

ADOPTION OF PROMISING PRACTICE:

A Systematic Review of the Literature



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1. Executive Summary

This report presents a review of the evidence regarding the successful adoption of promising practices in UK organisations. Promising practices are defined for the purposes of this report as management practices that are new to the organisation (e.g. Total Quality Management, Supply-Chain Partnering).

A systematic review methodology was used to analyse and integrate the findings from existing studies in order to formulate both practitioner and policy recommendations.

The major points discussed in the report are:

The poor level of adoption of promising practices in UK organisations:

- Studies conducted within the manufacturing sector demonstrate that UK organisations on average lag behind competitors such as Germany and Japan with regards to the adoption of promising practices.
- There is some suggestion that although the leading UK manufacturers can compete with the best in the world, there is a proportionally larger tail of organisations in the UK that fail to take up the desired practices.
- There is a lack of evidence indicating whether the same picture is apparent in other sectors.

Drivers for the organisational adoption of new management practices can be usefully conceptualised in an 'Institutional Push/Need Pull' framework. Push/Pull interactions have to be effectively managed so that the needs of the organisation are met.

Key 'Institution Push' drivers identified from the evidence were:

- Governmental actions (regulations; Government advisory initiatives).
- Inter-organisational relationships (Supply-Chain dynamics; inputs from consultants and vendors).
- Technological drivers.
- Management levels of knowledge (top management and executive training, attendance of management at workshops and professional events).

Key 'Need Pull' drivers were identified as situations where organisations:

- Had low levels of performance.
- Identified a particular need.
- Faced a problem or crisis.
- Saw an opportunity.
- Saw adoption of a new practice as a logical step in continuous improvement.

Developing the literature further, the adoption process is described in terms of five overlapping stages. The research evidence indicates that different enablers and inhibitors will affect each stage.

Stage 1: The initial adoption decision, which is influenced by:

- Internal antecedents (size, structure, sector, current performance, ownership).
- External antecedents (competition intensity, environmental dynamism).

Stage 2: Setting up a change programme to adapt the new practice, which is influenced by:

- Internal characteristics (structure and strategic context).
- External characteristics (organisational and social context).

Stage 3: Preliminary implementation of practice, which is influenced by:

- Commitment from top management.
- Training and education of workforce to deal with new practices.
- Absorptive capacity of the organisation.

Stage 4: Ramping up the implementation of practice to operational levels, which is influenced by:

- Levels of motivation and involvement of the workforce.
- Effective communication.
- Appropriate reward systems.
- Ability of organisation to resolve unexpected problems (ability of organisation to maintain focus; ability of organisation to maintain flexibility).

Stage 5: Integration of practice to become standardised routine.

- Little research evidence on how to integrate and sustain new practices.

Practical recommendations for those working in organisations wishing to successfully adopt new practices include:

- Ensure firm and visible commitment from top management.
- Develop the knowledge to know when and where to adopt new practices that meet an organisation's own particular needs.
- Train and educate the workforce to work with new practices.
- Nurture a culture where employees are open to change and motivated to try working in new ways.
- Systematically assess and review progress in new practice implementation.
- Develop a more external focus to work with customers and suppliers.
- Set clear goals and objectives for new practices.
- Use both informal and formal routes of communication to share information about new practice implementation.
- Empower and involve employees in making decisions about implementation.
- Establish clear monitoring and control systems to manage the introduction of new practices.

The Government could encourage the organisational adoption of best practices by developing policies which:

- Raise awareness of best practices by using multiple routes of communication and a variety of role models.
- Provide financial, accreditation and award incentives to encourage organisations to adopt best practices.
- Encourage use of benchmarking by organisations.
- Improve the use of the supply chain as a vehicle for encouraging take up of best practice.

The literature review also revealed several areas which required further research:

- More systematic international comparisons between UK and foreign organisations on promising practice adoption, especially in non-manufacturing sectors.
- More explicit identification of the particular stages of the new practice adoption process where UK organisations have the most problems.



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3 Preface

3.1 The DTI Innovation Review

Policy makers, practitioners and academics in the UK are engaged in a national debate about how to improve the country's innovation and productivity performance. Fuelling this debate are two specific initiatives: the DTI's Innovation Review¹ and the Porter Report². The Innovation Review, published in the autumn of 2003, involved widespread consultation with key stakeholders and sought to identify how the DTI and wider Government might best act to increase innovation in the UK. (For the complete list of themes and work-streams in the DTI Innovation Review see Appendix). Key issues to be covered in the Innovation Review include:

1. The drivers of innovation.
2. Current policies and actions.
3. The role of government and other stakeholders.
4. The potential obstacles.
5. International comparisons and benchmarking.

"Direct input from business and a wide range of stakeholders will be vital to the innovation review's success; not only do our stakeholders have knowledge that is essential to the analysis underpinning the review, but also many will have an important part to play in delivering the resultant strategy".

Source: www.innovation.project@DTI.dsi.gov.uk

3.2 The Porter Report

In addition to the Innovation Review, the DTI and the Economic and Social Research Council commissioned Professor Michael Porter and his team to conduct a review of the existing evidence on UK competitiveness. The resulting "UK Competitiveness Report" was published in May 2003 and argued that the UK has made good progress in certain aspects of the economy over the past decade. Growth in labour force utilization in the UK has been stronger than in Continental Europe, the UK's growth rate of GDP per capita has shown a rapid increase and trade and Foreign Direct Investment levels have been good. However, there is still a worryingly large productivity gap between the UK and major competitors such as the U.S., France and Germany. The UK Competitiveness Report argues that the UK economy is now in a transitional stage and the productivity and prosperity gap will widen if certain shortcomings are not addressed. The authors of the UK Competitiveness Report concluded that one of the major levers for change was to enhance the currently weak innovation capability of the UK.

¹ For information on the DTI's Innovation review, see www.innovation.project@DTI.dsi.gov.uk

² Porter, M.E. et al., "UK Competitiveness: Moving to the Next Stage", 2003 www.aim-research.org/

Key findings of the UK Competitiveness Report include:

- *Significant improvements in UK competitiveness.*
- *Demonstrable managerial abilities.*
- *UK's potential in comparison to other countries.*

However:

- *Diminishing returns from current government and company strategies.*
- *Weak collaborative capacity.*
- *Inadequate innovation, investment, management training.*

In summary, the Porter and Ketels Report suggest that the UK has made considerable progress, but now needs to make a transition to a high value economy. The key question to address is how the UK can make this change.

3.3 The AIM Management Research Forum

On 29th April 2003, leading academics, practitioners and policy-makers attended the first AIM Management Research Forum titled 'Post Porter: Where Does The UK Go From Here?'

Delegates were presented a number of pre-defined questions by AIM and the DTI.

Reactions to the Porter and Ketels Report:

Is the UK in a good position to make the transition to a high value innovative economy?

What should the UK do to make the transitions?

What must UK firms do in order to become more innovative?

What role should management play?

What role should Government play?

³ (For a detailed list of questions posed by AIM and the DTI see Appendix 3).

Four AIM Scholars from leading UK's business schools were selected to facilitate the discussion groups and produce the subsequent report under the direction of AIM Research's Associate Director: Professor Andy Neely. The report recommended a thorough review of all existing research relating to innovation and competitiveness in the UK.

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During the AIM Management Research Forum (MRF) the AIM scholars led and recorded the discussion groups. Post MRF, the project team met on several occasions to compile the report. A draft report was produced within two weeks and was sent to MRF delegates for comments. The report was submitted to the DTI and the public on June 3, 2003.

³ For information on the Porter Report, see Birdi et al, (2003), 'Post Porter: Where Does the UK Go From Here? Summary Report from the AIM Management Research Forum', June, www.aim-research.org/

3.4 How The Report Was Devised

Following the Management Research Forum, nine AIM Scholars (Dr Giuliana Battisti, Dr Kamal Birdi, Dr Luke Pittaway, Dr Joachim Bauer, Dr Kamal Munir, Dr Maxine Robertson, Dr Michel Leseure, Dr Timothy Edwards, Dr Wes Payne-McClendon) were selected to produce three 'evidence bases' on separate themes relating to innovation by conducting three systematic reviews (see Section 5.2). The project was managed by Professor Andy Neely (Project Director) and Dr David Denyer (Project Coordinator).

3.5 What The Report Contains

The literature review has been designed to identify the major influences on successful adoption of promising practices by firms and to relate the findings to UK organisations. The report will first present the rationale for the research and describe the systematic review methodology used to analyse the literature. The major findings of the review will be presented in terms of themes examining the different mechanisms by which new management practices are adopted, as well as significant enablers and inhibitors of the adoption process. The final section of the report will present sets of recommendations and outline areas needing more research.

3.6 Who The Report Is For

The review will feed into current work commissioned by the DTI on the UK's Economic Competitiveness and how businesses and the Government might best act to increase innovation.

The review is also seen as vitally important to identify areas where there is insufficient evidence or no evidence at all and thus further studies are required. The report will be submitted to the ESRC's research priorities board.

The research will also contribute to the groundbreaking work conducted at Cranfield School of Management in investigating whether, and to what extent, it is possible to develop and 'evidence-based' approach to management practice.



4 Introduction

4.1 Background

Best practices, by their very nature, are supposed to improve the performance of organisations. There is growing evidence in a number of domains to support this link (e.g. Collins et al., 1996; Hanson et al., 1994, Lowe et al., 1997). However, a recent statement by Patricia Hewitt: secretary for the Department of Trade and Industry, claimed that one of the major reasons for low profitability in the UK compared to its major competitors is "too often poor management of production processes and poor management of people". The recent Porter and Ketels (2003) review of UK competitiveness also suggested that poor adoption of best practices was a contributor to the UK productivity gap but the report failed to provide much evidence of this or explore the issue in enough detail. The DTI-mandated "Post Porter" report therefore agreed to answer the question: Are UK businesses effectively absorbing existing best practice innovations? Within this report, "best practice innovations" are broadly defined as administrative innovations, that is, management practices that are new to the organisation (e.g. Total Quality Management, Supply-Chain Partnering). The role of this review is to gather the existing evidence about the strategies by which organisations most effectively implement these types of management practices and to compare the UK to other countries with respect to how well their organisations carry out this role.

4.2 The Need for the Review

There has been ample worldwide research conducted on new management practices, their adoption by companies, the processes that drive adoption, and the factors that facilitate or constrain the adoption process.

However, this wealth of primary research findings is published in various academic fields, as the problems behind adoption of new management practices are multi-disciplinary in nature. Differences also exist in the motivation for the research, the research methods used, and the scope and scale of the studies. There is little evidence of effort by the contributing researchers to integrate their research findings. This means that a synthetic view of the issues surrounding the adoption of new management practices is difficult to formulate from what seems to be a dispersed and non-integrated information base.

The NHS Centre for Reviews and Disseminations defines a systematic review as a review of the evidence on a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant primary research. They also extract and analyse data from the studies that are included in the review. Thus, a systematic review is the ideal tool to draw a portrait of the current status of the adoption of new management practices in the UK, with a view to informing policy makers and identifying critical directions for future research, whilst guaranteeing rigour, relevance, and replicability.

4.3 The purpose of the review

The purpose of the review is to use existing citations and evidence-based research to describe the outcomes, processes, facilitators and inhibitors of best practice adoption. This will be further developed by explaining where the UK stands internationally in terms of adoption of best practices, with particular reference to comparisons between the UK, USA, France, Germany and Japan.

4.4 Overall Objectives

The overall aim of this review is to clarify the issues surrounding the successful adoption of best practices in UK organisations. This can be broken down into a number of objectives:

The overall objectives of the report are to:

Describe the criteria by which effectiveness of best practice absorption could be assessed.

Distinguish between the different mechanisms of adoption of best practice.

Review the evidence base to identify the most important influences on successful adoption of best practices.

Evaluate the evidence comparing UK organisations to major competitors in Europe, U.S and Japan on aspects of best practice adoption.

Identify recommendations for policy-makers and practitioners on how to improve the adoption of best practices in UK organizations.

Highlight areas for future research.

5 Methodology

5.1 Evidence-based Policy and Practice

Evidence-based policy and practice (EBPP) has emerged as a response to the poor utilization of academic research in practice, a phenomenon shared by many **physical and social science disciplines** (Muir Gray, 1997; Hamer and Collinson, 1999; Trinder and Reynolds, 2000). EBPP involves the collection, synthesis and application of all high quality research relevant to a problem being addressed. This research can be integrated with practitioner or policy-maker expertise to guide decision-making and action.

Evidence-based **approaches can now be found in** many physical and **social science domains** (Petticrew, 2001), such as healthcare (Cochrane collaboration 2001; NHS Centre for Reviews and Dissemination, 2001) and social policy (Campbell Collaboration 2001; Evidence Network, 2001). In addition, the Department of Education and Skills (DfES) has established a Centre for Evidence Informed Policy and Practice in Education. Furthermore, a 'What Works?' Programme was introduced in the probation service following the Crime Reduction Strategy published by the Home Office in July 1998 (HM Inspectorate of Probation, 1998; Home Office, 1998). In 1999 the Department for the Environment, Transport and the Regions (DETR) commissioned a review of the evidence base as it relates to regeneration policy and practice (DETR, 1999). Other disciplines such as nursing (Evans and Pearson, 2000), housing policy (Davies, Nutley and Tilley, 1999; Maclennan and More, 1999), social care (Macdonald, 1999) and criminal justice (Laycock, 2000) have also adjusted the approach with varying degrees of success. However, as yet, evidence-based business and management has largely been ignored.

Cranfield Innovative Manufacturing Research Centre (acting on behalf of the EPSRC) recently awarded grant IMRC19 'Developing a methodology for evidence-informed management knowledge using systematic review' to Professor David Tranfield and Dr David Denyer to develop a field-tested and grounded prototype methodology for generating research evidence in the manufacturing and management fields. This prototype methodology was used to produce the three systematic reviews.

5.2 Systematic Review

In order to create a knowledge base of the best available evidence, many disciplines have made significant strides in developing review methodologies to identify, acquire, extract and synthesize existing research studies. Systematic reviews have achieved a high profile as rigorous scientific investigations, with pre-planned methods and strategies that limit bias and random error (Cook, Greengold, Ellrodt and Weingarten, 1997). **These strategies include a comprehensive search of all potentially relevant articles and the use of explicit, reproducible criteria in the selection of articles for review** (Cook, Mulrow, and Haynes 1997: 379). Whilst differences between medical science and management research requires adaptation of the systematic review methodology, it can be applied to the management field in order to produce a reliable knowledge stock, which can inform policy and practice (Tranfield, Denyer and Smart, 2003). The process of systematic review is shown in Table 5-1.

Table 5.1 Systematic Review stages and phases. Source: Tranfield and Denyer (2003)

<i>Stage 1: Planning the Review</i>
<i>Phase 0 - Identification for the need for a review</i>
<i>Phase 1 - Preparation of a proposal for a Review</i>
<i>Phase 2 - Development of a review protocol</i>
<i>Stage 2: Conducting the Review</i>
<i>Phase 3 - Identification of the research</i>
<i>Phase 4 - Selection of Studies</i>
<i>Phase 5 - Study quality assessment</i>
<i>Phase 6 - Data extraction and monitoring progress</i>
<i>Phase 7 - Data synthesis</i>
<i>Stage 3 - Reporting and Dissemination</i>
<i>Phase 8 - The report and recommendations</i>
<i>Phase 9 - Getting evidence into practice</i>

5.3 The Review Strategy

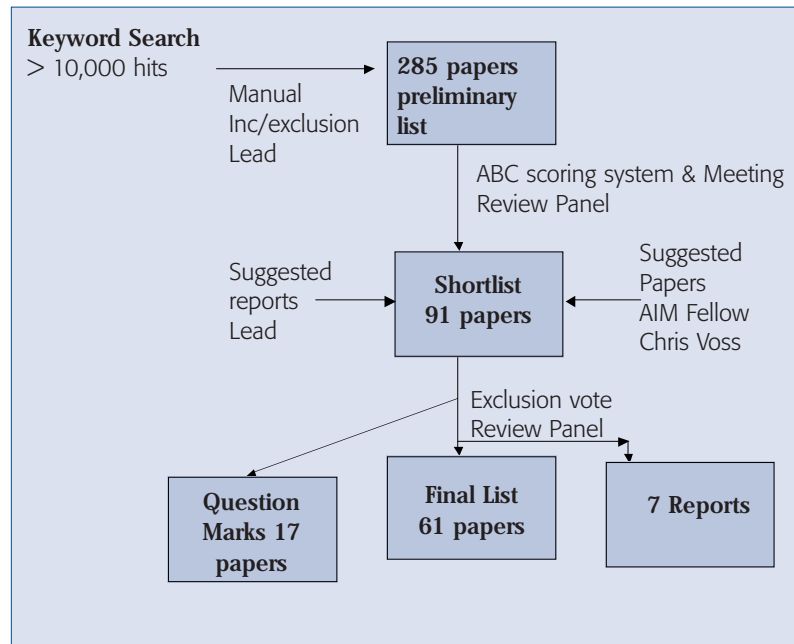
The review strategy followed closely the steps listed in table 5.1. The keywords used were defined by the panel of AIM scholars and was validated by the project co-ordinator. The list of keywords used is presented in appendix 11.2.

Only three databases were used given the limited time scale of the project: ABI/INFORMS, Science Direct, and Web of Science (See appendix 11.3. for more details about these databases).

Figure 5.1. shows the process followed to build the list of papers to be reviewed. The lead scholar conducted manual inclusion and exclusion of papers from the results of searches according the criteria listed in appendix 11.4. This resulted in a preliminary list of 285 papers.

The panel of AIM scholars was then asked to grade each paper as A (should be in shortlist), B (uncertain), or C (should not be in shortlist). Correlations between scholars were average (from 0.41 to 0.79 R-square between two individuals), but it generated a much shorter final list of 91 papers. At this point in time, additional references were included, especially those recommended by Professor Chris Voss from the London Business School. A final vote from the panel of AIM scholars brought the count down the 85 documents.

Figure 5.1. Selection Process



Due to time pressures, the review departed slightly from the procedure in that only 51 papers were reviewed. Priority was given to achieve maximum exposure to disciplinary fields and authors. If two or more papers by the same authors on similar topics were found, only one paper was reviewed. In the case where recent papers quoted heavily or built upon the findings of older papers, only the most recent paper was reviewed.

Additional papers (to the list of 51 papers) were also reviewed when it was felt that a reference to a concept was too elusive in the best practice adoption literature. This was for example, found in literature about the diffusion of innovations, which is not usually about best practice adoption.

The final list of 51 papers is described in section 6.



6 Descriptive Findings

This section presents descriptive findings about the 51 reviewed papers. These papers were primarily from the operations management, management and human resource management disciplines.

Table 6.1. illustrates how the papers were used to mapped the field of best practices. Most papers focus on researching the implementation process, addressing questions such as how a best practice adoption should be programmed, and what are the pre-conditions to adoption. Other papers focus more on whether or not best practices were used in some countries. Finally, only a few papers addressed topics that were relevant to understand the dissemination of best practices.

Table 6.1. Reviewed Papers³

<i>Implementation Focus</i>	<i>Implementation Focus</i>	<i>Addressed Dissemination</i>	<i>Usage Focus</i>
Ahire 2000	Kathuria 1999	Ahire 2000	Clegg 2002
Ascari 1995	Kumar 2001	Bateman 2003	Collins 1996 (made in Switzerland survey)
Baer 2003	Longbottom 2000	Bessant 2003	Hanson 1994 (made in Europe survey)
Banker 1997	Lowe 1997	Lane 1998	
Bateman 2003	Majchrzak, 1995	Ravichandran 2000	
Bessant 2003	McLachlin 1997		
Bessant 1996	Neergard 2002		
Beyer 1997	Newell 1998		
Boddy 1998	Nohria 2003		
Cagliano 2001	Panizzolo 1998		
Chakrabarti 1976	Petroni 2002		
Coyle-Shapiro 2003	Pil 1996		
Davies 1999, 2000	Ravichandran 2000		
Dixon 1994	Shadur 1995		
Drew 1994	Sousa 2001		
Fullerton 2002	Szulanski 1996		
Giunipero 1988	Taylor 2003		
Guimaraes 1999	Voss 2003		
Hughes 2000	Zeitz 1999		
Kassicieh 1998			

These papers were not explicitly about best practices but were included in the review as they were informative: Cohen 1990, Krause 1999, Lane 1998, Upton 1998

³ Only the first author's last name is used in this table.

Table 6.2. shows the list of countries covered by the reviewed research. It can be seen that the majority of papers included research conducted in the UK and the USA. However, there was a fairly wide spread of different European countries. Only a few studies were conducted in other countries.

Table 6.2. Country Coverage

<i>Country</i>	<i>Frequency</i>
<i>Australia</i>	<i>1</i>
<i>Canada</i>	<i>4</i>
<i>Europe (unspecified)</i>	<i>1</i>
<i>France</i>	<i>1</i>
<i>Germany</i>	<i>3</i>
<i>Ireland</i>	<i>1</i>
<i>Italy</i>	<i>3</i>
<i>Japan</i>	<i>1</i>
<i>Korea</i>	<i>1</i>
<i>Mexico</i>	<i>1</i>
<i>Sweden</i>	<i>2</i>
<i>Switzerland</i>	<i>1</i>
<i>The Netherlands</i>	<i>2</i>
<i>UK</i>	<i>20</i>
<i>USA</i>	<i>17</i>

7 Thematic Findings

7.1 Overview of Thematic Findings.

As shown in section 6, there is a broad diversity of perspectives (disciplines, scope, country coverage, etc.) in the reviewed research works about the adoption of best practices. This means that the objective of this review – to aggregate the evidence from different studies into a coherent, informative whole – is challenging.

This challenge resulted from three factors. First, in each study, the meaning of failure or success of adoption was different. Second, the research hypotheses that were formulated were also different, but yet showed considerable overlap from one set of authors to another. Third, the means that were used to test the hypothesis or a proposition vary greatly from one study to another.

What constituted failure or success of implementation greatly varied.

For example, Taylor and Wright (2003) based their survey of the antecedents of TQM adoption on a measure of the perception of success by managers. Szulanski measured success as “uneventfulness”, implying that an adoption process that was uneventful is problem-free and thus, a success. Lowe and his colleagues (1997) used operations and financial measures to study if the adoption of best practices had been beneficial in terms of performance. Finally, a great number of authors used the classification model of “world class performance” from the Made in Europe survey (Hanson et al., 1994) to differentiate different archetypes of failures and successes.

For a given factor potentially explaining adoption success, a great number of hypotheses have been formulated.

Consider the following propositions regarding employee training: (1) employees training is associated with increased customer satisfaction (Petroni, 2002), (2) with employee involvement (McLachlin, 1997), (3) with Just-in-Time flow (McLachlin, 1997), and (4) with improved process quality (Ahire & Ravichandran, 2001). Analysing the meaning of a pattern of acceptance and rejection of these propositions is not trivial (there are actually 17 tested propositions regarding employee training in this review).

A number of surveys report simple descriptive statistics.

Some test their hypothesis through a variety of regression methods. Other studies go further and posit models involving chains of cause and effect relationships, which are then tested through different statistical methods. Finally, qualitative research results tend to provide evidence that is more detailed than surveys, yet more anecdotal.

The approach used to overcome these challenges was to use the Nvivo qualitative analysis software to structure findings in a hierarchy of emerging themes (inductive analysis approach).

The overall emerging scheme to make sense out of the evidence from the reviewed research works was to develop a generic model of the process⁴ of adopting best practices and to “attach” the evidence to this generic model. This model is displayed in figure 7.1.

⁴ The term process is used here in its broadest sense; that of an overlapping succession of “episodes”; cf. section 7.3.

