by a comprehensive scientific excellence model. The method demonstrated in this chapter has the capacity to provide efficient identification of quality researchers regardless of their field of research. This will help researchers in their literature review, enabling them to easily sort search results using the rankings of the author/s. High-ranked scholars' publications also would be found and recognised much faster and easier. As soon as esteemed scholars publish new work, millions of researchers would be able to identify them in the specified databases maintained for this category of distinguished researchers. Fledgling researchers would also benefit from sharing knowledge with high-ranked scholars and could establish research collaborations to attain a higher citation rate.

The following questions are addressed in this chapter:

- (1) How effective are the current research performance measures/awards in encouraging researchers to work harder and make a more significant impact on their society or human life?
- (2) Are the scientific excellence awards as inspiring as the business excellence awards?
- (3) Which aspects of the business excellence models can be used to build a comprehensive and inspiring scientific excellence model?
- (4) What are the elements of a comprehensive and effective scientific excellence model?
- (5) What are the advantages and drawbacks of such a scientific excellence model?

This chapter is organised as follows. The next two sections review the current measures and awards for the research performance and their controversies and weaknesses. Section 3 describes the business excellence models, and their advantages compared to scientific awards. In Section 4, we use what we learnt from the business excellence award, to demonstrate how to develop a comprehensive model for scientific excellence. Section 5 concludes with a summary of limitations and findings, and suggestions for future research.

2.2 Current research performance measures

Many articles have been written on how to measure researchers' performance. However, we still do not have a widely accepted a comprehensive reference; as a result, each author defines his/her measures individually. For example, Abramo, D'Angelo, and Solazzi (2011) use three performance indicators for research performance:

- Productivity (P): number of publications authored singly by a scientist in the period under observation;
- Fractional productivity (FP): number of contributions to publications authored by a scientist, with 'contribution' defined as the reciprocal of the number of co-authors of each publication;
- Average quality (AQ): the quality of each publication is proxied by citations of that publication divided by the average number of citations of all publications of the same type (article or review), in the same year and falling in the same subject category.

Traditionally, research performance has been regarded as the ability to create interesting and valuable new scientific concepts, theories and data. From such a perspective, scientific excellence can be assessed through scientometric measures of publication output and impact (Van Looy, Callaert, Debackere, & Verbeek, 2003). Arguing that the publication measures are not sufficient to measure scientific excellence, Van Looy et al. (2003) name 'entrepreneurial' and 'educational' dimensions as other dimensions of scientific excellence for knowledge institutions, and present measures for those two dimensions. In the USA and Great Britain, publication counts, Institute for Scientific Information citations, peer ratings and research grants are the common measures of faculty research performance (Tien, 2007).

The Hirsch index, or h-index proposed by Jorge Hirsch, incorporates both quantity and visibility of publications as a single-number criterion. An H-index of 40 means, for example, that a scientist has published 40 papers that each had at least 40 citations (Bornmann & Daniel, 2007). This index is an easy way to rank researchers regardless of their field of research (Batista, Campiteli, Kinouchi, & Martinez, 2005). However, according to Bornmann and Daniel (2007), this index has many shortcomings. For example, it fails to differentiate

between active and inactive (or retired) scientists, and to differentiate between works that were at one time significant and those which continue to shape scientific thinking.

There are many other ranking methods currently used in the literature; however, in none of them can we see a clear relation between the ranking and the applicability of the publication or its actual benefit for mankind. Henrekson and Waldenstrom (2009) review current ranking methods covering seven of the most commonly used measures of research performance. Three are based on weighted journal publications including Kalaitzidakis, Theofanis and Stengos (KMS), Impact Factor (IF) and Kodrzycki and Yu (KY), three on the citations to the researcher's most cited works including the Social Sciences Citation Index (SSCI), Google Scholar (GS) and h-Index, and one on the number of international publications in EconLit. Henrekson and Waldenstrom compared the seven measures by applying them to the publications of all full professors in economics in Sweden. However, their analysis did not identify one method as the best or least controversial. They conclude that there are large discrepancies between the measures in terms of both the rank order of professors and the absolute differences between their performances.

Although these measures enable us to get a quick idea about the publications and researchers, they cannot reflect the actual added value and the contribution to the knowledge. According to Hogg, Couto, Teixeira, and Malcata (2008), bibliometric descriptions can only show a scientist's positioning within the scientific community, not the usefulness of the underlying work. They are just convenient targets for scientists and funding agencies. Hogg et al. also point out that even patents are not the most reliable indication of the applicability of a scientist's work, as the vast majority of patents are hardly ever translated into exploitable technologies – and even fewer eventually meet with commercial success. Hogg et al. conclude that, 'our current concept of scientific excellence does not

directly help in knowing which science best serves society'. Johnson (1993) also comments that:

The impact of research has rarely been evaluated by any kind of panel. Before evaluation, it is necessary to develop criteria and methods by which to evaluate output. The first step is to define goals toward which research should contribute.

The lessons researchers learn from current performance measures are that it is better to publish more papers in highly cited journals, and that nobody measures (or cares) whether or to what extent one's work benefits mankind.

2.3 Current research/scientific awards

Unlike the scientometric measures that do not take the usefulness of the underlying work into account, most of the scientific awards and prizes have been established to recognise and reward the positive impacts of research and their contribution to human knowledge and life. However, these awards suffer from weaknesses in one or many areas, such as their effects on researchers' motivation, their processes for nominating and judging competitors, and their judging criteria.

Rewards always aim to promote a specific action or behaviour. According to Kapena (2000), 'A reward is a gift that a leader gives to a person for exhibiting the desired behaviour. Rewards are meant to encourage more of such behaviour in the future'. Alfred Nobel wrote in his will that the prizes should be granted 'to those who, during the preceding year, shall have conferred the greatest benefit on mankind' (Nobelprize.org, 2011a). The Nobel Prize is now the most famous and prestigious scientific award, which is awarded for achievements in physics, chemistry, physiology, medicine, or literature and for peace (Nobelprize.org, 2011b). However, according to Byron and Khazanchi (2010), not all the rewards can encourage

desired behaviour. Byron and Khazanchi classify rewards into three categories, creativity-contingent, performance-contingent and completion contingent, and explain that only creativity-contingent rewards are likely to increase expectancy because they provide information about what is appropriate or valued, and direct effort toward creative performance. In contrast, performance-contingent rewards – that is, rewards offered for performance without an explicit creativity criterion – and completion-contingent rewards – those are given for completing or participating in a task, are less likely to motivate creative performance than are creativity-contingent rewards. Byron and Khazanchi also point out that the more information provided on judging criteria, the more effective rewards will be.

In most of the scientific excellence awards, judgments are made behind closed doors using unknown creativity criteria, and scoring is based on jurors' opinions. The process of those judgments cannot be clearly understood by researchers; as a result, the process is always criticised by them and is quite controversial. When a performance measurement is built only upon jurors' general opinion, it cannot show the strengths and areas for improvement, which are the most important elements in any feedback. Even for a prestigious prize, such judgments have little impact on competition between candidates, and do not make the same impact on researchers as the business awards do on businesses.

From what we learn from Byron and Khazanchi, we can easily conclude that because of lack of information, these awards cannot be very encouraging for researchers. However, we believe that the situation is even worse than all of the three categories shown by Byron and Khazanchi. The scientific awards could be considered as falling into a fourth group, that of 'nomination-contingent' rewards. Candidates for most of the scientific awards are nominated by other people. This means that no matter how hard you try, if nobody nominates you for the award, you will not be considered. Maybe neglecting Dr Douglas

Prasher, who is well-known for his 'wasted talent' (Benderly, 2009) was simply because no one nominated him for the Nobel Prize or any other scientific award. Based on his initial work on cloning and sequencing genes for green fluorescent protein, three other scientists were awarded the Nobel Prize. Although the prize winners admitted that fact, Prasher was left jobless and unrecognised.

Although researchers have a great respect for scientific awards, their plans seem to be unaffected by such awards. The great amounts of monetary value associated with such awards have not only been unsuccessful in drawing researchers' attention, but have also failed to act as a stimulus for scientific excellence. In other words, current scientific excellence prizes do not provide a strong incentive for researchers to improve their knowledge or make a more significant impact on human life. The American critic Herbert Howarth (cited in Feldman, 2000) has the same criticism about the Nobel Prize:

As soon as one asks about a prize-man not 'Was he the best man? But why did the judges select him?' One is likely to perceive that he was chosen for reasonable reasons; and one reports these; and in so doing willy-nilly defends the good instead of demanding the best.

Even Nobel Prize winners themselves have expressed doubts about the rationale behind the judgments of these judgments. For example, Alexander Fleming had told a friend that he did not really deserve the Nobel Prize (Gratzer, 2003). In another example, Robin Warren, who with Barry Marshall discovered *Helicobacter Pylori*, said in his Nobel Prize speech (Gould, 2006),

Let me clarify here, while it is true that MacFarlane Burnet injected himself with the rabbit myxoma virus, and I did actually infect myself with Helicobacter pylori, I don't suggest to other aspiring Aussie scientists that this process will guarantee a Nobel Prize. But to young people listening tonight I would say, find passion in your work—whatever it is. If, like me, you are working in the area of science, I can promise you

that it can be the most exciting and rewarding of careers. So work hard, keep balance in your life and, just in case, always be nice to Swedish people.

Warren points out his doubts about the judgments two times in his speech. First he is stating that no one knows what can guarantee a Nobel Prize, and then he suggests 'being nice to Swedish people' as a criterion. Those words specifically from a prize winner should be very disappointing for the jurors. There have also been some controversies and criticisms about significant mistakes that have happened in the Nobel Prizes (Wikipedia, 2011). It is predicted that by the end of the next decade, there will be thousands of breakthroughs happening every year and those mistakes will be much more likely to happen.

Another problem with scientific awards is that most of them cannot make a judgment between individuals regardless of their fields of study. In other words, these awards are not able to compare a physicist with a chemist or a Psychologist and choose one of them as the prize winner of the year. A comprehensive and internationally acceptable way to measure research excellence would be able to provide an efficient identification of quality researchers regardless of their field of research. This will help researchers in their literature review, enabling them to easily sort search results using the rankings of the author/s. Business excellence models have made it possible to quantify the excellence of organisations regardless of their size and industrial sector. However, is it also possible to quantify the excellence of a researcher regardless of their field of research? Our answer to this question is positive. In the following sections, we first discuss the features of existing business excellence models, and then use fundamental Knowledge Management concepts and a simulation to develop a comprehensive and internationally acceptable model to measure the excellence of the researchers.

2.4 *Business excellence models*

Today, many countries have their own quality award as an incentive for their companies to implement Total Quality Management concepts and gain sustainable results. All of the business excellence models have definite values that help them in defining their criteria and enable them to make a quantitative judgment between companies. Many companies in the world plan for a better score in their own national quality award processes and have a serious competition for the award.

In order to be successful, regardless of sector, size, structure or maturity, organisations need to establish an appropriate management system. A business excellence model is a practical tool which helps organisations by measuring where they are on their way toward excellence; helping them understand the gaps; and then providing solutions.

The role of business excellence models for the industries is the same as the role of scientific awards for researchers; however, their processes are quite different. This significant difference might be because of the difference in their initial goals. Scientific awards are established to recognise and reward researches, whereas the business excellence awards are established to inspire and improve businesses. For example, the Malcolm Baldrige National Quality Award (MBNQA, 2011) was established after a TV program in 1980 alerted the American audience to the role of the Deming Prize, in improving Japanese quality standards and processes in the post-war years (Crainer & Dearlove, 2006). Each year after a quantitative judgment, MBNQA is granted to the American companies which have had a better performance according to stated business excellence criteria. The Japanese had developed the Deming Prize in 1951 in commemoration of the late Dr. William Edwards Deming who contributed greatly to Japan's proliferation of statistical quality control after the World War II (JUSE, 2011). The aim of this prize was to encourage companies to

implement Total Quality Management concepts. In 1988, a group of European top companies also founded the EFQM (2011a) and in 1992 established the European Quality Award (EQA), with their own business excellence model. The EFQM Excellence model is now probably the most internationally used framework (Black, Meredith, & Groombridge, 2011).

There are many examples in the literature showing that the business excellence awards are helpful and inspiring in organisations' improvement and growth. For example, Hendricks and Singhal (1997), Lee, Rho, and Lee (2003), York and Miree (2004), Balasubramanian, Mathur, and Thakur (2005) and Mann, Adebajo, Laosirihongthong, and Punnakitkashem (2011) state that their empirical research provides strong evidence that firms that have won quality awards outperform the control firms on operating income based measures. Macleod and Baxter (2001) also clearly demonstrate the contribution of business excellence models in restoring failed improvement initiatives in three industrial case studies. Also as cited by Black et al. (2011), 'Excellence models have proven useful in organisations of varying size and type, across a variety of cultures and languages (Sila & Ebrahimpour, 2003) and in sectors as diverse as manufacturing, education, health and the arts (Goldschmidt & Goldschmidt 2001; Vallejo et al., 2006; Zink & Schmidt 1995)'. However, when reviewing the literature, we cannot find any evidence for the effectiveness of scientific excellence awards on scientists' improvement and growth. Table 2.1 presents a summary of our comparison between the Nobel Prize as a scientific excellence award and the EQA as a business excellence award.

Unlike the scientific awards, business excellence awards have clear and quantifiable concepts, definitions, criteria and sub-criteria for 'business excellence'. For example, the EFQM (2011b) describes Excellence as, 'achieving results that delight all the organisation's stakeholders', 'creating sustainable customer value', and 'managing through structured and

strategically aligned processes using fact-based decision making to create balanced and sustained results’.

Business excellence criteria are built upon values and concepts (Figure 2.1). The criteria can be used either as a scoring model for distinguishing winners of business excellence awards, or as a self-assessment tool for any organisation willing to identify its strengths and areas for improvements, and to assess its progress toward ‘excellence’ (Figure 2.2).

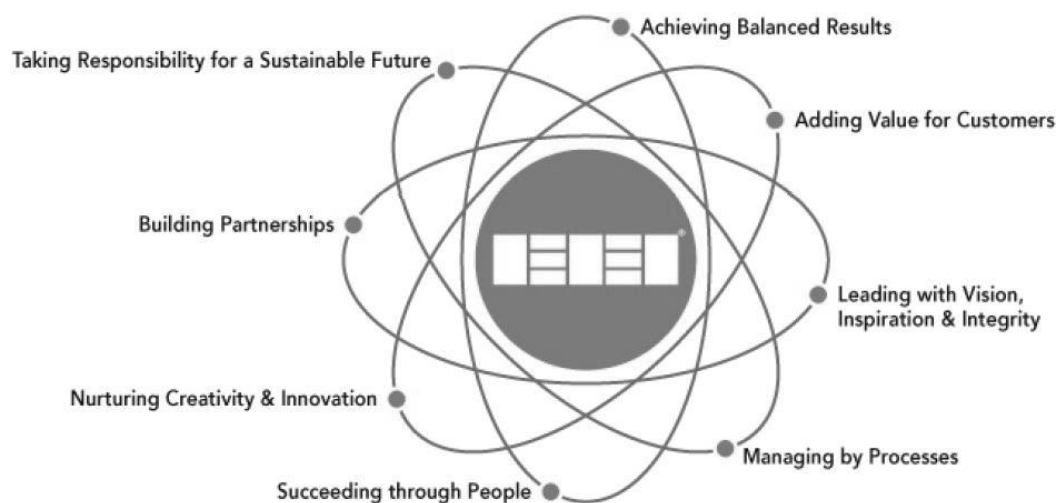


Figure 2.1. Core values and concepts of the EFQM Business Excellence Model (adopted from EFQM 2011b)

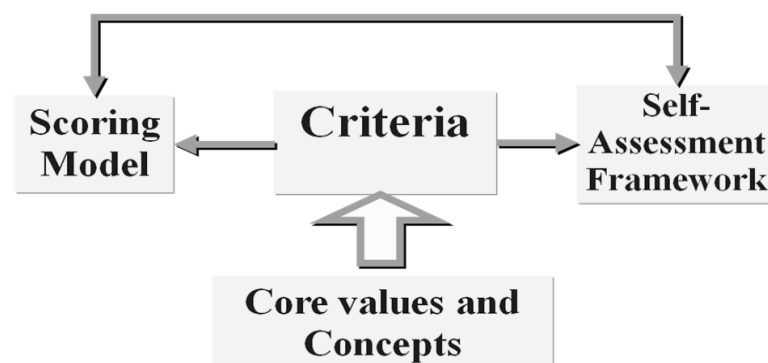


Figure 2.2. Structure of the EFQM Business Excellence Model (adopted from EFQM 2011b)

Table 2.1. Comparison between the Nobel Prize and the EQA.

	EQA	Nobel Prize
Addressees	Companies who have applied for the award	Researchers who have not applied for the prize
Benefits to prize winners	Feedback report (including score, strengths and areas for improvement) + honour and credit	Money + great honour and credit
Benefits to non-prize winners	Feedback report (including score, strengths and areas for improvement) + ranking	Nothing. In each field, one is the winner and others are losers
Dependency to the group	Capable of judgment regardless of the industrial sector	Incapable of judgment regardless of the scientific group
The schedule	Significant number of European companies are aware of the award process schedule	A very small number of researchers are aware of the prize schedule
Competition	Companies compete actively for the award	There is no competition for the prize
Source of information	Applicant companies provide information about themselves in a document called 'Submission'	Information about candidate researchers are gathered by the prize organisation
Judgment	Quantitative judgment based on RADAR scoring logic	There is no clear scoring logic, and it seems that judgments are done based on experts' votes in committees
As a self-assessment tool	Companies can assess themselves using the award model	Researchers cannot assess themselves using the prize model
As a benchmarking tool	An excellent source for benchmarking	Not a good source for benchmarking
As a stimulus for improvement and excellence	European companies using the EFQM model, have shown better financial growth compared to others	There is no evidence proving the efficiency of the prize in helping the researchers on their journey toward excellence
Inclusivity	It is flexible and can be applied to organisations of any size and sector, public or private	It ignores mathematicians, philosophers, and social researchers
Expenses	Low, paid by members, applicant companies, and ceremony participants	High, funded by the Nobel Foundation
Reliability	The assessors are calibrated ensuring a reliable assessment	The assessors are not calibrated
Fairness	Companies know all of the criteria and sub-criteria and can appeal of assessment decisions ensuring a fair assessment	Researchers do not know the assessment criteria and there is no opportunity to appeal decisions making lots of controversies

Using business excellence models, an organisation can compare itself qualitatively and quantitatively with other organisations and role models. Business excellence models provide a balance and a relationship between approaches (the way in which results are achieved) and results (what is achieved); a balance between cause and effect. The criteria which deal with cause are known as enablers, and those which deal with effects are known as results (UK National Probation Directorate, 2002). To score an organisation, the EFQM business excellence model defines 9 criteria, including 5 enablers and 4 results. Figure 2.3 shows the structure of the EFQM model. The EFQM criteria and weightings are also shown in Figure 2.4. As shown in the above figures, core values and criteria are not dependent upon the industrial sector. That is why those awards can easily compare organisations from different industrial sectors. For example, they can compare BMW from the automotive industry with KLM from the air travelling service industry. If a scientific award of this type is established with a similar specification, it will enable us to assess researchers regardless of their field of study.

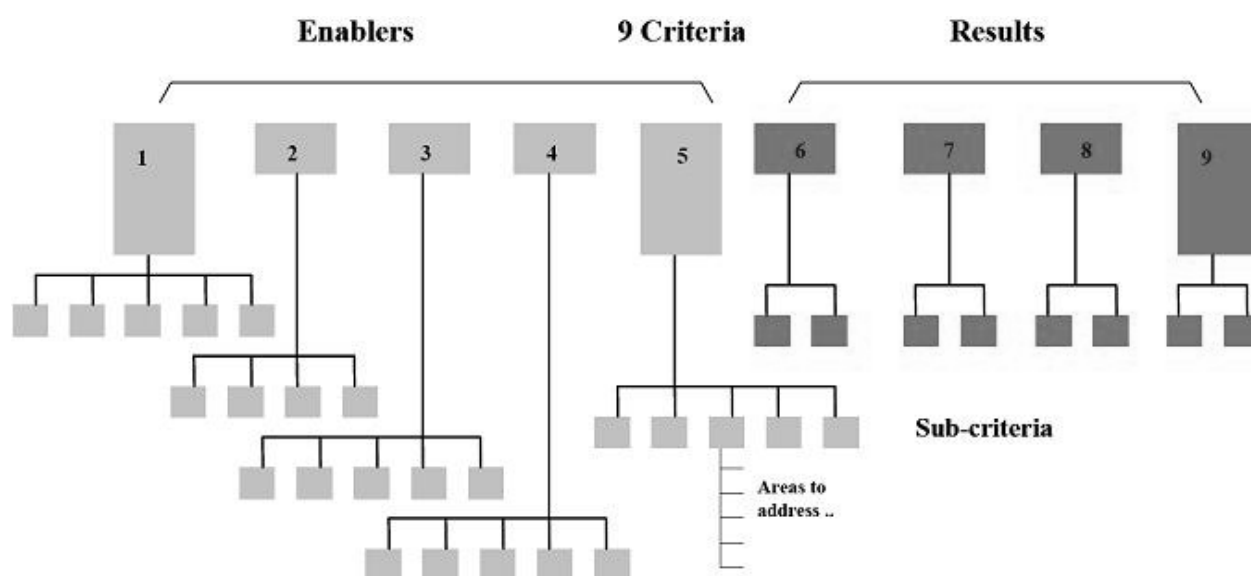


Figure 2.3. Structure of the EFQM Business Excellence Model (adopted from UK National Probation Directorate 2002)



Figure 2.4. The EFQM Model criteria and weightings (adopted from EFQM 2011b)

2.5 How to develop a comprehensive scientific excellence model

In this section, we demonstrate how to develop a comprehensive scientific excellence model providing a more comprehensive insight on a scholar's performance. We introduce a demo model that we have called the 'Sea-Fish' model. In the literature, sea-fish is a classic metaphor of a real lover, which best describes the passion of a scholar for research.

Excellent researchers are always engaged in learning and research, even when they are asleep. Friedrich August Kekule discovered the structure of Benzene in his dream, and Otto Loewi's dream helped him prove the chemical transmission of the nervous impulse and win the Nobel Prize (Brilliant Dreams, 2011). Our demo-model is shown in Figure 2.5.

To build that model, we followed the exact pathway subscribed by the EFQM (Figure 2.2). We first provided a list of fundamental values and concepts in scientific excellence, and translate the strong will and talent of the scholars into quantifiable terms. Our translation was inspired by the core values of the EFQM (2011b) model, and the core concepts of the 'Knowledge Management' and its similarities and differences with the 'Total Quality

Management' presented in Hsu and Shen (2005). Our fundamental concepts in building the demo model are shown in Figure 2.6.