A word of explanation is necessary to describe how the different enablers and inhibitors of best practice implementation were attached to the model in figure 7.1. Consider for example the factor “size of the firm”. A survey rejecting the association of the size of the firm on the intensity of adoption of a best practice (e.g. Ravichandran, 2000) would suggest that size of the firm should not be associated with any stages past the set-up decision. Another survey indicating that “size of firm” was significantly associated with the decision to adopt a best practice (e.g. Newell et al., 1998) would mean that size of firm should belong to “antecedents to adoption” in figure 7.1.

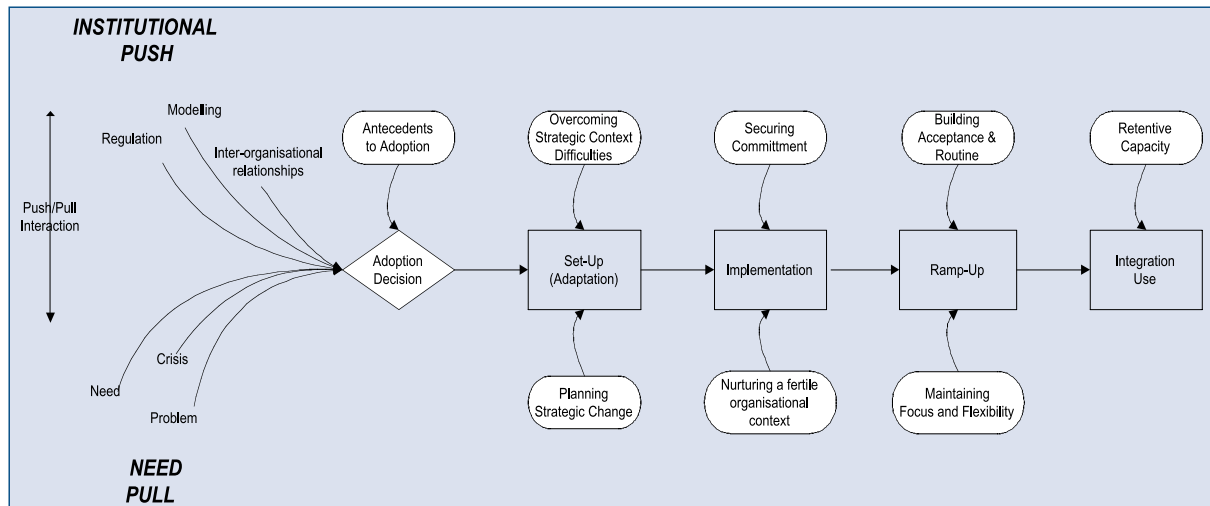


Figure 7.1: Generic Model of Best Practice Adoption

Section 7 is organised as follows: Section 7.2. reviews the evidence of the problem with the adoption of best practices in the UK.

The model introduced in figure 7.1, called the Need Pull/Institutional Push (NP/IP) model is described in more detail in section 7.3. The extent to which it is compatible with the other reviewed models is discussed.

In section 7.4. evidence is provided to support the existence of two distinct adoption drivers.

Section 7.5. starts with an introduction to institutional theory and describes the evidence supporting the importance of the supply chain for the diffusion and dissemination of best practices.

In section 7.6. the existing evidence regarding push/pull interactions (positive or negative) is presented.

The adoption decision is discussed in section 7.7. along with the different antecedents of adoption (factors that pre-condition adoption).

Set-up activities are discussed in section 7.8. along with a review of the evidence stressing the need to overcome strategic context difficulties (contingency theory) and the need to plan strategically for change.

The implementation stage is described in section 7.9. along with evidence supporting the key tasks of (1) nurturing an organisational context conducive to change and (2) securing commitment.

The often over-looked stage of ramping-up to performance is discussed in section 7.10. Research findings stress the importance of building acceptance and routine about the best practice whilst maintaining flexibility and focus.

Finally, section 7.11. discusses the stage of integration and the notion of retentive capacity.

7.2 Adoption of Promising Practices: Evidence of a Problem

Both the Porter and the Post-Porter reports highlight the fact that UK productivity lags behind its main competitors (Germany, France, USA). The two reports base this statement on macro-economic productivity data.

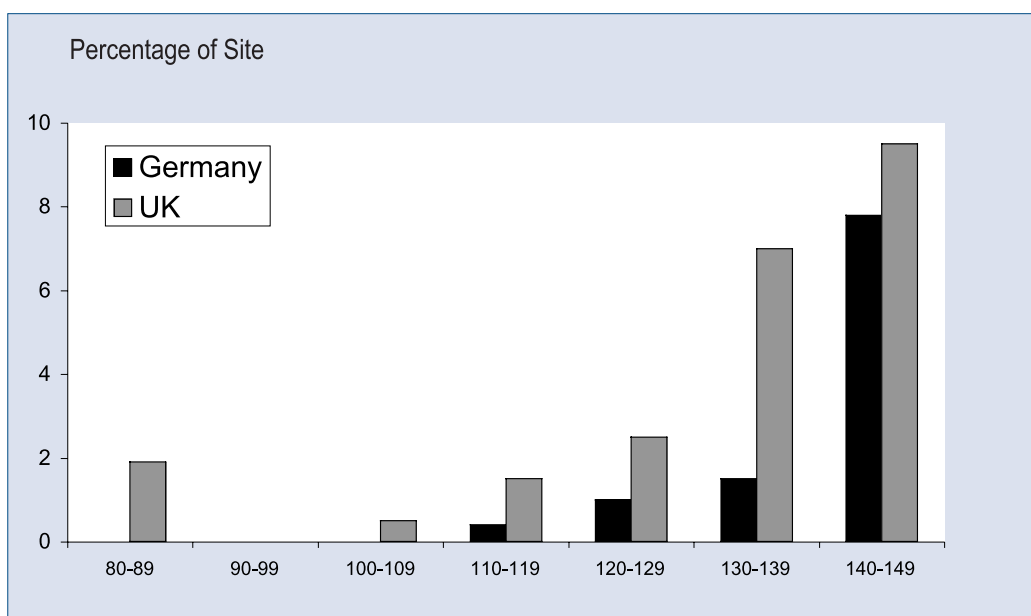
One direction for improvement, especially appealing to policy makers in terms of diffusion potential, is to promote the adoption of best practices. A well-established critical mass of research surveys has established that the adoption of best practices⁵ is significantly associated with increased productivity and profitability. However, the Porter and Post-Porter reports suggest that the UK seem to lag significantly in terms of adopting these best practices. This systematic review has collected ample evidence to support this last statement.

The first cornerstone survey was the Made in Europe survey (Hanson et al., 1994), a joint endeavour of IBM consultants and the London Business School. Based on data from 1993 and 1994, it drew a portrait of a poorly competitive UK manufacturing sector, lagging both in terms of adoption of practices and in terms of their ability to generate performance results from adoption. The Made in Europe survey initially compared the UK to Germany, the Netherlands, and Finland.

This study was subsequently used for a number of analytical investigations, mainly led by Professor Chris Voss from the London Business School (Hanson & Voss, 1995; Voss et al. 1995; Voss & Blackmon, 1996; Voss et al. 1997). The Made in Europe survey has also been franchised out, for example for the Made in Switzerland study (Collins et al., 1996), which revealed a world-class image of Swiss manufacturers. The comparison between Switzerland and the UK was not flattering, but it should be borne in mind that all exploitation of the UK data refers back to the original 1993/1994 data.

Voss and Blackmon (1996) offer a direct comparison of the UK and Germany extracted from the Made in Europe database. They confirm that the UK lags both in terms of adoption and performance (see evidence table 1). Consistently with the original Made in Europe survey's conclusion, they provide the moderating statement that UK statistics might be biased by an unusually high proportion of laggards (the "punchbags" in the World Class model). This is illustrated in the figure below:

Figure 7.2. UK lower performance tail [Source: Voss and Blackmon, (1996). The impact of national and parent company origin on World Class Manufacturing: Findings from Britain and Germany. Figure 3].



⁵ In this review, it is taken for granted that adoption of best practices will generate increased performance. The review's scope is to study how best practices eventually generate increased performance and how failures to do so can be explained.

The results of the Made in Europe Survey are rather dispiriting for UK competitiveness. However, their validity could be questioned: can the overall average be pulled downward by a small group of dramatically under-performing sites?

Several smaller case studies after 1994 confirm serious adoption and implementation problems in the UK independently of the Made in Europe database:

“A disturbing number of continuous programmes fail” (Bessant et al., 1996).

“UK supply chain management does not incorporate supply chain learning”(Bessant et al., 2003).

“54% of supply chain partnering fail” (Boddy et al., 1988).

Although UK companies conduct benchmarking activities and identify best practices, they do not go through any implementation efforts, often because the performance gap is so large that it seems impossible to bridge (Davies and Kochhar, 1999, 2000).

These results can be moderated by the fact that similar surveys yield almost similar results in the U.S. (e.g. Guimaraes, 1999; Ravichandran, 2000), although adoption statistics appear much more positive.

In the trail of the Made in Europe survey, Schemmner (1997), a US academic, announces the “erosion of European manufacturing”. As the details of his survey (IMD sponsored) are not provided, it is difficult to assess the validity of his claim.

It is Clegg and a large international team of researchers (Clegg et al., 2002) who provide the most recent evidence regarding the UK adoption of best practices. Companies in the UK have been using best practices for less time than the other three countries in their studies (Australia, Japan, Switzerland), use them less, and report less effectiveness with them. They also report less planned future investments in best practices (See evidence table 1 for more details). Clegg’s survey therefore strongly reinforces the findings of the Made in Europe survey with a recent data set.

Evidence Table 1: Evidence of a Problem

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Bessant, Caffyn, & Gilbert	Conceptual paper drawing on a 5-year empirical study into the adoption and implementation of CI within European enterprises.	1996	Europe	"A disturbing number of CI programmes fail, mostly through decay rather than sudden decline. Those which survive only do so because of active and continuing efforts to energise, nurse, guide and shape - in other words, as the result of a difficult learning process around and acquiring this new capability."
Bessant, Kaplisky, & Lamming	Case base research Telephone surveys of 25 organisations. Detailed case studies of 6 supply chains.	2003	UK	"UK supply chain management programmes do not yet incorporate SCL. Where SCL does occur, it is mostly limited to first-tier suppliers (or customers), and very seldom involves structured processes of learning from suppliers (or customers)."
Boddy, Cahill, Charles, Fraser-Kraus, & McBeth	Postal survey of 100 firms implementing supply chain partnering.	1998	UK	Reports 54 unsuccessful cases and 46 successful cases in terms of implementing supply chain partnering.
Davies & Kocchar	Structured interviews with 60 managers from 4 companies (2 aerospace, 2 automotive). Focusing on the benchmarking of manufacturing planning and control systems.	1999	UK	Even when best practices are accepted in principle, implementation does not follow (Results of benchmarking are not put into practice). Fire-fighting mentality most important barrier. Too much of a gap between malpractice and best practice to even attempt implementation in the short term.
Davies & Kochhar	Hybrid research instrument involving interviews, a focus group, and a postal survey.	2000	UK	Findings include: (1) predominant existence of malpractices. (2) high element of fire-fighting that block the adoption process.

Evidence Table 1

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Clegg, Wall, Pepper, Stride, Morrison, Cordery, Couchman, Badham, Kuenzer, Grote, Ide, Takahashi, & Kogi	Postal survey. Random, stratified sample of companies with 150 or more employees in the, yielding a total sample of 898 companies.	2002	UK, Australia, Japan and Switzerland	<p>To set the scene, it is instructive to consider the extent to which companies in the sample as a whole use one or more of the 12 practices. Using the criterion of 'substantial use' (defined here as using the practices 'a lot' or 'entirely'), 92% of companies are using at least one, and 51% are using 4 or more to this extent. There has clearly been considerable uptake of these initiatives generally.</p> <p>This showed a marked country effect ($F = 17.31$, $df 3, 992$, $p < .001$), with the highest rate recorded by Switzerland (average of 5.53 practices per company), followed by Japan (4.07), Australia (4.02) and the UK (3.45).</p> <p>In general, the Japanese companies have been using the practices the longest, followed by Switzerland then Australia. Companies in the UK tend to be the more recent adopters. The UK stands out in a rather different way, having used the practices for the shortest time. Indeed, the UK has the least (or joint least) years of use for 10 of the 12 practices.</p> <p>There are, however, some interesting results for differences across countries. The companies in the Swiss sample plan to have the greatest use for 11 of the 12 practices. At the other extreme, the UK sample reports lowest planned use for 9 of the 12 practices.</p>

Evidence Table 1

			<p><i>Where differences arise, in order of size, they are for total productive maintenance, total quality management, learning culture, outsourcing, just-in-time, team-based working, supply chain partnering and empowerment. Across these practices, Swiss and Japanese samples report the greatest effectiveness, with Australian and especially UK companies, reporting the least.</i></p> <p><i>In the UK, Waterson et al (1999) argued that these data are consistent with earlier surveys by Ingersoll Engineers (1991, 1996), and with an interview study of experts examining the effectiveness of IT (see Clegg et al, 1997). That study found that estimated rates of outright success ranged between 0% and 30%, partial success ranged between 10% and 70%, whilst rates of failure ranged from 5% to 40%. The corresponding figures from this survey fall within these ranges, being 14%, 65% and 22% respectively. Thus, even though these two studies use different methods and sampling techniques, the results are broadly consistent.</i></p>
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Evidence Table 1

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Guimaraes	Postal survey of an association member involved with BPR – 135 questionnaires.	1999	USA	<p>"While the promises from BPR implementation seem impressive, the problems are also numerous. Although many firms have implemented a variety of reengineering programs over the past years, relatively few have reaped the benefits they expected. According to the CSC Index, approximately one fourth of 300 reengineering projects in North America are not meeting their goals. Many chief information officers (CIOs) say that the actual benefits of the projects fall short of their expectations along the dimensions of customer service, process timeliness, quality, cost reduction, competitiveness, new/improved technology, and sales/revenues. A Deloitte & Touche survey showed that reengineering projects consistently fall short of their expected benefits. The up-front costs are high, particularly in the areas of training and consultant fees, with a time-consuming learning curve."</p>
Hanson, Voss, Blackmon, Oak	Interviews of manufacturing sites. 663 manufacturing sites. (Made in Europe study = MIE)	1994	Finland: 24 Germany: 210 Netherlands: 101 UK: 328	<p>Uses a the World Class classification model of firms surveyed: World Class, Contenders, Promising (practice=yes performance=no), Won't go the distance (performance yes - practice no), Make weights (lack both practice and performance - radical change is needed), & Punchbags (low on both performance and practice).</p> <p>UK vs. Germany World class: 2.3%, 2.9% Contenders: 40.3%, 53.3% Promising: 17.7%, 16.7% Won't go the distance: 9.5%, 8.6% Makeweights: 22.6%, 17.6% Punchbags: 7.5%, 1.0%</p> <p>The UK differ in that it has a much longer tail of companies with both poor performance and poor practices.</p>

Evidence Table 1

<i>Author</i>	<i>Data used in Study</i>	<i>Dates</i>	<i>Location of Study</i>	<i>Summary of empirical Findings</i>
<i>Ravichandran</i>	<i>Postal survey of 123 IS departments (private and public).</i>	<i>2000</i>	<i>USA</i>	<i>65.9% of the responding organisations were adopters, 24.4% were non-adopters, and 4.1% indicated that they had abandoned their TQM initiatives.</i>
<i>Schmenner</i>	<i>IMD sponsored survey.</i>	<i>1997</i>	<i>Europe</i>	<i>"The competitiveness of Western European manufacturing is slowly being eroded away and European firms must act decisively to halt this decline. Costs in Europe are high and getting higher. Productivity is not keeping pace. European manufacturers have adopted some of the ideas that have proved useful to manufacturers elsewhere around the globe, but they need to do more. Many European countries remain net exporters of direct investment. If the erosion is to be halted, European manufacturers must address overcapacity, particularly among the many small factories there, inappropriate plant locations, and company organizations that foster too much country-specific independence."</i>

Evidence Table 1

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Voss & Blackmon	Interviews of manufacturing sites. 663 manufacturing sites. (Made in Europe study = MIE).	1993-1994 Pub. 1996	Finland: 24 Germany: 210 Netherlands: 101 UK: 328	<p>As well as overall manufacturing practice and performance, differences in individual practices and performance by country were also analysed, using a one-tailed t-test for national differences. The results are presented in Tables IX and X. German manufacturing sites scored higher on average than British manufacturing sites - in many more areas than British manufacturing sites. For human resource practices, German manufacturing sites scored significantly higher on seven of the 11 practices examined, which may have led to the higher human resources performance by German sites. The German manufacturing sites also led in several lean production practices.</p> <p>On the other hand, the British manufacturing sites reported much higher levels of ISO 9000 adoption. This finding may be due to the earlier launch of quality certification programmes in the UK than on the Continent.</p>

Germany higher			
Automation	3,454	2,993	0.000***
Batch size	3,325	3,150	0.019*
Benchmarking	3,190	2,773	0.000***
Customer orientation	3,588	3,436	0.025*
Design process	3,908	3,519	0.000***
Employee involvement	3,251	2,937	0.000***
Housekeeping	3,819	3,587	0.001***
Information systems	3,215	3,003	0.007**
Job flexibility	3,322	3,168	0.021*
Maintenance	3,232	2,973	0.000***
Manufacturing strategy	3,624	3,414	0.011*
Plant layout	3,261	2,833	0.000***
Problem solving	3,469	3,215	0.000***
UK higher			
Process certification	2,882	3,168	0.000***
Supplier relations	3,052	3,427	0.000***
Performance			
Germany higher			
Customer deliveries	3,593	3,331	0.008
Customer satisfaction	3,351	3,132	0.001***
Employee morale	3,152	3,000	0.021*
New product introduction	3,139	2,921	0.010**
New product yield	3,335	3,132	0.016*
Process capability	3,233	3,042	0.005**
Productivity	3,929	3,666	0.000***
UK higher			
Cash flow	3,815	4,061	0.013**
Product cost	2,790	2,956	0.004**
Product reliability	3,270	3,637	0.000***
Priority orders	3,233	3,428	0.039*

Table IX .
Individual areas in
which one country was
significantly better
than the other

Notes:***.....<=0.001; **.....<=0.01; *.....<=0.05

7.3 The Institutional Push/Need Pull Model

The key challenge of this survey is to aggregate the results of a variety of research projects in order to explain why UK companies face so many difficulties adopting best practices and transforming them into performance.

As indicated in section 7.1., an immediate observation of this systematic literature review was the overall heterogeneity of how research frameworks were built and tested. Whilst many research questions can be formulated, two were paramount to explain the research findings of the Made in Europe survey and Clegg's survey:

First, why are UK companies apparently so reluctant to adopt best practices?

Second, once the decision to adopt is made, why so few UK companies manage to reap the benefits of adoption?

To answer these two questions, it was necessary to examine the reviewed evidence in the light of a generic process of adoption of best practices.

Only a portion of the reviewed papers actually described how they thought best practices were adopted and integrated within firms. It is also worth stressing that very few reviewed surveys made any empirical effort to test adoption process models. Most typically, researchers present an adoption process model when building their research framework, but this process model has no or little relationship to the data that is being tested later.

This relative lack of focus on the adoption process is disappointing. Ahire and Ravichandran's (2001, pg 458) findings indicate practicing managers are often pressured into implementing TQM as a "potpourri" of techniques and training programs, and it is often hard to reconcile prescriptions from quality consultants with what happens on the manufacturing shop floor. They suggest that reviewing the entire process of TQM implementation through a structured innovation adoption process model (such as the one presented in figure 7.1.) should aid managers in navigating through the various facets of a TQM program.

The approach followed in this review was to develop a generic model exhibiting a maximum compatibility with those described in the reviewed papers, especially with those that were supported by empirical research (Ahire and Ravichandran, 2001, Bessant et al., 2003, Ravichandran, 2000; Szulanski, 1996). Papers which provided process models that were more conceptual and only mildly related to research findings are: (Beyer et al., 1997, Davis and Kocchar, 2000; Krause, 1999, Newell et al., 1998; Zeitz et al., 1999).

Two papers were the starting point of this integration approach as described in box 1.

Box 1. The Two Adoption Mechanisms

Chakrabarti and Rubenstein (1976) in their review of adoption of NASA innovations state that the study of the exchange of technical information (product and processes) between individuals and groups has in the past been represented by two main traditions of research studies of 'technology transfer' and studies of the 'diffusion of innovations.'

Technology transfer differs from ordinary scientific information transfer in the fact that to be really transferred, it must be embodied in an actual operation of some kind.

The research in the area of diffusion of innovations involved the study of (1) the acceptance, (2) over time, (3) of some specified item - an idea or practice, (4) by individuals, groups, or other adopting units, linked to (5) specific channels of communication, (6) to a social structure, and (7) to a given system of values and culture.

Technology transfer studies have tended to emphasize the point-to-point transfer mechanism whereas the diffusion literature has dealt with the pattern of spreading an item over time.

Technology transfer has an element of planning and purposiveness, whereas the diffusion process denotes an element of naturalness.

In the majority of the research studies reviewed, there is an implicit assumption that the adoption of best practices is a process akin to the process of technology transfer described by Chakrabarti and Rubenstein. In other words, most researchers implicitly posit that firms adopt best practices to address specific, identified needs and objectives. They do not consider the possibility that adopting best practices could be the result of a natural process, and that the adoption decision could be led by forces other than a rational analysis of technical factors of production. This stands in stark contrast with the Information Systems (IS) innovation adoption literature.

Box 2. The IS innovation adoption literature

Ravichandran (2000) studies the swiftness and intensity of administrative innovation adoption through an empirical study of the adoption of TQM in information systems.

Although Ravichandran's research is about the adoption of best practices, it stands out from the other reviewed surveys because of its objectives to test the validity of the models of technological innovation diffusion in IS to the case of administrative innovations.

The technology innovation adoption in IS has a long research tradition rooted in the technology-push and need-pull (TP/NP) models which were introduced by Schon (1967). The research of Zmud (1982, 1984) and Chimbander and Kon (1994) all provide empirical evidence to support the importance of the push/pull distinction in terms of understanding adoption drivers and adoption success. More recently, Chau and Tam (2000) empirically developed a TP/NP model of the organisational adoption of open systems technology. Chau and Tam conclusion is that the TP-NP model was supported by the data and was useful to explain the adoption decision.

The model was renamed Institutional Push/Need Pull to match the context of best practices adoption. Section 7.4. provides the evidence which supports the credibility of this model, in terms of demonstrating the existence of two distinct adoption drivers.

Although there was evidence that two mechanisms drive adoption, there was no evidence that the post adoption activities would differ significantly. Figure 7.3 presents the Institutional Push/Need Pull model along with all the other models reviewed. Box 3 provides definitions for each of the stages of this model.

As indicated in section 7.1., the term process is to be interpreted in its broadest sense here. Newell and her colleagues (1998) suggest the use of the term "episode" rather than "stages" to stress that there can be considerable overlap between the different implementation activities. Similarly, Chakrabarti and Rubenstein (1976) stress the problem of an idealistic and "over-realistic" interpretation of what is meant by adoption process. They stress that the different steps are not necessarily sequential in real life, nor can they be completely programmed.

Box 3. The Different Stages of the Institutional Push/Need Pull Model

Initiation (Szulanski, 1996)

All events that lead to the decision to transfer a best practice after a discovery of needs, search for potential solutions, discovery of superior knowledge. Benchmarking may follow an orderly sequence or may resemble organised anarchy.

Set-Up (Bessant et al., 2003)

Begins with the decision to proceed. The target practice is often adapted to suit the anticipated needs of the recipient, to pre-empt problems experienced in the past or conceptually anticipated.

Implementation (As defined in this review)

Implementation is the mere launch of the change program and the execution of the short-term actions that have been planned for. This includes training activities, rewriting of procedures, acquisition of supporting technological infrastructure and execution of planned structural changes. There should be no expectations of financial returns or mass-acceptance at this stage. This stage is most often implemented as a project.

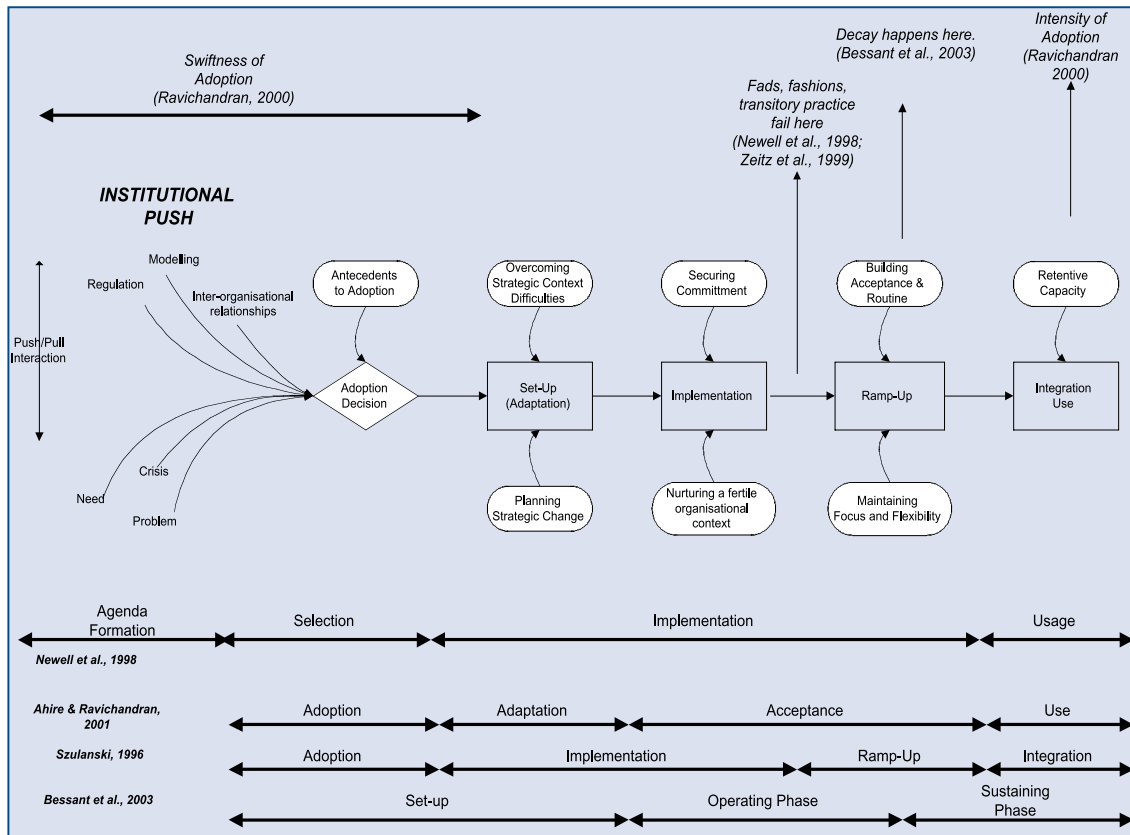
Ramp up – ramping up to performance, (Szulanski, 1996)

The ramp up stage begins when the company starts using the new practice. Focus is on resolving unexpected problems. Problems should be expected at first, but performance gradually improves, ramping up toward a satisfactory level. This stage is a brief window of opportunity to deal with the unexpected. It is at this stage that the capacity to learn is crucial (Bessant et al., 2003).

Integration (Szulanski, 1996)

This stage begins after the company achieves satisfactory results with the new practice. Its use becomes gradually routinised. A shared history of the use of the practice is built, and actors and actions become typified. The new practice becomes institutionalized, or entrenched (Zeitl et al., 1999).

Figure 7.3. Institutional Push and Need Pull Model and other reviewed models

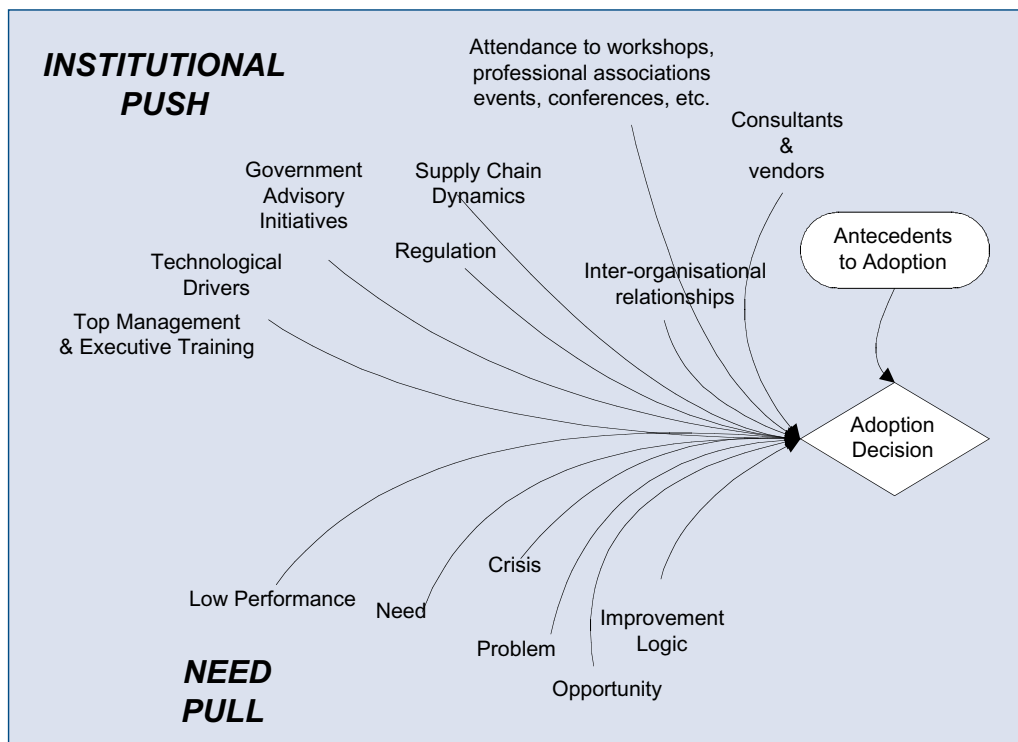


7.4 Adoption Drivers

7.4.1 Review of Evidence

The objective of this section is to present the reviewed empirical evidence which supports the existence of two distinct mechanisms (institutional push and need pull) driving companies to adopt best practices. The detailed evidence is displayed in Evidence Table 2. The findings are summarised in figure 7.4.

Figure 7.4. Push and Pull Adoption Drivers Supported by Empirical Evidence.



Evidence Table 2: Best Practices Adoption Drivers

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings Need Pull Institutional Push
Ascarì, Rock, & Doutta	Case based research of 16 BPR projects in large multinationals.	1995	UK, USA, Singapore	<p>Classify companies by their initial state (good, average, poor, crisis).</p> <p>Reports that companies in crisis situation go through more radical change (re-organisation, redefinition of roles, company-wide change).</p> <p>In contrast, good companies tend to emphasize flexibility and adaptability and implement area-specific changes.</p>
Bessant, Kaplisky, & Lamming	<p>Case base research.</p> <p>Telephone surveys of 25 organisations.</p> <p>Detailed case studies of 6 supply chains.</p>	2003	UK	<p>1). Factors driving the introduction of Supply Chain Learning are: technological drivers, sustained pressure on pricing, ability to satisfy widely fluctuating volumes of production, ensure reliable suppliers of components to counter fluctuation in demand.</p> <p>2). Mentions the role of government's white paper on competitiveness as an institutional source of best practices adoption across the supply chain.</p> <p>3). Stress that driving forces for adoption usually resides in one central, pivot firm within the supply chain.</p>
Beyer, Ashmos, & Osborn	<p>Case base research – longitudinal.</p> <p>2 companies semiconductor industry.</p>	1997	USA	<p>Describes the importance of “prior to selection” training for top management and executives, and the impact of the quality of this training on implementation results.</p>

<i>Author</i>	<i>Data used in Study</i>	<i>Dates</i>	<i>Location of Study</i>	<i>Summary of empirical Findings</i>	
				<i>Need Pull</i>	<i>Institutional Push</i>
<i>Boddy, Caitlin, Charles, Fraser-Kraus, & McBeth</i>	<i>Postal survey of 100 firms implementing supply chain partnering.</i>	<i>1998</i>	<i>UK</i>		<i>The statement "The pressures for change were clear and urgent" for adopting supply chain partnering scored 3.79/5 for successful firms versus 3.43/5 for unsuccessful firms. The difference is significant at the 0.05 level.</i>

Evidence Table 2

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings Need Pull Institutional Push	
Chakrabarti & Rubenstein	Postal survey of 65 companies having adopted NASA innovations.	1976	USA	<p>Develop a model of the factors leading to adoption success for process innovations.</p> <p>His findings indicate that recognition of a need for a process innovation is one of the main factor in determining its utilisation.</p>	
Dixon, Arnold, Heineke, Kim, Mulligan	Review of 23 BPR projects (15 primary data + 8 secondary data).	1994	USA	<p>Out of the 15 projects, 3 were launched from a crisis situation. In these 3 projects, understanding the need for change and communicating it was not an issue.</p> <p>The other 8 projects were "opportunity" changes, where top management had developed a vision for the firm. Current capabilities were assessed as insufficient and BPR as the mechanisms to bridge the gap between current capabilities and the vision.</p>	

Evidence Table 2

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings	
				Need Pull	Institutional Push
<i>Drew</i>	<i>Postal survey of 43 financial institutions.</i>	<i>1994</i>	<i>USA and Canada</i>	<p><i>Drivers for the adoption of BPR: Senior management frustrated by inability to achieve results.</i></p> <p><i>Many financial products experiencing slow or stagnant demand.</i></p>	<p><i>Drivers for the adoption of BPR: Deregulation and regulation have shifted boundaries.</i></p> <p><i>Recession leading to increasing pressures for downsizing.</i></p> <p><i>Huge investments in technology have been made.</i></p> <p><i>New financial products often easily copied so process innovations may give more of an edge.</i></p>
<i>Hughes, Williams, & Ryall</i>	<i>Survey of 133 construction consultants & contractors registered for ISO 9000 certification.</i>	<i>2000 (survey 1996)</i>	<i>UK</i>		<i>84% of respondents report seeking certification because of client pressures.</i>

Evidence Table 2: Institutional Push

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings Institutional Push																																																	
Kumar & Chandra	Postal survey of 37 cross-sectors organisations.	2001	USA	<p>What are the reasons for initiation of benchmarking in your organisation for the past 2 years?</p> <p>Increased profitability (67%), Maintain competitive advantage (67%), increase competitive advantage (67%), learn other processes (3%).</p>																																																	
Newell, Swan, & Robertson	Postal survey (1277) and interviews (80) of firms belonging to professional operations management association. Focuses on the adoption of BPR.	1998	UK (733) France (170) Netherlands (198) Sweden (176)	<p>Survey shows statistically significant differences in terms of institutional involvement and networking for adopters of TQM.</p> <p>Mean networking score for adopters and non adopters on the various networks used to find out about the latest ideas.</p> <table border="1"> <thead> <tr> <th></th> <th>Non-adopters</th> <th>Adopters</th> <th>t-value</th> </tr> </thead> <tbody> <tr> <td>Colleague networks</td> <td>4.19</td> <td>4.35</td> <td>2.53(p=0.05)</td> </tr> <tr> <td>Professional networks</td> <td>2.27</td> <td>2.18</td> <td>NS</td> </tr> <tr> <td>Supply chain networks</td> <td>3.39</td> <td>3.39</td> <td>NS</td> </tr> <tr> <td>Consultant/vendors network</td> <td>2.03</td> <td>2.26</td> <td>2.25 (p=0.01)</td> </tr> <tr> <td>Total contact with networks</td> <td>2.65</td> <td>2.72</td> <td>NS</td> </tr> </tbody> </table> <p>(1 = 'never'; 6='daily')</p> <p>Mean networking score for adopters and non adopters on attendance at professional events</p> <table border="1"> <thead> <tr> <th></th> <th>Non-adopters</th> <th>Adopters</th> <th>t-value</th> </tr> </thead> <tbody> <tr> <td>Mean total events</td> <td>1.22</td> <td>1.29</td> <td>3.17(p=0.001)</td> </tr> <tr> <td>Mean formal events</td> <td>1.23</td> <td>1.31</td> <td>3.12 (p=0.001)</td> </tr> <tr> <td>Mean informal events</td> <td>1.19</td> <td>1.27</td> <td>2.75 (p=0.001)</td> </tr> </tbody> </table> <p>(1 = 'never in the last 12 months'; 3='attended more than 1 such event in the last 12 month')</p> <p>Regression analysis with length of BPR adoption as the dependent variable</p> <table border="1"> <thead> <tr> <th></th> <th>F-value</th> <th>R square</th> </tr> </thead> <tbody> <tr> <td>Involvement in informal PA events</td> <td>16.72</td> <td>0.08</td> </tr> <tr> <td>Consultant/vendor networking</td> <td>14.85</td> <td>0.08</td> </tr> </tbody> </table> <p>These two factors explain more variance than size (0.02) and industry sector (0.05).</p>		Non-adopters	Adopters	t-value	Colleague networks	4.19	4.35	2.53(p=0.05)	Professional networks	2.27	2.18	NS	Supply chain networks	3.39	3.39	NS	Consultant/vendors network	2.03	2.26	2.25 (p=0.01)	Total contact with networks	2.65	2.72	NS		Non-adopters	Adopters	t-value	Mean total events	1.22	1.29	3.17(p=0.001)	Mean formal events	1.23	1.31	3.12 (p=0.001)	Mean informal events	1.19	1.27	2.75 (p=0.001)		F-value	R square	Involvement in informal PA events	16.72	0.08	Consultant/vendor networking	14.85	0.08
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Evidence Table 2: Need Pull

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings Need Pull
<p><i>Pil & MacDuffie</i></p>	<p><i>From International Motor Vehicle Programme at MIT. 39 plants with data at two time points (1989 and 1994). Completion of surveys (plus visits from research teams to verify data).</i></p>	<p>1996</p>	<p><i>Plants representing 24 companies in 17 different countries.</i></p>	<p><i>Study of the factors driving the adoption of high involvement work practices. Hypotheses tested through regression analysis are: H1: Organisations will be more likely to adopt HIWP if they have already adopted complementary HR practices (e.g. selection, recruitment, incentives) and/or flexible automation. Supported for HR practices but not for automation. H2: Organisations will be more likely to adopt HIWP if they are exhibiting poor performance compared to competitors (from evolutionary perspective). Not supported (direction of relationship as expected but not significant). H3: Organisations will be more likely to adopt HIWP if their employees have less experience with existing practices. (Difficulty of unlearning practices) Not supported. In fact managers with greater tenure were significantly more likely to adopt HIWP. H4: Organisations will be less likely to adopt HIWP if they have recently undertaken lay-offs or other actions that reduce trust on the part of the workforce. Not supported. H5: Organisations will be more likely to introduce HIWP in the presence of changes that cause some "unfreezing" in the current way of doing things (Disruptions such as deregulation mean the costs of introducing something new are lowered). Supported for new model introductions but not for new additions to the plants.</i></p>

Evidence Table 2: Need Pull

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings Need Pull
<p><i>Pil & MacDuffie</i></p>	<p><i>From International Motor Vehicle Programme at MIT. 39 plants with data at two time points (1989 and 1994). Completion of surveys (plus visits from research teams to verify data).</i></p>	<p><i>1996</i></p>	<p><i>Plants representing 24 companies in 17 different countries.</i></p>	<p><i>Additional qualitative analyses from interviews and visits show that companies that moved most rapidly to adopt new work practices from 1989 to 1994/3:</i></p> <ul style="list-style-type: none"> <i>* Faced a serious competitiveness crisis.</i> <i>* Their senior managers (and sometimes union officials) perceived the source of crisis as internal (i.e. poor organisation of mass production system) and benchmarked against other competitors to validate this perception.</i> <i>* Top managers and union officials reached the conclusion lean production principles should be applied.</i> <i>* Company had relatively little experience with work reforms.</i> <i>* Company found effective ways to cultivating organisational learning across internal functional or divisional boundaries.</i> <i>* Formed learning relationships with other companies.</i> <p><i>Similarly, report that many plants in US and Canada that retained relatively traditional work practices did so because:</i></p> <ul style="list-style-type: none"> <i>a) Management and union ambivalence about work reform that developed to the earlier change efforts in the late 70s and early 80s.</i> <i>b) Competitive crises not necessarily interpreted as having internal sources or as requiring a fundamental production principles.</i> <i>c) Organisational learning, with respect to innovations both inside and outside the plant, were not always carried out effectively.</i> <i>d) The fact that most of these plants remained highly focused on building a single model at high volume provided less incentive to become more flexible by changing work practices.</i>

7.4.2 Introducing Institutional Theory: A Review of Best Practices within Supply Chains

Most of the reviewed empirical works consider, explicitly or implicitly, that the decision to adopt a best practice is made on technical and rational grounds. A thought-provoking facet of considering institutional push mechanisms is to suggest that the adoption logic of a best practice may differ.

Institutional theory makes such a claim. Institutional theory originated with DiMaggio and Powell's (1983) notion of mimetic isomorphism which asserts that the greater the amount of external modelling (i.e. the extent to which another company appears as a model), the greater the propensity to imitate. Institutional theory is, therefore, concerned with both the issues of imitation (why do firms seek to imitate each other) and legitimacy (how companies derive legitimacy for their action from the institutional level rather than through technical/rational analysis). Voss and Blackmon (2003) point out that the focus of institutional theory is not on the individual organisation but upon a category or network of organisations. This is why institutional researchers focus on how external institutions construct and interpret the organisation (Suchman, 1995). Organisations must accommodate institutional expectations, even though these expectations may have little to do with technical notions of performance accomplishment. For example Hughes, Williams and Ryall report that "(the confirmation by respondents of client pressures to achieve certification provide proof that) a desire to improve the economic performance of the company was not the only reason and may not even be the primary reason for a company to seek registration". Finally, it is worth highlighting that it is generally agreed amongst institutional theorists that institutional pressures may prevail when uncertainty about relationships between practices and outcomes leads to the adoption of some practices whose value cannot be unequivocally demonstrated.

Zeitz and his colleagues (1999) discuss the different mechanisms through which adoption can take place. Internal mechanisms are the imitative propensity of the firm, a trend for self identity formation (how does the firm perceive itself and acts to fulfil this image), and sunk costs (the tendency to continue past initiatives). In contrast, external mechanisms are external dependencies, external power, and network ties.

The notion of institutional push appears as an ideal channel for policy making, as policy makers can encourage adoption of best practices at several levels:

At a societal level, they can encourage cultural shifts (as the US did in the case of quality management with TV educational programs, Zeitz et al., 1999).

At an institutional level, by supporting and sponsoring the creation of "institutions" such as the British standard BS 5750, which was derived from UK military quality systems requirements from the 1960s and eventually became ISO 9000.

At an organisational level: By exerting power on suppliers, best practices can be diffused to all branching supply chains (Bessant et al., 1999).

There were few research results found providing information on disseminating best practices at the societal and institutional level (with exception of ISO 9000, which is discussed in the next section). However, there was evidence relative to institutional push mechanisms being used at the organisational level.

Evidence table 3 presents relevant research results. It contains a wide range of research findings, and it should read in conjunction with the evidence regarding the adoption of supply chain partnering in evidence table 1.

Evidence table 3 can be summarised as follows:

There is evidence that a supplier's actions or malpractices can significantly influence both the adoption of best practice and the performance of a focal firm.

One course of action to remedy to this dependence would be to invest in suppliers' development programmes, where a focal firm becomes the "diffusion engine" of a supply chain (Bessant et al., 2003; Case study of the Silicon Glen in Scotland from Hanson et al., 1994, Krause, 1999).

What data suggests is that some firms find customer/supplier relationship management programmes difficult to implement.

The evidence regarding the benefits are mixed. Some firms report being "annoyed" by customer pressures to adopt best practices and state that it only results in increased costs and bureaucracy, whereas others report performance improvements.

Evidence Table 3: Best Practices and Supply Chain Interactions

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Ahire & Ravichandran	407 questionnaires – automobile parts suppliers industry.	2001	USA	<p>Proposes that the relative positioning of the two parties (suppliers and customers) at the opposite ends of the supply chain as a potential limitation to a co-operation linkage. This means that the direct impact of customer focus on supplier co-operation can be blurred as a result of the complex dynamics of intermediate manufacturing activities. Such a blurred perception could possibly contribute to the perceived lack of significance of the path between customer focus and external (supplier) co-operation.</p> <p>The authors' finding supports this argument. Internal cooperation appears to be affected only by employee management. The paths from supplier quality management and customer focus were found to be insignificant. While supplier quality management is an important aspect of quality improvement, the major thrust of many quality efforts is typically on improving internal processes.</p>
Bateman & Rich	Case based research 21 companies adopting process improvements in the automobile components industry.	2003	UK	<p>Introduces the "Industry forum" scheme which was introduced to accelerate improvements in the automotive industry. Hires engineers from foreign high performance manufacturers to teach UK engineers process improvements methods. Scheme is reported to be successful.</p>
Cagliano, Blackmon, Voss	Data is from the MICROSCOPE Database which includes 297 manufacturing SMEs from Europe.	2001	Italy, UK, Belgium, Denmark, Germany, Sweden, Ireland	<p>Moreover, a number of SMEs are operating within supply chains where they can play an increasing role, only if they follow the standards and requirements set by the focal companies. In this context, the traditional technical excellence or operational flexibility of SMEs are no longer sufficient to promise good performance.</p>
Davies & Kocchar	Structured interviews with 60 managers from 4 companies (2 aerospace, 2 automotive). Focusing on the benchmarking of manufacturing planning and control systems.	1999	UK	<p>Reports that the area of purchasing and material control are the most benchmarked. Suggests that this is due to high industry/literature pressure to do so.</p>

Evidence Table 3

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Drew	Postal survey of 43 financial institutions.	1994	USA and Canada	Resistance by suppliers or customers is reported to be one of the barriers to success for the implementation of BPR projects.
Giunipero	Postal survey.	1988	USA	<p>This article presents research results highlighting key barriers to JIT-purchasing implementation.</p> <p>The six major barriers are: type of production process, frequency of schedule changes, lack of supplier benefits, distance from suppliers, focus on price versus cost, and lack of role models to follow.</p>
Hanson, Voss, Blackmon, Oak	Interviews of manufacturing sites. 663 manufacturing sites. (Made in Europe study = MIE)	1994	Finland: 24 Germany: 210 Netherlands: 101 UK: 328	Quotes the example of "The Silicon Glen" in Scotland which relied heavily on supplier development and succeeded.
Pil & MacDuffie	From International Motor Vehicle Programme at MIT. 39 plants with data at two time points (1989 and 1994). Completion of surveys (plus visits from research teams to verify data).	1996	Plants representing 24 companies in 17 different countries.	Additional qualitative analyses from interviews and visits show that companies that moved most rapidly to adopt new work practices from 1989 to 1994/3 formed learning relationships with other companies.
Selto, Renner, & Young	Field study of a Fortune 500 manufacturing site over 6 months. JIT user. Includes 406 employees questionnaires and 19 managers questionnaires.	1995	USA	Report from interviews that: "Engineers made depreciating remarks about the competence and foresight of management, particularly with regard to relationships with suppliers".

Evidence Table 3

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Panizzolo	Multiple case study of 27 firms having adopted lean production.	1998	Italy	The data shows that firms find it more difficult to fully adopt innovative practices, which concern the management of external relationships with suppliers and customers than internally oriented innovative practices.