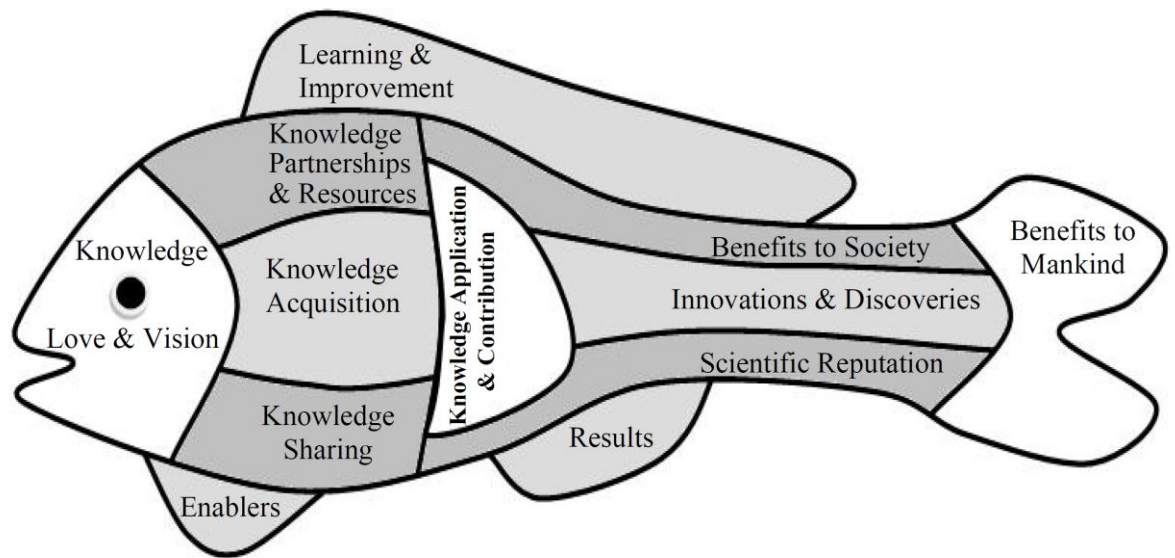


Figure 2.5. An example of a scientific excellence model (the Sea-Fish model)

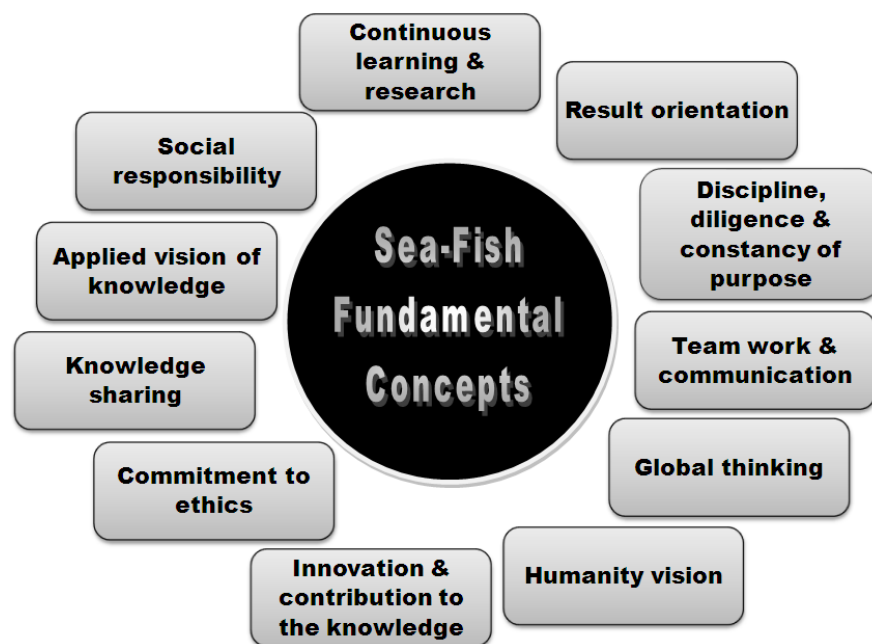


Figure 2.6. Examples of scientific excellence fundamental concepts

In the last step in building the model, we transformed each criteria of the EFQM Model to its equivalent in the individual research performance level. In this transformation, we included all of our fundamental scientific concepts and the collection of the Critical Success Factors of the Knowledge Management provided by Alazmi and Zairi (2003) in our criteria and sub-criteria (Figure 2.7). Table 2.2 shows the simulations we have made to build the Sea-Fish model.

In the first glance, the assessment criteria of the BE and SE models seem to have no similarities, but when we narrow the focus from the organisation level to the researcher level, then business leadership translates into the researcher's love and vision, business strategy to the researcher's knowledge acquisition, business people to the researcher's papers, books, students, and business products to what the researcher adds to current knowledge.

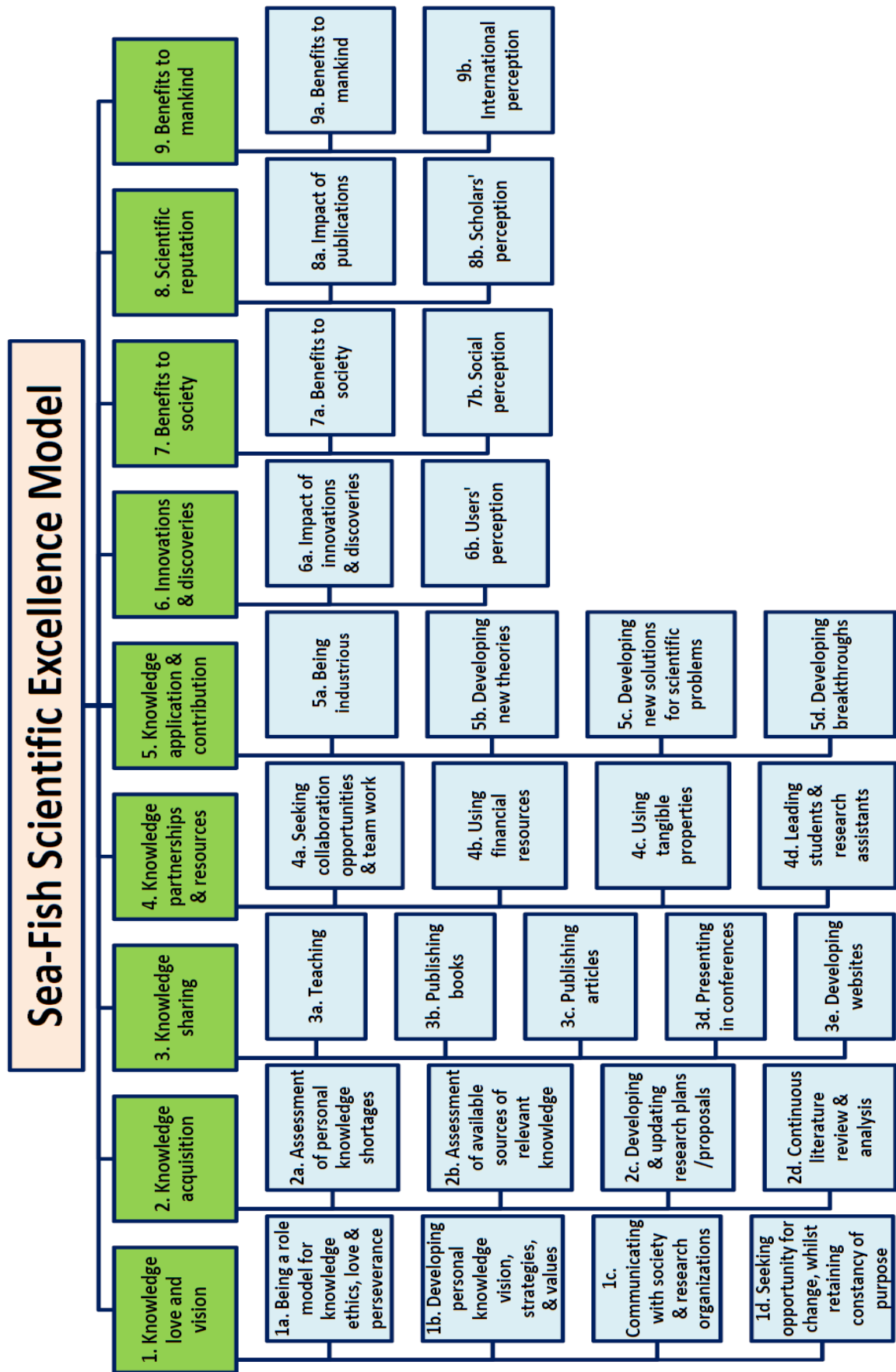


Figure 2.7. A demo of criteria and sub-criteria (the Sea-Fish model)

Our demo scientific excellence model starts with ‘Knowledge love and vision’, which means that the researcher must have an open eye and communicate effectively with society and professional bodies. It finishes with ‘Benefits to mankind’ as the ultimate goal for an excellent researcher. Knowledge vision defines the ‘field’ or ‘domain’ that gives the person a mental map of the world they live in and provides a general direction as to what kind of knowledge they ought to seek and create (Nonaka & Takeuchi, 1995; Simonin 2004; Von Krogh, Nonaka, & Ichijo, 1997).

Table 2.2. Comparison of the EFQM and the Sea-Fish models

EFQM model	Sea-Fish model
Leadership	Knowledge Love & Vision
Strategy	Knowledge Acquisition
People	Knowledge Sharing
Partnerships and resources	Knowledge Partners & Resources
Processes, products and services	Knowledge Application & Contribution to the Knowledge
Customer results	Innovations & Discoveries
People results	International Reputation
Society results	Benefits to Society
Key results	Benefits to Mankind

Table 2.3. Similarities between the Sea-fish framework and the Bose and Sugumaran’s framework for Knowledge Management

Bose and Sugumaran’s framework	KM	Sea-fish model
knowledge generation	identification and	knowledge love and vision knowledge acquisition
knowledge storage	codification and	knowledge resources management
knowledge distribution		knowledge sharing
knowledge utilisation and feedback		knowledge application and contribution to the knowledge results (innovations and discoveries, international reputation, benefits to society, benefits to mankind)

Research activities resemble a type of input –output process, in which the inputs consist of human and financial resources, while outputs have a more complex character, of both a tangible (publications, patents, conference presentations, etc.) and intangible nature (personal knowledge, consulting activity, etc.) (Abramo et al., 2011). Our first four criteria are the inputs, and the last four criteria are outputs with the ‘Knowledge application’ in the middle. Some criteria are directly connected to each other, showing their straight cause and effect relativity. For example, sharing knowledge by itself can affect the reputation of the researcher as well as the knowledge application and contribution.

As a result, Knowledge Sharing and International Reputation criteria are directly connected to each other. Knowledge Partners and Resources and Benefits to Society criteria are also directly connected together because a researcher can provide some benefits for society through application of knowledge or just by using his/her own resources. This is similar to what Alfred Nobel did by creating the Nobel Prize.

The side wing, Knowledge Application and Contribution, also relates all the Enablers to Results. Its colour is the same as that used for the Vision and the Benefit to Mankind criteria, implying that we expect a researcher to have a mankind vision and use his/her knowledge for the cause of mankind.

The criteria in our example model can also be used as a framework for Knowledge Management in organisations. It is in fact, a more expanded form of the framework presented by Bose and Sugumaran (2003). Their framework consists of: knowledge identification and generation, knowledge codification and storage, knowledge distribution, and knowledge utilisation and feedback. Our framework consists of knowledge vision, knowledge acquisition, knowledge resources management, knowledge sharing, knowledge application and contribution to the knowledge, and the results. Table 2.3 shows the

similarity of the two frameworks. As discussed earlier, we started with the EFQM model, and now we can see that we have ended up with a contribution to the Bose and Sugumaran's framework.

The Sea-Fish model seems to be more detailed, with more distinguishable boundaries between its elements. Therefore, it is also suitable as a framework for innovation and knowledge management in organisations as well. We believe that Innovation Management and Knowledge Management have reached a degree of maturity that enables organisations to go one more step ahead and implement a 'Knowledge Excellence' or 'Innovation Excellence' system. We propose the Sea-Fish model as a starting point.

In this demo-model, we defined 9 criteria and 31 sub-criteria (Figure 2.7). For each of the sub-criteria, there is also the need to define some areas to be addressed. This may result in a total of about 150 areas to address for the whole model. One may argue that organising 150 activities by a researcher does not leave any time for them to think and remain creative.

The answer is that the realm of human knowledge is expanding in such an unprecedented rate that no researcher can overtake it individually. Scholars must be highly organised to lead multidisciplinary teams to achieve excellent results. In other words, there is no need for researchers to do all of those activities alone: they can empower students or team members to accomplish the areas to address. Discoveries can still 'pop up' in their mind, and a researcher who is supported by a well-organised team can more strongly take advantage of those pop-ups. If a professional actor or football player should have someone to manage their programs, why should not an excellent researcher have one?

2.6 Discussion and conclusion

In this chapter, we argue for a comprehensive method to measure the scientific performance and propose a scientific excellence model to be used by scientific award bodies, or by researchers as a self-assessment tool, or by organisations as a framework for their innovation and knowledge management. The model must be designed in a way that can be easily applied to all of the sciences including Mathematics, Social sciences, Philosophy and the Humanities. In this thesis, we could not provide examples for all of the areas to address in each sub-criterion, which is essential for the whole model to work. Apart from the areas to address, other elements (including the values and fundamental concepts, criteria, sub-criteria and the scoring logic) must be revised by award developers.

Development of a complete quantitative scientific prize may seem difficult; however, it would also be quite rewarding and can be considered a breakthrough. It creates a new business field that has never before existed. Many new jobs will be created in this regard around the world, such as Scientific Assessment Trainers, Scientific Assessors, Scientific Submission Development Consultants, Scientific Database Designers, and Scientific Benchmarking Experts. Definition of such a personal scientific award makes researchers more effective, and encourages them to continue their journey toward excellence.

Augmenting the current standard, and the ranks of those who judge scientific efficacy, may make it possible to use scientific knowledge better and to identify and fill gaps in knowledge more deliberately than is the case now (Johnson, 1993). Using such a model, governments or international organisations such as the United Nations also will be able to lead researchers to do their research in a more philanthropic and peaceful way. Provided that a reputable international organisation does the ranking, the international rank of the

researchers will help them in their search for knowledge by simply classifying the resources by the authors' scientific rank.

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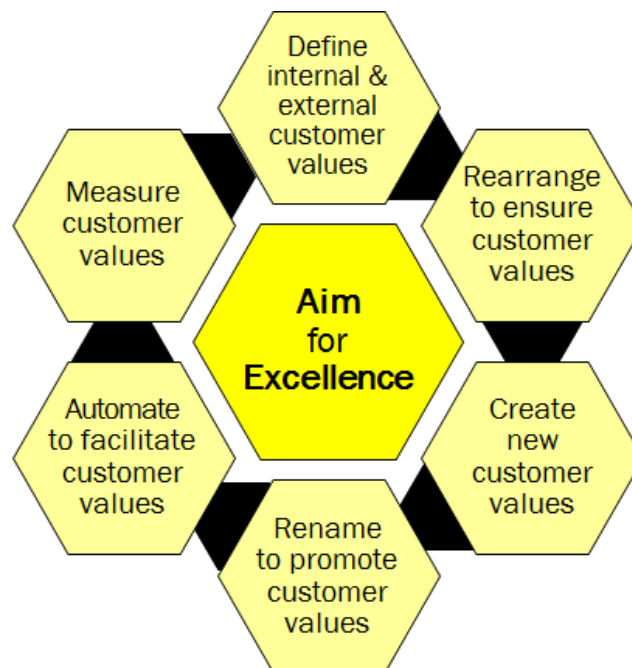
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Having presented some conceptual insight on Business Excellence (BE) models, their development and applications, this thesis continues with a real case-study in the next chapter that shows the mechanism of BE models' contribution in organisation management. In line with the thesis conceptual model, Chapter 3 provides a profound and practical insight on the linkages between Business Excellence practices, process orientation, and performance.

Chapter 3:

Business Process Rearrangement and Renaming- A New Approach to Process Orientation and Improvement *



* A modified version of this chapter has been published in the *Business Process Management Journal*.

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Abstract

Process orientation, which involves managing organisations based on horizontal end-to-end processes, has been shown to increase the quality of products/services, decrease costs, and make business functions faster and more reliable. However, current process orientation methods are radical and destructive, leading to failure in most cases. The purpose of this paper is to present a non-destructive method of implementation. Supporting by literature review and two case studies, this paper presents a new process orientation methodology named as Business Process Rearrangement and Renaming (BPR2).

The existing process management methodologies mostly aim to provide a comprehensive view on all of the main activities involved in process management and strategic alignment, with insignificant focus on mitigating the risk of failure in their redesign stage. In contrast, every step in the methodology presented in this paper, including the design phase, aim to reduce the risk of failure.

Name is the most communicated characteristic of a department; however, this most communicated characteristic of the departments has always been the most neglected characteristic as well. For the first time in the literature, this paper provides a description on how to use the power of departmental names to promote the main customer values expected from each department.

Added to a detailed guideline on the new process design and process names, this paper presents a new marketing mix model with a process-oriented delegation of authority view, which may be of interest to the marketing researchers and practitioners.

Keywords: Performance measurement, Performance management, Business process redesign, Business process reengineering, Organisational restructuring, Business re-engineering.

3.1 Introduction

Process orientation or the process method of management can be defined as assigning each manager in-charge of a whole set of activities that produce a valuable product/service for current or future internal/external customers. It is also considered as the horizontal method of management based on end-to-end processes, and contrasts with the traditional hierarchical approach (Rummler and Brache, 1995; Hammer, 2007; Paim et al., 2008; Palmberg, 2010). Process orientation aims to assign responsibilities based on expected products/services for internal/external customers rather than on duties, and “to organise around outcomes not tasks” (Hammer, 1990). Mounting empirical evidences suggest that having a process orientation, results in enhancement of products/services, decrease in costs, and faster functions (Hinterhuber, 1995; Terziovski et al., 2003; Hammer, 2007; Kohlbacher, 2010; Psomas et al., 2011; Tiwari et al., 2008).

Although process orientation is conceptually attractive, the current methods of implementation and associated change from vertical task-based to horizontal processbased structure are radical and disregard the existing structure of organisation. Such radical changes are claimed to trigger organisational anxiety (Huy, 1999), ambiguity and uncertainty (Sikdar and Payyazhi, 2014), and opposition from managers against consultants, “each side seeing the other as threatening rivals” (Fincham, 1999), leading to failure in most of the process orientation efforts (Holland and Kumar, 1995; Neubauer, 2009; Rohloff, 2009; Siha and Saad, 2008; Skrinjar and Trkman, 2013; Sikdar and Payyazhi, 2014).

This chapter presents a new non-destructive method for process orientation. The method presented in this chapter is named as the Business Process Rearrangement and Renaming (BPR2). Instead of disregarding the existing organisational structure, BPR2 gives each of the existing departments a new identity and the responsibility to provide certain

products/services for the internal/external customers. In contrast to the traditional business models where all of the departments work for just one business, BPR2 enables each department to have unique products/services and contribute to wealth production while supporting other departments as well. BPR2 also uses the power of departmental name changes to promote the main valuable product/service expected from each department.

The following questions are addressed in this chapter:

- (1) What is the difference between the process-oriented division of work, and the traditional functional division of work?
- (2) What are the current process orientation and management methodologies, and why do they lead to failure in most cases?
- (3) What is the proposed method for a successful process orientation and management (BPR2)?

3.2 Process orientation literature and description

In contrast to the traditional functional work division where each department has its own specific duties, in the process-oriented division of work, each department has its own products/services. In traditional organisations, a single customer inquiry passes through many departments to be met, whereas in process-oriented organisations it is possible for a customer enquiry to be accomplished from start to the very end within one single department. Figure 3.1 demonstrates the difference between process orientation and functional orientation. Circles represent the organisation, and shapes inside the circles represent people working together. In the first circle we see some people who are working individually. Each of them do exactly the same work as other people, and produce the same products; e.g. each make a whole shoe individually. Then the “Division of Work” comes and

each person undertakes a different role, e.g. one brings the leather, another one cuts it, etc. In this situation, people together make products, and meet the customer enquiries very efficiently. Then the team expands and people with the same function come together in departments (No. 3), e.g. one department provides leather, another department cuts them, etc. This function-based organisation has its own problems such as lack of agility and lack of responsibility toward the customer expected outcomes.

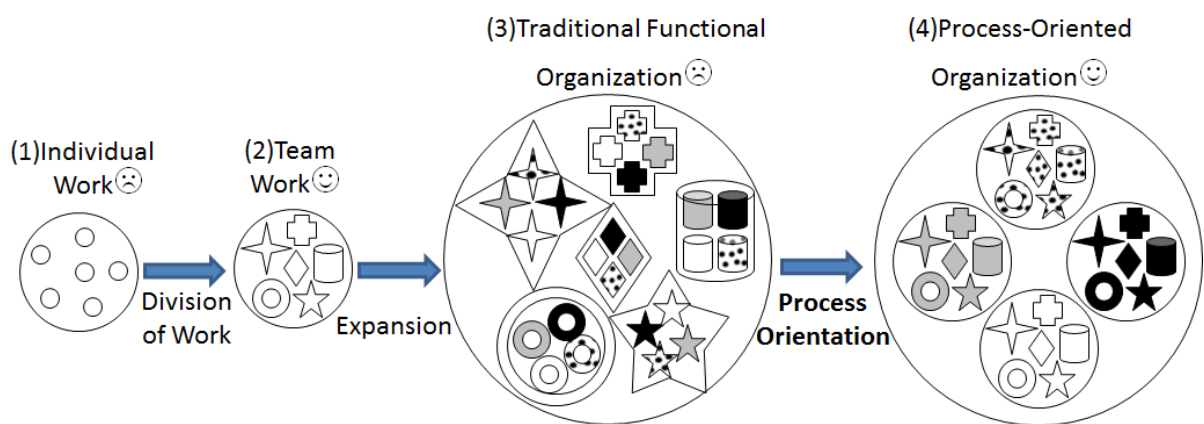


Figure 3.1. Difference between process orientation and Functional Orientation

Process orientation (No. 4) suggests a different departmentation where each department has its own set of products, e.g. one department produces women shoes, another one produces men shoes, etc. Although the process-oriented situation (No. 4) has been evidenced to be more efficient (Bosilj-Vukšić and Indihar-Štemberger, 2008; Kohlbacher and Gruenwald, 2011; Küng and Hagen, 2007; Leyer and Hollmann, 2014; Reijers, 2006), when the organisation naturally falls into the functional orientation trap, it becomes very difficult to get out.

Porter (1985, pp. 110-111) was maybe the first person who suggested that companies should “reorder” or “regroup” their “value-adding activities” in order to achieve dramatic

improvements in their performance. Hammer (1990) and Davenport and Short (1990) used the word “processes” instead of value activities and suggested that firms should use the power of modern information technology to radically “redesign” or “reengineer” their business processes. That was tantamount to a revolution in the organisation, destroying the existing systems and procedures. Many companies followed Hammer’s call and launched BPR projects but that was when the implementation problems became evident. Many reengineering projects failed to conquer structural inertia to implement that fundamental change (Attaran, 2003; Harrington, 1998; Lee and Dale, 1998). There were even reports that 60-80 percent of BPR projects failed (Fink, 2003; Holland and Kumar, 1995). On the basis of the high failure rate, some authors concluded that BPR was just a management fashion (Abrahamson, 1996), or that it was a good theoretical idea that was impractical to implement (Deakins and Makgill, 1997). However, the idea of obliteration of non-value added functions was still a logical way to proceed with innovation (Zairi, 2001).

Some other researchers stated that being unappreciative of human dimension and obliteration of the current structure are the main problems with the BPR. They suggested that process orientation should happen in a gradual manner rather than a thorough reengineering (e.g. Lee and Dale, 1998; Zairi, 1997). For example, it was suggested that after definition of the new structure, the old structure should remain in place, and fade out gradually over a long period of time (see Palmberg, 2010). Some others suggested that instead of a revolutionary change, people should be prepared for a long period of time, and practice the change before it actually happens in one pre-planned day (Big-Bang). Parallel and relay methods were also suggested as other options for gradual process orientation (see Jeston and Nelis, 2014). To highlight the difference of their suggested methods to BPR, authors used Business Process Management (BPM) as the name of the new methodology.

During the last decade, related papers have been published mostly under the name of process management instead of reengineering; however, BPM has remained in the fad phase (Hung, 2006) and researchers are still uncertain about the substantive meaning of process management and how it should be used (Abrahamson and Eisenman, 2008; Dale et al., 2001; Steininger et al., 2009).

To investigate the BPM lifecycle models within the academic-scientific ambit, de Morais et al. (2014) conducted a literature review, and found seven BPM models. They analyzed those models, and compared them with the BPM model presented by the Association of Business Process Management Professionals (ABPMP, 2009) as presented in Table 3.1. Arguing that none of the studied methodologies can guarantee an alignment between strategy and business processes in organisations, de Morais et al. (2014) proposed a new BPM lifecycle as shown in Figure 3.2.

Table 3.1. The BPM lifecycle models studied by de Morais *et al.* (2014)

Cycle steps BPM (ABPMP)	Authors Hallerbach <i>et al.</i> (2008)	Netjes <i>et al.</i> (2006)	Houy <i>et al.</i> (2010)	Zur Muehlen and Ho (2006)	Vander Aalst (2004)	Verma (2009)	Weske (2007)
Planning and strategy			Development of strategy	Specification of objectives and analysis of environment		Define objectives	Administration and Stakeholders
Analysis		Design	Definition and modeling	Design	Design	Identify process	Design and analysis
Design and modeling	Modeling	Configuration	Implementation	Implementation	Configuration	Classify process	Configuration
Implementation	Frequency and selection	Execution	Execution	Monitoring	Execution	Choose process	Operation
Monitoring and control	Execution and monitoring	Control	Monitoring and control	Evaluation	Diagnosis	Define tool and implement process	Performance evaluation
Refining	Optimization	Diagnosis	Optimization and improvement			Monitor process	

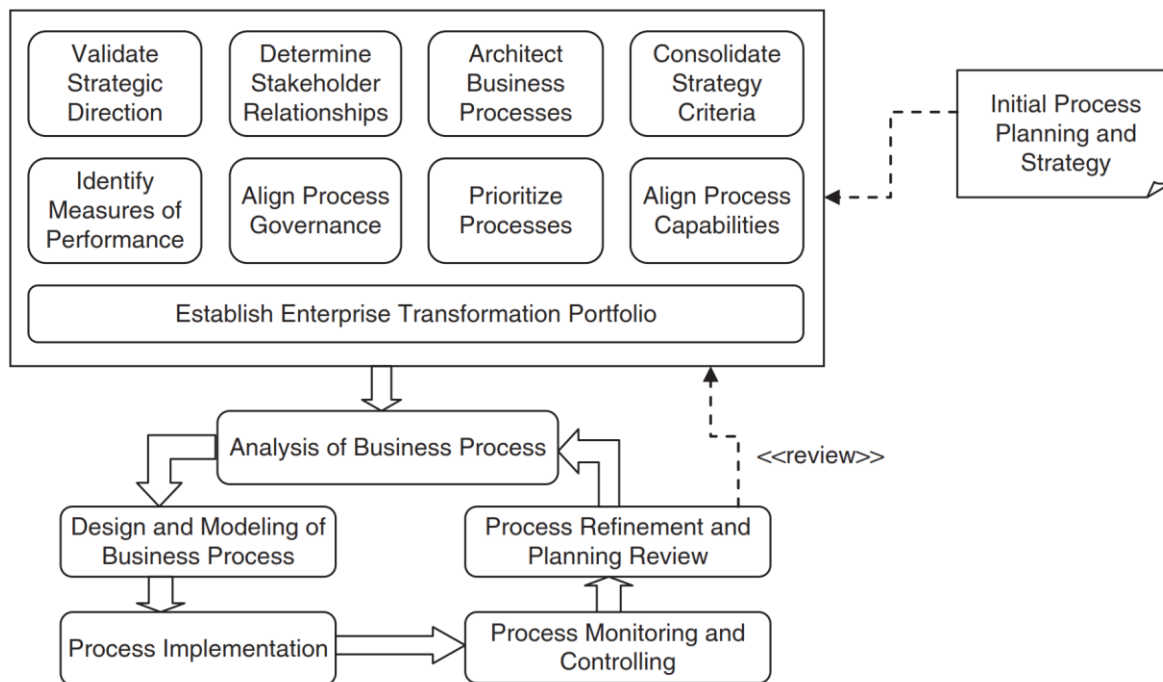


Figure 3.2. BPM framework proposed by de Morais *et al.* (2014) emphasising on strategy

BPR has also been always popular within academia and industry, and there are many authors who are interested in BPR methodologies. The difference between BPM and BPR methodologies is that in most cases, BPR authors have a project focus, whereas in BPM, authors are mostly interested in the processes lifecycle. As BPR writers have a narrower focus, they consider the BPR project in more depth. Although BPR writers have a more in-depth view, they do not provide a guideline on how to design the new process structure to reduce the risk of failure in the process orientation.

In a literature review, Zellner reviewed the process improvement methodologies published in EBSCO and Emerald databases (Table II), and could not find any methodology focussing on the “act of improving” or in other words, the “redesign stage.” This gap in the literature has still remained unchanged. As an example, Eftekhari and Akhavan who propose an IT tools-based BPR methodology (CITM) in order to facilitate these projects, only

recommend benchmarking and considering the current status of the processes in the “modifying and redesigning” stage.

There are two main facts in the existing BPM and BPR methodologies. The first fact is that although the number of steps and terminologies used varies significantly, cycle steps do not present fundamental differences and are only divided differently (Houy et al., 2010; de Morais et al., 2014). The second fact is that those BPM models mostly aim to provide a comprehensive view on all of the main activities involved in process management and strategic alignment, with insignificant focus on mitigating the risk of failure in their redesign stage.

In a research article on Process Focussed Organisations features and characteristics, Neubauer (2009) made a survey within Austrian companies. His survey showed that only 6 percent of the participating organisations stated their business processes as completely aligned with their business strategy. This low figure indicates how difficult is to achieve process orientation in reality. Although the idea of obliteration of out-dated non-value-adding processes is too powerful to ignore, a 6 percent success rate is very discouraging.

Table 3.2. Summary of the process improvement methodologies studied by Zelner

(2014)

Approach	Author(s)	Context	Structured overview	Structuring criteria	Focus on act of improving
Business process redesign	Reijers and Mansar (2005), Mansar and Reijers (2007)	Best practice in business process redesign	Yes	Components of business process redesign framework (e.g. customers, business process operation, organization, information, etc.)	No
Quality tools	Hagemeyer <i>et al.</i> (2006)	Problem-solving quality tools and techniques	Yes	Ten selection criteria (e.g. phases of Six Sigma cycle, type of tool, skill of user, etc.)	No
BPI	Siha and Saad (2008)	Current process improvement approaches	Yes	Four categories: Six Sigma, benchmarking, BPR, process mapping	No
BPR	Kettinger <i>et al.</i> (1997)	BPR methodologies, techniques and tools	Yes	Six-stage BPR project framework (stages: “envision,” “initiate,” “diagnose,” “redesign,” “reconstruct” and “evaluate”)	No
BPR	Valiris and Glykas (1999)	“Global” BPR methodologies	Yes	IS-, accounting- and organization-theory-based methodologies	No
BPR	Vakola and Rezgui (2000)	Critical overview of existing BPR methodologies and models	Partly	Stages of the methodologies	No
BPR	Al-Mashari and Zairi (2000)	Holistic review of literature related to BPR	Partly	Stages of the methodologies	No
BPR	Zairi and Sinclair (1995)	Survey of current practice and future trends in BPR	No	None	No
BPR	Al-Mashari <i>et al.</i> (2001)	Survey of international experience on implementation of BPR	No	None	No

Many of the failures associated with process orientation can be attributed to a neglect of the concerns of employees and their resistance to radical change (Aladwani, 2001). Acknowledging people connections and minimising the impact of our process redesign on them and their belongings can minimise the risk of failure in process orientation. The

following section outlines the new method presented in this chapter on the basis of the author's practical experience, and shows how it is possible to change from a function-based structure to a process-based structure without changing the existing structure.

3.3 Proposed methodology: BPR2

To reduce the employees' resistance to change, and achieve a process-oriented structure without destroying the existing structure, this chapter presents the BPR2 methodology. As shown in Figure 3.3, BPR2 includes seven steps:

- (1) aiming for excellence;
- (2) definition of internal and external customer values;
- (3) rearrangement to ensure customer values;
- (4) creating new customer values;
- (5) renaming to promote customer values;
- (6) automation to facilitate customer values; and
- (7) measurement of customer values.

The following sections provide a detailed description on the above steps.

3.3.1 Step 1: aiming for excellence

The first step in BPR2 is to determine and communicate what is expected from BPR2. How the leaders induce and explain the reason of change to their staff is very important for the success of the change imposed (Ravesteyn and Batenburg, 2010; Shin et al., 2012). The survey conducted by Terziovski et al. (2003) shows that an organisation is more likely to achieve greater profitability if the process reengineering is implemented in a proactive

manner as part of an organisation's business strategy. Their results show that organisations that implement BPR reactively as a "quick fix" do not achieve significant performance outcomes.

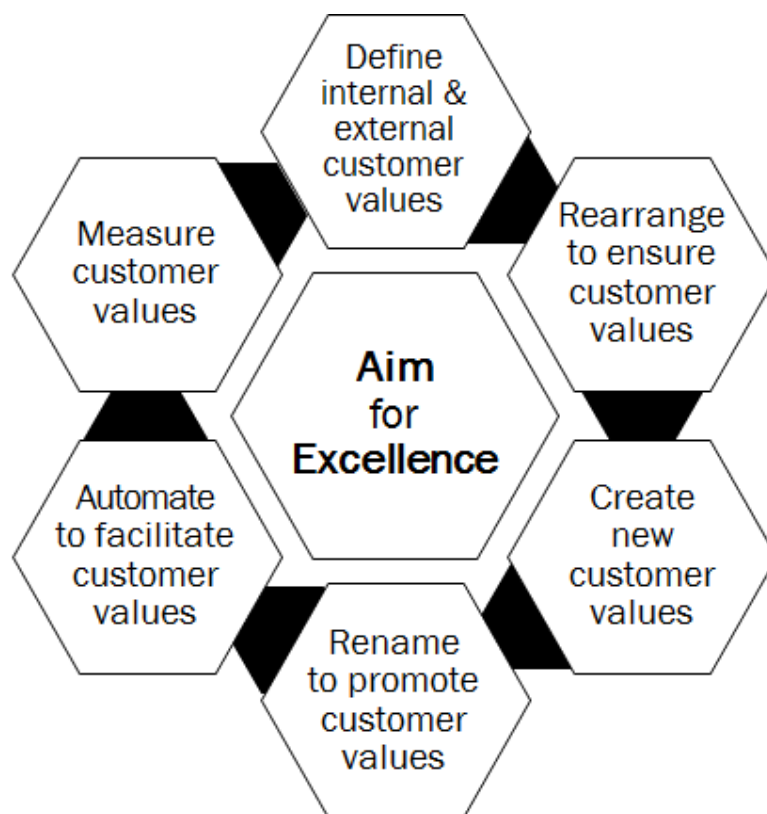


Figure 3.3. Business Process Rearrangement and Renaming (BPR2)

As a proactive manner, it is suggested for the BPR2 project to be executed within a suit of projects that aim for Business Excellence (BE). Aims such as cost reduction, redundancy or even increasing the profitability may result in employees' resistance and failure. BE models are diagnostic tools which allow companies to assess how they are managing all key areas of their businesses and the quality of the results they are achieving. BE models such as the Malcolm Baldrige Model or the model presented by the European Foundation for Quality Management (EFQM) recommend many strategies for a sustainable improvement including

the process orientation. Thus, training the employees on the BE principles can help them to understand the benefits of process orientation, and reduce their resistance.

3.3.2 Step 2: definition of internal and external customer values

The second step in BPR2 is to identify what is valuable for the internal/external customers. This step consists of four main activities including: first, recognition of the current and potential internal/external customers (according to the vision and strategies); second, detailed recognition of their characteristics; third, clear recognition of their needs, wants, and expectations; and fourth, deciding about what valuable products the organisation is going to offer to each group of customers in return to what is expected from them.

What is referred to as “customer value” in this thesis appears also in management literature as “consumer value,” and appears in the marketing literature as the “marketing mix.” Customer value can be defined as a set of benefits and attributes in a property, product or service that persuades a customer to pay the price, take possession of it, and enjoy taking benefit from it.

For its purposes, this study presents a comprehensive customer value model from an authoritative view shown in Figure 3.4 as the “P8 Model.” In this customer value or marketing mix model, eight processes are defined as plan, prototype, price, produce, present, post-sale service, place, and promote. Each of these processes provides a distinct value for customer. All of the P’s defined here have equivalents in other marketing mix models except for the “Plan” which has not usually been included as a part of marketing mix. In many businesses, the customer requires help to decide on the suitable product/service/solution, and such a help is valuable for him/her. A patient who pays a

doctor for prescribing the diagnostic tests (X-ray, blood test, etc.), or a business owner who pays a management consultant for a business review and prioritising improvement projects, or an investor who recruits a financial adviser for future investments are examples of when “Planning” comes before the main product/ service. After this planning phase, most customers prefer to purchase the planned solution from the same provider. Thus, considering “Planning” as an extra element in marketing mix may help businesses in their marketing efforts.

The outcome of the customer value definition step is the identification of all of the current and future internal/external customer groups, and customised P8-plots for each of the products/services for each group of the relevant customers. The BPR consultants use brainstorming in definition of new processes; whereas in BPR2, P8 Model enables process designers to define processes (grey boxes in Figure 3.4) for each group of stakeholders in a precise and comprehensive manner. The next step will describe why and how processes on these P8-Plots should be assigned to the current departments and their sub-groups to ensure expected customer values.

3.3.3 Step 3: rearrangement to ensure customer values

The third step in BPR2 is rearranging the current departments’ responsibilities in a way that each department undertakes the whole responsibility of certain processes on the customised P8-plots for certain group(s) of internal/external customers. Skrinjar and Trkman cite from McCormack and Johnson (2001), Leavitt (2005), and Neubauer (2009), and suggest that “organisations do not need to replace their traditional structures with process-based ones, but rather find a way to combine the specialisation and expertise of a functional structure with the adaptability and responsiveness of a process-based one.” In those papers

however, there is no guideline on how to bring responsiveness without replacing the traditional structure. The Step 3 in BPR2 provides a practical pathway to turn the traditional functional structure into a process-based structure maintaining the current structure and work groups.

In a consultancy session, a company deputy president in the milk processing industry narrated a case that can best explain what is meant in this thesis as the process rearrangement. He said that many years ago, they used to pack produced cheese in large metal cans, and this made the cheese sensitive to the storage temperature. Some retailers did not store them in fridges as instructed by the company, and this resulted in early spoiling of the cheese. Consumers became poisoned every now and then, and sued the company. Finally, the deputy president ordered the production manager to take the whole responsibility of the cheese from the time milk is purchased, until retailers sold it to end customers. The production manager was reluctant to accept such a responsibility as he believed that retailers, who were to be blamed in that matter, would not follow the procedures anyway. However, under the obligation from the deputy president, the production manager took the responsibility, and solved the problem.

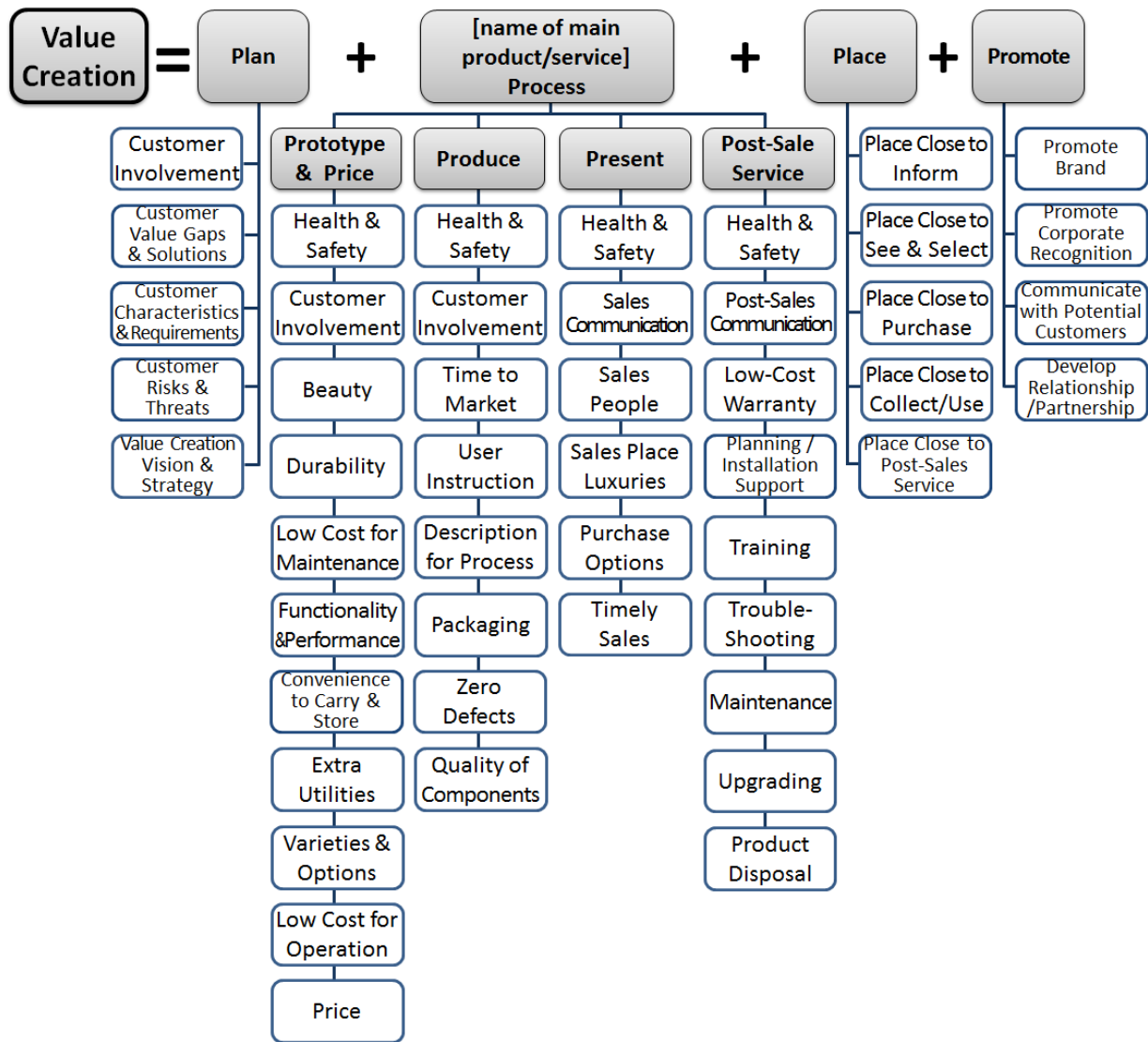


Figure 3.4. P8 Model for Customer-Value and Marketing Mix

As discussed earlier, each grey box in the P8-plot represents a process or subprocess. Consequently, immediately after a manager takes the responsibility of a relevant process (grey box) for a product/service for a group of internal/external customer, the position becomes process oriented. Rearrangements should take place with ideally no change in managerial levels and their subordinate teams, and with minimal change in their working places. It is possible for a manager to take the responsibility of more than one process, but delegation of authority of one process in one geographical region/market to more than one

manager is not recommended. More senior managers should take the responsibility of one or more processes for a larger group of products/services or larger groups of customers.

BPR2 changes the departmental boundaries, but does not consider people as components that can be easily moved or removed from the organisation. In contrast to BPR that holds little concern for the organisation's existing human resources (Taylor, 1995), BPR2 does not separate people from their current teams. After a BPR2, the organisational structure will remain unchanged with new roles for departments to play.

3.3.4 Step 4: creating new customer values

After giving the whole responsibility of end-to-end processes to the existing departments, departments that used to provide support for production department such as procurement and quality control departments may have no product/service to provide. The fourth step in BPR2 is to define a new role for those departments. It is strongly recommended that in this situation, leaders should think creatively and regard it as an opportunity to create new products/services rather than removing the extra departments from their organisation. For example, the quality control department can start a quality management consultancy business, and the procurement department can start a foreign trade business and so on.

Hammer (1990) clearly described how Ford's account payable department achieved 75 percent reduction in head count by undertaking a BPR project. However, there was no explanation in his paper on what happened to those people who were cut, and the ones who survived. Staff layoffs damage firm's reputation (Love and Kraatz, 2009), and provoke guilt and remorse and loss of trust, commitment, and productivity in surviving employees (Zatzick

and Iverson, 2006), and cause disruption and disorder (DeRue et al., 2008). According to Drago and Geisler (1997):

Companies which have undergone BPR tend to experience several indicators of low morale, such as growing unwillingness to work longer hours and increases in absenteeism. There is a sense of loss and uncertainty due to downsizing and the lack of knowledge as to what to expect. Low morale tends to disrupt the flow of ideas, to interfere with sharing of information, and to hinder teamwork. Fear and suspicion tend to replace trust and attitudes that welcome challenge and discovery.

BPR2 suggests that the business leaders should regard their departments as business units with the potential of production and independent income. This new approach enables the leaders to consider all of the opportunities for starting new businesses in their current departments. In traditional business models, all of the people in the firm work for one business, and the people who are found unable to contribute in that business, get sacked. For example, in a car manufacturing company, everyone is focussed on car marketing, manufacturing and sales; and no one considers other investments and incomes. By putting all of the eggs in one basket, when that main business fails, the whole company goes bankrupt.

Creating value and wealth is not limited to the production or service departments, and other departments on their own can contribute to the profit. Many people and businesses have created a fortune just through fruitful investments and effective cash flows; many entrepreneurs and businesses create wealth by producing and selling businesses and brands; many businesses earn their income by creating and selling patents. Likewise, HR Department can provide recruitment services for other companies; Finance Department can provide consultancy and fruitful cash flows for shareholders and other companies; and sales department can also produce and sell new brands. Taking this view, redundancies are not the best option, and entrepreneurship and growth should come first.

When this thesis talks about developing new businesses, it does not mean that one large business should be converted to many small businesses. To ensure sustainability, the business in which the company has a competitive advantage, should remain in focus like the main pole of a tent. Departments should support the main business, and at the same time think more creatively, and extend their view beyond their tangible assets and organisational borders. Departments are recommended to start communicating with other people and businesses on the other side of the fence, and contribute to the innovation and wealth.

After rearrangement of responsibilities, the current names of departments and sub-groups may no more be applicable. The following section will describe why and how department names can be changed to reflect their main products/services, and improvements that they are going to make according to the strategies.