Table 8
Degree of adoption of improvement programmes in the Supplier Relationships area

Improvement Programme	Score	χ^b	σ^c
SR1 JIT deliveries	92.5		
SR2 open orders	92.5		
SR3 quality at the source	100		
SR4 early information exchange on production plans	85.1		
SR5 supplier involvement in quality improvement programmes	88.8		
SR6 reduction of number of sources and distances	62.9		
SR7 long-term contracts	55.5		
SR8 total cost supplier evaluation	55.5		
SR9 supplier involvement in product and development	44.4		
		75.2	19.3

»Score and improvement programme represents the percentage of respondents who rated the programme as wither adopted (3) or fully adopted (4).
 b Area average adoption factor.
 c Area variance adoption factor.

Table 9
Degree of adoption of improvement programmes in the Customer Relationships area

Improvement Programme	Score	χ^b	σ^c
CR1 reliable and prompt deliveries	100		
CR2 commercial actions to stabilize demand	96.2		
CR3 capability and competence of sales network	92.5		
CR4 early information on customer needs	74.0		
CR5 flexibility on meeting customer requirements	62.9		
CR6 service-enhanced product	48.1		
CR7 customer involvement in product design	37.0		
CR8 customer involvement in quality programmes	44.4		
		69.38	23.3

»Score and improvement programme represents the percentage of respondents who rated the programme as wither adopted (3) or fully adopted (4).
 b Area average adoption factor.
 c Area variance adoption factor.

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Taylor & Wright	Longitudinal (5 years) survey of TQM implementation + interviews. 109 organisations.	2003	UK	<p>Tested the hypothesis: The size of the customer base is significantly associated with the perceived degree of TQM success.</p> <p>The data did not support the hypothesis. However, authors report to having detected in the data a degree of compliance with customer pressure to implement TQM:</p> <p><i>"We were pushed toward TQM by our main customer. Of course we went along with it to keep them happy we see no real benefits for ourselves, in fact it created bureaucracy for us. We've stopped at ISO9000 - again our main customer told us to get it. I suppose we will continue with TQM if they insist. You can't afford to get on the wrong side of them".</i> Managing director, medium-size electronics company.</p> <p><i>"Our main customer presented TQM as a 'have to do' rather than something which could have benefits. It was introduced and driven by their London based consultant and it all appeared too American in concept and content."</i> Chief executive, small mechanical components company.</p>

Evidence table 3 shows that the use of institutional push mechanisms to diffuse best practices does not come without controversy. This is consistent with the conclusion of Newell, Swan and Robertson (1998) who conclude their survey of the diffusion of BPR practices in 4 European countries that too often, institutional channels work as "fashion setting networks", only resulting in superficial implementation efforts that do not eventually result into effectiveness gains.

The following question emerges: Do best practices adopted through institutional push mechanisms, either imitative propensity or customers pressures, actually result in entrenched and effective practices, or only stimulate adoption of superficial programmes? This question is at the core of the debate surrounding management "fashions" or management "fads".

There is an abundant conceptual literature about management fashions, which is why only a few were reviewed as part of this evidence-based review. Out of the two that were part of the final list, the first was fully rejected after the quality assessment stage and the second (Zeit et al., 1999) was kept for its theoretical contribution but rejected for its weak empirical basis.

There was however enough evidence in the reviewed papers to answer whether or not institutional push mechanisms should be seen as positive or negative. Box number 3 lists empirical findings that analyse the adoption of best practices from a supply chain perspective.

Box 3. Supply Chain Performance and Best Practices

Lowe and his colleagues (1997, pg 785) report that:

"The data shows that high-performing plants exist within high-performance supply chains where, for example, suppliers provide them with better quality and on-time deliveries and customer provide them with more stable production schedules."

Their conclusion is that:

"This highlights the limitations of studies which focus exclusively on plant-level practices. It also suggests that the wider context in which plants operate have a crucial bearing on the plant's manufacturing performance."

Their findings clearly reject any proposition that institutional push mechanisms can have negative effects on individual firms. Firms that report suffering from undue customer pressures may be right or wrong, but they very likely belong to a low performance value chain.

This is consistent with the following recommendation:

"(Implementation is subject to) commitment on the part of the supply chain co-ordinator to learn from suppliers and to accept that some answers to the supplier's malpractice could be found in their own malpractice" (Bessant et al., 2003).

According to Bessant and his colleagues, the competitive performance of a value stream depends upon learning and the development of the whole system, not just that of the leading players. They introduce the notion of leveraging the supply chain through supply chain learning. The ability to learn at the supply chain level is both a source of competitiveness and a way of disseminating best practices effectively (Bessant et al., 2003, pg 180; Bessant et al., 1999).

There are therefore very few rationales for questioning the usefulness of institutional push mechanisms. What should be questioned instead, is what happens once the stimulus for adoption has been sent. A major shortcoming of the literature reviewed is that it is strongly biased. Papers implicitly adopting the need pull mechanism consider institutional push mechanisms as "noise in the system" or ignore them altogether. Institutional theorists, on the other hand, tend to consider push mechanisms in isolation, i.e. regardless of any compatibility with a need pull factor. This stands in stark contrast with the IS technology adoption literature, which has empirically demonstrated that push and pull mechanisms occur simultaneously. These push/pull interactions are discussed in the next section.

7.4.3 Push/Pull Interactions

The focal question of this section is whether or not push and pull mechanisms are always congruent (in terms of encouraging adoption and generating performance) or whether they work at odds with each other?

The only case where ample evidence could be collected about push/pull interactions is the case of ISO9000 and Quality Management practices. Due to its nature as quality standard, ISO9000 is an institutional best practice, and many surveys confirm that institutional push mechanisms are often the sole driver for adoption (cf. evidence table 4). Quality management efforts, such as TQM initiatives, tend to be need-derived.

Two stances are adopted in the literature regarding the impact of ISO 9000 on quality management efforts (Taylor and Wright, 2003). For some, ISO 9000 certification is a stepping stone to TQM, and thus, it has a positive impact. For others, ISO 9000 creates a conformance culture that is the antithesis of the continuous improvement culture necessary for TQM. Research findings about the relationship between ISO9000 and TQM are presented in evidence table 4. These findings are summarised in table 7.1 below.

Table 7.1. Push/Pull interaction in the case of ISO9000 and TQM.

		<i>Existence of Institutional Push</i>		
		<i>None</i>	<i>Modelling</i>	<i>External</i>
<i>Clear Acknowledgement of Need Pull for Quality</i>	<i>None</i>	<i>No adoption of quality practices</i>	<i>Relationship between ISO 9000 and Conformance culture. No Quality performance outcomes.</i>	
	<i>Measurement & Internal control oriented TQM/ Customer satisfaction oriented</i>	<i>Neergard's platonic and vision configurations. Ad-hoc, low intensity, adoption of ISO 9000 & TQM</i>	<i>Internal configuration of Neergard</i>	<i>Competitors configuration Of Neergard</i>
			<i>Excellent configuration of Neergard – Relationship between ISO 9000 & TQM is understood. Synergistic complementary. High intensity of adoption. Quality Performance.</i>	

In the case where the company has no identified quality needs and is not subject to institutional pressures, no quality-oriented best practices are adopted.

When only institutional pressures exist, ISO 9000 is usually adopted for the sake of pleasing the external parties that requested it. In this case, the relationship between ISO9000 and TQM is usually not understood, as TQM is of no immediate concern (21% of companies in Taylor and Wright's survey). The negative conformance culture mentioned above tends to prevail in this configuration.

Where there are no institutional pressures, but recognition of a quality need (either to control quality or to improve it), companies select quality practices (ISO 9000 or TQM) as they see fit. Intensity of adoption is typically low. If ISO 9000 is adopted, it is only because it addresses a need within these companies.

If companies recognise the need to monitor quality and are also subject to institutional pressures to demonstrate that they are monitoring quality, they will adopt ISO9000 as it perfectly matches their needs. TQM practices might be adopted on an ad-hoc basis if they address other identified needs.

Finally, in the case of companies seeking high standard of quality and subject to high institutional pressures (for instance, by entering the European Quality Awards Scheme), a full integration of ISO9000 and TQM is necessary.

Consistently with the conclusion of Neergard (2002), push-pull interactions are highly context-dependant. When policy makers "push" for best practices, such as the adoption of quality standards, these "pushed" best practices will actually perfectly match the need of only a fraction of companies. For other companies, the "pushed" best practices will have to be adapted in some ways. An emerging theme of importance from this review, which concerns both practitioners and policy makers, is to make sure that push/pull interactions are managed in a positive, performance-generating fashion.

If adoption of a best practice becomes "acquiescence" rather than adoption (Voss and Blackmon, 2003), it is unlikely that companies will go through the motion of all the stages of the IP/NP model presented here, and thus, that adoption would lead to performance.

The responsibility for a negative push/pull interaction is likely to be shared. On one hand, a company might not acknowledge the value generating potential of a pushed best practice for a variety of reasons described in the later sections of section 7. On the other hand, the pushed best practices might be too generic to be valuable for all companies. This is a common criticism of ISO 9000, reported to be too expensive and formal for SMEs (Voss and Blackmon, 2003).

7.4.4 Conclusions

There are two important conclusions for this section:

First, the lack of an association between ISO9000 and performance outcomes reported in evidence table 4 has only been approached from two perspectives. Researchers either question (1) why are some best practices, of questionable universality and value, pushed onto companies? Or (2), why are companies not adopting best practices when they need them? We suggest that the answer to both of these questions reside in a better management of push/pull interactions.

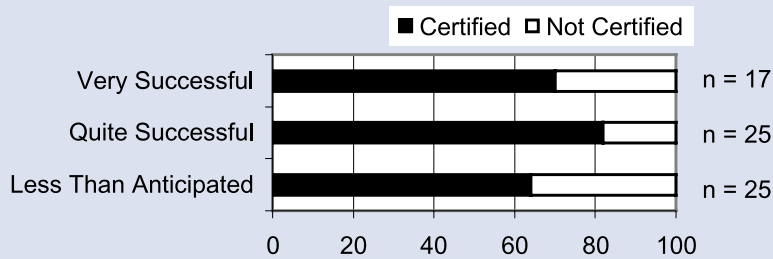
We also suggest that the performance of push mechanisms cannot be evaluated through the same measures than pull mechanisms. When considering the variation of quality configuration in table 7.1, there are no reasons why an average association measure of ISO9000 and performance outcomes should be significant. If a company decides to adopt statistical process control because of an identified need, it should result in a positive financial measure, such as return on investment. If a company identifies ISO 9000 as the answer of a similar need, it should be assessed through the same measure. However, if a company is pressured into adopting ISO9000, it might not experience (or not want to experience) any performance improvement. This does not mean that this adoption has not benefited the supply chain that this company belongs to. We believe that more research is needed to develop performance assessment framework for push mechanisms, through which performance impacts can be assessed at the organisational, institutional, and societal levels.

Evidence Table 4: Relationship between ISO 9000, TQM adoption, and Quality Performance

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings			
Collins	Replication survey of the "Made in Europe" survey.	1996	Switzerland, compared with UK and Germany.	<p>Quality certification does not necessarily lead to better quality performance.</p> <p>63% of the sites surveyed for the MIS study had ISO 9000 certification. In addition, a number of sites who were not certified at the time of the survey were planning to apply for it.</p> <p>However, when the quality performance data was split between companies with ISO 9000 certification and those without it, certification appeared to have little or no influence.</p>			
Neergard	Postal survey of 270 companies.	2002	Denmark	<p>There is a clear correlation between certification and configurations.</p> <p>From his observation, Neergard concludes that certification implies that companies choose the internal control, competitor or excellent configuration in their quality work (i.e. certification is contingency factor).</p>			
<i>Certification and configurations»</i>							
	Total number	Certification	Certification (%)	No certification	No certification(%)	Initiated/Planned	Initiated/Planned(%)
Platonic	40	5	13	28	70	7	18
Vision	52	7	13	33	63	12	23
Internal control	29	13	45	11	38	5	17
Competitor	48	23	48	15	31	10	21
Excellent	51	28	55	19	37	4	8
Average			35		48		17
»Statistically significant. Chi test: p -value 0.0001, Q -value 37.02.							
Taylor	Quoted in Voss and Blackmon, 2003.	1995		<p>Reports that only 38% of his sample of senior executives correctly responded that the purpose of ISO9000 was to "provide a disciplined means of providing goods/services for customer"; other responses were "to demonstrate that products are of a high grade or standard" (27%), "that demonstrate that this is a TQM organisation (17%), "to strengthen control over operations (7%), or to produce paperwork to satisfy customers or to "provide an alternative to TQM" (11% combined).</p>			

Evidence Table 4

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Taylor & Wright	Longitudinal (5 years) survey of TQM implementation + interviews. 109 organisations.	2003	UK	<p>Reports that 38.5% of respondents had discontinued TQM 5 years after launching the programme.</p> <p>The main reasons for discontinuance are: lack of senior management commitment change of leadership/top management more benefit was being gained from ISO9000 certification TQM was too vague and intangible</p> <p>"TQM is far too complex to get any real benefit from. ISO9000 is adequate, simpler and of more immediate benefit. We will only come back to TQM if they make it a standard like ISO9000." Director of engineering and quality, small electronics assembly company.</p> <p>Authors believe that ISO9000 has an important role to play within TQM by strengthening systems and procedures but it is only a small part of overall TQM activity. They confirm this proposition by demonstrating that the degree of TQM success is significantly associated with understanding of the relationship between ISO9000 and TQM. 21% of surveyed companies do not understand the relationship properly.</p>



Chi Square = 2.62, 2df, p=0.27

(Source: Fig. 4. Influence of ISO9000 Series Certification on TQM success.

Conclusion is that there is no apparent link between holding ISO9000 and the perceived degree of TQM success.

Evidence Table 4

<i>Author</i>	<i>Data used in Study</i>	<i>Dates</i>	<i>Location of Study</i>	<i>Summary of empirical Findings</i>
<i>Voss & Blackmon</i>	<i>Based on the data from the 1994 Made in Europe Survey.</i>	<i>2003</i>	<i>UK data set only (328 manufacturing Sites)</i>	<p><i>H1: There is a significant positive relationship between the level of adoption of quality practices and ISO9000 certifications.</i></p> <p><i>Not supported.</i></p> <p><i>H2: ISO 9000 certification will not significantly contribute to internal quality performance when other quality practices are considered.</i></p> <p><i>Supported.</i></p> <p><i>H3: ISO9000 certification will not significantly contribute to external quality performance when other quality practices are considered.</i></p> <p><i>Supported.</i></p> <p><i>H4: ISO 9000 certification will not significantly contribute to business performance when other quality practices are considered.</i></p> <p><i>Supported.</i></p> <p><i>H5: Social conformity pressures will reduced the effect of ISO9000 on internal quality performance.</i></p> <p><i>Not supported.</i></p>
<i>Terzioski</i>	<i>Postal survey Of manufacturing companies.</i>	<i>1997</i>	<i>Australia (962) New Zealand (379)</i>	<i>Data shows that there is no link between ISO9000 and business performance in either the presence or absence of TQM practices.</i>

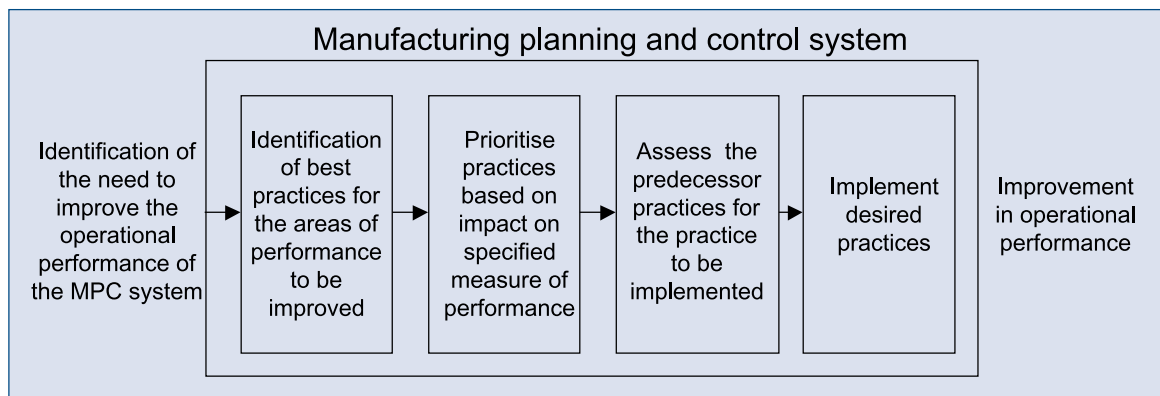
7.5 The Different Stages of the IP/NP Model

7.5.1 The adoption stage

Regardless of how a company came to consider a best practice for adoption, its selection should be treated as both a problem solving process and as an investment decision. (Chakrabarti and Rubenstein, 1976).

Although there are a large number of research studies focusing on the adoption decision, there is, quite ironically, very little research about the selection decision itself. Most studies focus on identifying the inputs and antecedents of this decision. Consequently, there are very few guidelines about the task content and sub-processes of this decision. The only exception is the best practice selection decision proposed by Davies and Kochhar (2000) shown in figure 7.5. This framework is developed in the context of the adoption of best practices for the improvement of manufacturing planning and control systems.

Figure 7.5. Davies and Kochhar's Best Practice Selection Framework



A number of authors reinforce the role of benchmarking as this stage of the process, as described in box 5.

Box 5. The Importance of Benchmarking at the selection stage

Drew (1994) reports in his study of BPR adoption in the financial service sector that successful business process change is related to use of benchmarking. However, he also reports that only 26% of companies had used benchmarking of any kind to help choose the most recently re-engineered process.

The rates of use of each best practice are positively and significantly related to the extent of benchmarking, both with companies in the same sector, and with companies from other sectors. The effectiveness of the use of a best practice is also significantly related to the extent of benchmarking (Clegg et al., 2002).

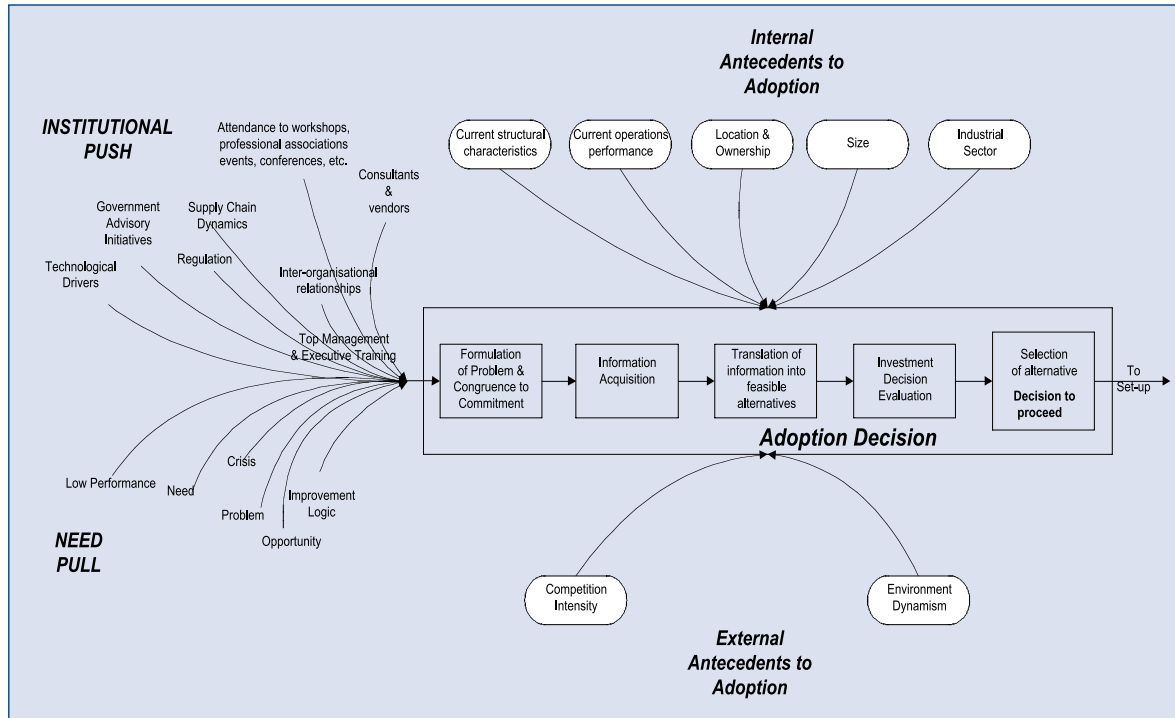
Davies and Kochhar (1999) in their review of UK benchmarking practices in the manufacturing sector report that UK companies tend to implement benchmarking superficially as a generic best practice concerned with external comparison and company visits rather than internal improvement. Benchmarking results are typically not used.

Kumar and Chandra (2001) data reveal that identifying the best practice is the most important benchmarking step identified by participants. The most dangerous obstacles to the effectiveness of benchmarking were identified as "lack of implementing benchmarking findings" and "reluctant organizational culture change".

Research studies focusing on the context of the adoption decision usually distinguish internal antecedents to adoption (see evidence table 5) and external antecedents to adoption (see evidence table 6).

Figure 7.6 below presents our synthesis of the research findings and present the adoption decision framework.