3.3.5 Step 5: renaming to promote customer values

Taking benefit from the power of name is the fifth step in BPR2. Searching the “power of names” exact phrase over the internet produces 273,000 results (viewed August 13, 2013). There seems to be a widespread consensus about the importance of name. In academic papers many authors have mentioned the impact of name on the firm value (Mase, 2009; Berkman et al., 2011), on employability (Guéguen and Pascual, 2012), on health care (Burt, 2011), and even on the presidential election (Block and Onwunli, 2010).

With such a strong consensus on the power of name, there seems to be a gap in the literature on how to name departments or business processes to make a better impact on employees and other stakeholders. Name is the most communicated characteristic of a department; however, this most communicated characteristic of the departments has always been the most neglected characteristic as well. We name departments by their main

activity, and not by their valuable product. Department names such as engineering, procurement, documentation, accounting, and finance seem to be very normal; however, the problem arises when people forget about the value they really need to create for their customers. For example, “Engineering Department” or RandD are very common names in industries and generally refer to the department in which design and making samples of new products take place. However in most cases, RandD and engineering departments are involved in non-creative and routine works such as regular samplings and testings and whatever duties that has no one else in charge.

If we change RandD or “Engineering Department” to “Innovators Department,” their staff will be more likely to focus on creativity and innovation. It will also attract a better support from company leaders, and the department will remember to employ innovative staff rather than just engineers/researchers. The main idea in the process renaming is that in contrast to the brand names that should be short and attractive, department names should be prestigious, exciting and informative. Department names are appellative and do not need to have the characteristics of proper names. For a process, a descriptive epithet highlighting the valuable product of the process, makes a clearer sense and better impact. As the name of a department is the most communicated property of it, choosing a name that reflects the expected customer values, can promote values in everyday activities and communications.

As an example, finance departments are expected to provide wealth and financial information for shareholders; however, when we look for an information document in simple words understandable for the shareholders who may know nothing about accountancy, in many cases we may come to an absolute zero. Finance departments mostly focus on controlling the capitals, and have no temptation to look for other opportunities for investment and increasing the profit for shareholders. Changing the name of Finance

Department to “Shareholder Advisors and Wealth Creators” would remind them the valuable products they need to provide for their shareholders.

In contrast to what is recommended in this thesis as naming the processes by their valuable products, Hammer and Champy (1993) briefly suggest that process names that express their beginning and end states, enable better handling of the processes. They, e.g. suggest that manufacturing is better called the procurement-to-shipment process. Hammer and Champy do not provide any more explanation or further reasoning for such a renaming.

Burt (2011) is one of the few authors who examine the impact of name change on both staffs and customers. Burt suggests changing the name of “Palliative Care” in hospitals to “Supportive Care” as an “effective approach to improving perceptions of the service – particularly for patients.” Palliative care aims to alleviate symptoms of illnesses that affect patients mostly at the last stages of their life, to improve their quality of life within the limitations of the condition. This name change is still referring the department by its main activity (supportive care), and not by their valuable product (improved quality of life). Thus not surprisingly, Burt (2011) admits that although the majority of care professionals supported it as they perceived the patients preferred it, this name change had no impact on their referral patterns. Instead of changing the name to “Supportive Care,” BPR2 suggests the name change of “Palliative Care” in hospitals to “Quality of Life Improvers.” Such a name change might make a more positive impression on professionals, and ignite creative solutions to provide a more satisfactory life for the patients with life-ending illnesses. It can be also suggested that if there is no conventional cure for palliative people, why not to try unconventional and creative cures? In that case, “Palliative Care” can be also renamed to “Creative Life Improvers.”

3.3.6 Step 6: automation to facilitate customer values

The sixth step in BPR2 is to provide a solution for the overloaded departments. After rearrangement of responsibilities, some departments may lose the support they used to receive from other departments (e.g. from procurement department) and encounter an increase in work load. The solution recommended in this step is to take a few volunteer people from other departments or preferably take benefits from the internet capacities or other available automation technologies. Information technology has enabled us to better manage data, information and knowledge, and reduce barriers of time, place and language. However, any effort for a costly automation or technology change should be provided with sufficient explanation and reasoning in terms of its impact on the products/services it provides for the internal/external with facts and figures. At this stage, as the P8-plots have enabled departments to exactly comprehend the customer values they are responsible for, they can better decide on the use of information technology or any other types of technologies to cope with the new situation and increase the value of their products/services for their customers.

In BPR2, automation comes after the process rearrangements, and this is in agreement with the authors such as Gargeya and Brady (2005) who recommend the process redesign prior to adoption of SAP in ERP systems. In contrast to Hammer and Champy (1993, p. 83) who suggest the information technology as an essential enabler and a crucial part of the process reengineering (BPR), implementation of BPR2 is not dependent to the information technology. Mixing IT with process orientation, as we can see in some process integration systems, brings the problems of inflexibility and rigidity if the software does not fit the future firm (Lindley et al., 2008). By using the P8-plots, BPR2 determines the processes, and then managers can decide on compare different options and tools and technologies to optimise the whole value for their customers. By separating the information technology

from the process thinking, BPR2 makes the process orientation easier and more affordable for any size and any type of industry.

3.3.7 Step 7: measurement of customer values

The last step in BPR2 is definition of process measures and targets according to the P8-plots and strategic goals and objectives. White boxes in P8-plots provide the measurement criteria, and the strategic goals provide targets. Measurements are recommended to be conducted continuously and include efficiency (consumption of time, money [...]) and effectiveness (customer perceptions and other desired outcomes).

Regular top managers' review sessions are recommended to be monthly reviewing the assessment results compared to targets and benchmarks, and suggestions for improvement of the customer values, process arrangements, and names. At this stage, there would be process-oriented departments in place that would easily accept any change in responsibilities and products. The cycle begins again with the definition of internal and external customer values, and will continue in a much easier manner.

3.4 A success story

Immigration to a process-based structure is difficult in most companies, and the difficulties intensify in governmental firms. Any change in the structure is subject to a long bureaucratic process for confirmation. Thus, it has become common in the public sector to manage cross-functional processes by cross-functional teams of managers (Piercy et al., 2012). However, cross-functional teams often compete for scarce resources, support, and

legitimacy (Yan and Louis, 1999), and do not yield anticipated performance gains (Ancona and Caldwell, 1992).

The following successful case example shows a genuine process orientation in a governmental company without any need to cross-functional teams or any correspondence to higher governmental bodies. The author had the role of consultant in this story that started in October 2007 and finished in June 2008. The case company, BPG, is an electric power generation company. BPG burns mazut (low quality fuel oil) and gas to generate electricity. Highly purified water is also a medium for the mazut process. Mazut is burned to make superheated steam needed for huge high-speed turbines. BPG had five major departments including: Financial Affairs, Operations, Repair and Maintenance, Chemicals, and Engineering. The Operations Department runs the generators, and Chemicals Department provided the purified water needed to produce steam. At that time, Engineering Department had many different responsibilities such as training and development of staff, sampling, and operational measurements, quality management, and any other activities that had no one else in charge.

The following sections describe implementation of the BPR2 in BPG Company.

3.4.1 Step 1: aiming for excellence in BPG

Following an incentive from the government, BPG made a contract with me as the management consultant, and started implementation of the BE concepts and tools. As an essential part of the BE efforts, BPG started moving toward process orientation as well. It must be admitted that this movement would have never started without governmental motivation. The more interesting fact was that this incentive was more in the form of compulsion rather than just an encouragement. The governmental Parent Holding was going

to measure the performance of subordinate CEOs by the companies' BE score, and although CEOs were reluctant in this regard, they had no option but to follow. No one was aware of the CEOs performance measurement procedure, and there were many valid critics and questions on this type of measurement. Subordinate CEOs only knew that they had to implement the BE model presented by the EFQM. It was an order and everyone followed.

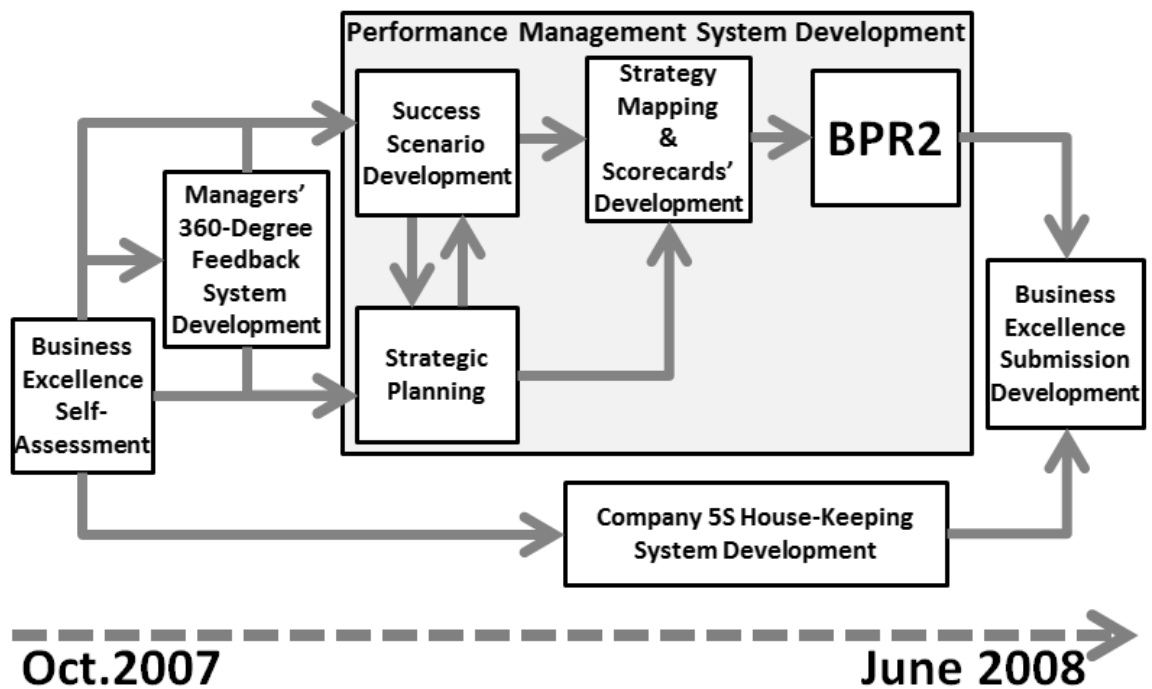


Figure 3.5. First year of the journey toward Business Excellence in BPG Company

The steps accomplished by BPG in the first year of journey toward excellence are shown in the Figure 3.5. In the beginning, a self-assessment was conducted based on the EFQM model. Following the assessment and prioritisation of the needed improvements, three improvement projects were identified including development of 5S Housekeeping, Performance Management, and Managers' 360 Degree Feedback systems. These projects involved all of the managers and staff in the improvement, and brought a new culture to BPG which led them to the heights of success.

3.4.2 Step 2: definition of internal/external customer values in BPG

Without having a clear vision of the future, it is impossible to make an appropriate process structure. Thus, process design projects must start after strategic planning. In BPG, previous strategic plans also had to be updated. Projects were defined that led to the definitions of internal/external customer values in BPG were:

- Managers' 360 Degree Feedback System Development;
- success scenario development;
- strategic planning; and
- strategy mapping and scorecards' development.

These projects took about three months to complete, and during this period, the consultant and the top managers worked individually and met at least once a week. The main strategies resulted from these projects were:

- identification of the opportunities to make extra income for the company and the employees;
- increasing the flexibility, and providing repair and maintenance services and engineering services for other local customers;
- staff motivation for the knowledge improvement through the external projects;
- improvement of the power forecasting and competitive pricing; and
 - improvement of communications with the power customer (National Dispatching).

3.4.3 Step 3: process rearrangement in BPG

At this stage, processes, sub-processes, and their performance measures were suggested and presented by the consultant (the author), and all of the details were reviewed and refined with managers in two sessions. As departments' new processes supported the agreed strategies, and the proposed process structure was identical in shape to the current functional structure, managers were all satisfied and accepted their new individual responsibilities and rearrangements.

A few important changes were agreed to happen in the new arrangement. The Operations Department agreed to take the responsibility of whatever directly related to the power generation including the regular tests that were conducted by the Engineering Department. In the same manner, Chemicals Department agreed to take the charge for whatever directly related to production of chemicals including the samplings. Financial Affairs Department also agreed to take the responsibility of utilising company's tangible and intangible assets to produce more profit for the company.

3.4.4 Step 4: creating new customer values in BPG

In the new arrangements, the responsibility of samplings and tests were removed from the Engineering Department. Rather than cutting the head-counts, Engineering Department became responsible to actively promote the level of knowledge and technology in BPG, and also conduct technology improvement projects for external customers. This change would address the issue of negligence toward the new technology that was previously found as a major point for improvement at BPG.

Creation of new values in BPG was not limited to the Engineering Department. Maintenance Department and Chemicals Department also decided to do marketing and provision of maintenance and chemical engineering projects for the external customers. Hydrogen and demineralised water productions were also decided to increase for external sales purposes.

3.4.5 Step 5: process renaming at BPG

The BPG level-1 processes have been listed in Table 3.3 together with their valuable products and customers. At that time, the consultant had not developed the process renaming technique. According to what described earlier about the Business Process Renaming, the consultant and BPG managers could have chosen more effective names for processes such as the names that are suggested in Table 3.3.

As shown in the table, BPR2 names reflect the valuable product that is expected from the department. Some of the proposed names may look too long, and not comfortable to use. For these long names, abbreviation of the names is more recommended than a kind of shortening that destroys the meaning and motivating character of the name.

Table 3. BPG defined level-1 processes and suggested BPR2 names

Process	Valuable product	Customer	Possible BPR2 process name
Management and business excellence	Sustainability and improved ranking for the company	Parent holding Board of Directors	Business improvers
Water provision	Chemical engineering services, efficient and environment-friendly hydrogen and highly purified and demineralized water	Power generation process External hydrogen customers External DM water customers	Efficient chemical producers and advisors
Power generation	Efficient, agile, and stable electricity	National dispatching	Efficient, agile, and stable power creators
Knowledge and technology management	Engineering services, innovations, updated knowledge of staff, and a more sustainable and efficient technology for the power plant	External engineering service customers Power generation process Repair and maintenance process Water provision process	Innovative power engineering advisors
Repair and maintenance	Repair services and reduced down times	External repair and maintenance service customers Power generation process Water provision process	Total re-creators
Human resources management and services	Wages, incentives, transports, catering, official services, enhanced green area and working places	Employees	Employees rewarding and environmental beautifiers
Investments and financial management	Enhanced yield for capitals and assets, and financial information	Parent holding Board of Directors	Shareholder advisors and wealth creators
Security	Secure assets and people	Parent holding Board of Directors	Security facilitators
Fire and safety	Safe assets and people	Board of Directors Employees	Safety and ergonomic improvers

3.4.6 Step 6: automation in BPG

At this stage, as the new processes were known for managers, and they knew their performance measures, they could easily decide on the automation technology that would help them in better achievement to their goals. Operations Department decided to automate their pricing to achieve the highest sales price, in accordance to the demand, and the available capacity for power generation. Repair and Maintenance Department decided to use total productive maintenance systems. Other departments also decided to use on-line marketing techniques to introduce their new services and products to potential customers. By doing so, they did not have to recruit more people for their marketing purposes.

3.4.7 Step 7: BPG achievements from customer perspective

At that time there was a significant uncertainty about the future of the BPG Company. Many of the power plants had been sold to the private sector, and others were waiting to be sold. The main strategic themes for BPG were to increase profitability through agility and flexibility, and to improve the satisfaction of the Parent Holding and the National Dispatching (the main customer) through a better communication. After four years from completion of the suit of projects in BPG, the Parent Holding not only has decided to keep the ownership of the power plant operated by BPG, it has also started a large expansion project to increase its power generation units and make it the largest power plant in that region. The results that have been published in 2012 by the Parent Holding show the following achievements for BPG after four years from the completion of the suit of projects:

- BPG has promoted the power plant thermal efficiency to 38.9 percent coming to the third rank between all of the steam power plants across the country (19 steam power plants). Given the fact that the power plant in the first rank (40.5

percent of thermal efficiency) is much younger than the BPG, and the second one is in a much higher weather temperature reducing its energy loss, BPG's rank is a very significant achievement.

- BPG has achieved the Load Factor of 93.4 percent and the fourth rank, where the highest national score for steam power plants is 95.9 percent, and the lowest score has been 67.6 percent.
- BPG has achieved Yearly Operating Time of 88.5 percent and the fourth rank nationally, where the highest national score for steam power plants is 90.8 percent, and the lowest score is again 67.6 percent.

By making a new criterion through multiplying the three above performance measures together, BPG comes first between all of the steam power plants across the country in 2012. This shows a strong and balanced improvement in all of the most important performance factors.

3.5 A failure story

This story happens in an IT private company, TechEdge, and describes a failure in implementation of the performance measurement system. The case-study is written by Prabhu and Hegde (2012), and demonstrates how difficult it is in traditional functional organisations to measure the performance of staff and pay wages according to individuals' performance. In traditional functional organisations no one really knows who did well and who did not. After a brief summary of the case-study, we will see what would happen if they had tried the process orientation through a BPR or a BPR2 project.

TechEdge is a system integration company providing IT solution and services for multiple industries, and we expect the managers in this company to be quite familiar with the most recent technologies and modern integrated business structures. However, in what Prabhu and Hegde describe about TechEdge, we see a classic example of a very traditional organisational structure. The main departments are Sales, Consulting, Support and Services, Back Office Operations, Finance, Software and HR. HR recruits people; Software Department produces IT products; Sales Department sells them; Support and Services provide post-sale services; Back Office Operations Department does the procurements; and the Finance Department looks after the budget and accountancy issues.

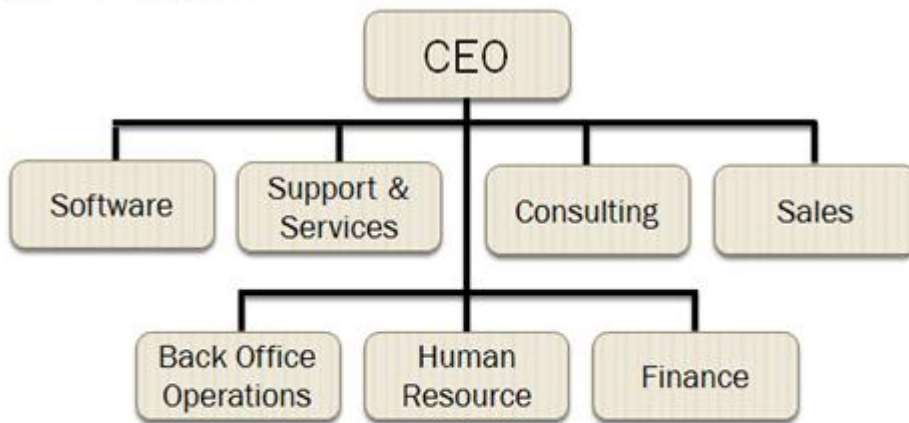
There are two MBA graduates in TechEdge who propose a performance-based pay-plan. They receive approval and full support from the CEO and start the project first within the Sales Department as a pilot, and then extend it to the whole company. However, the new performance measurement system makes such serious inter-departmental allegations and arguments that they together decide to stop it. Prabhu and Hegde describe the situation as follows:

Each department claimed to have incurred a loss of incentive due to the lethargy of the other department. The finance team is annoyed since the payment collection had fallen almost 15% below the normal rate. The sales team defended it alleging that the payments had been delayed due to late commissioning of projects. The services team seemed to say that the sales team had overcommitted, and the scope of the project had extended much beyond the initial agreement. The sales team did not agree to this allegation and blamed the services team that they themselves had agreed to service the customer's extended demands for which the sales team should not be held responsible. The sales team also pointed out that the overall Customer Satisfaction (C-SAT) for existing customers had come down due to call-ageing. Support team declared that C-SAT had come down due to hardware and software resources not being available in time from the logistics people in the back office operations. The back office team promptly pointed out to

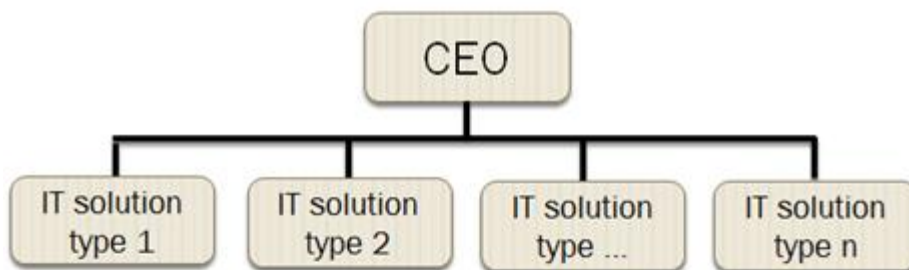
the finance team saying that they did not get approval for purchases in time. Finance defended its delays saying that they are restricted by cash flows as well as their mandate of cutting costs at least by 10%.

In this story, TechEdge did not try the process orientation as a possible solution. Figure 3.6 shows how the TechEdge structure could change through a BPR or a BPR2 project. If BPR was conducted and succeeded in TechEdge, it would demolish the current structure based on finance, production, sales, post-sales, etc. BPR structure would be based on different IT products (Figure 3.6 (b)), making each department accountable for what they would produce and sell; and performance measurement would be very easy.

(a) TechEdge current structure:



(b) What TechEdge might become after a BPR:



(c) What TechEdge might become after a BPR2:

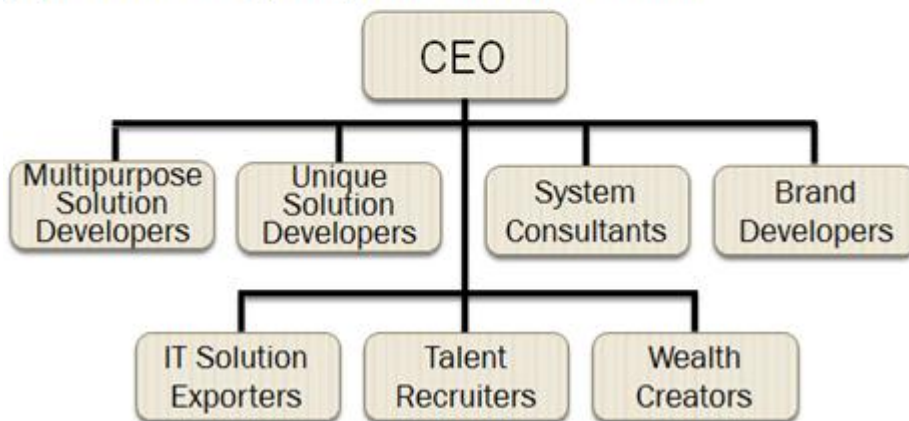


Figure 3.6. Change in TechEdge structure after a BPR and after a BPR2

BPR2 structure (Figure 3.6 (c)) would be identical to the current structure, only giving process-oriented missions to each department. After BPR2, production people would be in charge of the sales and pricing of the IT products themselves. Sales Department would then change its name to, e.g. Brand Developers Department, and would only promote the company, and ensure that all of the potential customers in the target markets are aware of TechEdge and its IT brands. Support and Service Department could take the responsibility of pricing, production, sales, and post-sales of unique and customised systems that involve less complicated programming and more networking and support. Software Department could then take the responsibility of the general multipurpose softwares which need more complicated programming, and need less contact with customers. BPR2 would then choose more prestigious and descriptive names for all of departments and sub-groups according to their new arrangements. In this way, each department would have unique values to provide, making performance measurement easy.

3.6 Discussion and conclusion

Figure 3.7 compares BPR2 with other organisational change methodologies in term of their time requirements, and the organisational changes involved. Although some companies may extend the BPR projects to several years to reduce the risks of failure, BPR projects typically tend to impose high mount of change to organisations in a short period of time. Enterprise automation methodologies also take a long time to complete, with significant structural changes involved. Process improvement methodologies such as the Lean Six Sigma impose minimal changes to the organisations with high rate of success; however, process improvements need a rather long period of time to achieve their goals. The most important point of strength in BPR2 is that it makes minimal changes to the

organisation. Based on the author's experience, for a company that has already defined its agreed-upon strategies and stakeholders, BPR2 is achievable within a month or two.

To reduce the managers and staffs' resistance toward change, BPR2 introduces "Aiming for Excellence" as the first step, and then provides a clear way to establish a new process-oriented structure as closely as possible to the existing structure. In contrast to the traditional business models where all of the departments work for one business, BPR2 enables business leaders to regard each department as a separate business unit that can produce wealth/value for the stakeholders. The aim is not to isolate departments from each other and convert a large business to a number of small businesses. The goal is to improve communications, responsiveness, awareness, flexibility, and creativity of employees in producing value and wealth for all of their stakeholders.

Organizational changes	High	Business Process Reengineering / Redesign / Restructuring (BPR)	Enterprise process automation methodologies e.g. ERP
	Low	Business Process Rearrangement and Rename (BPR2)	Process improvement methodologies e.g. Six Sigma
		Low	High
		Time required to achieve significant goals	

Figure 3.7. Comparing BPR2 with other existing process change methodologies

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3.8 Further reading

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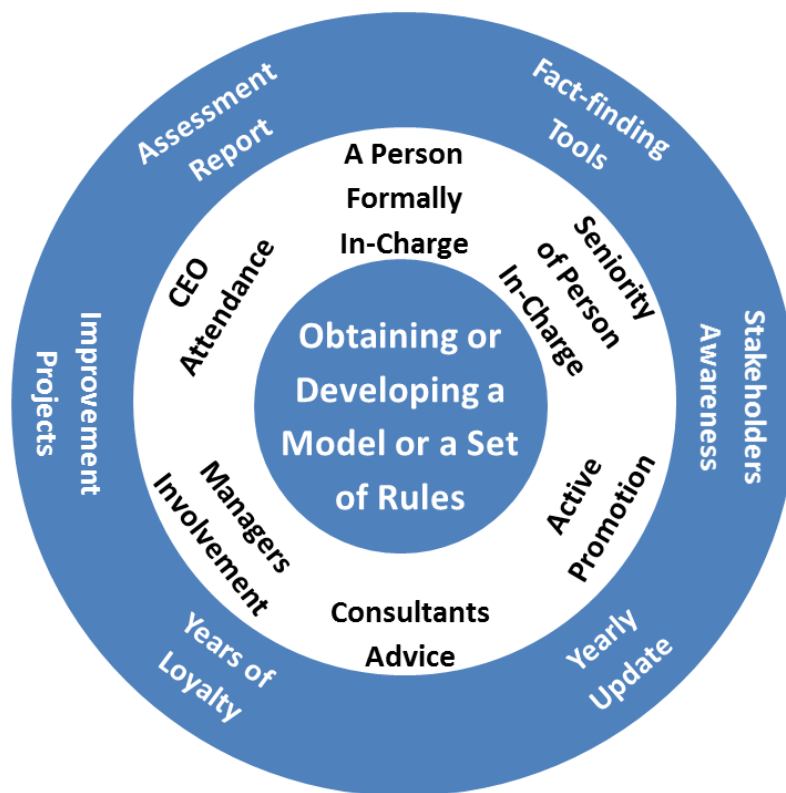
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This chapter reflected a qualitative description on the impact of Business Excellence (BE) on process maturity and performance. Although qualitative study provides a deep understanding of the subject, its generalisability is less than quantitative study. To address this issue, the next chapter uses a quantitative approach, and through a survey, examines the influences of BE related activities.

Chapter 4:

Aiming for Excellence:

Commitment Matters *



* A modified version of this chapter has been submitted for publication to the *Total Quality Management and Business Excellence Journal*, at time of finalising the thesis it was still under review by the journal.

Abstract

There is a significant debate about management systems and models in the literature; one side refers to them as management fads or fashions, and one side talks about their positive impacts. Focusing on Business Excellence (BE) models, this study examines the impact of commitment to BE related activities on firms' process maturity and financial performance. Results obtained from the online survey in the UK indicated that the BE active firms significantly outperform companies that do not practise BE. Another interesting finding of this research is that receiving awards or certificates for Business / Organisational Excellence did not appear as strong as other BE related activities in terms of its impact on process maturity and financial performance. Other than the Business Excellence and Business Process Management discussions, a new 'Organised Commitment Model' is presented in this article that can be of interest to the researchers and practitioners who want to measure or develop 'Commitment' in any other subject.

Keywords: Business Excellence, Organisational Excellence, Process Orientation, Process Maturity, Financial Performance, EFQM, MBNQA, Deming, Organised Commitment Model.

4.1 Introduction

In more than six decades since its birth, Business Excellence (BE) has achieved glorious results. BE has been supported and recommended by several long-standing corporations, such as Nestle, KLM, BMW, TNT, Electrolux, Philips, Daimler-Chrysler, Siemens, Bosch, etc. BE has also been identified as the motivating force for Japanese post-war industries (Crainer & Dearlove, 2006). Most importantly, several authors have found that companies with higher BE scores and BE award winners outperform other companies (e.g. Oakland & Tanner 2008, Hendricks & Singhal 2003).

BE model is a set of criteria and scoring logic “that can be used in a number of different ways, namely as a self-assessment tool, a way to benchmark with other organisations and a guide to identify areas for improvement” (Amaral 2007). BE models can quantify the excellence of organisations regardless of their size and industrial sector (Conti 2002, Khosravi & Chavan 2012). Organisations choose and utilise a BE model as a diagnostic tool and to find the points for improvement and provide a roadmap for their journey toward excellence (Mishra, Garg & Naru, 2013). BE models provide a comprehensive view of the organisation and prioritise the improvements they need to make (Eshlaghy & Kazemi 2009). The Deming, EFQM and the Malcolm Baldrige are the most popular BE models in the world (Gómez et al. 2015, Heras-Saizarbitoria et al. 2012, Metaxas & Koulouriotis 2014) and tens of thousands of organisations around the globe use them on their journey toward excellence (Asif & Gouthier 2014, Khosravi & Chavan 2012).

Despite the many potential positive impacts, usage of BE models has its drawbacks as well. Some authors have warned that BE models do not provide complete coverage of TQM concepts (Chileshe 2005) and can encourage a 'motivational/directional effect', encouraging fulfilment of award criteria rather than achieving business goals (Oakland & Tanner 2008).

Some companies have found BE models too complicated, time-consuming and costly to put into practice (Arasli 2012) and most organisations fail to implement the strategic initiatives recommended by BE models (Asif et al. 2009). Above all, the literature review in this study could not find sufficient empirical evidence of the benefits of committing to Business Excellence and implementing BE models.

Given this insufficient empirical evidence of the benefits of committing to BE models, it is still valid to ask, 'Can following Business Excellence models and commitment to Business Excellence activities lead to process improvements and favourable financial outcomes?' This broad question can be broken into the following specific questions:

1. What are the key elements in commitment to BE?
2. Does following a BE model and commitment to BE lead to higher levels of process maturity?
3. Does following a BE model and commitment to BE lead to better financial performance?

Following this introduction, a discussion on BE and BE-related activities is presented and then a discussion on the identified gaps in literature. These gaps are then summarised in the form of research questions and hypotheses. Research method and operationalisation of constructs are then presented, followed by data analyses, discussion and conclusion.

4.2 Business Excellence-related activities

The journey toward Business Excellence begins with defining or selecting a BE model and then conducting a self-assessment using that model's criteria. Self-assessment is similar to a health check, where an initial analysis against the criteria provides information and evidence on the basis of which improvements can be made. Figure 4.1 shows the steps recommended by the EFQM (2014) for a successful BE self-assessment and demonstrates that the journey towards Business Excellence involves several activities. Conducting such activities requires a leader, initial planning, resource provision, execution, monitoring, continuous review and improvement. Activities start from organising and training teams of managers and employees to conduct a self-assessment, provide comprehensive feedback and, most importantly, to follow up with improvement projects. Hence, efforts made under the name of Business Excellence cannot be called BE activities without following a certain BE model and conducting self-assessments.

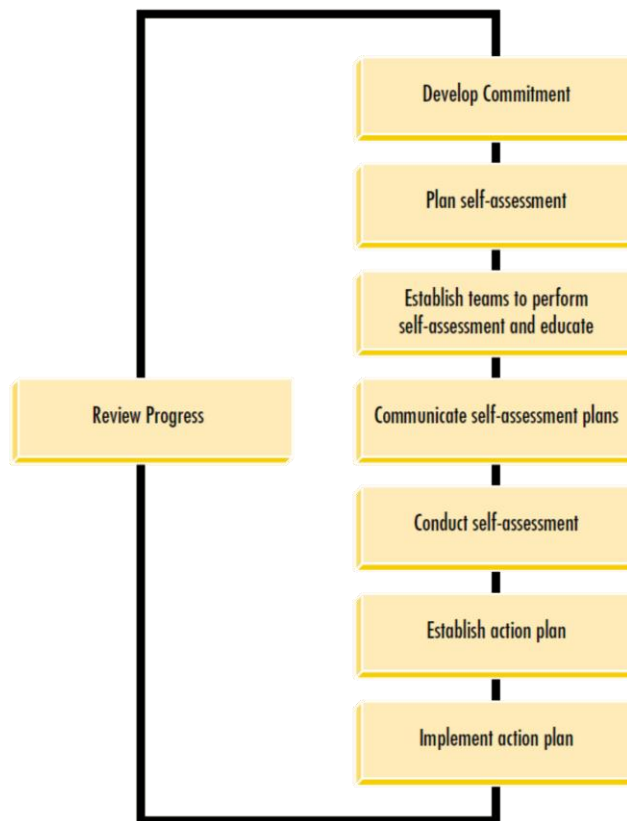


Figure 4.1
Steps recommended by
EFQM (2014) for self-
assessment

The aim of the literature review in this study was to find the peer-reviewed documents that had investigated the impact of Business Excellence self-assessments or BE-related activities on process improvement and performance. As a result of this study, two major gaps were found in the literature; these are described in detail in the following sections.

4.3 Gap 1. Impact of Business Excellence activities on performance

Most empirical research on the impact of BE on performance can be categorised into three main groups based on the methods and variables they use in their studies. The first group (e.g. Gupta 2013, Heras-Saizarbitoria et al. 2012, Kömürcü 2008, Kristensen et al. 2001, Moon et al. 2011, Oakland & Tanner 2008, Tanner 2004, Terziovski 2003, Tutuncu & Kucukusta 2006) measures BE as a variable which consists of other variables such as leadership, strategies, human resources and other resources management, processes and products/services. The second group (Boulter et al. 2013, Capon et al. 1991, Centre for Quality Excellence 2005, Fasil & Osada 2011, Hendricks & Singhal 2003, Mann et al. 2011,

Mann, Adebajo & Tickle 2011, Modd & Matanda 2006) considers excellence as the state of being recognised as a BE award winner and compares the performance of the award winners to non-award-winners. All of those studies have so far indicated the positive impact of BE on organisational performance. Although the investigations of both of those groups are relevant, there are valid critics of both types of studies. The third group (George, Cooper & Douglas 2003, Khosravi 2016, Li & Yang 2003, Samuelsson & Nilsson 2002) presents case-studies showing the positive impacts of BE practices. Although those case-studies are highly encouraging, generalisability is an issue to consider.

The study conducted by Oakland & Tanner (2008) is an example of the group that measures BE as a variable consisting of variables such as leadership, strategies, processes and so on. Investigating the relationship between Business Excellence and organisational performance, they conducted a survey using Kanji and Sa's Leadership Excellence Model as a measure of business excellence maturity. Their survey showed a positive relationship for all types of organisations. Another example with a similar survey, Moon et al. (2011), investigated the causal relationship among categories in the Korean National Quality Award (KNQA) model. Their survey instrument consisted of 79 questions from the seven KNQA categories. Structural Equation Modeling (SEM) was used to analyse the empirical data and estimate the path coefficients among KNQA categories. Their research showed that the human resource focus directly affects process management, process management directly affects customer satisfaction and customer satisfaction directly affects financial results.

Although the articles in the first group try to show the impact of Business Excellence on performance, there is a significant flaw in all of them. The point is that none of those studies measure the level of Business Excellence effort in firms. In other words, practising BE involves developing commitment to a BE model, involving managers to assess their own activities according to the criteria of the selected BE model (self-assessment), documenting

the assessment outcomes, providing an agreed action plan, progressing through the action plan and regularly updating the self-assessment and programs. Attention to all these activities and their impact on performance is the main point which is still missing in the identified literature. From this perspective, measuring BE as a function of variables such as leadership, strategy, human resources and so on, is actually measuring the mediating variables instead of the main independent variable, namely the level of commitment and effort that the firm dedicates to the BE. Until now what we know is that making improvement in leadership, strategy, HR and process orientation leads to better performance; however, the existing literature still does not tell us whether it is worthwhile to commit to a BE model and spend so much effort on BE self-assessments.

A much-cited example for the second group of studies that considers BE as the state of being a BE award winner is the study conducted by Hendricks and Singhal (2003). They studied 600 worldwide quality award-winning organisations over five years. The results were compared to a control group of companies of similar size and industrial sectors. The authors concluded that the firms that won quality awards outperformed the control firms on operating income-based measures. In a similar study sponsored by the EFQM and British Quality Foundation of 120 award winners, it was found that the winners outperformed comparison companies similar in size and operating in the same industries over an 11-year period (Mann et al. 2011).

The most important flaw in the research conducted by the second group, i.e., those who consider BE as the state of being an award winner, is that those award winners had already demonstrated better approaches as well as better performance to the award jurors. Thus, finding that those firms continued to outperform others proves only the relative fairness of the award processes, not the effectiveness of the Business Excellence activities.

A study that included non-award-winners in its sample was conducted by Hausner (1999) who examined the performance of 15 manufacturing firms participating in the Australian Quality Awards (not just award winners). He asked the 15 firms to list their 10 most important performance indicators and provide quantitative data in respect of those KPIs over an eight-year period. Hausner found a strong positive correlation between KPI improvement and the total BE score. Unfortunately, this study did not compare non-award-participants with award participants to investigate the benefits of participating in award processes.

In a similar study, Van der Wiele, Dale & Williams (2000a) conducted a survey among companies that were members of the European Foundation for Quality Management (EFQM), questioning the benefits of BE self-assessments. As expected, their survey arrived at the conclusion that 'self-assessment against an excellent model can help organisations move towards higher levels of excellence.' Unfortunately, this study, exactly like the study mentioned previously, also did not compare EFQM members with non-members to investigate the performance outcomes of being involved in BE activities and measured only EFQM members perceptions of the benefits of self-assessment, which obviously could not be negative.

The only identified study that focused on the impact of BE implementation was conducted by Fernández Díaz et al. (2014). Using a survey of primary and secondary schools in Spain, they measured the impact that implementing a quality management system, such as the EFQM model. Their results showed that implementing quality management systems had a notable positive impact on schools' communications and external relations. Although they found that such positive impact increased with the number of years the quality management systems were put into practice, they found the impact to be weak in some

other areas, such as the schools' systematic review. While presenting extensive arguments on effectiveness, Fernández Díaz et al. (2014) did not mention whether they measured the efficacy of such implementations on such key indicators as students' scores.

The literature review presented in this section tells us that BE models are relatively reliable in measuring the level of organisational excellence and those firms that follow these models are satisfied with them. We also learn from the literature that companies with a higher score in leadership, strategy, human resource management etc. show higher performance as well. However, while BE self-assessments and other related activities are costly and time-consuming, there is not enough evidence to convince that BE self-assessments and other BE relevant activities lead to better performance. This is the first gap to be addressed in this chapter.

4.4 Gap 2. Mediating role of process orientation in the impact of Business Excellence activities on performance

One of the most important aspects of BE practices is that they promote process orientation. Process orientation, which is considered a horizontal method of management based on end-to-end processes, contrasts with the traditional hierarchical approach (Rummler and Brache 2013, Ghoshal and Bartlett 1996, Hammer 2007, Paim et al. 2008, Palmberg 2010). There are many studies in the literature suggesting that a process orientation enhances products/services, decrease costs and speeds up functions (Hinterhuber 1995, Terziovski 2003, Hammer 2007, Kohlbacher 2010, Khosravi 2016). As all the BE models advocate process orientation, the firms that practise BE are more likely to pursue this orientation and this will have a positive impact on their performance. Existing studies on the impact of BE on performance neglect the mediating impact of process

orientation and do not clarify the main stimulant in performance improvement. In other words, there seems to be a lack of clarity in the literature on the mechanism of this performance improvement: how much does BE contribute to process orientation, how much of performance improvement is related to process orientation, and how much of the performance improvement is related to factors other than process orientation. Both the Malcolm Baldrige and the EFQM models have 'processes management' as one of their fundamental concepts and, as shown in Figures 4.2 and 4.3, both these BE models have 'Processes Management' as one of their main criteria. They both suggest that 'management by processes' has a significant role in the success of an organisation and in turning the enablers into results. The significance of this is what has been identified as the second gap in the literature and is tested in this research.



Figure 4.2 The EFQM Business Excellence Criteria and Weightings (adopted from EFQM 2014)



Figure 4.3 Malcolm Baldrige National Quality Award (MBNQA) Model (NIST 2017)

4.5 Hypotheses

Based on the above literature review and the identified gaps, the following research hypotheses have been extracted:

H₁. A firm's commitment to a Business Excellence model is positively related to its process maturity, controlling for the effects of the industry type and the firm size.

H₂. A firm's commitment to a Business Excellence model is positively related to its financial performance, controlling for the effects of the industry type and the firm size.

H₃. A Firm's process maturity has a mediating impact on the relationship between its commitment to a Business Excellence model and its financial performance.

In this paper, Commitment to Business Excellence refers to the extent which the leaders and staff are committed to the performing the Business Excellence self-assessments and related improvement projects; process maturity refers to how well the company is managing its key business processes as defined by Rummler & Brache (2013); and the financial performance refers to the extent to which the organisation performs in relative profitability, return on investment, and total sales growth (Salim & Sulaiman 2011).

The linkage between the hypotheses and the key concepts is shown in Figure 4.4.

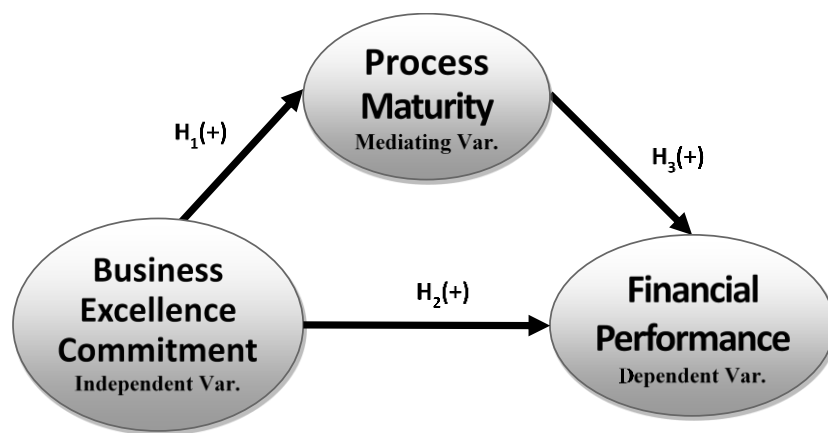


Figure 4.4 Research hypotheses

4.6 Research Method

The hypotheses above were tested through quantitative research using an online survey. To enable a comparison between different manufacturing and service groups and sizes using Partial Least Square analysis, this study gathered 209 responses. To achieve this number of responses, a panel provider was recruited. Respondents were on the providers' database from all over the UK within managers who had previously expressed their willing to participate in surveys. To ensure the validity of data, respondents were asked to provide their name, email address, their firm name and location. The panel provider was asked to provide at least 200 responses, and as soon as

they realised that this number had been achieved, the online questionnaire was blocked.

The UK was chosen for sampling, as previous research (Saunders, Mann & Grigg 2008) showed the UK as a country in which BE is popular enough to enable a comparison. Proportion of the firms that had experienced BE was higher than expected and what was reported by Saunders, Mann & Grigg (2008). In this survey, 117 respondents out of 209 (about 56%) were found to be active in terms of BE. This significant number enabled an effective comparison between BE active firms and the ones who were not practising BE at the time of survey.

To ensure the sufficient number as well as the quality and reliability of responses, there were three criteria for participants to qualify as respondents:

1. Having a management role: as Business Excellence is a shared activity, all managers should have an active role in it, a requirement that would not apply to other employees. Thus, being a manager was a minimum requirement for this survey.
2. Having worked in the firm for more than one year: the aim of this criterion was to increase the reliability of responses.
3. Firm sizes of minimum 100 employees: the existing literature (Hewitt 1997) suggests that BE activities are less popular with small companies. This criterion was designed to obtain a higher number of BE-active companies in the survey.

4.7 Operationalisation of constructs

There are three constructs in this research, including commitment to BE, process maturity and performance. process maturity and performance are well-established concepts and previously validated tools were available for them. process maturity was measured with the tools developed by Rummler and Brache (2013). They developed a questionnaire, including 10 questions about different aspects of a mature process management system. The scale for the firm's financial performance (FP) was also extracted from Khuong's (2002) thesis. However, as this study could not find any previous research measuring commitment to BE, a new measurement tool was developed. The following criteria were used in the questionnaire to measure this commitment. These criteria were based on the author's long-term experience in Business Excellence and were checked and approved by Business Excellence academic experts:

- BEC0. having been assessed by a particular BE model (essential criterion)
- BEC1. having a person formally in charge of BE activities
- BEC2. rank or seniority of the person in charge of BE activities
- BEC3. years of being BE active (minimum 5 years of BE receives full score)
- BEC4. regular yearly update of BE assessments
- BEC5. CEO/director attending the leadership assessment meetings
- BEC6. percentage of firm managers involved in BE assessments
- BEC7. using consultants as facilitators, not as assessors
- BEC8. BE assessment fact-finding tools (interviews and focus groups attract a higher score than observation and a questionnaire)

- BEC9. BE assessment report components (an overall score for the firm, a score for each criterion, a detailed description of the firm according to each BE criterion, the firm's strengths and areas for improvement according to each BE criterion, an action plan addressing areas for improvement, a set of improvement projects)
- BEC10. percentage of completed improvement projects resulting from the first BE assessment
- BEC11. percentage of employees aware of BE assessments
- BEC12. active promotion of BE in the firm
- BEC13. receiving BE awards, prizes and certificates (it is explained in the data analysis that this measure was later excluded).