Figure 7.6. Adoption Decision Model



Evidence Table 5: Internal Antecedents to Adoption (Operations context and Ownership)

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings																																																												
Lowe, Delbridge, & Oliver	Case based survey of 71 auto-components Manufacturers over a period of 12 months.	1997	International: Europe, USA, Japan	<p>The data shows that part of the explanation for the higher performance of top plants lies with some combination of scale (volumes), capacity utilisation, and automation.</p> <p>"This leads us to question whether the conceptual contrast between lean and mass production have been exaggerated and to conclude that lean production does not negate some of the traditional correlates with high productivity, such as economies of scale."</p>																																																												
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Schmenner	Schmenner IMD sponsored survey	1997	Europe	<p>Many European industries already have vast over-capacity. More than half the European companies in a recent survey IMD-sponsored survey reporting suffering from over-capacity. Shuttering over-capacity is often a problem in Europe. Government mandates on severance pay and compensation to affected local communities make it more expensive to close facilities in Europe, and prevailing social mores make it a solution of last resort.</p>																																																												

Evidence Table 5: Internal Antecedents to Adoption (Operations context and Ownership)

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Clegg, Wall, Pepper, Stride, Morrison, Cordery, Couchman, Badham, Kuenzer, Grote, Ide, Takahashi, & Kogi	Postal survey. Random, stratified sample of companies with 150 or more employees in the, yielding a total sample of 898 companies.	2002	UK, Australia, Japan and Switzerland	<p>Further evidence of the robustness of the above findings comes from examining the extent of uptake of the practices as a whole according to country of ownership (e.g., Japanese-owned companies in the UK, UK-owned companies in Australia).</p> <p>Looking at the UK sample, there were four groups of companies sufficient in number to allow analysis, namely those which are UK-owned ($n = 377$), Japanese-owned (11), European-owned (69) and US-owned (76). Equivalent analyses to those described above showed an overall country of ownership effect ($F = 3.52$, $DF 3,529$, $p < .02$), with Japanese-owned companies in the UK revealing the highest mean uptake scores (average of 5.18 practices per company), followed by US-owned companies (3.83), European-owned companies (3.35) and UK-owned companies (3.30).</p>

Evidence Table 5 (Ownership)

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings							
Collins, Cordon, & Julien	Replication survey of the "Made in Europe" survey.	1996	Switzerland, compared with UK and Germany	<p>The origin of the parent company can influence results In the MIS study, Swiss-owned plants achieved lower levels of overall practice and performance than non-Swiss. Eighty-three per cent of plants in the sample were owned by Swiss-based companies, eight per cent by American-based organisations and a further six per cent [page 882] by parents from European Union (EU) countries.</p> <p>Although the sample size for non-Swiss-owned sites was small, analysis showed that the number of leaders in the EU-owned plants is disproportionately high. However, it should also be noted that there were no leaders at all among plants with American or other parent companies, which included parents from Canada and Scandinavia. These results are consistent with the MIE study, where foreign-owned companies fared considerably better than home-based companies in each country.</p>							
Hanson, Voss, Blackmon, Oak	Interviews of manufacturing sites. 663 manufacturing sites. (Made in Europe study = MIE).	1994	Finland: 24 Germany: 210 Netherlands: 101 UK: 328	Home Team Disadvantage? Across Europe, foreign owned companies fare considerably better than those which are domestically-owned. Japanese-owned sites are particularly outstanding at both practice and performance; American-owned have much better practice and somewhat better performance on average than domestic firms. On the other hand, companies with domestic parents have below average scores on both practice and performance.							
Voss & Blackmon	Using data from the MIE survey Published 1996 Score of 5.	The tests for differences in the adoption of manufacturing practices between sites with different parent origins were statistically significant at the $p = 0.000$ level. Manufacturing sites were more likely to have adopted world-class manufacturing practices with overseas parents. Japanese ownership was associated with the highest level of practices adoption, followed by North American and then other European ownership. The one-way ANOVA for differences in the adoption of manufacturing performance between sites with different parent origins was not significant at the $p = 0.05$ level; however, sites with Japanese ownership significantly outperformed other sites.									
		Domestic	Europe (other)	German North American	Japan	Domestic	Europe (other)	UK North America	Japan	F-test	Probability
Table XI	Practises	3,199	3,253	3,411	3,751	3,067	3,191	3,223	3,875	3,817	0.010
	Practices and Performance	3,221	3,325	3,410	3,473	3,191	3,085	3,091	3,913	2,412	0.066
	performance Combined	3,209	3,287	3,411	3,622	3,125	3,142	3,161	3,161	3,464	0.016
	by parent origin N (MANOVA)	157	26	24	3	196	37	67	4		

Evidence Table 5 (Size)

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Cagliano, Blackmon, Voss	Data is from the MICROSCOPE Database which includes 297 manufacturing SMEs from Europe.	2001	Italy, UK, Belgium, Denmark, Germany, Sweden, Ireland	<p>Size was linked with significant differences in practices, and only to a lesser extent to performance. In fact, practice scores increased with size, while a more mixed pattern was found for performance.</p> <p>In particular, practices that are more influenced by size are related to strategic planning and control, human resource management, and equipment layout and maintenance.</p> <p>In other words, smaller SMEs tend to focus on more operational aspects, while bigger SMEs are more concerned with strategic planning, business formalisation and control, and human resource exploitation.</p>
Collins, Cordon, & Julien	Replication survey of the "Made in Europe" survey.	1996	Switzerland, compared with UK and Germany	<p>In the MIS project there was a high correlation between the leaders in the sample and sites with between 201 and 2000 employees. In the case of the laggards, the reverse was true: no laggards were found at all in sites with between 501 and 2000 employees (see Figure 8). Plants in the 201 to 2000 employee range were found to achieve above average practice in virtually all areas, although it is important to note that performance did lag behind practice scores as plants increased in size to beyond 500 employees. These results vary from the MIE study, where the best performing sites fell into the 50-200 employee range. However, in both studies the largest plants lagged behind in performance, even if the relevant practices were in place, which may suggest that the infrastructure at large sites impedes rather than supports the implementation process.</p>
Hanson, Voss, Blackmon, Oak	Interviews of manufacturing sites. 663 manufacturing sites. (Made in Europe study = MIE).	1994	Finland: 24 Germany: 210 Netherlands: 101 UK: 328	<p>The right size?</p> <p>Findings are that as a site size increases, the adoption of best practices increases whilst performance decreases.</p> <p>This suggests that there is a size at which balance between availability of resources for implementation and ease of acceptance through management layers is struck.</p> <p>Small firms may perform well "informally", that is without a formal best practice label</p> <p>Larger sites adopt best practice, but can be slow to reap the performance benefits.</p>

Evidence Table 5 (Size)

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Ravichandran	Postal survey of 123 IS departments (private and public).	2000	USA	H3: There is a positive relationship between the size of the IS unit and its swiftness of adoption of TQM in systems development. Not supported. H3b: There is a positive relationship between the size of the IS unit and its intensity of adoption of TQM in systems development. Not supported.
Neergard	Postal survey of 270 companies.	2002	Denmark	Classifies companies in terms of quality management configurations. Size is a major factor in terms of explaining the incidence of various configurations.

Table 3 Configuration and company size ^a

Employees	Total number	<100		100-500		>500	
		Number	%	Number	%	Number	%
Platonic	40	26	65	13	33	1	2
Vision	52	29	56	17	33	6	12
Internal control	29	21	72	6	21	2	7
Competitor	48	18	38	22	46	8	17
Excellent	51	19	37	20	39	12	24
Average for all companies selected		113	51	78	36	26	13%

^aChi test:p-value 0.0008;Q-value 20.59.

Taylor & Wright	Longitudinal (5 years) survey of TQM implementation + interviews. 109 organisations.	2003	UK	<p>H1: That the size of firm would be significantly associated with the perceived degree of TQM success.</p> <p>The results indicate that there was no such association between firm size and success with those continuing with TQM.</p> <p>Chi Square = 4.53, 4df, p=0.339</p>
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Evidence Table 5 (Size)

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings															
Newell, Swan, & Robertson	Postal survey (1277) and interviews (80) of firms belonging to professional operations management association. Focuses on the adoption of BPR.	1998	UK (733) France (170) Netherlands (198) Sweden (176)	<p>Difference between adopters and non-adopters of BPR and organisation size</p> <table border="1"> <thead> <tr> <th></th> <th>Non-adopters</th> <th>Adopters</th> </tr> </thead> <tbody> <tr> <td>Less than 100</td> <td>193(78%)</td> <td>54(22%)</td> </tr> <tr> <td>100-500</td> <td>381(80%)</td> <td>98(21%)</td> </tr> <tr> <td>501-1000</td> <td>146(66%)</td> <td>77(35%)</td> </tr> <tr> <td>1000+</td> <td>188(58%)</td> <td>135(42%)</td> </tr> </tbody> </table> <p>Respondents were asked to indicate the size (as measured in terms of the number of employees) of their own organisation on a 7 point scale. Grouping some of these categories together, the table above shows that there was a direct relationship between firm size and adoption of BPR.</p> <p>Firms where BPR had been adopted were significantly larger than the firms where BPR had not been adopted ($t=6.38$, $p<0.0001$).</p>		Non-adopters	Adopters	Less than 100	193(78%)	54(22%)	100-500	381(80%)	98(21%)	501-1000	146(66%)	77(35%)	1000+	188(58%)	135(42%)
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Evidence Table 5 (Industrial Sector)

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings																																																			
Newell, Swan, & Robertson	Postal survey (1277) and interviews (80) of firms belonging to professional operations management association. Focuses on the adoption of BPR.	1998	UK (733) France (170) Netherlands (198) Sweden (176)	<p>Difference between adopters and non-adopters of BPR and industry sector</p> <table border="1"> <thead> <tr> <th></th> <th>Non-adopters</th> <th>Adopters 4</th> </tr> </thead> <tbody> <tr> <td>Manufacturing</td> <td>710 (75%)</td> <td>243 (25%)</td> </tr> <tr> <td>Services/retail</td> <td>38 (62%)</td> <td>23 (38%)</td> </tr> <tr> <td>Transport/distribution</td> <td>26 (67%)</td> <td>13 (33%)</td> </tr> <tr> <td>Software vendors</td> <td>28 (66%)</td> <td>25 (34%)</td> </tr> <tr> <td>Hardware vendors</td> <td>10 (59%)</td> <td>7 (41%)</td> </tr> <tr> <td>Education</td> <td>15 (88%)</td> <td>2 (12%)</td> </tr> <tr> <td>Consultancy</td> <td>59 (56%)</td> <td>39 (44%)</td> </tr> <tr> <td>Other</td> <td>16 (55%)</td> <td>13 (45%)</td> </tr> </tbody> </table> <p>There were significant differences ($\chi^2=26.61$, $df=7$, $p=0.00039$) between industry sectors in the proportion of firms that had adopted BPR.</p>		Non-adopters	Adopters 4	Manufacturing	710 (75%)	243 (25%)	Services/retail	38 (62%)	23 (38%)	Transport/distribution	26 (67%)	13 (33%)	Software vendors	28 (66%)	25 (34%)	Hardware vendors	10 (59%)	7 (41%)	Education	15 (88%)	2 (12%)	Consultancy	59 (56%)	39 (44%)	Other	16 (55%)	13 (45%)																								
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Table VIII. Differences by industry sector	<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Practice</th> <th colspan="3">Performance</th> </tr> <tr> <th>Germany</th> <th>UK</th> <th>t -test</th> <th>Germany</th> <th>UK</th> <th>t -test</th> </tr> </thead> <tbody> <tr> <td>Chemicals and pharmaceuticals</td> <td>3.370</td> <td>3.211</td> <td>0.129</td> <td>3.413</td> <td>3.275</td> <td>0.209</td> </tr> <tr> <td>Electronics</td> <td>3.283</td> <td>3.356</td> <td>0.494</td> <td>3.073</td> <td>3.247</td> <td>0.117</td> </tr> <tr> <td>Machinery</td> <td>3.378</td> <td>3.261</td> <td>0.207</td> <td>3.168</td> <td>3.214</td> <td>0.628</td> </tr> <tr> <td>Metal products</td> <td>3.233</td> <td>3.144</td> <td>0.492</td> <td>3.261</td> <td>3.315</td> <td>0.699</td> </tr> <tr> <td>Transportation</td> <td>3.435</td> <td>3.248</td> <td>0.253</td> <td>3.356</td> <td>3.094</td> <td>0.091</td> </tr> </tbody> </table>								Practice			Performance			Germany	UK	t -test	Germany	UK	t -test	Chemicals and pharmaceuticals	3.370	3.211	0.129	3.413	3.275	0.209	Electronics	3.283	3.356	0.494	3.073	3.247	0.117	Machinery	3.378	3.261	0.207	3.168	3.214	0.628	Metal products	3.233	3.144	0.492	3.261	3.315	0.699	Transportation	3.435	3.248	0.253	3.356	3.094	0.091
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Hanson, Voss, Blackmon, Oak	Interviews of manufacturing sites. 663 manufacturing sites. (Made in Europe study = MIE).	1994	Finland: 24 Germany: 210 Netherlands: 101 UK: 328	Reports that "the industry sector in which a unit operates clearly influences the set of practices which will be appropriate" – no report of statistical significance.																																																			

Evidence Table 5 (Industrial Sector)

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Clegg, Wall, Pepper, Stride, Morrison, Cordery, Couch-man, Badham, Kuenzer, Grote, Ide, Takahashi, & Kogi	Postal survey. Random, stratified sample of companies with 150 or more employees in the, yielding a total sample of 898 companies	2002	UK, Australia, Japan and Switzerland	<p>Taking the overall index of the number of practices used substantially, one-way analysis of variance by sector showed a small overall effect ($F = 2.27$, $df = 14$, 678, $p < .01$) indicating statistically significant differences. Inspection of the means showed that uptake of the practices was highest for companies in electronic machinery, industrial and commercial machinery, transportation equipment, leather, rubber and plastic sectors. In contrast, the lowest rates of overall use were by companies in textile mills, chemical and petroleum processing, fabricated metal products, stone, clay, glass and concrete sectors.</p> <p>The overall index, however, masks potentially interesting differences for particular practices. Thus, we examined sectoral differences for each practice. This analysis revealed two groups of practices. The first comprises those practices which do not differ significantly in their rates of use by sector (as shown by Kruskal-Wallis Test, using $p < .01$ as criterion). These were: total quality management, just-in-time, total productive maintenance, team-based working, empowerment, supply-chain partnering, and business process reengineering. We note that four of the five most common practices fall in this group, reflecting their general applicability. This contrasts with integrated computer-based technology, manufacturing cells, concurrent engineering, learning culture, and outsourcing, use of which varies significantly across sectors. To take integrated computer-based technology as an example, this is most common in printing and publishing, apparel and clothing, electric and electronic machinery, industrial and commercial machinery and transportation equipment sectors. Use of ICBT is least in leather, rubber and plastic, and in food and kindred products sectors.</p>

Evidence Table 6: External Antecedents to Adoption

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Drew	Postal survey of 43 financial institutions.	1994	USA	Drivers for the adoption of BPR: Increase in cross-border competition intensity.
Collins, Cordon, & Julien	Replication survey of the "Made in Europe" survey	1996	Switzerland, compared with UK and Germany	Explains the high number of World Class performing companies in Switzerland by: "This emphasis on productivity can be seen in the fact that Switzerland is ranked highest for productivity growth against the other countries. Germany is ranked second, followed by The Netherlands and the UK. Conversely, this list is reversed, with Switzerland ranked at the bottom and the UK ranked at the top, for low product cost." "The second reason for the high number of Swiss world-class and contender companies may be the fact that the laws of natural selection - the survival of the fittest - operate at a much faster rate in Switzerland than in the other countries, with plants achieving less than 60 per cent in overall practice and performance ratings having a short life expectancy."
Ravichandran	Postal survey of 123 IS departments (private and public)	2000	USA	<ul style="list-style-type: none"> • H1: There is a positive relationship between the degree of environmental dynamism and the swiftness of adoption of TQM development. • H1b: There is a positive relationship between the degree of environmental dynamism and the intensity of adoption of TQM development. <p>These two hypotheses are rejected.</p> <p>(Note: does not rule their role in the adoption decision, it only suggests that influence post-adoption is limited).</p>

7.5.2 The Set-Up Stage

The set-up stage follows the decision to proceed. The objective of this stage is to plan for the implementation of a best practice. The focus here is on trying to pre-empt problems which could lead to implementation failure. Although problems are likely to occur, the set-up stage is a chance to reflect upon implementation lessons (Szulanski, 1996) and to exploit the firm's knowledge to facilitate implementation.

Reviewed models stress the importance of two tasks at this stage:

The adaptation of the best practice to the context of the firm.

The detailed planning and identification of resources needed to launch implementation.

The evidence shows that both tasks are often overlooked and a root cause of adoption failure.

Adaptation and Strategic Context.

Many authors support conceptually that the notion of generic, "universally applicable" best practice are a problem. Claims of universality constitute misguidance and lead to superficial implementation efforts that usually fail. This conceptual support is presented in Box 6. A recurring recommendation is to adopt a more systemic, holistic approach to change, which is to customise generic best practices to the specific context of the firm.

Researchers who have based their research framework on contingency theory support these statements empirically. The central theme of contingency theory is that all components of an organisation must "fit" well with each other or the organisation will not perform optimally (Perrow, 1967). Within a single organisation, contingency theory also predicts that variations in subunits' performance are due to variations in fit of their variations components (Selto et al., 1995). Fit encapsulates the notion of alignment with context, but also that of alignment between practices. For example, the findings of the Made In Europe survey support for the notion that to perform well, one has to perform across the board, that is not on one practice only (Hanson et al., 1994). This is also an underlying theme in the "4+2" recommendation for success of Nohria, Joyce, and Roberson (2003). Theoretically, each organisation has its own optimal configuration or best fit of context, structure and control. Deviation from that ideal fit (which is misfit) should cause lack of co-ordination, miscommunication, misunderstanding, poor morale, and poor motivation, which in turn, should lead to poor performance. (Selto et al., 1995).

Evidence table 7 presents the findings of researchers:

Who have investigated whether or not best practices implementation and usage is dependent on strategic context.

Who bring support for this statement, although their primary research questions were different.

The important contribution of table 7 is the distinction brought forward by Sousa and Voss (2001) : "there is a fine line between implementation difficulty and inadequacy with respect to context". "This distinction contributes to structuring the current chaotic wealth of QM implementation advice".

Strategic context difficulties require structural fixes, which should be initiated at the set-up stage. This is different from the actions that can be taken to facilitate implementation (see next section).

The other conclusions from evidence table 7 are that:

Contingency factors are important. Being over-prescriptive hurts adoption.

There is no such a thing as a “one size fits all” solution. Claim for universality are uniformly rejected by empirical data.

The patterns of combination of practices and the intensity of adoption are context-sensitive.

Adoption of best practices is subject to fit with structural and infrastructural properties. Structural fixes might be required. They should be planned for.

Strategic Change Management

The fact that the adoption of a best practice is not managed strategically is another highly consistent theme across the reviewed research studies (Evidence Table 8).

The typical reported shortcomings are:

No clear aims and objectives.

No data collection or measurement to support planning.

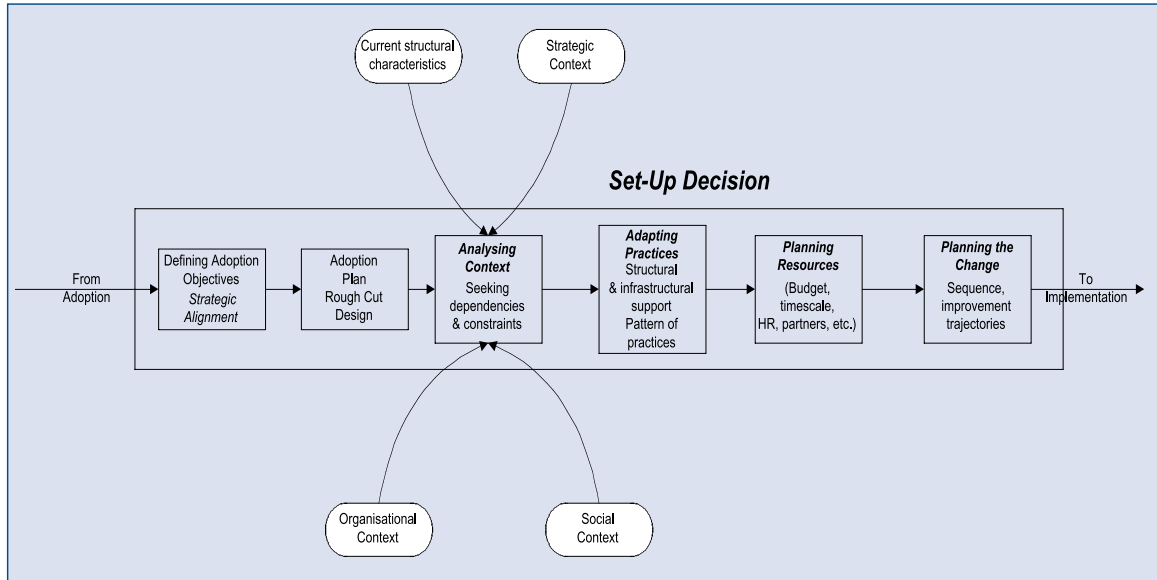
No analysis of (best practice) integration constraints.

Insufficient funds and resources allocated to change projects.

No inclusion of best practice targets in the strategic plan in the firm.

Figure 7.7 presents a detailed framework for the set-up decision.

Figure 7.7. Set-up Decision Framework



Box 6: The Myth of Universally Applicable Best Practices

"The EFQM model and quality literature in general are presented as having universal validity. This means that all companies, irrespective of size, market structure, strategic positioning and products, may use the same models in their quality work. TQM has been advocated as being universally applicable to organisations and organisational activities with virtually no attention to the nature of the uncertainty faced by the organisation. While it is stressed that the model should be adapted to each individual company, no guidelines are given as to how such an adaptation should be effected." (Neergaard, 2002, pg 174).

"A number of Western firms realized the potential of JIT quite early and began programs to emulate such systems. By the late 1980s, there were high levels of awareness of JIT (Goddard, 1986; Voss and Robinson, 1987; Lieberman, 1989). Nevertheless, while there were successful implementations (e.g., Schonberger, 1986, 1987; Sepehri, 1986; Voss and Clutterbuck, 1989), the number was limited (Dertouzos et al., 1989). Rather than implement a complete system or philosophy, many firms in the West attempted to implement only particular elements of JIT (Hall, 1983; Hanlon, 1985; Voss and Robinson, 1987; Im and Lee, 1989; Ettkin et al., 1990; Gilbert, 1990; McLachlin and Piper, 1990; Safayeni et al., 1991; Vastag and Whybark, 1993). Firms were addressing a subset of elements that were easy to implement rather than the core elements of JIT that were reported to produce greater benefits (Voss and Robinson, 1987), that provided quick, tangible returns (Im and Lee, 1989), or that overlooked the human resource policies of Japanese firms (Westbrook, 1988; Lieberman, 1989). Although the appearance of the Toyota production system in North America and Europe stimulated some change, manufacturing improvement was transient, superficial, and insubstantial (Shingo, 1988). Few explanations were offered for these observations aside from the suggestion that partial approaches do not entail a commitment to the JIT concept (Voss and Robinson, 1987) or that Western manufacturers often see only the existing processes, rather than the multiple, painstaking steps that have preceded them (Voss and Clutterbuck, 1989)." (McLachlin, 1997, pg 272-273).

"Quality management (QM) has been led mainly by practitioners having acquired a strong prescriptive stance, with practices being advocated as universally applicable to organizations and organizations activities." (Sousa and Voss, 2001, pg 383).

"Capability becomes a highly specific combination of behaviours and artefacts; this helps to explain why imitation of capability or its constituent abilities and routines is extremely difficult. Simply copying what others do only represents superficial rather than fundamental change; it is only when the underlying behaviours are learned and reinforced that lasting change is likely to emerge. This is a limitation of the current fashion for "best practice" benchmarking which implies that all firms need to do to become "world class" is to copy processes and structures." (Bessant et al., 1996).

"Although the idea of a universally applicable TQM approach may have been instrumental in fostering its acceptance, it also may be a root cause of many of today's TQM problems" (Sitkin et al., 1994, quoted in Voss and Blackmon, 2003).

"It seems likely that some companies have a better understanding than others of the circumstances under which certain practices are appropriate (i.e., a contingency explanation). Some companies may be better than others at understanding the systemic nature of organizational design, and the need to ensure these new practices fit consistently with how their organization works (i.e., a matter of overall system design)." (Clegg et al., 2002, pg 180).

Evidence Table 7: Best practices configurations and Contingency Factors

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Baer & Frese	Questionnaire Survey	2003	Germany	<p>This paper contributes to the discussion on contingencies of process innovations by focusing on and introducing organizational-level constructs of climate for initiative and psychological safety.</p> <p>Findings support that process innovation need to be accompanied by climates that complement the adoption and implementation of such innovations.</p>
Bessant, Kaplinsky, & Lamming	Case base research telephone surveys of 25 organisations. Detailed case studies of 6 supply chains.	2003	UK	<p>Case studies show that:</p> <ul style="list-style-type: none"> • Avoiding an over-prescriptive approach toward supplier is a success factor for supply chain learning. • The approach of searching for one-size-fits-all solution is a failure factor.
Cagliano, Blackmon, Voss	Data is from the MICROSCOPE Database which includes 297 manufacturing SMEs from Europe.	2001	Italy, UK, Belgium, Denmark, Germany, Sweden, Ireland.	<p>Findings show that small firms can adopt advanced managerial practices, a number of them are aligned with WC standards, and a peculiar pattern of adoption can be highlighted, characterised by practices emphasising high customer responsiveness and product quality, but poor planning and control and human resource management.</p>
Davies & Kochhar	Hybrid research instrument involving interviews, a focus group, and a postal survey.	2000	UK	<p>Adoption of best practices is not sufficient to emulate the success of the key players; practices have to be adapted to the environment in which the company is operating.</p> <p>"Failure to identify and implement the necessary supporting practices may lead to the expected improvements not being realised."</p>
Drew	Postal survey of 43 financial institutions.	1994	USA and Canada	<p>Different projects experienced different barriers to success. In cost saving projects managerial resistance to change was more significant than in other cases. Lack of appropriate knowledge and skills was more of a barrier for cost saving projects in general than for other types.</p>

Evidence Table 7: Best practices configurations and Contingency Factors

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Lowe, Delbridge, & Oliver	Case based survey of 71 automotive components manufacturers over a period of 12 months.	1997	International: Europe, USA, Japan	<p>Lean production management practices are advanced as a universal set of best practices which performance benefits at the establishment level, regardless of context and environment.</p> <p>Rather results show two distinct sets of high performers: Japanese ones - they follow the model - and Western ones - they only partially follow the model.</p> <p>The data does not show a necessary relationship between high performance and the pursuit of lean work systems and HRM policies such as team working, high involvement, extensive induction, and selection.</p> <p>The conclusion is that the social system that supports a best practice may vary greatly.</p>
Majchrzak & Paris	Survey of 43 manufacturing plants from 3 industries.	1995	USA	<p>Effective management practices differ with plants for integrated and non-integrated AMT [Page 322].</p> <p>Based on regression with selected practices.</p> <p>For non-integrated AMT, effective management practices focused on:</p> <ul style="list-style-type: none"> • Training maintenance workers in machine operations and problem-solving. • Operators spending time improving the production process. • Less formal procedures. • More job titles. • Larger supervisory spans of control. <p>For non-integrated AMT, effective management practices focused on:</p> <ul style="list-style-type: none"> • Not spending too much time training operators in problem-solving. • Have multiple criteria for evaluating departmental performance. • Have enough maintenance personnel to keep the equipment running (to keep WIP) down but not too many relative to the number of total hourly workers. • Have sufficient levels of authority to help ensure that the production process is given the attention and monitoring that such a complex integrated technology needs.

Evidence Table 7: Best practices configurations and Contingency Factors

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings			
Neergaard	Postal survey of 270 companies.	2002	Denmark	The analysis shows a statistically significant difference between configurations and the organisation of quality work, p. 188.			
Quality management configurations ^a							
	Total population	Platonic	Vision	Internal control	Competitor	Excellent	Residual group
1. Discussion of quality in strategic plans and /or budgets	76%	None	85%	83%	77%	99%	52%
2. Quality targets in strategic plan	58%	20%	All	51%	86%	90%	None
3. In-house systems for measurement of quality	58%	None	None	All	All	All	54%
4. Measurement of customer satisfaction	38%	17%	23%	None	None	All	36%
5. Assessment of own products/services compared with those of competitors	58%	45%	46%	None	All	All	16%
Companies in configuration	220	40	52	29	48	51	50
Companies in total	270						
^a Note: None =0%, all =100% of the companies studied. A few companies did not respond to all questions in the survey. This had a slight impact on the calculation of percentages.							
Sousa & Voss	Case study of 6 manufacturing companies carefully screened for having implemented successfully quality management practices.	2001	UK	<p>Study the interactions that exist between practice, as an internally congruent set. Need causal networks to explain the pattern of uses of practices.</p> <p>Data confirms that process QM practices are dependent on strategic context, which means that the use of process QM practices could be explained across all plants by a stable set of relationships among strategic context variables and individual practices.</p> <p>Context is significantly correlated with the degree of use of all practices, except for one practice (zero defects). The strength of the correlation coefficients is high.</p> <p>These findings suggest the existence of an internally coherent process QM configuration matching a plant's strategic configuration.</p> <p>Refutes the universal stance on best practices.</p>			

Evidence Table 8 – Planning Strategic Change

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Bateman & Rich	Case based research 21 companies adopting process improvements in the automobile components industry.	2003	UK	<p>Greatest citation as an inhibitor to PI initiatives: lack of resources.</p> <p>This is not associated with direct financial resources (i.e. available budget), but with issues such as access to production equipment and human resources.</p> <p>Lack of resources is not affected by size of the firm, but is correlated to the complexity and “interconnectedness” of the operations of the firm.</p> <p>Bottleneck improvement is always taken up with reluctance because of negative performance consequences in the short term.</p> <p>Similarly, certain employees are “assets bottlenecks” in terms of process knowledge. “Even when such individuals are made available, a sustained heavy involvement with the team is unlikely”.</p>
Bessant, Kaplisky, & Lamming	Case based: Surveys of 25 organisations. Case studies of 6 supply chains.	2003	UK	<p>The provision of “crystal-clear” objectives is reported to be an enabler of supply chain learning.</p>
Davies & Kocchar	Structured interviews with 60 managers from 4 companies Focusing on manufacturing planning and control systems.	1999	UK	<p>Conclude that lack of planning results in poor findings during benchmarking. State that 70% of the success of a benchmarking study depends on how well it is planned.</p> <p>Lack of planning means: no clear aims and objectives meant superficial and general and vague recommendations poor subject/partner choice over ambitious aims and objectives insufficient time and money to fulfil the implementation plan.</p>
Dixon, Arnold, Heineke, Kim, Mulligan	Review of 23 BPR projects (15 primary data + 8 secondary data).	1994	USA	<p>Report that the difficulty of implementation of BPR projects explains why project objectives are so fuzzy: organizations lack established measures for the new competitive priorities.</p> <p>Report that reengineering projects goals were not specific and project duration was not clearly defined.</p>

Evidence Table 8 – Planning Strategic Change

<i>Author</i>	<i>Data used in Study</i>	<i>Dates</i>	<i>Location of Study</i>	<i>Summary of empirical Findings.</i>
<i>Drew</i>	<i>Postal survey of 43 financial institutions.</i>	<i>1994</i>	<i>USA and Canada</i>	<i>Reports that only 33% of firms in the survey had identified all major processes and 7% had mapped these.</i>
<i>Guimaraes</i>	<i>Postal survey of an association member involved with BPR – 135 questionnaires.</i>	<i>1999</i>	<i>USA</i>	<i>Reports the following as success factors to implement BPR: Developing a rough-cut design to identify major issues early, Determining all setup details before implementation.</i>

Evidence Table 8 – Planning Strategic Change

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings																		
Longbottom	Meta analysis of literature (460 papers).	2000	International	<p>"We find very little evidence to show that organizations are identifying and prioritising projects based on their corporate and strategic planning process".</p> <p>"The selection of projects is rarely based on or flows from the strategic planning process. This leads to sub-optimal results and in some instances misuse of resources. The focus of projects is very narrow, and customer processes are being neglected."</p> <p>"Respondents say that lack of confidence, lack of time and resources are all negative factors."</p>																		
Petroni	Postal survey of 109 SMEs in the packaging and packing industry having implemented MRP.	2002	Italy (Northern)	<p>(Confirmatory factor analysis) supports that formal project planning is a critical factor to increase people's commitment and promote organizational/managerial support by organizing the implementation process.</p> <p>"The organisational structure of the MRP implementation project reflects the degree of managerial support and might influence organizational support across the various functions of a company."</p>																		
Taylor & Wright	Longitudinal (5 years) survey of TQM implementation + interviews. 109 organisations.	2003	UK	<p>"The practice of including specific plans and objectives for quality, as part of the strategic planning process, is significantly associated with the degree of success from TQM." (See table below).</p>																		
<p><i>Relationship between strategic quality planning and TQM success</i></p> <table border="1"> <thead> <tr> <th colspan="3">Do your strategic plans contain specific quality plans and objectives?</th> </tr> <tr> <th>Degree of success</th> <th>Yes (%)</th> <th>Number of firms</th> </tr> </thead> <tbody> <tr> <td>Unsuccessful or less than anticipated</td> <td>56</td> <td>25</td> </tr> <tr> <td>Quite successful</td> <td>92</td> <td>25</td> </tr> <tr> <td>Very successful</td> <td>94</td> <td>17</td> </tr> <tr> <td colspan="3">Chi square = 12.907, 2df, p < 0.01</td> </tr> </tbody> </table>					Do your strategic plans contain specific quality plans and objectives?			Degree of success	Yes (%)	Number of firms	Unsuccessful or less than anticipated	56	25	Quite successful	92	25	Very successful	94	17	Chi square = 12.907, 2df, p < 0.01		
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7.5.3 The Implementation Stage

Contrarily to many authors for whom the term implementation means the entire adoption process (from selection to integration), the term implementation is used here to refer solely to the launch of the change program and the execution of the short-term actions that have been planned for. There should be no expectations of financial returns or mass-acceptance at this stage. This stage is most often implemented as a project.

At this stage, activities that are project-specific such as the rewriting of procedures, the acquisition of supporting technological infrastructure and the execution of planned structural changes, take place. This is the direct execution from the plan developed at the set-up stage.

The implementation stage also represents the point in time when the best practice is released to the organisation at large. As implementation takes place, the first reactions (positive and negative) emerge. At this early stage of introduction the plan should be adhered to, but it is necessary to engage, in parallel, into activities that aim to prepare the ramp-up stage. The background activities are quite generic, that is they are likely to vary little between one practice adoption to another. The purpose of this activity is to build motivation for the recipients of the new practice. Lack of motivation may result in foot dragging, passivity, feigned acceptance, hidden sabotage, or outright rejection. (Szulanski, 1996). All these behaviours are likely to be initiated when implementation takes place, but they are likely to emerge as problems only at the ramp-up stage.

Through the review, two management areas to focus on were identified.

First, there is ample evidence about the importance of securing commitment for implementation success (See evidence table 9). Whereas acceptance and active involvement are key issues at the ramp-up stage, it is important to promote the change programme and to “buy-in” the commitment (to future action at the ramp-up stage) of a maximum number of parties.

Evidence table 9 can be summarised as follows:

A general sense of commitment to the adoption of the best practice should be built early on.

Top management commitment and the role of project champions are generally supported as important issues, leading to successful adoption and integration. Some authors provide moderating evidence; such as Chakrabarti (1976) who reports that top management commitment and project champions are critically important only when things go wrong (timescale needs to be revised, budget needs to be expanded, etc.). In others words, if the set-up phase resulted in an excellent plan, top management commitment is a secondary concern. Beyer and her colleagues (1997) describe two different case studies where the role of project champions varies considerably. The project champion who is the more lenient and operates in an organic (rather than mechanistic) organisational context is reported to achieve better results.

Supervisory reinforcement is important.

The importance of employee commitment at this stage receives very mixed support, not to say no support. However, research shows that training and educating the employees about the new practices is much more important than trying to secure their commitment at this stage.

The second important background activity is related to the provision of training and education, and consists in nurturing a fertile organisational context (Szulanski, 1996), which is conducive to change. In order to prepare the ramp-up stage, and to achieve acceptance of the best practice at this stage, the following issues should be addressed:

Attitudes and perceptions that are likely to inhibit adoption should be dealt with (see box 7).

Possible conflicts between the best practice and the operating culture of the firm should be dealt with (see box 8).

Efforts to improve the absorptive capacity of the firm should be undertaken.

Absorptive capacity is the ability of the firm to “recognize the value of new, external knowledge, assimilate it, and apply it to commercial ends” (Cohen and Levinthal, 1990). Evidence table 10 reports the empirical contribution to the development of the concept of absorptive capacity and its relevance to the adoption of best practices (Szulanski, 1996). Szulanski’s empirical model shows that absorptive capacity is important throughout all the stages of the adoption process. It is positioned at the implementation stage in this framework to indicate that this is the latest time at which deficiencies in absorptive capacity should be dealt with.

The provision of training is one way of greatly enhancing absorptive capacity and adoption success. The evidence supporting this statement is provided in evidence table 11. What training does is to “popularise” the best practice at all levels of the firm, so that everybody understands what is going on and what expectations are. Evidence table 12 displays the empirical findings that highlight the role of understanding best practices before the ramp-up stage.

Box 7 Attitudes and Perception

Taylor and Wright (2003) stress that it is important to recognise the importance of managers’ attitudes to, and perceptions of TQM, and their understanding of its nature and purpose as antecedents of implementation practices and concomitant outcomes.

Dixon and his colleagues (1994) and Drew (1994) both report that stress is an inhibitor to implementation. Drew (1994) also mentions scepticism as a barrier to success.

Shadur and his colleagues (1995) test empirically the fact that employees’ approval of the speed of their work is associated with approval of Lean Production Systems.

Arrogance of managers is a serious cause of implementation failure of supply chain learning (Bessant et al., 2003).

Trust is an enabler to the smooth implementation of best practices (Dixon, 1994; Bessant et al., 2003).

The Made in Europe survey (Hanson et al., 1994, pg18) reports a strong “rose-tinted spectacle” distortion of perception of performance. Companies that are under-performers tend to perceive themselves as being of world-class status. Only Dutch companies tend to self-assess themselves objectively. In the made in Switzerland survey, the “rose-tinted” perception of performance is observed in nearly all cases (Collins et al., 1996). Davies and Kochhar (1999) report that the perception to be good is one reason put forward by companies to justify the fact that they do not need benchmarking.

If a project is perceived to be highly visible, project managers tend to devote more efforts to make sure that implementation is successful (Dixon et al., 1994).

Box 8. Culture

An open-minded culture, supporting enthusiasm is an enabler of process improvement initiatives (Bateman et al., 2003).

Ravichandran's (2000) research results show that there is a positive relationship between the degree of quality orientation of the host organisation and the swiftness and the intensity of adoption of TQM in systems development.

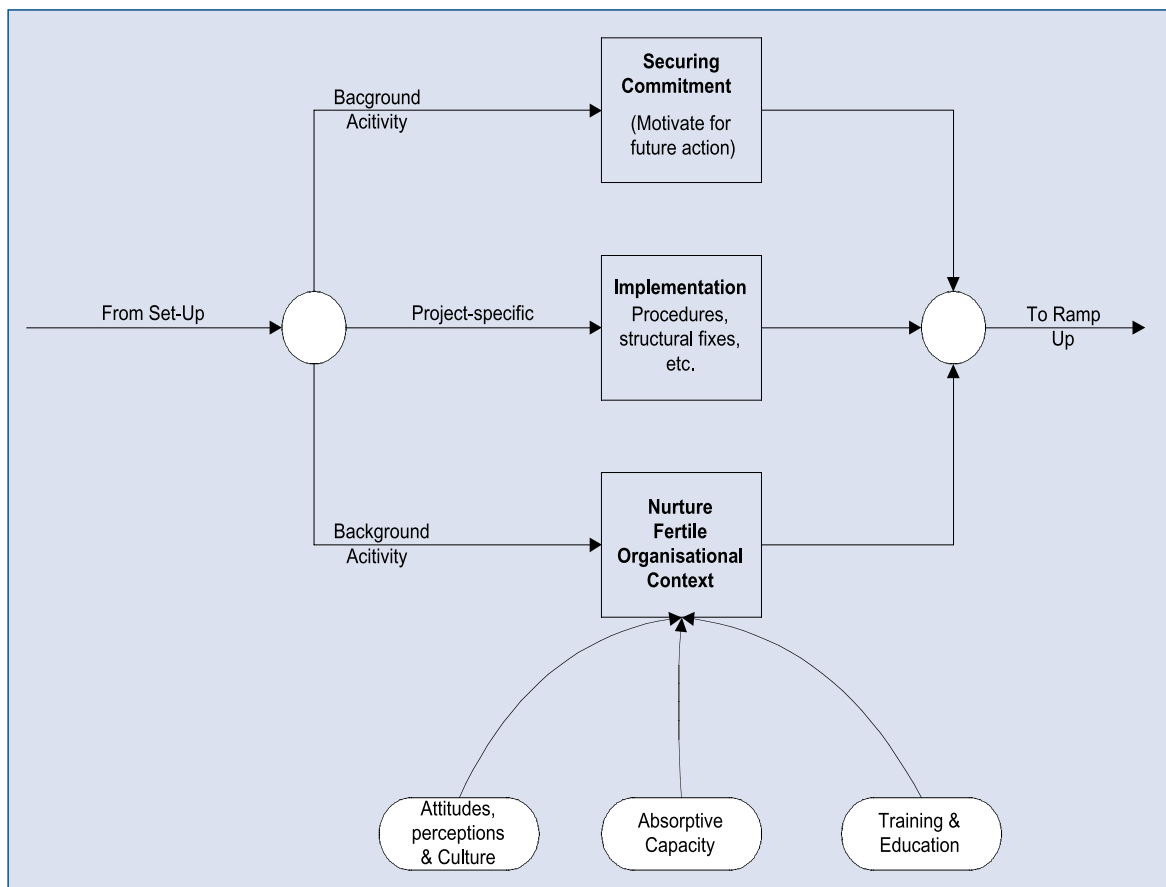
In general, it can be stated that supportive climates would be generally desirable across the board for employee involvement programs in organisations" (Shadur et al., 1999).

The low cost culture prevalent in the aerospace industry tends to block the adoption of supply chain learning (Bessant et al., 2003).

However, in some sites the gap is not explained by time delay but by inhibitors that are precluding performance gain, such as a change averse culture (Hanson et al., 1994).

Figure 7.8 summarises the implementation stage.

Figure 7.8. The Implementation Stage



Evidence Table 9: The Importance of Commitment

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Ahire & Ravichandran	407 questionnaires Automobile parts' suppliers industry.	2001	USA	<p>Data support the notion that managers and firms need to prepare themselves for a systematic commitment to the entire effort.</p> <p>Our model specifically shows how top management commitment affects the adaptation elements of employee management, supplier quality management, and customer focus; how these affect the employee acceptance of the TQM innovation through internal and external co-operation and learning; and how these in turn affect the actual use of TQM tools and techniques. Contrary to our expectations, rewards were not found to be an important aspect of employee management.</p>
Bessant, Kaplisky, & Lamming	Case base research Telephone surveys of 25 organisations Detailed case studies of 6 supply chains.	2003	UK	<p>Senior management commitment is an enabler of supply chain learning.</p>
Chakrabarti & Rubenstein	Postal survey of 65 companies having adopted NASA innovations.	1976	USA	<p>Data shows that top management support is not important in this survey.</p> <p>But respondents indicated that they had autonomy and resources available - only if resources are limited or heavily controlled does top management support matters.</p> <p>The degree of success of adoption was directly associated with the following variables:</p> <p>Availability of personnel to implement the technology.</p> <p>Project champions are not significant conditions for the success of process innovations (they are in the case of product innovations).</p>
Coyle-Shapiro, & Morrow	Three stages questionnaire survey of 118 employees in one supplier to the automotive industry.	2003	UK	<p>Data shows that:</p> <p>Top management support is important for TQM adoption.</p> <p>Supervisory reinforcement is important.</p> <p>H3: Organisational commitment relates positively to the degree to which individuals adopt a TQM orientation receives mixed support only.</p>

Evidence Table 9: The Importance of Commitment

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Davies & Kocchar	Structured interviews with 60 managers from 4 companies Focusing on the benchmarking of manufacturing planning and control systems.	1999	UK	Benchmarking does not yield expected outcomes because there is a lack of commitment to the findings and to the implementation of the recommendations.
Dixon, Arnold, Heineke, Kim, Mulligan	Review of 23 BPR projects (15 primary data + 8 secondary data).	1994	USA	<p>Managers in our study universally agreed on the need for management involvement and commitment and the development of trust within the organization via the communication of that commitment to the members of the organization not involved directly in the reengineering project.</p> <p>In order to really understand what challenges reengineering managers faced, we asked them to tell us about what kinds of concerns gave them headaches and kept them up at night during the course of the project. Again and again, we heard project managers voice concern about continued top management support and commitment.</p> <p>Almost all managers we spoke to were able to point out the project's champion. Sometimes, the existence or hiring of this champion was a key reason that the organization was able to initiate a reengineering project. [page 104] In eight cases, the CEO or President was the champion. In another three cases, the champion was the division general manager. Sometimes it was the champion who recognized the need for reengineering. In most cases, champions were directly involved throughout the process, from the design of the project, to determination of the composition of the team, and through every step of implementation. This direct involvement of top management differentiates reengineering from the continuous improvement process.</p>

Evidence Table 9: The Importance of Commitment

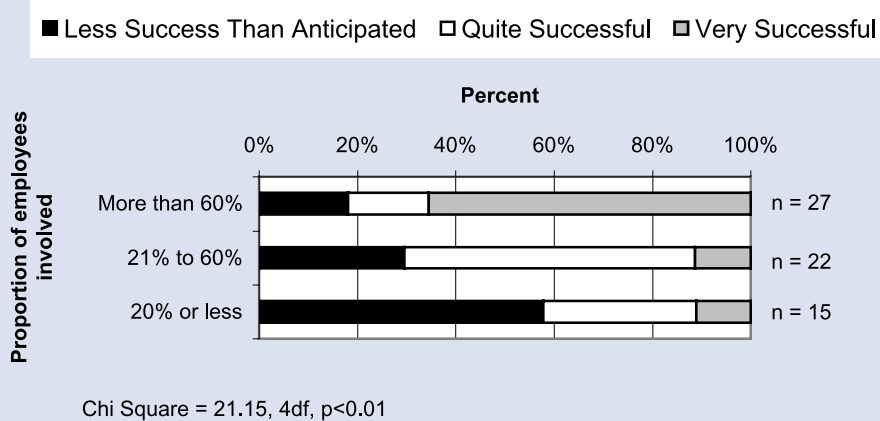
Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Hanson, Voss, Blackmon, Oak	Interviews of manufacturing sites. 663 manufacturing sites. (Made in Europe study = MIE).	1994	Finland: 24 Germany: 210 Netherlands: 101 UK: 328	Lack of executive sponsorship is provided as a reason for companies that have adopted best practices but do not reap performance outcomes.
Lowe, Delbridge, & Oliver	Case based survey of 71 automotive components manufacturers over a period of 12 months.	1997	International: Europe, USA, Japan.	There is little evidence that HR practices systematically distinguish the high performers from the rest of the sample. Workforce is more stable in high performance lean manufacturers.
Neergaard	Postal survey of 270 companies.	2002	Denmark	There are significant differences between commitment and the configuration chosen. The commitment of all organisational levels increases almost linearly from the platonic configuration to the excellent configuration. Employee commitment to quality work is limited in the platonic, vision, and internal control configurations. The analysis shows that the perception of who is responsible for quality varies significantly from configuration to configuration.
Shadur, Kienzle, & Rodwell	Survey of 269 employees in an IT company.	1999	Australia	The results showed that supportive climates and commitment significantly predicted each of the employee involvement variables.
Guimaraes	Postal survey of an association member involved with BPR – 135 questionnaires.	1999	USA	The success factors deemed very important by the respondents are operational, as follows: the project is initiated and led from the top down by senior-level managers; They ensure that the chief executive is willing to take responsibility for the project success. The results show that re-educating and retraining workers on what BPR actually is, on the average, is deemed more important than empowering the workers performing the required tasks as decision makers.

Evidence Table 9: The Importance of Commitment

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Krause	Questionnaire Survey of members of National Association of Purchasing Managers. n=546	1999	USA	Data support that there is a significant relationship between the buying firm's top management support and the intensity of supplier development activities.
Taylor & Wright	Longitudinal (5 years) survey of TQM implementation + interviews. 109 organisations.	2003	UK	lack of senior management commitment is a reason for discontinuance of TQM programme. QM adoption should be led by the top. "To do otherwise is at best, abdication and at worst, tokenism". Firms that have been unable to facilitate or motivate the majority of their employees to become involved with TQM are also less likely to perceive TQM as having been successful.