As an essential part of BE activities, firms that had never been assessed by a particular BE model received a zero score for their commitment to BE.

The BE questionnaire that was developed based on the above measures was reviewed by several academics in two stages. In the first stage, a panel consisting of four senior academics reviewed the whole questionnaire. In the next stage, it was reviewed by four senior academics who had conducted research and publications on BE.

The questionnaire consisted of six parts in different pathways. Respondents were directed to their designated pathway according to their answers about the level of BE in their firm. After gaining the approval of the relevant ethics committee, the questionnaire was sent to the survey company for data collection. It launched the survey online and received 209 complete responses from all over the UK.

4.8 Data analysis

First, all data were normalised and recoded to vary between 0 and 1. Since the questionnaire was online and questions were all compulsory, there were no missing values. However, some of the BE questions offered respondents a 'don't know' option. As BE activities are highly participatory in nature and all managers should be involved in them, every 'don't know' response was regarded as a negative point for the company and was scored zero. One record was deleted due to 'Don't know' responses to many of the questions. Hence, the final number of responses analysed was 208, using statistical software, including SPSS, Microsoft Excel and XLSTAT.

To ensure the validity and reliability of the survey data, various tests were conducted. A reliability test using Cronbach's alpha attracted a value of 0.902, which shows excellent internal consistency. Although all constructs were measured using the same method (questionnaire), questions were designed with different wording and different scales and anchor points to mitigate the risk of Common Method Variance (Chang, Van Witteloostuijn & Eden 2010). Risk of bias is significant if one single factor accounts for more than 50% of the variance. Hamran's One-Factor Test indicated that none of the factors significantly controlled the variance (the highest factor variance was 26.7%).

4.8.1 Test of BE Commitment (BEC) constructs

To examine the BEC constructs in terms of their correlation with process maturity and performance, a Partial Least Squares (PLS) regression was conducted on the survey data using Microsoft Excel and XLSTAT software. As mentioned earlier, all of the constructs were normalised to vary between 0 and 1. In this situation, in order for a construct to have a

substantial positive influence on the dependent variable, the confidence interval (both the lower and higher limits) of the coefficient must be significantly higher than zero in PLS regression. With normalised coefficients, a higher confidence interval shows more significance for the construct.

Regression coefficients resulting from the PLS regression are shown in Figure 4.5, Table 4.1 and Table 4.2. As shown, all the BEC constructs except for the construct BEC13 (receiving BE awards, prizes and certificates) indicated a significant impact on both process maturity and Performance at a 95% confidence interval.

Before eliminating the BEC13, some supplementary tests were conducted. The bivariate Pearson test on the relationship between BEC13 and performance showed a positive and significant but small correlation ($p=0.018$, $r=0.164$). To make a further assessment on BEC13, a factor analysis including KMO and Bartlett's test was conducted on the data. The KMO value was 0.615 (greater than the required 0.6) with significance 0.000 recommending dimension reduction. BEC13 attracted the minimum value in the communalities table and was therefore omitted from the BE constructs. After deleting the BEC13 from the constructs, the factor analysis was run again; this time, the KMO value dropped to less than 0.6, requiring no further dimension reduction.

4.8.2 Testing the Hypotheses

The impact of BE activities on process maturity and Performance was found to be overwhelmingly significant. Just being assessed by a particular BE model proved to make a substantial improvement in firms. As shown in Figure 4.6, firms that had been assessed by a particular BE model demonstrated a higher level of process maturity and performance.

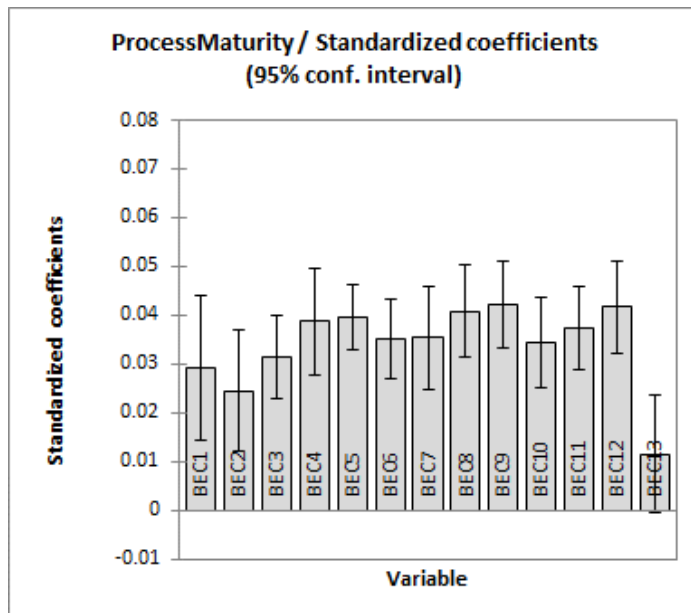
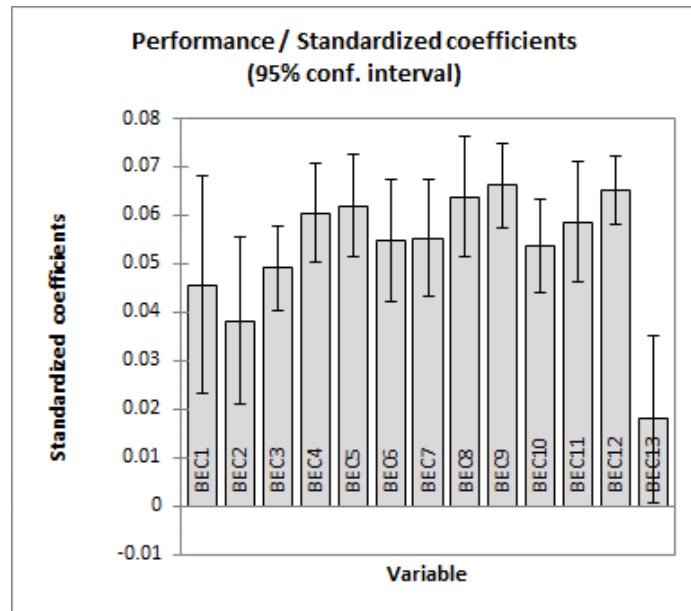


Figure 4.5 PLS Regression outputs for the correlation between BEC construct and process maturity and Performance

Table 4.1. Standardised coefficients (Variable Performance)

Variable	Coefficient	Std. deviation	Lower bound (95%)	Upper bound (95%)
BEC1	0.046	0.011	0.023	0.068
BEC2	0.038	0.009	0.021	0.056
BEC3	0.049	0.004	0.040	0.058
BEC4	0.060	0.005	0.050	0.071
BEC5	0.062	0.005	0.051	0.072
BEC6	0.055	0.007	0.042	0.068
BEC7	0.055	0.006	0.043	0.067
BEC8	0.064	0.006	0.051	0.076
BEC9	0.066	0.004	0.058	0.075
BEC10	0.054	0.005	0.044	0.063
BEC11	0.059	0.006	0.046	0.071
BEC12	0.065	0.004	0.058	0.072
BEC13	0.018	0.009	0.001	0.035

Table 4.2. Standardised coefficients (Variable process maturity)

Variable	Coefficient	Std. deviation	Lower bound (95%)	Upper bound (95%)
BEC1	0.029	0.008	0.014	0.044
BEC2	0.024	0.006	0.012	0.037
BEC3	0.031	0.004	0.023	0.040
BEC4	0.039	0.006	0.028	0.050
BEC5	0.040	0.003	0.033	0.046
BEC6	0.035	0.004	0.027	0.043
BEC7	0.035	0.005	0.025	0.046
BEC8	0.041	0.005	0.031	0.050
BEC9	0.042	0.005	0.033	0.051
BEC10	0.034	0.005	0.025	0.044
BEC11	0.037	0.004	0.029	0.046
BEC12	0.042	0.005	0.032	0.051
BEC13	0.011	0.006	-0.001	0.023

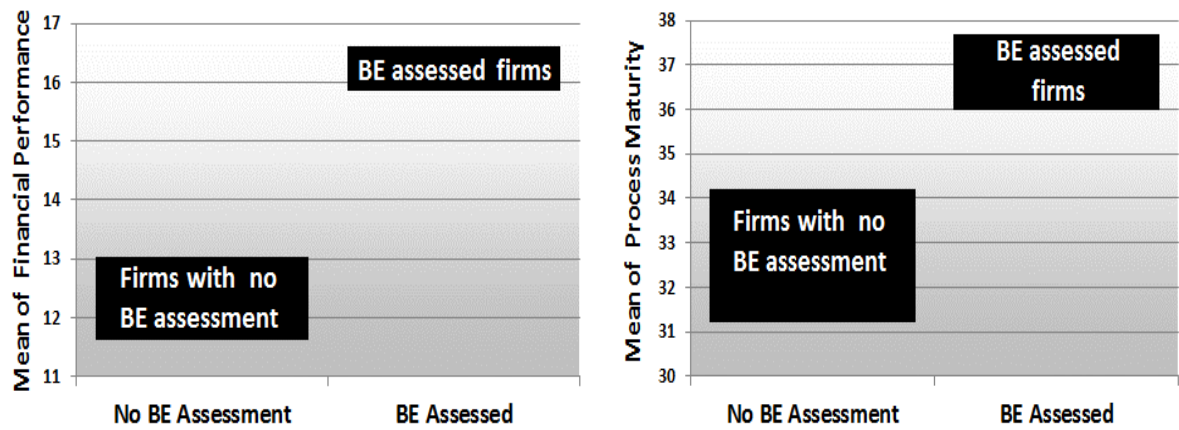


Figure 4.6 Means comparison based on Business Excellence (BE) assessments

4.8.2.1 Impacts of Commitment to Business Excellence

To test the first two hypotheses, a partial correlation test was conducted between BE Commitment, process maturity and financial performance while controlling for firm size and industry. As mentioned earlier, BEC13 was deleted as a result of the PLS and Factor Analysis and constructs BEC0 to BEC12 were summed up to build the overall BE Commitment. As shown in Table 4.3, all of the correlations were positive and significant, rejecting the null hypotheses. Using BE Commitment and process maturity as independent variables and financial performance as the dependent variable, the model could account for 47% of the variance in financial performance, which is a compelling result.

4.8.2.2 Mediating role of process maturity

To test the mediating effect of process maturity, a partial correlation test was conducted to evaluate the null hypothesis that there is no relationship between a firm's commitment to BE and its financial performance, while controlling for their process maturity (N=208). There was significant evidence to reject the null hypothesis and conclude that there is a strong, positive, partial correlation between BE Commitment (M=4.7, SD=4.6) and Performance

(M=14.5, SD=3.4), while controlling for process maturity (M=35.0, SD=6.3), $r(205)=0.499$, $p=0.000$. The results of the zero order correlation showed that there is strong, positive correlation between BE Commitment and financial performance, $r(206)=0.579$, $p=0.000$. This indicates that controlling for process maturity does not eliminate the influence of the relationship between BE Commitment and financial performance. In other words, the influence of BE Commitment on performance is not only because of its impact on the process maturity.

Table 4.3. Partial correlation between BE Commitment, Process Maturity and Financial Performance while controlling for firm size and industry

Control Variables		BECommitment	ProcessMaturity	FinancialPerf
Manufacturing or Service & Firm Size (number of employees)	BECommitment Correlation	1.000	.362	.579
	Significance (2-tailed)	.	.000	.000
	df	0	204	204
	ProcessMaturity Correlation	.362	1.000	.530
	Significance (2-tailed)	.000	.	.000
	df	204	0	204
	FinancialPerf Correlation	.579	.530	1.000
	Significance (2-tailed)	.000	.000	.
	df	204	204	0

To further test the mediating effect of process maturity, the Sobel mediation test was conducted. As expected, statistics (Sobel test =4.24, Aroian test =4.21, Goodman test =4.26) were significantly higher than the required 1.65 for a 95% confidence interval. This result indicated that the effect of the BE Commitment on financial performance via process maturity was significantly different from zero. Thus, process maturity indicated a partial mediating role in the relationship between BE Commitment and financial performance.

To identify how much of the variance is explained by different factors, a number of linear regressions were conducted. As shown in Table 4.4, the linear regression of financial performance as a function of process maturity shows that the full model explains 46.4% of the variance, which is a compelling result. Table 4.4 also shows through separate linear regressions that this variance is more related to BE Commitment than to process maturity; this agrees with our conceptual model that identifies process maturity as a partial mediating variable. It also agrees with the EFQM Model, which introduces processes and products as a bridge that relates enablers (systems and approaches) to performance outcomes.

Table 4.4 Regression models summary

Variables	Model 1	Model 2	Model 3	Model 4
BE Commitment	✓		✓	✓
Process Maturity	✓	✓		✓
Financial Performance	✓	✓	✓	
Adjusted R ²	0.464	0.290	0.332	0.112

4.9 Discussion

BE assessments act as a comprehensive mirror showing a firm's strengths and points for improvement from many different perspectives. Finding a significant positive correlation between the BE activities and financial performance of a firm indicates that managers should take whatever they see in this mirror very seriously. The impact of BE Commitment was significant in all groups and within all firms that were actively practising BE. Those with a higher commitment to BE also indicated higher levels of process maturity and financial performance.

One of the key findings of this study was the notable mediating role of process maturity in relation to the impact of BE Commitment on Performance. This finding is in agreement with the major BE models such as EFQM and Baldrige Excellence Framework that have Process Management as one of their fundamental concepts and have placed it at the core of their models. Business Processes act like a bridge between enablers (people, systems, resources, etc) and outcomes such as customer satisfaction and financial performance. However, Business Excellence's improvement is due not only to process maturity; even when controlling for process maturity, BE proved to have a highly significant ($p=0.000$) influence on performance.

This study also found that although the receipt of BE awards, prizes and certificates has a notable impact on the performance, their impact is much weaker than other BE-related activities. If we classify BE-related measures into leading (effort-oriented) and lagging (outcome-oriented) measures, receiving awards and certificates go into the lagging category, whereas other measures, such as having a person in charge of BE activities, having the CEO actively participating in and promoting BE and defining and accomplishing BE-related projects will all be leading indicators. Moreover, receiving prizes and certificates is the only measure that the firm has the minimal control over. This indicator was therefore eliminated from the BE Commitment measures through data analyses and dimension reduction.

4.9.1 Implications

This study contributes to management research and theoretical improvements in several ways. It is the first study to provide empirical evidence of the impact of BE-related activities on a firm's financial performance. Results indicate that BE assessments can significantly

improve performance, a finding that provides a better understanding for the essence of BE activities in organisations.

An interesting outcome of this study is the significance of BE Commitment on the process maturity of the firm. The existing literature suggests that most process-orientation projects fail (Kumar & Mishra 2014, Trad 2015). As a result of this study, we can recommend that those firms that want to improve their process and structure can use BE as a strategy to communicate the importance of process improvements and facilitate their implementation.

Based on the survey analyses that confirmed BEC0 to BEC12 and rejected BEC13, a new 'Organised Commitment Model' is presented in this paper (Figure 4.7). This model shows the activities that are required to build commitment within an organisation on an important issue such as values and ethics, strategies, customer relationship and so on. Obtaining or developing a set of rules is at the heart of this model, which suggests that without agreed rules, convergence and commitment will not be possible. Implementation basics and introduction come in the next layer of the model (the middle layer) and output / outcome measures are presented in the last layer.

The middle layer involves six metrics. Those measures suggest that having more than one person in charge is equal to having no one responsible for implementation and follow-up. The more senior the person in charge, the greater the chance of success. Personal attendance is the strongest message that a CEO can send to other managers and employees about supporting of the issue. Managers' involvement, consultants' advice and active promotion are also other implementation introductory measures that are well established in management literature and come in this layer.

The outer layer also involves six measures to assess the efficiency and effectiveness of the system. The fact-finding tools that we use to measure the efficiency and effectiveness are highly important. Quantitative tools such as questionnaires are regarded as low precision, whereas the qualitative tools such as interviews and focus groups are regarded as high precision in terms of capturing the existing situation. The Model suggests that measurements should be reported in details, and stakeholders should be notified of the outcomes. Improvement projects should be completed on schedule and this cycle should be completed at least every year. To achieve the highest impact, a minimum of 5 years' experience is recommended, and having the system for less number of years attracts a lower score for commitment.

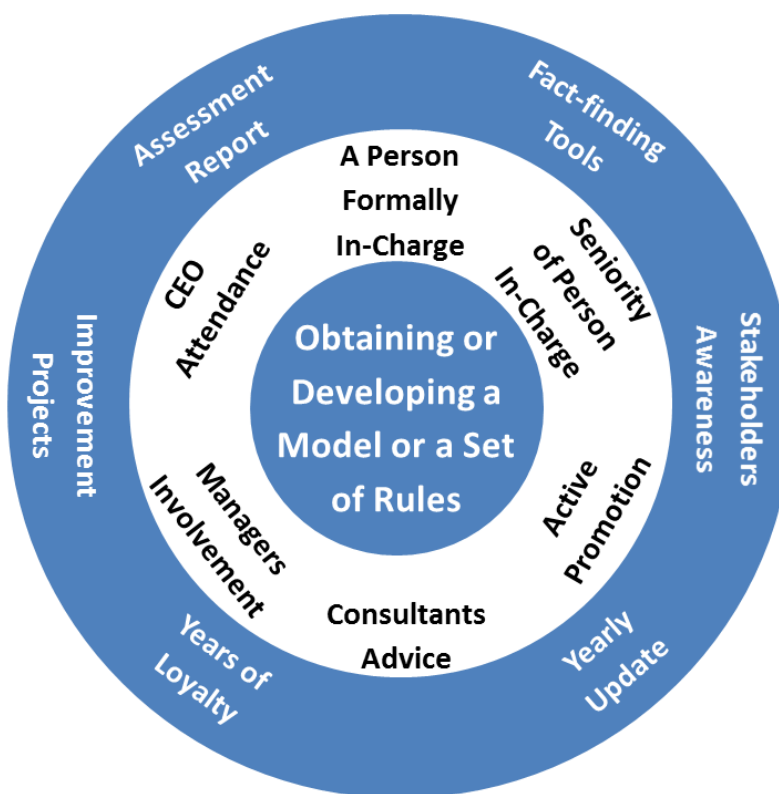


Figure 4.7 The Organised Commitment Model

The model's last layer includes the activity measures. These measures come after organising the team(s) and basics and they define the activities a team should undertake to achieve its desired outcomes. The implementation team will choose a set of fact-finding tools (surveys, interviews, observation, document reviews, focus groups and experiments), to assess the firm against the agreed rules and provide a comprehensive report of the existing situation, strengths and points for improvement and the improvement projects. The team should then keep stakeholders continually informed about the activities and outcomes, undertake improvement projects and update assessments at least once a year. The longer the model is in place, the better the outcomes.

In addition to the business managers and practitioners who will benefit from the outcomes of this research, management researchers and academics may also benefit from this Commitment Model in two different ways. First, they can use the Model to examine the impact of BE Commitment on other organisational outcomes such as social responsiveness, customer satisfaction, HR and so on. Second, they can use it to measure commitment and its impact in other areas such as commitment to ethics, commitment to groups or even commitment to a particular program.

4.9.2 Limitations

The results of this study should be interpreted in the light of its limitations. First, this study measured the impact of BE Commitment on financial performance, which is a lagging measure. It is recommended that other important performance measures, such as innovativeness, reputation, customer satisfaction, environmental impacts and so on be included in future studies and that a control for the degree of competition is incorporated. Second, the data for this research were collected in the UK to ensure a sufficient number of

BE-active companies in the data. It would be interesting to know what results this research could produce from other non-European or non-English speaking countries. Third, the data was gathered through a panel provider company. The fact that an experienced professional third party with no interest or bias in the subject collected the data may be regarded as a strength, giving more credibility to the data. Although a well-known company was selected for this project, having a third party might be also regarded as a limitation in that the research team must fully trust the panel provider in the data collection process. Fourth, in this survey there was in most cases only one response for each firm. All constructs were measured using one single online questionnaire. While the analyses showed no significant threat to common method variance, collecting data from multiple respondents and with various measurement tools would enrich the findings. Longitudinal studies and using real performance data from firms' existing data or public databases would provide more detailed information about these relationships.

4.10 Conclusion

Other than investigating the benefits of following Business Excellence models, this study found 12 key elements that had a strong relationship with process maturity and financial performance. The survey showed that BE-active firms were not only in a better situation than non-BE-active firms, but within the BE-active companies, those that showed a higher level of commitment, were more advanced in their process maturity and financial performance. Even controlling for process maturity, BE-related activities still appeared strongly related to financial performance measures.

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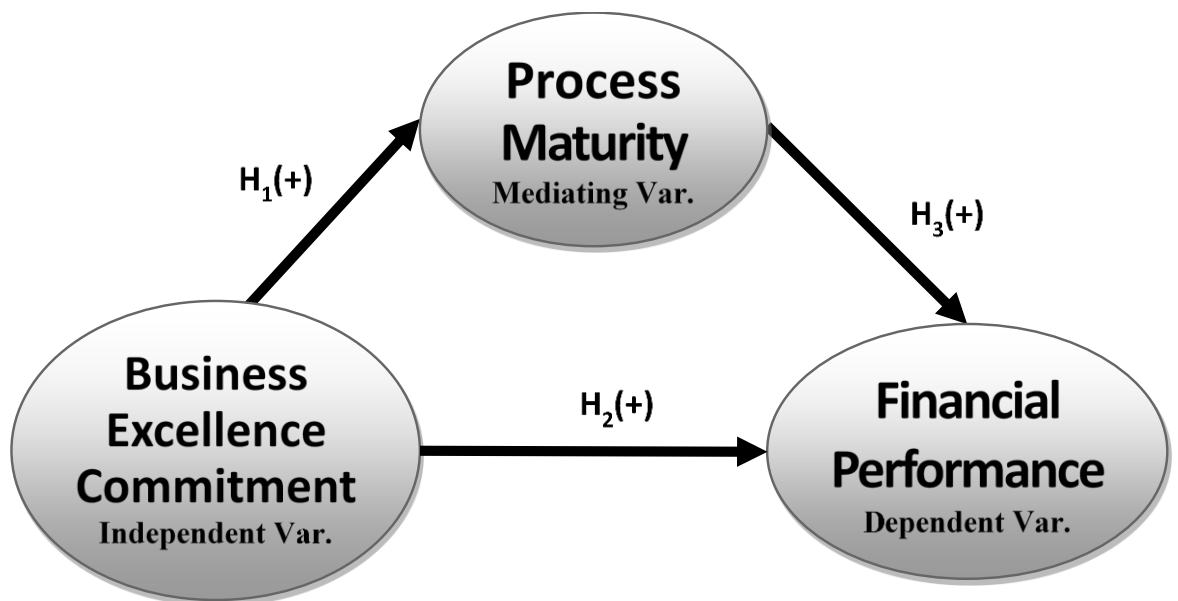
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Findings of this study were in agreement with what was presented in the previous chapter and provide a strong basis in terms of generalisability. The next chapter combines all of the achievements of this PhD study and, after discussion, reflects on the most important contributions of this thesis.