Table 6: TQM success and management involvement

Degree of Success	Panel A: Job title of respondent		Panel B: Who is in charge of TQM Total		
	CEO or MD	Middle or junior manager	MD or senior manager	Quality manager	
Unsuccessful or less than anticipated	9	16	8	17	25
Quite successful	18	7	19	6	25
Very successful	14	3	15	2	17
Total	41	26	42	25	67
	Chi square = 11.11, 2df, p < 0.01		Chi square = 16.703, 2df, p < 0.01		



Evidence Table 10: Absorptive Capacity

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Cohen & Levinthal	Using previous survey data and secondary data.	1990	USA	<p>Coined the term 'absorptive capacity' which they define as a firm's general ability to value, assimilate, and commercialise new, external knowledge.</p> <p>They suggested that an organization's absorptive capacity tends to develop cumulatively, be path dependent, and builds on prior investments in its members' individual absorptive capacity. They further suggested that the incentives for investing in absorptive capacity are themselves driven by three industry-wide effects: demand, appropriability, and technological opportunity. Using R&D spending as a proxy for a firm's willingness to invest in absorptive capacity, they found empirical support for their industry-level predictions.</p>
Szulanski	Two-step questionnaire survey involving 12 large companies. Total of 122 questionnaires.	1996	USA	<p>Studies the phenomenon of internal stickiness, i.e. the impediments to the transfer of best practices within the firm.</p> <p>Using a canonical correlation model, Szulanski test a model of the origins of stickiness – the lack of absorptive capacity of the recipient is the most important origin of stickiness (0.53 standardized z-value).</p> <p>Szulanski's test indicate that absorptive capacity is important at all stages of the adoption process.</p>
Lane & Lubatkin	Panel of experts, 52 questionnaires, and secondary data on companies surveyed.	1998	USA	<p>Extend the concept of absorptive capacity to that of relative absorptive capacity. One firm's ability to learn from another firm is argued to depend on the similarity of both firms' (1) knowledge bases, (2) organizational structures and compensation policies, and (3) dominant logics. They test the model using a sample of pharmaceutical-biotechnology RED alliances. As predicted, the similarity of the partners' basic knowledge, lower management formalization, research centralization, compensation practices, and research communities were positively related to inter-organizational learning. The relative absorptive capacity measures are also shown to have greater explanatory power than the established measure of absorptive capacity.</p>

Evidence Table 11: Training

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Ahire & Ravichandran	407 questionnaires – automobile parts suppliers industry.	2001	USA	Use a likert scale to test the importance of several factors contributing to quality improvements, product quality, and process quality. The technical training of employees scored 5.10 out of 7 on likert scale and is the second most important factor.
Dixon, Arnold, Heineke, Kim, Mulligan	Review of 23 BPR projects (15 primary data + 8 secondary data).	1994	USA	Reports that extensive employee training efforts were observed in 2/3 of the cases. Training took place prior to and during implementation. In one case, 5% of the total operating budget was spent on training.
Guimaraes	Postal survey of an association member involved with BPR – 135 questionnaires.	1999	USA	The item “Re-educate and retrain workers on BPR actually is” score 3.21 on a 5 point importance scale. The item is correlated significantly at the 0.1 level with the fact that project objectives were attained (pearson correlation coefficient: 0.29) but shows no statistically significant correlation with organisational performance.
Kassicieh & Yourtsonne	Postal survey of 111 manufacturing and service organisations.	1998	USA (New Mexico)	Use regression analysis to test at the 0.1 level the significance of “extent of training” on three dependent variables, in a quality adoption context. Conclusion is that extent of training is a variable significant correlated with cost reduction and increases in profits, but not with employee morale.
Mc Lachlin	Case base research – 6 plants having adopted JIT.	1997	Canada (Central)	Finds through pattern matching that 3 propositions regarding the provision of training are supported: Provision of training is a necessary condition for employee involvement. Provision of training is a necessary condition for JIT flow. Provision of training is a necessary condition for JIT quality.

Evidence Table 11: Training

<i>Author</i>	<i>Data used in Study</i>	<i>Dates</i>	<i>Location of Study</i>	<i>Summary of empirical Findings</i>
<i>Beyer, Ashmos, & Osborn</i>	<i>Case base research – longitudinal 2 companies semi conductor industry.</i>	<i>1997</i>	<i>USA</i>	<i>Describes the programme of training adopted by two companies with very different implementation plans. Suggests a non-coercive, voluntary approach to training leads to entrenchment of quality practice within the firm.</i>
<i>Petroni</i>	<i>Postal survey of 109 SMEs in the packaging and packing industry having implemented MRP.</i>	<i>2002</i>	<i>Italy (Northern)</i>	<i>Tests through regression analysis the role of providing education and training to employees on 5 dependent variables. A statistically significant correlation (0.01 level) is found with customer satisfaction, but no correlations are reported for planning and inventory management, improved efficiency, organisational climate, know-how and competence.</i>

Evidence Table 12: Lack of Understanding

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Bateman & Rich	Case based research 21 companies adopting process improvements in the automobile components industry.	2003	UK	Some informants report a lack of internal support for their process improvement initiatives. They state that this lack of support is explained by the lack of understanding of the initiatives and the processes at stake by the parties expected to provide support.
Chakrabarti & Rubenstein	Postal survey of 65 companies having adopted NASA innovations.	1976	USA	Demonstrates through regression analysis the significance of the maturity of an innovation on the degree of success of adoption. This supports the idea that well-known, tested practices are easier understood and implemented.
Davies	Hybrid research instrument involving interviews, a focus group, and a postal survey.	2000	UK	Evidence, from initial case studies and literature, indicated that failure to select practices based on a structured approach can lead to malpractices, fire-fighting, and sub-optimisation of performance. One reason of this that there is no real understanding of the practices being recommended as solutions.
Drew	Postal survey of 43 financial institutions.	1994	USA and Canada	Report the lack of knowledge and skills to make BPR a success the third most important barrier to success in their survey.
Kumar & Chandra	Postal survey of 37 cross-sectors organisations having adopted benchmarking.	2001	USA	Who understand the benchmarking goals in your organisation? Top management only (11% of respondents). Top and most of middle management (22%). Every manager and supervisor (7%). Every manager, supervisor, and associate (26%).
Taylor & Wright	Longitudinal (5 years) survey of TQM implementation + interviews. 109 organisations.	2003	UK	Data statistically supports the hypothesis that the understanding of the purpose of TQM is significantly associated with the perceived degree of TQM success. However, there are still a high level of misunderstanding, with 13% of respondents linking it more with product or service quality, and 46% still viewing it in an internal and reactive way. These misunderstandings are more prevalent among less successful firms.

7.5.4 The Ramp-Up Stage

The ramp up stage begins when the company starts using the new practice. The overall objective of this stage is to “ramp-up” to performance. To do this it is necessary to build acceptance of the best practice at all levels of the organisation.

Box 9. Building Acceptance

The objective is to start generating performance outcomes and to entrench the best practice as a routine activity. It is important that the best practice become accepted across the board as otherwise resistance to change will block ramping-up:

“Organizational overload, stress, managerial and employee resistance are all important barriers to success. Before embarking on process redesign, the nature, strength and causes of such organizational barriers should be investigated and addressed” (Drew, 1994).

Managerial resistance to change is barrier to implementation. “Middle managers in particular may be threatened by changes which increase their workload, reduce authority and require new approaches” (Drew, 1994, pg 32).

Employee resistance is often due to the fact that they see those behaviours as outside the boundaries of their jobs (Coyle-Shapiro et al., 2003, pg 323).

In a review of the factors that lead to employees’ approval of lean production techniques, Shadur and his colleagues report that the following factors are associated with approval: company commitment among employees (e.g. I feel I am part of the company), and the approval of the speed of work. The following factors are reported to have no association with approval: employee’s perception of stress and job satisfaction, the fact the important work burden are placed upon them, the degree of team orientation, prior work experience, and the extent of participation in work activities. These findings from an Australian set of companies are consistent with those of similar studies in the UK (e.g., Lowe, 1997).

Research findings suggest that to build in acceptance of the new practice, it is necessary to secure motivation and involvement. For example, research shows that TQM orientation is explained by active involvement, allegiance to quality, and personal accountability (Coyle-Shapiro et al., 2003). McLachlin (1997) also concludes that employee involvement plays a central role in JIT implementation.

Three set of research findings were relevant in terms of identifying activities that managers should engage in at this stage:

Paying attention to individual-level factors: most research on the adoption of best practices focuses on organisational-level explanations of success or failure. Coyle-Shapiro and her colleagues (2003) suggest that at this stage of the process, more attention should be paid to individual-level issues, such as awareness, mindsets, allegiances, behaviours, personal accountability, higher order needs strength (including vocational behaviour), and organisational commitment. Their research shows that individual-level constructs explain more variance than organisational-level constructs in terms of explaining success or failure. In their comparative case study of TQM adoption, Beyer and her colleagues (1997) show how one company treat employees as a uniform group and the other as a set of individuals with different needs and desires to be involved. The second approach achieved better results.

Communication at all levels is important (see evidence table 13) – it is critical at the ramp up stage where unexpected problems are emerging.

The use of reward systems is more controversial. Out of the five studies reviewed which explicitly tested the role of rewarding behaviour, three were positive and two negative. The detailed evidence is displayed in evidence table 14.

To build acceptance, a critical activity of the ramp-up stage is to resolve unexpected problems.

“Problems should be expected at first, but performance gradually improves, ramping up toward a satisfactory level. This stage is a brief window of opportunity to deal with the unexpected” (Szulanski, 1996, pg 29).

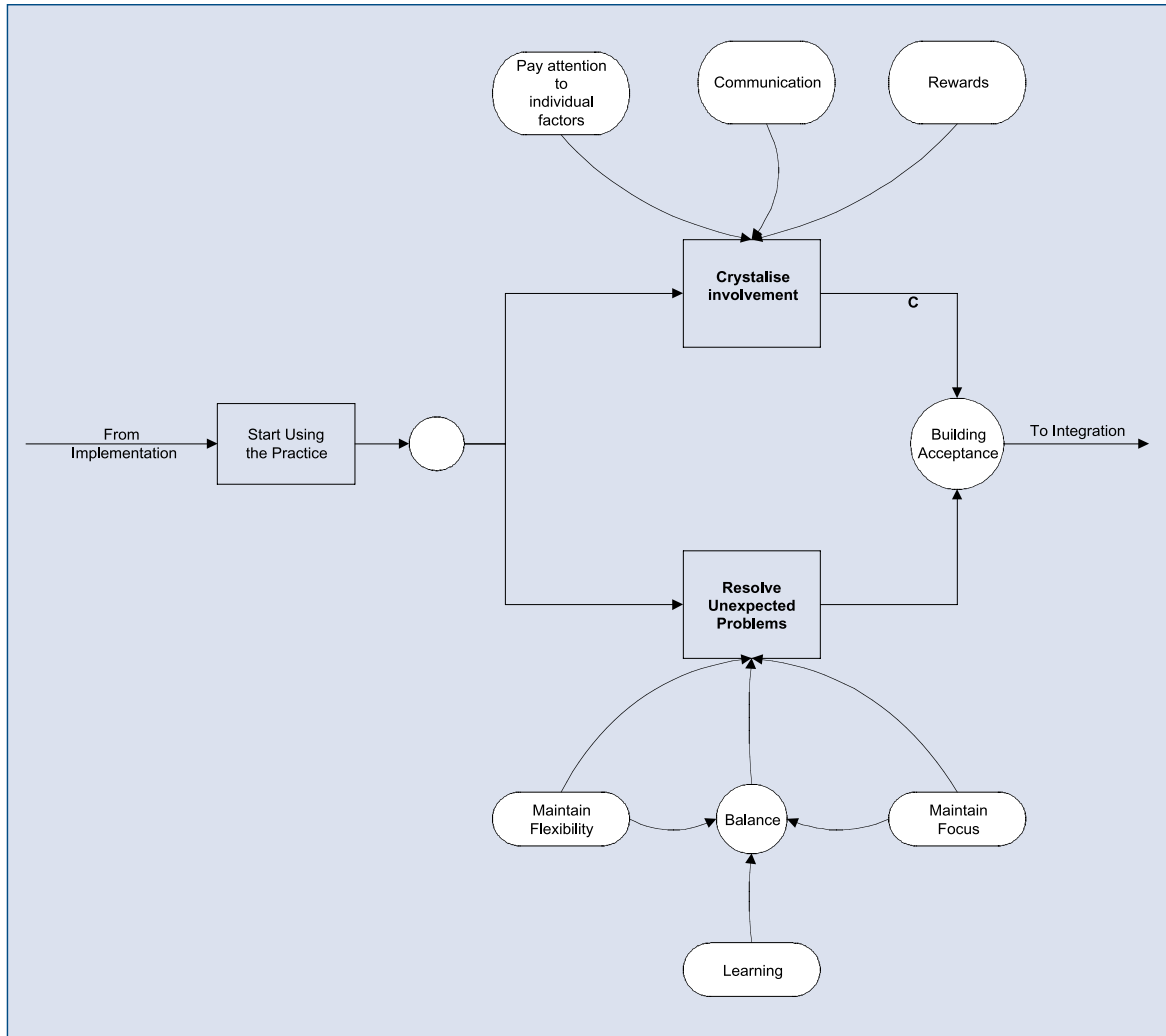
It is at this stage that the capacity to learn is crucial. This is why communication and involvement are critical at this stage. In terms of making sure that unexpected problems will be dealt with, research findings point to two important issues: (1) maintaining focus and (2) being flexible.

Maintaining focus: In their studies of process improvement initiatives, Bateman and Rich (2003) report that the second inhibitor is “lack of focus”, i.e. “the unfortunate consequence that business pressures distract team efforts as improvement is replaced with traditional operations management fire-fighting. External shocks such as changes in ownership lead to freeze on improvement programmes. Even cases that did not suffer so extensively from a lack of focus did still suffer from disruptive events”. The negative influence of fire-fighting behaviour is also present in the findings of Davies and Kocchar (1999). When focus is absent, the risk is a decay of the adoption efforts: “A disturbing number of CI programmes fail, mostly through decay rather than sudden decline. Those which survive only do so because of active and continuing efforts to energy, nurse, guide and shape - in other words, as the result of a difficult learning process around and acquiring this new capability”. (Bessant et al., 1996). In the case of supply chain partnering, Boddy and his colleagues (1998) found that project managers tend to avoid experimentation and playing with new ideas. This is encapsulated by the statement from one of the respondents: “the worst thing we can do around here is to dither”.

Maintaining flexibility: Although no authors presents their findings under the label of “flexibility”, there is a lot of evidence supporting the idea that too many implementations fail because they stick to an implementation plan which is idealistic and over-realistic (Chakrabarti and Rubenstein, 1976). Evidence table 15 display these research findings: they all point to the need to introduce some “organisational slack”, especially through the development of the ability to learn and of revising deadlines productively.

It should be noted that there is a degree of conflict between the objectives of maintaining focus and flexibility simultaneously. It is likely that a balanced trade-off is paramount to success. Although the capability to learn was presented as a source of flexibility, we believe that it plays a compromising role between the two forces of flexibility and focus. This is indicated in Figure 7.9, which summarises the ramp-up stage.

Figure 7.9. Ramp-Up Stage Framework



Evidence Table 13: Communication

<i>Author</i>	<i>Data used in Study</i>	<i>Dates</i>	<i>Location of Study</i>	<i>Summary of empirical Findings</i>
<i>Banker</i>	<i>Questionnaire survey of 362 workers in 40 plants.</i>	<i>1993</i>	<i>USA</i>	<i>Findings support that in order for workers to identify problems and opportunities, and coordinate their efforts, management needs to provide them feedback information in the form of manufacturing performance measures.</i>
<i>Bessant, Kaplisky, & Lamming</i>	<i>Case base research Telephone surveys of 25 organisations. Detailed case studies of 6 supply chains.</i>	<i>2003</i>	<i>UK</i>	<i>Extensive communication, holding extensive review meetings, are enablers of Supply Chain Learning.</i>
<i>Dixon, Arnold, Heineke, Kim, Mulligan</i>	<i>Review of 23 BPR projects (15 primary data + 8 secondary data).</i>	<i>1994</i>	<i>USA</i>	<i>Managers in our study universally agreed on the need for management involvement and commitment and the development of trust within the organization via the communication of that commitment to the members of the organization not involved directly in the reengineering project. Communication of the reengineering team's efforts was also deemed by managers to be critically important.</i>
<i>Drew</i>	<i>Review of 23 BPR projects (15 primary data + 8 secondary data). Postal survey of 43 financial institutions.</i>	<i>1994</i>	<i>USA and Canada</i>	<i>Poor communication blocks effective BPR implementation.</i>
<i>Fullerton, & McWatters</i>	<i>Postal survey of manufacturing firms (n=253).</i>	<i>2002</i>	<i>USA</i>	<i>There is a significant relationship between the use of JIT practices and the frequency of use of bottom-up measuring techniques. (Confirm Banker's findings).</i>
<i>Guimaraes</i>	<i>Postal survey of an association member involved with BPR – 135 questionnaires.</i>	<i>1999</i>	<i>USA</i>	<i>To have regularly scheduled meetings between the project manager and each level of the project structure, to share and exchange information willingly are reported to be success factors.</i>
<i>Kathuria & Davis</i>	<i>Questionnaire survey of 5 employees at 3 different levels of each organisation. 483 questionnaires collected.</i>	<i>1999</i>	<i>USA</i>	<i>Findings indicate that effective managers communicate task-relevant information (informing), such as the product specifications, to employees when the emphasis on quality is high.</i>

Evidence Table 14: Reward Systems

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Ahire & Ravichandran	407 questionnaires – automobile parts' suppliers industry.	2001	USA	<p>"Contrary to our expectations, rewards were not found to be an important aspect of employee management.</p> <p>In its current form, this construct includes the extent to which individual financial rewards, group financial rewards, and gain-sharing programs are implemented. These tend to emphasize the financial incentives for stimulating employee adaptation to quality initiatives and ignore powerful non-financial incentives such as publicity and peer recognition that have been found to be effective in many organizations."</p>
Boddy, Cahill, Charles, Fraser-Kraus, & McBeth	Postal survey of 100 firms implementing supply chain partnering.	1998	UK	<p>Survey respondents agreed with the statement: "The reward system was changed to encourage implementation and acceptance of partnering".</p>
Kassicieh & Youtson	Postal survey of 111 manufacturing and service organisations.	1998	USA (New Mexico)	<p>"We also found that performance evaluation based on quality outcomes is a key to successful implementation of TQM along the dimension of profit increase.</p> <p>And our results indicate that rewards for quality ideas increase morale but do not have a significant effect on cost or profit".</p>
Bateman & Rich	Case based research 21 companies adopting process improvements in the automotive components industry.	2003	UK	<p>This research posits that manufacturing managers would not demonstrate rewarding behaviour when the emphasis is high on quality in organizations. Our contention is based on Deming's work that opposes the use of extrinsic rewards (points 10 and 11 in his 14-point program) in the belief that they hinder the implementation of quality management practices. Deming further believed that instituting an individual reward scheme would foster adversarial intra-organizational relationships. Anderson, Rungtusanatham, and Schroeder (1994) were also in favour of eliminating merit-reward systems so as to facilitate the implementation of quality management.</p> <p>Findings support that rewarding has no significant performance implications, when the emphasis on quality is high.</p>

Evidence Table 14: Reward Systems

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Nohria	Study of 160 companies over 1986-1996. Best practice adopters.	2003	USA	"It should be obvious that the best way to hold people to such high standards is to directly reward achievement. While nearly 90% of the winning companies in our study tightly linked pay to performance, only 15% of the losers did the same."
Fullerton, & McWatters	Postal survey of manufacturing firms (n=253).	2002	USA	Strong associations are demonstrated between JIT practices and the compensation variable that represent rewards for enhancing product quality, throughput time, and team performance.

Evidence Table 15: Flexibility

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Ascarl, Rock, & Doutta	Case based research of 16 BPR projects in large multinationals.	2003	UK, USA, Singapore	Findings support that a precondition for undertaking change is the need for flexibility and adaptability to change.
Bateman & Rich	Case based research 21 companies adopting process improvements in the automotive components industry.	2003	UK	Case studies provide examples of counter actions to inhibitors: One is the authorisation of over time to close out improvement activities, engaging additional "floating" staff.
Bessant, Caffyn, & Gilbert	Conceptual paper drawing on a 5-year empirical study into the adoption and implementation of CI within European enterprises.	1996	Europe	"In other words, knowing how to develop and deploy technological competence is as important a learning process as the actual knowledge within a particular technological competence." "A degree of unlearning may be required."

Evidence Table 15: Flexibility

Author	Data used in Study	Dates	Location of Study	Summary of empirical Findings
Bessant, Kaplisky, & Lamming	Case base research Telephone surveys of 25 organisations. Detailed case studies of 6 supply chains.	2003	UK	Highlights the value of experiential learning for the adoption of Supply Chain Learning.
Chakrabarti & Rubenstein	Postal survey of 65 companies having adopted NASA innovations.	1976	USA	"One way in which management can institutionalise innovation is through the provision of organisational slack. This fosters innovation since it allows individuals to spend a certain amount of time concentrating on unprogrammed innovative activities. Guetzkow (1967) observed that the existence of organisational slack provides an organisation with an increased capability to absorb error and with a noticeable ethos for risk-taking - two important factors contributing to the success of innovative activity.
Dixon, Arnold, Heineke, Kim, Mulligan	Review of 23 BPR projects (15 primary data + 8 secondary data).	1994	USA	Perhaps most importantly, managers stressed that reengineering takes time and patience.
Longbottom	Meta analysis of literature (460 papers).	2000	International	Respondents say that lack of time is a negative factor.
Upton & Kim	Case study of two large shipbuilding companies.	1998	Korea	Data shows that how learning takes place (off-line or on-line) is more a condition of "initial conditions" ("e.g. structural characteristics") than a matter of best practice. Comparative case study illustrates the phenomenon of "lock-in" learning, which stress the importance of flexibly identifying the best method for learning within a firm.

7.5.5 The Integration Stage

This stage begins after the company achieves satisfactory results with new practice. Its use becomes gradually routinised. A shared history of the use of the practice is built, and actors and actions become typified.

The importance of sustaining momentum at this stage is highlighted by Bessant and his colleagues (2003), Szulanski (1996), and by Bateman and Rich (2003).

At this stage the new practice becomes institutionalized, or entrenched. Ideas associated with entrenchment are: persistence, structuration, order or pattern, retention (Zeit et al., 1999).

There is however, very little empirical results demonstrating how best practices become entrenched.

One of the few contributions is Szulanski's notion of retentive capacity:

"A transfer of knowledge is effective only when the knowledge transferred is retained. Persistence cannot be taken for granted. The ability of a recipient to institutionalise the utilisation of new knowledge reflects its retentive capacity. In the absence of such ability, initial difficulties during the integration of received knowledge may become an excuse for discontinuing its use, and, when feasible, reverting the previous status quo" (Szulanski, 1996, pg 31).

However, his empirical test of retentive capacity remains inconclusive.

Similarly, Zeitz and his colleagues (1999) provide five bases to explain what would trigger entrenchment:

Models.

Regulative or coercive pressures.

Cultural factors (cognitive and normative).

Education and indoctrination.

Technical-rational calculation.

Their proposition is only loosely connected to the data they present, and thus empirical support cannot be considered.

Therefore, there is in academic circles, a general belief that retention of a best practice past the ramp-up stage should not be taken for granted. This remains to be confirmed by research. Research also needs to address how managers can improve retentive capacity.



8 Discussion

The key lessons from this review are:

To verify the fact that UK companies lag behind competitors in terms of adopting promising practices.

To acknowledge the joint existence of two mechanisms driving the adoption of best practices (institutional push and need pull).

To shift the focus on institutional push mechanisms away from its current critical stance onto understanding how to achieve positive push/pull interactions and synergistic effects.

To present a robust, detailed adoption process model based on empirical findings.

This model is presented in figure 8.1.

8.1 Implications for policy

Given that the vast majority of papers in this systematic review did not address national policy issues, the recommendations listed here extrapolate from the ten implications for practice described elsewhere.

Raise awareness of best practices.

Use multiple routes of communication to reach organisations. The more varied the means by which organisations hear about best practice, the more likely they are to pay attention. The Government may therefore look to using different types of media for dissemination, as well as using individuals, groups and institutions to convey the same types of messages.

Highlight role models.