Chapter 5:

Discussion



5.1 Introduction

This chapter provides some discussions on the conceptual and theoretical contributions of this study, and what I was aiming to answer in terms of research questions. This thesis presents some new application for BE models which include using them as a benchmark to develop scientific / knowledge excellence models, and to facilitate significant changes in organisations. As mentioned in Chapter 1, several applications have already been reported in the literature for BE models such as recognition of best practices and provision of the opportunity for benchmarking (Friedli et al. 2013, Hunt & Harden 2016), helping organisations to meet their social and environmental responsibilities (Suciu & Fisher 2014), managing intellectual capital (Para-González, Jiménez-Jiménez & Martínez-Lorente 2015), and evaluating businesses (Pálka, Blahová & Kwarteng 2014).

Another major gap addressed in this study was showing the benefits of utilisation of BE models in terms of their impact on process improvement and performance. I first argued that the existing studies do not clearly prove the beneficence of utilising and commitment to BE models in firms, and then provided one qualitative and one quantitative study in this regard. Through a literature review, a case-study and a survey, I showed that aiming for excellence results in superior performance in firms. The aim for combining qualitative (case-study) and quantitative (survey) methods was to minimise the risk of bias in my research. I tried to explain the theoretical background of BE models' benefits logically, showed both the detail and mechanisms methodologically and qualitatively, and tested the generalisability quantitatively.

The newly proposed applications for BE in this thesis are in line with the research questions presented in the Introduction chapter of this thesis. In particular, four research questions were listed in Chapter 1 as the main areas for investigation. In this chapter, I

elucidate how those areas have been addressed. Based on the research questions, the areas highlighted in this chapter are as follows:

- BE models as sources of Benchmarking
- BE models as facilitators of process orientation
- BE models as stimulants for Performance
- BE models as mediated by process maturity

Rather than repeating the discussions presented at the end of each chapter, this chapter provides a summary of the relevant findings and achievements of this thesis directly relevant to each of the above areas of focus.

5.2 BE models as sources of benchmarking

BE models have made a platform for participating organisations to share best practices and learn from each other. However, This characteristic of Business Excellence practice is well-known and well established in the existing literature (e.g. Leonard & McAdam 2002, McAdam & Kelly 2002). Hence, this thesis provided an insight on utilisation of BE models as a benchmark for other academic/scientific awards.

In relation to the personal / scientific excellence awards, one major question is that why those awards do not have a definitive set of criteria and rules so that people can compete for them. According to Lin (2008), “when personal awards are offered to encourage the designated person to perform targeted tasks or to engage in specific activities, the award is controlled entirely by the award provider, and the award is offered only as a promise. The designated award receiver generally does not have a more definite and assured motivation to complete the activities or tasks the award provider wishes to motivate. The effectiveness

of motivation is also reduced because there are uncertainties about whether the promise offered by the award provider can be eventually realized.”

In undertaking the literature review, I tried to present academic support for why, what, and how the personal awards can learn from BE awards. I provided a historical view on BE award models, their aims, development and the studies of their application and impact. Comparison of the BE awards and other well-known awards, specifically the Nobel Prize, as demonstrated in Table 2.1 (in Chapter 2), shows that custodians of academic awards can use BE award models as benchmarks in several ways.

In scientific or academic excellence awards, metrics such as number of publications, ISI citations and research grants are commonly used to recognise the prize winner(s). However, these measures are lagging and reflect only the past performance. In addition, such measures cannot capture the benefits that academics bring to their society and what they contribute to the body of knowledge. As a result, research and publications in higher education are becoming increasingly repetitive and less creative. A more comprehensive way of measuring and scoring the overall performance of researchers is required to encourage researchers to enhance their research performance on a continuous basis.

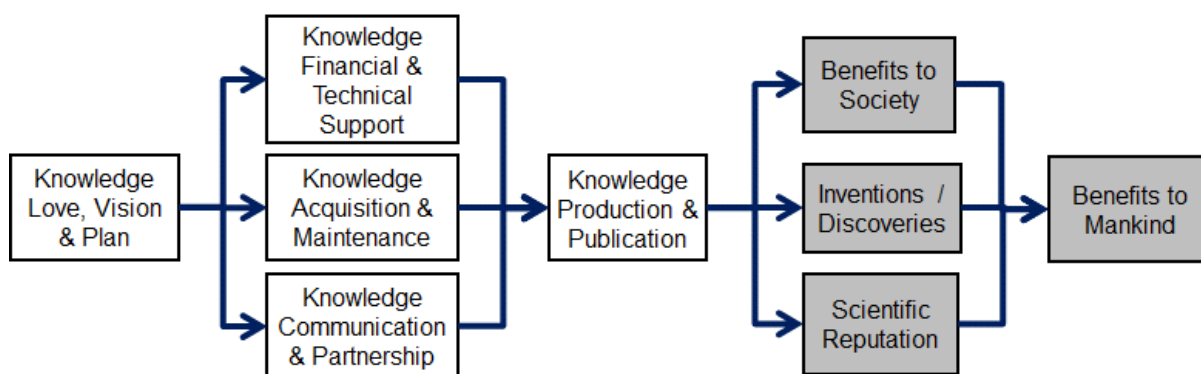


Figure 5.1 Sea-Fish conceptual model

The Sea-Fish conceptual model is presented in Figure 5.1, where white boxes represent the *enabler* concepts and grey boxes represent the *result* concepts. These concepts are the main criteria of the Model. Motive forces for a researcher in their journey toward excellence are their love, vision and plan for knowledge. The ultimate goal and direction of those forces should be towards benefiting the mankind. Producing and publishing knowledge acts as a bridge that turns the researchers' efforts into actual innovations and benefits.

The Sea-Fish Model is not empirically tested and was used in Chapter 2 to demonstrate what a scientific or knowledge excellence model may look like. To build the model, I used fundamental Knowledge Management concepts and a simulation and defined 9 criteria and 31 sub-criteria that could be used to measure the excellence of academics. Following the same path as the BE award, personal award custodians can build models that enable a comprehensive view of 'excellence', and inspire and encourage their target audience.

One may argue that such a model cannot be regarded as a brand-new model, and it is simplistic to assume that the scientific excellence awards such as the Nobel Prize do not have well defined and sophisticated criteria for judging nominees. As explained in Section 2.3 in Chapter 2, the absence of published criteria makes it impossible to provide any clear judgment nor is it possible to inspire scholars in their work.

Finally, it was argued in Chapter 2 that the Sea-Fish Model can be also used in organisations as a Knowledge Excellence assessment tool. Aiming for knowledge excellence, organisation leaders should develop a passion and vision for knowledge within employees, and manage the knowledge through acquisition, partnerships, resources and sharing, and apply it to become more innovative and develop reputation to benefit the society and mankind. Organisations should also monitor and measure their knowledge management processes, and continuously learn and improve approaches and systems.

5.3 BE models as facilitators of process orientation

As discussed in Chapter 3, process orientation is difficult to achieve. After nearly three decades from the birth of process reengineering, and huge advance in methods and technologies, we still see in many of the very recent papers expressions of high possibility of failure in process reengineering projects (e.g. Chagas et al. 2016, Nasiri, Nasiri & Azar 2016, Omid & Khoshtinat 2016, Valverde & Talla 2017). Process orientation projects involve a highly significant change to the organisation and what staffs are used to do, and a major reason for their failure is the resistance of people against the change. Thus, preparing and convincing people about the benefits of such changes are crucial to the success.

Other than the impact of reengineering projects on individuals and teams, another factor that can endanger the success of process transformation projects is the loss of tacit knowledge in such projects. When changes in people's roles happen, two important issues arise. One issue is that some processes may have not been fully documented (Bloodgood 2012), and the second issue is that the actual processes may not be fully consistent with the process documents (Wickramasinghe 2003). In both cases, disruption in roles results in a significant loss of knowledge.

It is more than two decades that authors are complaining about the difficulties involved in the Business Process Reengineering (BPR) (Attaran 2003, Fink 2003, Habib 2013, Harrington 1998, Holland & Kumar 1995, Jurisch et al. 2012, Lee & Dale 1998) and wondering about the actual differences and advantages of its successor, the Business Process Management (BPM) (Abrahamson & Eisenman 2008, Dale et al. 2001, Steininger et al. 2009). Business Process Rearrangement & Renaming (BPR2), presented in Chapter 3, is an answer to those complaints and wonders.

BPR2 starts with 'aiming for excellence', and addresses the human dimension of change by customising the new arrangements according to the existing organisational structure. BPR2 also recommends that any redundancy in staff should be prohibited, and this recommendation partially addresses the problem. However, documenting the existing processes to fully address the potential loss of knowledge should be added to the new version of BPR2 in future publications.

BPR2 Model is the most important by-product of this PhD project. In addition to its overall significance, some of its components are also opening new horizons that are not reflected in the existing literature. Those brand new components are:

- aiming for excellence
- the P8 Model for process rearrangement, and
- process renaming based on the customer-value.

The case-study presented in Chapter 3 refers to a suite of BE projects in a power generation company in 2008. I explained in this study how a compulsion from the parent holding to implement BE in the firm, resulted in a genuine improvement in their processes and key operational performance results.

In agreement with the existing literature (e.g., Ravesteyn & Batenburg 2010, Shin, Taylor & Seo 2012), BPR2 proposes that how the leaders introduce and explain the reason for change to their staff is very important for the change to be imposed successfully. In order to conquer staff inertia and resistance, 'Aiming for Excellence' is recommended in the BPR2 Model as the starting point of process orientation projects.

The application of 'Aiming for Excellence' is not limited to process orientation projects. In any difficult situation, excellence can provide a shared vision between all of the stakeholders

and provide enough motivation to go forward. Hence, it is recommended that managers and academics consider 'Aiming for Excellence' as a part of any change initiative.

In Chapter 3 I defined the 'customer value' as a set of benefits and attributes in a property, product or service that persuades a customer to pay the price, take possession of it, and enjoy taking benefit from it. In my definition for the customer value, the aim is to be customer-focused, and capture the modern sales issues such as on-line payments and refund policies. Nowadays the internet has made the payments very easy and customers can purchase everything over the internet very conveniently; however, due to the distance of the product or service from the customer or due to other difficulties, actual possession of the purchased service or product may not happen. Most of the providers are also committed to the refund in case of dissatisfaction. Therefore, many customers pay for the price, but refuse to possess the products or service, or they may even return the product after a short-term possession of it. The above definition for the value addresses these new issues in sales and marketing.

As described earlier, the marketing mix basically refers to four famous P's including product, price, place and promotion. These are known as the most important variables of decision making for a potential buyer. Greater value will be achieved for a customer through a higher quality product or service, cheaper price, closer location, and a well-known brand. There are now many different versions of marketing mix available in the literature such as 3C's, 4C's, 5V's, 30R Parameters, and different number of P's up to 15P's (Goi 2009). As an example, Rajagopal (2009) adds seven more P's to those four, and extends them to 11P's of marketing mix. Rajagopal's new added P's are: packaging, pace (competitive dynamics), people (sales front-liners), performance of previous brands, psychodynamics (consumer pull), posture (brand and corporate reputation) and proliferation (brand extension and market expansion).

Norton and Kaplan's (2004) value proposition comes from the other stream which is the management literature. In their value proposition they identify fewer components for the customer value than what was presented in the marketing mix. However, they categorize these components from the strategic management perspective and provide a description on how different strategies result in focussing on different categories of value proposition. As shown in Figure 5.2, Norton and Kaplan (2004) define three value proposition categories including: product/service attributes, relationship, and image.

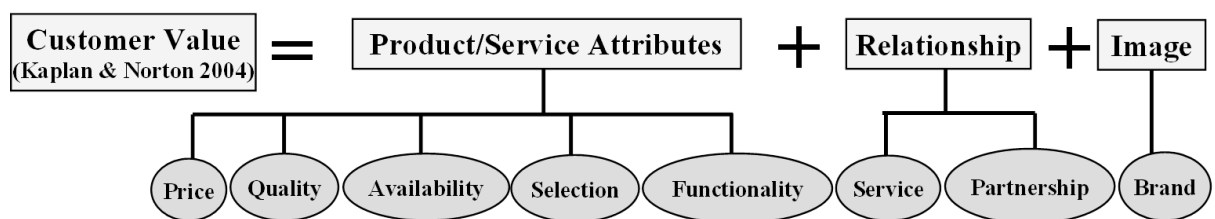


Figure 5.2 Customer Value (Kaplan & Norton 2004)

Knowing that the *marketing mix* and the *customer values* represent the same concept, I mixed their various models together and developed the P8 Value Model and Marketing Mix (Plan, Prototype, Price, Produce, Present, Post-sale service, Place, and Promote) as presented in Chapter 3. Every box in the P8 Model defines a type of 'customer value'. Both management and marketing streams can benefit from the P8 Model, which is the most complete model I have found in the literature, presenting altogether eight processes and 48 components.

Another important point of BPR2 is that it advocates choosing stronger names for departments and processes. Name is the most communicated property of any department, and such an important property should be used in communications as a tool for improvement. However, although a search in Google Scholar with the exact phrase 'power

of names' brings more than 1500 documents, my review of 2014 found no publication presenting a methodology to use this power for organisational departments.

My argument in BPR2 is that the power of names will not be utilised to its optimum capacity unless the name by itself reflects a concept of improvement and excellence. In this way, the message of improvement will be repeatedly communicated and will form the culture and characteristics of people within that process.

5.4 BE models as stimulants for performance

The case-study in Chapter 3 began with Business Excellence and concluded with a description of improvements in the firm's key performance outcomes. It was mentioned that as a result of a suite of BE projects in BPG power generation company, its ranking rose from midway to the first rank of the steam power plants in that region. Performance improvements were presented in the case-study in terms of non-financial measures such as power plant thermal efficiency, load factor and annual operating time.

One of the major contributions of BPR2 and process orientation in general is that they facilitate pay for performance schemes. As discussed in the second case-study in Chapter 3, without empowering the managers and employees, and giving them authority on end-to-end processes, we cannot expect them to take the responsibility of the expected outcomes. In that case-study, one single customer enquiry passed through different departments, and when the targets were not achieved, departments blamed each other. This resulted in the failure of the pay for performance scheme. In that case study I proposed a possible BPR2-based structure that could potentially prevent such a failure.

Although there are numerous papers supporting the pay for performance schemes, opponents present some valid points to consider when implementing such programs. They argue that 'theories based on self-interest cannot provide sufficient grounds to analyse the motivation of employees, especially that of employees in the public sector' (Weibel, Rost, & Osterloh 2010). They also claim that 'such a system pressures those being measured to game the system, which distorts the process being monitored' (Wible 2012). Opponents of pay for performance also argue that in fully established and stable systems, employees do not have much control on results. As identified by Dr Deming in his red bead experiment (Deming 1982), in such situations performance based pays cannot make any change in overall results, and any significant increase in productivity must come from changes to the system (Mercado 2005). The system must be thoroughly evaluated before goals or objectives can be set (Mercado 2005).

Process reengineering / transformation methodologies including the BPR2 advocate the same message, and aim to make fundamental changes in processes prior to setting performance measures for employees. The goal is to empower and assign people on end-to-end processes and give them autonomy and control to meet customer requirements, and then expect them to achieve ambitious targets. Superiority of BPR2 is that it focuses on reducing the risk of failure in process orientation, and hence, it makes the pay-for-performance more achievable.

The survey presented in Chapter 4 also gave strong support to the positive impact of BE Commitment on process maturity and financial performance. In that survey, those firms that had been assessed against a BE model were in a significantly better situation than non-BE-active firms. Also within the BE-active companies, those that showed a higher level of

commitment did better in their process maturity and financial performance. Such a result is important as it justifies the cost and effort required for BE-related activities.

The measurement tool that was developed and tested for BE Commitment, resulted in a new 'Organised Commitment Model', shown in Figure 4.7. While the existing commitment models consider commitment from a personal point of view, this new proposed model can be used by top managers who want to establish commitment on highly important issues such as organisational values, customer relationship, shareholder satisfaction and so on. It can also be used by academics who want to measure the impact of commitment on an issue such as strategies on another variable such as share value.

5.5 BE models as mediated by process maturity

The main focus in this discussion was to know the significance of the mediating role of process maturity on Performance (Figure 4.4). According to the existing literature, process-oriented organisations demonstrate a superior performance in comparison with the traditionally functioning organisations (Hinterhuber 1995, Hammer 2007, Kohlbacher 2010). Since most BE models promote the process approach, the important question is whether the benefit of BE activities only sits in its impact on process maturity, or there are other benefits involved in BE activities. If all BE benefits originate from process orientation, rather than performing Business Excellence activities, managers could focus on process orientation.

As discussed in Chapter 4, the mediating effect of process maturity was tested using the survey data. There was significant evidence of a strong, positive, partial correlation between BE Commitment and financial performance while controlling for process maturity. This indicated that controlling for process maturity did not eliminate the influence of the relationship between BE Commitment and financial performance. In

other words, the influence of BE Commitment on performance is not only because of its impact on process maturity. To test the mediating effect of process maturity further, the Sobel mediation test was conducted. The results indicated that the effect of BE Commitment on financial performance via process maturity was significantly different from zero. Thus, process maturity had a partial mediating role in the relationship between BE Commitment and financial performance.

Chapter 6:

Conclusion

6.1 Introduction

This final Chapter presents a critical review and reflection on what have been offered in this thesis, and based on the critical reflections, describes the main limitations, points for improvement and opportunities for further research. Since this thesis was by publication, the main chapters followed the formats dictated by the targeted journals and could not provide enough theoretical details. Chapters 2 and 4 were designed to fit into the Total Quality Management and Business Excellence Journal which has a 6000-word limit. Chapter 3 was also designed for the Business Process Management Journal with a 10,000-word limit. Thus, many theoretical discussions were omitted from chapters. This chapter describes the limitations and missing discussions, and then provides some substantial points for further research, managerial and academic implications, and the overall conclusion.

6.2 Critical reflections

This section provides a detailed critical reflection on the three papers presented in this thesis. Every product has some strengths and weaknesses, and the developer of the product is the first source of truth. Thus, in the following sections I describe what was presented in my papers together with their limitations and the points for improvement.

6.2.1 Paper 1: A comprehensive view on research excellence

In relation to the literature review for BE models, this study not only included the relevant history and major researches, it also presented an example of building a new excellence award model. Paper 1 (Chapter 2) provided a discussion on BE awards and compared them with scientific awards in terms of their performance impacts. Discussing about the weaknesses of the scientific awards and the strengths of BE awards, I suggested

that the scientific award custodians can use BE models as benchmarks, and design comprehensive scientific excellence models that can inspire and encourage scholars in their research endeavours. I also provided an example for such a model and named it as the Sea-Fish Model.

Because of the nature of this thesis which was by publication, the literature review was presented in all chapters in accordance to their applications and relevance to the main focus of the paper. As a result, although Chapter 2 is a conceptual study presenting the new excellence award model, it does not contain all of my literature review in relation to BE models. In fact, most of the literature review on BE models have been presented in Chapter 4 where I discussed the BE models and tested their beneficence for firms through a survey.

An inconsistency in the literature review of the first paper should be acknowledged. To motivate the use of BE models as benchmarks, I cited from some sources that approved the positive impact of BE on performance, but later in Chapter 4 I criticised those sources for the lack of providing enough evidence. This inconsistency was not deliberate. At the time of writing the first paper, I was in my early stages of the PhD program, and those sources seemed to be convincing enough. My survey presented in Chapter 4 showed that the firms that followed a BE model significantly outperform other firms, and if I could re-write my first paper, I could certainly refer the readers to the results of my survey. Hence, this inconsistency does not make any negative impact on the message and findings of the paper.

To build the Sea-Fish Model, I followed the methodology presented by the EFQM (Figure 2.2). I used the EFQM fundamental values and concepts, and translated them into their equivalents in terms of what I guessed to be the fundamental values and concepts in scientific excellence. Based on those concepts and again by simulation to the EFQM Model, I

developed the criteria and sub-criteria of the Sea-Fish Model, and then showed its agreement with the Bose and Sugumaran's (2003) framework for Knowledge Management.

In translating BE to Knowledge Management, I used the core values of the EFQM (2011b) model, and the core concepts of the 'Knowledge Management' and its similarities and differences with the 'Total Quality Management' presented in Hsu and Shen (2005) resulting in the concepts shown in Figure 2.6. Testing the Sea-Fish Model was out of the scope of my research. Therefore, I left its validation to the future research, and called the model as a "demo model."

Other than the fact that the Sea-Fish Model is not empirically tested, to enable the actual scoring, these 9 criteria and 31 sub-criteria are not enough. Each sub-criterion must be explained in detail in terms of all of its components and areas to address. Using the EFQM Model as a benchmark, it is required to define about 10 sub-sections for each sub-criterion making more than 300 areas to address for the whole model. The Sea-Fish Model is only a point of start.

Another way of building the Sea-Fish Model could be through interviews and focus groups with scholars to determine the core values and concepts in research excellence, and then developing working groups to define the criteria, sub-criteria and relevant points to address each sub-criterion. Such an action would be costly, and out of my scope in this research.

6.2.2 Paper 2: Business Process Rearrangement and Renaming - a new approach to process orientation and improvement

Paper 2 (Chapter 3) presented a new methodology for process together with two case studies. Since the word limits in this paper was 10,000, many of the relevant discussions and examples that could lead to a better understanding of process orientation and BPR2 were deleted from it. The BPR2 methodology is a breakthrough in process management field and opens new fields of research in many ways, and has the capacity to become the title of new books and soft-ware packages.

The case-study presented in Chapter 3 was in an electric power generation company where a suite of BE related activities including BE self-assessment and BE prioritised improvement projects were conducted. Although the focus of that chapter was on process improvement and performance, business excellence and aiming for excellence were at the heart of that chapter and the BPR2 Model. Results demonstrated in that case-study were described as the key performance indicators for that business including the thermal efficiency, load factor, and the yearly operating time.

Apart from word limitations that led to summarising descriptions and providing inadequate examples, there are some points to acknowledge in that paper. The first point is that this paper does not provide any empirical evidence for many of the beneficence of its recommendations other than the first case study. Those empirically unproven recommendations can be listed as follows:

1. BPR2 recommends rearrangement rather than reengineering. According to BPR2, it is easier to convince people to change their works and activities rather than changing their work groups and locations. This claim can be argued in many ways.

Other than the fact that changing the type of works may not be possible for many people or may not be possible without obtaining expertise or changing locations, many people may have some difficulties within their work group or with managers, and prefer to relocate to a new work group. New locations may also be more attractive for some people for many reasons. In any case, this claim should be further researched in depth for validation. During rearrangements also people should be asked if they would volunteer for changing department.

2. The second recommendation in BPR2 is to avoid redundancies, and introduce new businesses instead. One may argue that managing less number of people is easier than introducing new businesses. Introducing new businesses may even become more difficult when the organisation is undergoing significant changes. Such valid arguments should be acknowledged and fully researched.
3. Renaming is advocated in BPR2 to promote customer values. This recommendation seems very good in the first instance. However, one may still argue that such names will become too long, and soon change to funny abbreviations that may again make no sense in people and customers. This is quite a valid critique that should be considered. The word phrases should not become too long. Another point to acknowledge in this regard is that in both presented case studies, renaming has been shown in an imaginary form, and no empirical evidence has been provided to show its actual benefits.
4. BPR2 recommends automation to be conducted after process transformation, whereas most major automation packages dictate their own processes. Although the points I made are quite valid, and many of such automations fail in action, it will be managers' choice to whether use the available solutions and fit their processes with them, or to choose customised solutions that may cost more.

6.2.3 Paper 3: Aiming for Excellence – commitment matters

Paper 3 (Chapter 4) presented the new measurement tool and the survey within firms in the UK, and showed the benefits of commitment to BE in terms of process improvement and performance.

The survey presented in Chapter 4 included developing a new measurement tool for the ‘commitment to business excellence’. To build this measurement tool, a preliminary literature review was presented and the BE commitment measures and survey questions were generated. The survey questions were then reviewed first by my supervisory panel at Macquarie University which consisted of two professors and a senior lecturer. After some improvements and modifications, the questionnaire was submitted to some academics who had interest, experience and expertise in BE. Subsequently, a questionnaire consisting of 14 measures was finalised for the survey.

After conducting the survey and analyses, one of the measures was not found as significant, and was hence omitted from the suggested measures. The remaining 13 measures provided a comprehensive reflection of what were found to be significant in terms of commitment to BE. Since these measures had enough support to be applied for commitment to any other major issue within a firm, I proposed them in the form of a new “Organised Commitment Model” presented in Chapter 4.

Same as the previous two papers and any other work, there are some points to acknowledge and improve in that paper as follows:

1. This study only measured commitment to BE, process maturity, and financial performance. As everyone knows, these are not the only important aspects and

measures in an organisation. Important measures such as leadership, strategies, partnerships, products and patents, competitors, geographical and political situations and several other factors are also linked to the success of the organisation.

2. Financial performance is not the most important outcome in many organisations. It would be interesting to know whether commitment to BE has an impact of the same significance on non-financial measures as well or not.
3. Receiving BE awards and certificates was a measure that was not found in tests as insignificant compared to other measures. One may argue that if I had a larger sample size, this measure would also become significant. This is certainly a valid point to examine.
4. The factor of time was only measured in terms of years of BE activity, and up to 5 years. Dahlgaard et al. (2013) argue that BE models are most beneficial for those firms that are in their early stages of excellence, and in higher levels they lose their beneficence. This would be an interesting point to consider and examine.

6.3 Limitations and future research opportunities

As mentioned in the Introduction Chapter, identification of the ontological and epistemological context is a highly important step that should come in the early stages of research. Unfortunately, because of my lack of previous knowledge, identification of self-paradigms did not happen in my research until I had already completed the field research.

It is very difficult for a person to investigate and find their own paradigms in research. To me it was a journey back to every part of the literature review, case-study and the survey criticising every approach I conducted in each step. At first, I could not find anywhere in my research that my own paradigms might have influenced my results. Since I had tried to ask

objective questions and had asked other people to collect the data, I thought there should not be any bias involved. After a while I remembered that I had designed my questionnaire on the assumption that in order to make any BE self-assessment and any serious BE moves, the firm should provide or follow a BE model. Those firms that declared they did not use any particular BE model skipped other BE questions and received zero score for their BE efforts. This was where my paradigms influenced my research.

As a researcher, I believe that any serious research should follow a certain methodology. My management practitioner background also dictates using well-known management systems and models, in the same way as a carpenter must work with his tools. This paradigm is dominant in my personal life as well. As an example, I sometimes prompt my atheist friends to note that even when two systems want to start communication, they are required to send their protocols to each other. Since atheists do not follow any protocol, I recommend them to write a set of protocols for themselves so that other people know how to deal with them or even follow them. Now I think that at least in academia I should not judge so easily and score non-model-followers as zero.

As a result of this paradigm, 36 firms (out of 209) that had not used any particular BE model were given no opportunity to explain their BE activities. My survey clearly indicated that the firms that followed the same paradigm as mine outperformed other ones. However, if prior to my survey I had known the importance of paradigmatic influences in research, I would have tried to learn more about the non-BE-model firms, rather than discarding their BE section of the survey and giving them a zero score for their commitment to BE.

As mentioned earlier in section 6.2, there are several limitations in my research that provide opportunities for further research. One was that Business Excellence and process maturity are not the only important factors in the business performance. Several factors,

such as the products, leadership, partnerships, resources, patents, brands, cultural context and so on, can in some cases be even more important. Obviously, it was not possible in this research to control for all those important issues. Testing the impact of BE models on other important factors would be highly recommended. More importantly, observing the effects of the phenomenon over time would make the findings more interesting, and longitudinal studies on BE is highly recommended.

Three previous chapters presented in this thesis (Chapters 2, 3 and 4) presented new concepts and new models that, though they have contributed considerably to the existing knowledge, they had significant limitations and constraints. Further research and tests are required on each of those new concepts and models to provide stronger support and empirical evidence for them. For example, the Sea-Fish Model presented in Chapter 2 was developed by myself and must be tested further through focus groups, interviews and case-studies before obtaining the capacity for usage in a scientific award. BPR2 in Chapter 3 is also a new model for process orientation, but it was not possible for me to provide more empirical evidence on its components. Thus, further elaboration and field research would be very beneficial for possible improvements. The P8 Model could be another interesting research field, especially for marketing researchers, as it introduces 'Planning' as a new component of the marketing mix.

The only new model in this thesis that is supported by empirical testing is the Organised Commitment Model. As described earlier, this model can be used in several ways in research dealing with any type of commitment that requires top management support. It would also be interesting to compare this model with other *personal* commitment models and provide more comprehensive models e.g. for sport commitment, staffs organisational commitment, commitment to personal diets and so on.

6.4 Implications

This section provides a summary of the implications of this research for managers and academics as follows.

6.4.1 Implications for managers and practitioners

- **The Sea-Fish Model:** The Sea-Fish Model defines nine criteria and 31 sub-criteria that can be used as a framework for knowledge management in any organisation. All of the criteria and sub-criteria are applicable to organisations, and according to the strategic targets, managers can use the Model to provide a comprehensive view on the knowledge management within their organisation, and to define improvement projects.
- **Business Process Rearrangement and Renaming:** BPR2 is a methodology that focusses on mitigating the risk of failure in process orientation. Other than managers and practitioners who can benefit from the methodology, the IT firms that want to implement enterprise resources planning (ERP) systems within firms can use the aiming for excellence and the early steps in BPR2 to reduce their risk of failure.
- **Organised Commitment Model:** This model provides a framework for the activities that are required to build commitment within an organisation on an important issue such as values and ethics, strategies, customer relationship and so on. This framework provides a better view for managers to understand building commitment is not only dependent to their acceptance and involvement. It needs many other activities that together bring results for their organisation.

- **Benefits of commitment to BE:** Results presented in Chapter 4 are so compelling and self-descriptive that can bring any manager to BE commitment. It was clearly shown that business excellence in the modern world is no more a choice. In a healthy and open economy, private companies should either pursue excellence or prepare themselves for exiting the market.

6.4.2 Implications for academics

- **The Sea-Fish Model:** The Sea-Fish Model is basically defined for researchers and research / scientific awards custodians. Award custodians can build award models that enable a comprehensive view of 'excellence' and inspire and encourage their target audience, and researchers can use those models or the Sea-Fish Model to assess themselves and realise whether they are following a growing trend or falling. It also reminds the scholars that excellence is not only dependant to the number of publications. Bringing measurable benefits to society and mankind also matters and should be the ultimate goal.
- **Business Process Rearrangement and Renaming:** As mentioned in Section 6.2.2, BPR2 opens many new arguments that can be highly controversial. Conducting research on any of those arguments can be highly beneficial for industries and further developments of the BPR2 methodology.
- **Organised Commitment Model:** Researchers and academics can use the Model to examine the impact of BE Commitment on other organisational outcomes such as social responsiveness, customer satisfaction, HR and so on; or to measure commitment and its impact in other areas such as commitment to ethics, commitment to groups or even commitment to a particular program.

- **Benefits of commitment to BE:** As mentioned in Section 6.2.3, there are many angles of BE benefits that are still unexplored. Would commitment to BE improve other important measures such as leadership, strategies, partnerships, branding and so on? Would commitment to BE benefit governmental organisations where the financial performance is not the main focus? These are examples of all valid research questions that should be answered through research.

6.5 Overall conclusion

I recommend the concept of 'Aiming for Excellence' as my most important achievement in this PhD journey. Although people may present different definitions for excellence, their overall perception of this concept is very similar. Thus, 'Aiming for Excellence' can provide a shared vision that brings people together in challenging circumstances. In a change cycle, the initial steps are normally the most difficult ones, and a shared vision could provide enough momentum and synergy to accomplish the first steps successfully. 'Aiming for Excellence' is applicable to every personal and organisational activity and has enough impact and potential to be added to the existing quality management logics such as PDCA, DMAIC and RADAR.

Appendix A:
The online survey
questionnaire

Exploring the Impact of Business Excellence on Process Maturity and Firm's Performance

You are invited to participate in a study of the Business Excellence in firms. The study is being conducted by Mr. Ali Khosravi, to meet the requirements of PhD under the supervision of Professor Raymond Markey, Professor Daryll Hull, and Dr. Erik Lundmark, lecturers at the Faculty of Business and Economics of Macquarie University.

We have done our best to make it interesting and useful for you. Questions are designed based on the guidelines of the European Foundation for Quality Management (EFQM). Your answers are important and valuable, and will help managers to find out the benefits of implementing the Business Excellence and Process Orientation. The summary of results will be ready within two years, and will be made available to you.

Length of the survey is about 30 minutes. Participation is voluntary and participants have the right to withdraw from further participation at any time by just closing the survey window.

Confidentiality

Your firm and your contact details will be recorded only for the analysis purposes and will not be published under any circumstances. All information will be kept strictly confidential. Records will be stored in a password protected directory and where access limited to project staff. Information gathered during the course of the project will only be used for research, and no data that will be published in scientific journals will reveal the identity of participants.

Contact Information

If you have any further questions, please contact the coordinator of this project, Mr. Ali Khosravi, on +614 3238 2306 or email ali.khosravi@mq.edu.au.

Research Ethics

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone +612 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Statement of Consent

I have read the above information and I wish to participate:

- ☐ Yes, I want to take the survey
- ☐ No, I do not wish to participate

If No, I do not wish to partic... Is Selected, Then Skip To End of Survey

Please provide your contact details in the following text boxes:

Your name

Your firm's full name

Your email

What is your current position?

- ☐ Business Owner/CEO
- ☐ Director
- ☐ Manager
- ☐ None of the above

Please answer each of the following questions by either marking the appropriate box or typing in your response.

It is sometimes difficult to judge whether a company is a 'manufacturing' or a 'service providing' company. Please tell us if your firm's income is more based on the services you provide for your customers or on the products you manufacture.

- ☐ 100% Manufacturing
- ☐ 80% manufacturing and 20% service
- ☐ 60% manufacturing and 40% service
- ☐ 40% manufacturing and 60% service
- ☐ 20% manufacturing and 80% service
- ☐ 100% service

Approximately how many employees directly work for your firm?

- ☐ Less than 100 people
- ☐ Between 100 to 299 people
- ☐ Between 300 to 499 people
- ☐ Between 500 to 699 people
- ☐ Between 700 to 899 people
- ☐ Between 900 to 1099 people
- ☐ Between 1100 to 1299 people
- ☐ Between 1300 to 1499 people
- ☐ More than 1500 people

How long have you been working in this firm?

- ☐ Less than one year
- ☐ Between 1 to 2 years
- ☐ Between 2 to 3 years
- ☐ Between 3 to 4 years
- ☐ Between 4 to 5 years
- ☐ More than 5 years

Is your firm ISO 9001 certified?

- ☐ No
- ☐ Yes (for how many years?) _____

Business Excellence has different names in different organisations such as Operational Excellence, Organisational Excellence, or Excellence Suite of Projects. Managers select a Business Excellence model such as Deming, Baldrige, EFQM, ABEF, etc., and implement it for their business or operational improvement. Your answers to this questionnaire can relate to any of these.

Has your firm ever tried to implement a Business / Organisational Excellence model?

- ☐ Our firm has never tried to implement a Business / Organisational Excellence model.
- ☐ Our firm previously tried to implement a Business / Organisational Excellence model, but completely stopped it after a while.
- ☐ Our firm started implementing a Business / Organisational Excellence model less than 1 year ago.
- ☐ Our firm started implementing a Business / Organisational Excellence model more than 1 year ago.
- ☐ Not Sure.

If Not Sure. Is Selected, Then Skip To End of Survey

Answer If Business Excellence has different names in different organisations such as Operational Excellence... Our firm has never tried to implement a Business / Organisational Excellence model. Is Selected

What were the reasons that your firm has never tried to implement a Business / Organisational Excellence model? Please select all of the options that apply to your firm.

- ☐ Lack of information about Business / Organisational Excellence
- ☐ Lack of our top managers' commitment
- ☐ Our top managers' suspicion about the benefits
- ☐ Changes in our firm leadership
- ☐ Difficulty in finding appropriate Business / Organisational Excellence consultants
- ☐ High costs of Business / Organisational Excellence compared to potential benefits
- ☐ Lack of enough financial support
- ☐ It is very time consuming
- ☐ Our firm is a part of a holding or a governmental body, and we do not have authority to conduct improvement projects
- ☐ Middle managers' resistance
- ☐ Lack of top managers' involvement
- ☐ Lack of middle managers' involvement
- ☐ Having other improvement projects already in place
- ☐ Other (please state in the box) _____

Then respondent skips to *"Use this scorecard to evaluate your process management environment"*

Answer If Business Excellence has different names in different organisations such as Operational Excellence, Organisational Excellence, or Excellence Suit of Projects. Has your firm ever tried to implement B... You previously tried to implement Business / Operational Excellence, but completely stopped it after a while. Is Selected

What were the important causes of stopping your firm's Business / Organisational Excellence activities? Please select all of the options that apply to your firm.

- ☐ Lack of information about Business / Organisational Excellence
- ☐ Lack of our top managers' commitment
- ☐ Our top managers' suspicion about the benefits
- ☐ Changes in our firm leadership
- ☐ Difficulty in finding appropriate Business / Organisational Excellence consultants
- ☐ High costs of Business / Organisational Excellence compared to potential benefits
- ☐ Lack of enough financial support
- ☐ It is very time consuming
- ☐ Our firm is a part of a holding or a governmental body, and we do not have authority to conduct improvement projects
- ☐ Middle managers' resistance
- ☐ Lack of top managers' involvement
- ☐ Lack of middle managers' involvement
- ☐ Having other improvement projects already in place
- ☐ Other (please state in the box) _____

Then respondent skips to *"Use this scorecard to evaluate your process management environment"*

Answer If Business Excellence has different names in different organisations such as Operational Excellence, Organisational Excellence, or Excellence Suit of Projects. Has your firm ever tried to implement B... Your started your Business / Operational Excellence journey less than 1 year ago. Is Selected Or Business Excellence has different names in different organisations such as Operational Excellence, Organisational Excellence, or Excellence Suit of Projects. Has your firm ever tried to implement B... Your Business / Operational Excellence journey has been ongoing for more than a year. Is Selected

What are the important challenges in your firm's Business Excellence activities? Please select all of the options that apply to your firm.

- ☐ Lack of information about Business / Organisational Excellence
- ☐ Lack of our top managers' commitment
- ☐ Our top managers' suspicion about the benefits
- ☐ Changes in our firm leadership
- ☐ Difficulty in finding appropriate Business / Organisational Excellence consultants
- ☐ High costs of Business / Organisational Excellence compared to potential benefits
- ☐ Lack of enough financial support
- ☐ It is very time consuming
- ☐ Our firm is a part of a holding or a governmental body, and we do not have authority to conduct improvement projects
- ☐ Middle managers' resistance
- ☐ Lack of top managers' involvement
- ☐ Lack of middle managers' involvement
- ☐ Having other improvement projects already in place
- ☐ Other (please state in the box) _____

Does your firm have a person formally in charge of the Business / Organisational Excellence activities?

- ☐ No
- ☐ Yes, but s/he is not actively working for the Business / Organisational Excellence activities.
- ☐ Yes, and s/he is actively working for the Business / Organisational Excellence activities.
- ☐ Don't know.

What is the rank / seniority of the person in charge of your firm's Business / Organisational Excellence activities?

- ☐ S/he is a top manager.
- ☐ S/he is a middle manager.
- ☐ S/he is a lower level manager.
- ☐ S/he is a not a manager.
- ☐ Don't know.

Has your firm ever been assessed using a particular Business Excellence model? (If yes, please choose the most used model)

- ☐ No specific Business Excellence model was used
- ☐ I don't know the name of the model
- ☐ Australian Business Excellence Framework
- ☐ Deming Prize Model
- ☐ Malcolm Baldrige Award criteria
- ☐ European Foundation for Quality Management (EFQM) Model
- ☐ Other (please state the name of the model) _____

If No Is Selected, Then Skip To End of Block

In which year did your firm's first Business / Organisational Excellence assessment happen? (Please choose from the drop-down list below)

- ☐ Don't know.
- ☐ 1980
- ☐ 1982
- ☐ ...
- ☐ 2015

What was the overall score for your firm in the first Business / Organisational Excellence assessment out of 1000? (Please choose from the drop-down list below)

- ☐ Don't know.
- ☐ 1-50
- ☐ 51-100
- ☐ 101-150
- ☐ 151-200
- ☐ 201-250
- ☐ 251-300
- ☐ 301-350
- ☐ 351-400
- ☐ 401-450
- ☐ 451-500
- ☐ 501-550
- ☐ 551-600
- ☐ 601-650
- ☐ 651-700
- ☐ 701-750
- ☐ 751-800
- ☐ 801-850
- ☐ 851-900
- ☐ 901-950
- ☐ 951-1000

What percentage of the improvement projects resulting from the first Business / Organisational Excellence assessment were successfully completed?

- ☐ Don't know.
- ☐ No improvement project was defined.
- ☐ None of the improvement projects were successfully completed.
- ☐ 25% of the improvement projects were successfully completed.
- ☐ 50% of the improvement projects were successfully completed.
- ☐ 75% of the improvement projects were successfully completed.
- ☐ All of the improvement projects were successfully completed.

Does your firm regularly update its Business / Organisational Excellence assessment?

- ☐ Don't know
- ☐ We have never updated it
- ☐ We have updated it, but do not have a regular plan for its update
- ☐ Yes. We update it every year
- ☐ Yes. We update it every 2 years
- ☐ Yes. We update it every 3 years
- ☐ Yes. We update it every _____years (please state in the text-box below)

If We have never updated it Is Selected, Then Skip To How actively is Business / Organizational Excellence assessment updated? If Don't know Is Selected, Then Skip To How actively is Business / Organizational Excellence assessment updated?

In which year did your firm's last Business / Organisational Excellence assessment happen? (Please choose from the drop-down list below)

- ☐ Don't know.
- ☐ 1980
- ☐ 1982
- ☐ ...
- ☐ 2015

What was the overall score for your firm in the last Business / Organisational Excellence assessment out of 1000? (Please choose from the drop-down list below)

- ☐ Don't know.
- ☐ 1-50
- ☐ 51-100
- ☐ 101-150
- ☐ 151-200
- ☐ 201-250
- ☐ 251-300
- ☐ 301-350
- ☐ 351-400
- ☐ 401-450
- ☐ 451-500
- ☐ 501-550
- ☐ 551-600
- ☐ 601-650
- ☐ 651-700
- ☐ 701-750
- ☐ 751-800
- ☐ 801-850
- ☐ 851-900
- ☐ 901-950
- ☐ 951-1000

What percentage of the improvement projects resulting from the last Business / Organisational Excellence assessment were successfully completed?

- ☐ Don't know.
- ☐ No improvement project was defined.
- ☐ None of the improvement projects were successfully completed.
- ☐ 25% of the improvement projects were successfully completed.
- ☐ 50% of the improvement projects were successfully completed.
- ☐ 75% of the improvement projects were successfully completed.
- ☐ All of the improvement projects were successfully completed.

How actively is Business / Organisational Excellence promoted in your firm?

- ☐ Strongly active
- ☐ Almost active
- ☐ Neither active nor inactive
- ☐ Almost inactive
- ☐ Completely inactive

Does your firm conduct the Business / Organisational Excellence assessments by external consultant(s) or uses the internal managers/staff as assessors?

- ☐ Don't know
- ☐ External assessor(s) accomplish all of the assessments, and internal staff only answer their questions
- ☐ External consultant(s) have the role of facilitators, and train the internal managers and/or staff members to be the assessors
- ☐ No external consultant / assessor is involved in the assessment processes, and internal manager(s) and staff conduct the process

Approximately what percentage of your firm managers are involved in your firm's Business / Organisational Excellence assessments as assessors?

- ☐ Don't know
- ☐ 100%
- ☐ 90%
- ☐ 80%
- ☐ 70%
- ☐ 60%
- ☐ 50%
- ☐ 40%
- ☐ 30%
- ☐ 20%
- ☐ 10%
- ☐ 0%

How often does your CEO / Director attend the leadership Business / Organisational Excellence assessment meetings?

- ☐ Don't know
- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

How are the data for your firm's Business / Organisational Excellence assessments gathered?
(You can choose more than one option)

- ☐ Observations
- ☐ Survey and questionnaires
- ☐ Interviews
- ☐ Focus groups
- ☐ Existing reports
- ☐ Other (Please specify)

Does your firm's Business / Organisational Excellence assessment reports include any of the following components? (You can choose more than one option)

- ☐ An overall score for our firm
- ☐ A score for each of the Business / Organisational Excellence criteria
- ☐ A detailed description of our firm according to each of the Business / Organisational Excellence criteria
- ☐ Our firm's strengths and areas for improvement according to each of the Business / Organisational Excellence criteria
- ☐ An action plan for our firm addressing those areas for improvement
- ☐ A set of improvement projects

Approximately what percentage of employees are aware of the Business / Organisational Excellence assessments in your firm?

- ☐ Don't know
- ☐ 100%
- ☐ 90%
- ☐ 80%
- ☐ 70%
- ☐ 60%
- ☐ 50%
- ☐ 40%
- ☐ 30%
- ☐ 20%
- ☐ 10%
- ☐ 0%

Has your firm ever received any award/prize/certificate for its Business / Organisational Excellence?

- ☐ Don't know
- ☐ No
- ☐ Yes. Please specify what award/prize/certificate, and from which organisation

Use this scorecard to evaluate your process management environment. Choose the option which best describes how your organisation manages its key business processes.

	Do you agree with the following statements about your organisation?				
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
In your organisation, business processes are directly linked to the organisation's strategy and critical success factors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enterprise business processes are defined before launching improvement initiatives (e.g., Six Sigma).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Key players understand the role of process management in improving performance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improvement efforts are prioritized according to process "health" and linkage to current issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Process management teams use a standard approach to navigate process analysis and design.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Process performance is measured at the individual, process, and enterprise levels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Process analysis and design efforts focus on delivering value to the customer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Process owners monitor process metrics and continuous improvement efforts on a regular basis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Process is the "master" and information systems are the "servants."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People and cultural issues are effectively addressed when process changes are introduced.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To the best of your knowledge, please select the choices which you feel best describe your firm's performance changes over the past 5 years.

	Trend of your firm performance over the last three years				
	Dramatically declining	Declining	No change	Improving	Dramatically improving
Operating income as a % of net sales	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
After-tax return on total assets (%)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EBITA % (Earning before interest, taxes, depreciation, amortisation as a % of net sales)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firm total sales	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall firm financial performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B:
Full references list

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