Dissemination activities would do well to use a range of organisational role models to convince companies of the fact that the new management practices would be relevant to their own types of firm.

Communicate the whole picture.

As well as the potential benefits, companies should be given realistic previews of implementation issues and the sense that practices need to be adapted to their own needs rather than imitated wholesale.

Provide incentives for organisations to adopt best practices.

Focus on the 'long tail' of organisations or sectors in the UK who traditionally lag behind in taking up best practices. Tax incentives could be provided for those organisations that have had little experience in adopting new management practices. These should cover both capital and personnel costs.

Introduce accreditation for effective implementation of selected practices shown to improve organisational performance.

Have national and regional awards for usage of best practices.

Increase deregulation in lagging sectors to increase competition.

Encourage use of benchmarking by organisations.

Facilitate benchmarking initiatives undertaken by firms.

Develop easily accessible national databases and studies to highlight the most effective organisational practices.

Improve the use of the supply chain as a vehicle for encouraging take up of best practice.

The Government should act as a direct driver for change in the companies it deals with.

The Government itself is a major customer and can use its purchasing power to encourage the use of best practice through its supply chain.

Extend usage and support of Supply Chain Groups.

Which help companies working together on particular products to operate more efficiently to more sectors and regions. Support training and education activities, which develop the knowledge, skills and motivation of management and employees with regards to adopting best practice.

Identify the specific knowledge and skills needed to adopt best practice.

The type of knowledge that individuals need for their roles in adopting best practice has not been clearly explained in the literature. This review has helped outline some of the evidence-based issues that should be considered, but further research needs to be done to define the particular skills and abilities needed for best practice adoption. A two-tiered approach would be useful, with description of the generic skills applicable to the choosing and implementation of any new management practice and the more specific skills required for particular types of practice (e.g. TQM, BPR).

Educate leaders.

The role of leaders was clearly indicated as being crucial to effective adoption of practices within organisations. Management therefore needs to know how, and why, to choose the best practices for their organisation and how to successfully manage the implementation process. This type of knowledge could be disseminated through MBAs and other professional development programmes. Alternatively, coaching or mentoring initiatives could be set up where more experienced managers or experts from other organisations could be sponsored to help provide the requisite knowledge. Professional bodies or government-supported networking initiatives (e.g. Industry Forums) could also help in this role.

Train employee in the skills needed to work with best practices.

This training could be delivered in-house, in which case there is a need to ensure that the organisation's learning processes are effective; learning audit initiatives such as Investors In People should help in this effort. Alternatively, training could be delivered by local providers through the Learning and Skills Councils (LSCs). However, there is a need to ensure that LSCs can respond quickly to enough to demands for this type of training.

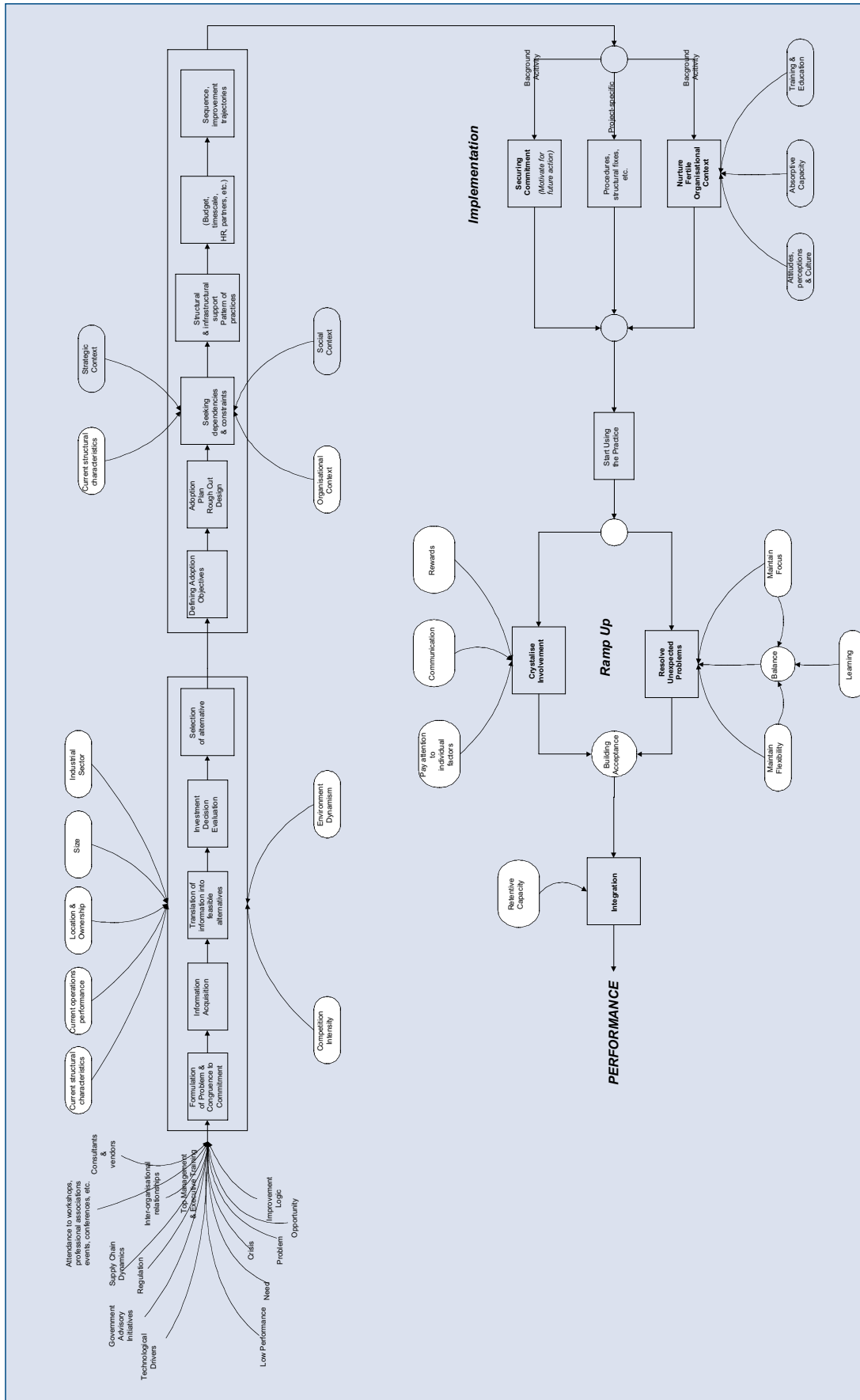
Support inter-organisational networks that facilitate the adoption of best practice.

Support intermediate bodies such as trade associations or chambers of commerce, which work to both, raise awareness of best practice and provide access to resources to help implement them. Branches of the Government such as Regional Development Agencies can also help in this effort. However, the Government should also work to ensure there are co-ordination, consistency and synergy between the different types of groups and its own activities.

Facilitate activities that encourage direct peer-to-peer learning.

This may take the form of sponsored visits between members of companies (e.g. as used by Inside UK Enterprise), setting up of multi-organisational working groups or on-line databases where experiences can be shared and advice sought. Establish more Centres of Excellence or Industry Forums to provide expert advice and support for particular sectors and practices.

Figure 8.1. Institutional Push/Need Pull Model of Best Practices Adoption



8.2 Implications for practice

This section is based on a review of the most common cited recommendations for practitioners from the 51 reviewed papers. Appendix 11.6 presents the analysis supporting this section.

Ensure firm commitment from top management.

Active championing of change.

Clear lines of responsibility for projects.

Develop the knowledge to know when and where to adopt new practices that meet the organisation's own particular needs.

Ensure need for new practices communicated to all working population.

Implement processes to effectively share knowledge about new practice implementation.

Train and educate the workforce with regards to new practices.

Provide education for managers on how to choose and implement new practices.

Provide training for workforce on how to work with new practices.

Ensure organisations have the capabilities to provide effective training.

Nurture a culture where employees are open to change and motivated to try working in new ways.

Systematically assess and review progress in new practice implementation.

Consistency in measures.

Use systematic approach to implementation.

Assess improvement in operational performance.

Review the entire process of implementation.

Develop a more external focus to work with customers and suppliers.

Create customer focus.

Engage in supplier quality management.

Willingness to learn from customers and suppliers.

Engage in networking.

Set clear goals and objectives for new practices.

Ensure agreement with goals.

Continued consistent reviews against set targets.

Communicate regularly about new practice implementation.

Ensure that both formal and informal communication routes are effectively used.

Nominate a communications co-ordinator.

Regularly share information on the project with key stakeholders.

Empower and involve employees.

Empower employees and managers to make independent decisions.

Increase participation of stakeholders in decision-making about implementation.

Establish clear monitoring and control systems to manage the introduction of new practices.

Have clear reporting relationships.

Set up control and monitoring systems.

Have less direct control.

8.3 Implications for future research

There are a number of issues for which this review could only gather partial or limited evidence.

The concept of retentive capacity and the mechanisms through a best practice become entrenched were not supported by the literature. Would best practices become systematically integrated at the end of the ramp-up stage? Or is there a need for specific management efforts after the ramp-up stage to make sure that best practices become routinised?

There is no evidence that best practices adoption projects are treated as investment decision. Further research is needed to determine whether this is the case. If yes, which criteria are used for selection and decision-making? Are organisations satisfied with these criteria?

To what extent practitioners perceive institutional push as a positive or negative factor? What can be done to improve negative perception and to make sure that push/pull interactions are positive? How can we measure the effectiveness of institutional push mechanisms?

Generally speaking, research investigating adoption process guidelines should be encouraged.

There are a number of propositions made throughout this report which are based on aggregated evidence but that should be formally verified through empirical research.

The institutional push/need pull model should be tested for relevance, competence, and accuracy. Research about adoption process should use concepts from the field of decision analysis.

There is evidence to support the fact that the UK lags behind competitors in terms of adoption rate, time since adoption, usage rate, and future plans for adoption. There are however no major research studies which address at which stage in the process UK companies fail: is it at the selection stage? The set-up stage? The ramp-up stage? Or is it, like economics research would suggest, down to external factors such as environmental dynamism and macro-economic context?

9 Conclusions

The first emerging conclusion from this review is the complexity of the process of adopting best practices. Much of this complexity is linked to the interactions of institutional push and need pull mechanisms. The increasing role of “modelling” from best practices such as lean manufacturing has been high enough to encourage entire industries to re-shape themselves. Reconciling traditional cost-benefit analysis with concepts such as imitative propensity and self-identity formation is the task that practitioners, policy makers, and researchers should focus on in the future for a better understanding of the current malaise.

Too often, promising practices are presented as being universal. The evidence collected in this review is overwhelming and decisive: there is not such a thing as a “one size fits all” best practice. Moreover, although the cautionary advice to “adapt” best practices to individual cases is given to adopters, there are often no guidelines to tell adopters where to start.

Paying attention to the strategic context of the firm, launching “structural fixes”, maintaining flexibility in a competitive environment where key mottos are downsizing and rationalisation of operations, securing the involvement of employees reported to be “burned out” by succeeding waves of change programmes, is “serious surgery”.

Although this systematic review resulted in the formulation of a detailed best practice adoption model, there was unfortunately no research results that indicate how UK companies differ from major competitors in terms of how well adoption efforts are managed. There is evidence to support the fact that the UK lags behind competitors in terms of adoption rate, time since adoption, usage rate, and future plans for adoption. There are, however, no research studies which point to the stage at which UK companies fail to keep up with competition: is at the selection stage? The set-up stage? The ramp-up stage? Or is failure, like economics research would suggest it, solely down to external factors such as environmental dynamism and macro-economic context? This is the most immediate and critical research question to address.



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11 Appendices

11.1 The Authors

Dr. Joachim Bauer, Advisory Scholar, Leeds University Business School

Dr Joachim Bauer is a Research Fellow at Leeds University Business School, where he is also teaching Operations Management. His research interests are centred around operations management strategy, contingency theory and management practices. Joachim is an Associate to the European Centre for Business Excellence (ECforBE), the research and teaching division of Oakland Consulting based in Leeds (www.ecforbe.com).

With a German degree in Business Administration, Joachim joined a hardware and software company. He then moved on to study European Business Administration at the Hochschule für Wirtschaft und Politik, Hamburg and Newcastle Business School. After being awarded a MA in European Business Administration, he joined Siemens Semiconductor Division (now Infineon). In 1998, Joachim joined Leeds University Business School and was awarded a PhD in 2002. His research considered the relationships between organisational context and the success of the implementation of business excellence. Joachim is co-author of 'The Model in Practice', 'The Model in Practice II' and co-authored a book on Marketing Controlling, which was published by the Frankfurter Allgemeine Zeitung. Joachim has also held seminars and given papers at conferences.

Dr. Kamal Birdi, Advisory Scholar, University of Sheffield

Dr Kamal Birdi is a Research Fellow at the Institute of Work Psychology/ESRC Centre for Organisation and Innovation at the University of Sheffield. His main research interests are learning and innovation at work. With regards to learning, he has spent the past decade investigating issues surrounding the take up and effectiveness of employee training and development activities. More recently, he has also been studying factors influencing the success of individual and organisational innovation activities.

Dr. David Denyer, Project Co-Ordinator, Cranfield School of Management

Dr David Denyer is a Senior Research Fellow in the Advanced Management Research Centre (AMRC) at Cranfield School of Management. David is a co-investigator on the EPSRC grant 'Developing a methodology for evidence-informed management knowledge using systematic review' (Cranfield IMRC 19). The aim of this groundbreaking work is to investigate whether, and to what extent, it is possible to develop and 'evidence-based' approach to management practice. He is a member of the research methods group of the Evidence Network. This group is accessed by invite only and has only two representatives from the management community in the UK. It is recognised to lead thinking on evidenced informed work in the medical and social sciences, and is located at Queen Mary College and is sponsored by ESRC and the Health Development Agency. David has authored several articles and has led several seminars on Evidence-based policy and practice, and is a regular speaker at international conferences.

Dr. Michel Leseure, Lead Scholar, Aston Business School

Dr Michel Leseure is a lecturer in operations management at Aston University. He holds an engineering diploma from France, an MBA from Eastern Washington University, and a PhD in Manufacturing Management from the University of Sheffield. His industrial experience is primarily in design and project-based manufacturing operations. He has lectured in the USA, the UK, and Morocco. His research interests are operations strategy, international operations management, organizational aspects of operations management, project management, industrial knowledge management, supply chain management, and performance management.

Prof. Andy Neely, Project Director, Advanced Institute for Management Research

Professor Andy Neely is Associate Director of AIM, the Advanced Institute for Management, Chairman of the Centre for Business Performance at Cranfield School of Management and Managing Director of The Performance Practice. Previously he has held appointments at Cambridge University, where he was a Fellow of Churchill College, Nottingham University, where he completed his PhD and British Aerospace. Andy has been researching, teaching and consulting in the field of business performance measurement and management since the late 1980s and chairs the PMA, an international network for those interested in the performance measurement and management. He has authored over 100 books and articles, including "Measuring Business Performance", published by the Economist and "The Performance Prism", published by the Financial Times. He sits on the UK Government's Performance Information Panel and is widely recognised as one of the world's leading authorities on performance measurement.

11.2 Keywords used in the review

The following list of keywords captures essential concepts to conduct the review:

<i>1a - Best practices (general)</i>	<i>1b - Best practices (specific)</i>	<i>2 Implementation)</i>
<i>(best practice? OR management fashion? OR management fad? OR process innovation? OR good practice? OR promising practice?)</i>	<i>(Kai?en OR TQM OR total quality management OR QM OR quality management OR EFQM OR BPR OR Business Process Reengineering OR high commitment work practice? OR High performance work practice? OR JIT OR just in time OR lean manufacturing OR Investors In People OR IIP OR empowerment)</i>	<i>(Adoption OR Adaptation OR Implement? OR Use)</i>
<i>3 - Performance</i>	<i>4 - Hurdles</i>	<i>5 - Culture</i>
<i>(performance OR success? OR effectiveness OR impact? OR competitiveness OR failure? OR benefits OR advantages OR disadvantages OR profit? OR productivity OR cost?)</i>	<i>(Resistance OR hurdle? OR barrier? OR obstacle? OR antecedent? OR predictor? OR factor?)</i>	<i>(Culture OR assimilation OR absorption)</i>
<i>6 - Emergence</i>	<i>7 - Perception</i>	<i>8 - Absorptive capacity</i>
<i>(Emergence OR evolution OR development)</i>	<i>(perception OR relevance)</i>	<i>absorptive capacity)</i>

11.3 Electronic databases

The following databases were assessed for relevance and were selected for use in the study

<i>DATABASE</i>	<i>Areas</i>	<i>Specifics</i>	<i>Comments</i>
<i>ABI – Proquest</i>	<i>This database includes details on virtually every aspect of business and management Coverage: from 1971</i>	<i>(?) as a right hand truncator only. To retrieve words with the same root. (* in place of characters</i>	<i>Some full text available. Guided search mode is preferable.</i>
<i>Science direct</i>	<i>Experimental Sciences as well as Social Science. Coverage: from 1994</i>	<i>(!) to find a root word (* to replace characters –one for each character</i>	
<i>Web of Science (Social Citation Index)</i>	<i>More than 5,700 major journals across 164 scientific disciplines.</i>	<i>- word* for all endings - sul*ur for alternative spelling Organi?ation to search both spellings</i>	<i>SAME for search for words in the same sentence () for combining operators No full text availability. Cited references functionality</i>

11.4 The Selection of studies

1.1.1. Automatic exclusion criteria

The automatic inclusion/exclusion criteria are entered at the time of the search to adjust for bias in the coverage of fields of each of the respective databases.

<i>N</i>	<i>Criteria</i>	<i>Reason for exclusion</i>
1	NOT (agricultur? OR farm? OR crop? OR children OR youth OR school? OR medical OR hospital? OR clinical?)	For Web of Science only – to eliminate papers from non-relevant fields
2	(Organi?ation? OR firm? OR compan? OR employ? OR Business?)	For Web of Science only – to focus papers on relevant fields
3	No articles from the popular press e.g. newspapers	For ABI/Informs only
4	AND NOT energy AND NOT bank! AND NOT environment! AND NOT power AND NOT electricity	For Science Direct only – to focus papers outside of fields heavily represented within science direct but irrelevant to the study: environmental management, power and energy studies, bank management.

1.1.2 Manual inclusion criteria

Once a database has returned a list of results, the researcher manually selects the papers to include in the final list of papers to be reviewed according to the following criteria:

<i>N</i>	<i>Inclusion Criteria</i>
1	Private sector organisations only
2	Qualitative or quantitative
3	Theoretical or empirical
4	Countries to include at least one of UK, Germany, France, Scandinavia, Japan or USA

<i>N</i>	<i>Exclusion Criteria</i>
1	Nothing pre-1980
2	No regulated practices e.g. Health and Safety legislation, environmental management, etc. – The focus is on voluntary rather than regulated compliance
3	Not directly related to one of the questions in section 1 - To eliminate all papers where a reference to best practices is a “fashion” phenomenon rather than an indication of a study about best practices

11.5 Studies quality assessment criteria

The following table details the assessment criteria applied to the relevant studies:

<i>Quality assessment criteria</i>					
<i>Element</i>	<i>Level</i>				
	<i>0- Absence</i>	<i>1- Low</i>	<i>2 – Medium</i>	<i>3 - High</i>	<i>Not applicable</i>
<i>1. Theory robustness</i>	<i>The article does not provide enough information to assess this criterion</i>	<i>Poor awareness of existing literature and debates. Under or over referenced Low validity of theory</i>	<i>Basic understanding of the issues around the topic being discussed The theory weakly is related to data</i>	<i>Deep and broad knowledge of relevant literature and theory relevant for addressing the research Good relation theory-data</i>	<i>This element is not applicable to the document or study</i>
<i>2. Implication for practise</i>	<i>The article does not provide enough information to assess this criterion</i>	<i>Very difficult to implement the concepts and ideas presented. Not relevant for practitio-ners or professionals</i>	<i>There is a potential for implementing the proposed ideas, with minor revisions or adjustments</i>	<i>Significant benefit may be obtained if the ideas being discussed are put into practice.</i>	<i>This element is not applicable to the document or study</i>
<i>3. Methodology. Data supporting arguments.</i>	<i>The article does not provide enough information to assess this criterion</i>	<i>Data inaccuracy and not related to theory. Flawed research design.</i>	<i>Data is related to the arguments, though there are some gaps. Research design may be improved</i>	<i>Data strongly supports arguments. Besides, the research design is robust: sampling, data gathering, data analyses is rigorous</i>	<i>This element is not applicable to the document or study</i>
<i>4. Generalisability</i>	<i>The article does not provide enough information to assess this criterion</i>	<i>Only to the population studied</i>	<i>Generalisable to organisations of similar characteristics</i>	<i>High level of generalisability</i>	<i>This element is not applicable to the document or study</i>
<i>5. Contribution Plus a short statement summarising the article's contribution</i>	<i>The article does not provide enough information to assess this criterion</i>	<i>Does not make an important contribution. It is not clear the advances it makes</i>	<i>Although using other's ideas, builds upon the existing theory</i>	<i>Further develops existing knowledge, expanding the way the issue was explained so far</i>	<i>This element is not applicable to the document or study</i>

11.6 Analysis of Recommendations to Practitioners⁶

<i>Implication for practice</i>	<i>Frequency</i>	<i>%</i>	<i>Author(s)</i>
<i>Management role Ensure firm commitment and active championing from top management Clear lines of responsibility for projects</i>	11	33.33	<i>Author(s) Ahire, Ravichandran (2001); Ascari et al. (1995); Bessant (2003); Dixon et al. (1994); Hughes (2000); McLachlin (1997); Taylor (1998); Ravichandran (2000); Sutcliffe (1999); Bateman, (2003); Drew (1994);</i>
<i>Understanding, knowledge Develop good understanding of which practices are needed when Ensure need for new practices communicated to all working population Implement processes to effectively share knowledge about new practice implementation</i>	11	33.33	<i>Ascari et al. (1995); Bessant (2003); Boddy (1998); Boddy (2000); Davies and Kochar (2000); Lane, Lubatkin (1998); Longbottom (2000); Drew (1994); Newell et al, (1998); Nohria et.al (2003); Gagliano et al. (2001)</i>
<i>Education, training and development Provide education for managers on how to choose and implement new practices. Provide training for workforce on how to work with new practices Ensure organisations have the capabilities to provide effective training</i>	9	27.27	<i>Ascari et al. (1995); Dixon et al. (1994); Gagliano et al. (2001); Katuria, Davis (2001); McLachlin (1997); Nohria et.al (2003); Petroni (2002); Majchrzak and Paris (1995); Drew (1994)</i>
<i>Cultural issues Create an organizational culture that is open to change. Ensure employees are motivated to work with new practices</i>	8	24.24	<i>Ahire, Ravichandran (2001); Ascari et al. (1995); Bessant (2003); Collins et al. (1996); Hughes (2000); Kumar and Chandra (2001); Longbottom (2000); Nohria et.al (2003);</i>

⁶ The following table synthesises the implications for practice pulled out from the papers used in this report. Similar recommendations were grouped and summarised into higher-level issues. The synthesis is based on 33 out of 51 articles. The table shows the top-ten implications based on their frequency of mention within the 33 papers reviewed.

<i>Implication for practice</i>	<i>Frequency</i>	<i>%</i>	<i>Author(s)</i>
<i>Measurement, assessment, review</i> <i>Consistency in measures</i> <i>Use systematic approach to implementation</i> <i>Assess improvement in operational performance</i> <i>Review the entire process of implementation</i>	8	30.3	<i>Ahire, Ravichandran (2001); Bessant (2003); Fullerton (2002); Shadur (1999); Taylor (1998); Davies and Kochar (2000); Majchrzak and Paris (1995); Drew (1994).</i>
<i>Customer focus / relationship issues</i> <i>Create customer focus</i> <i>Engage in supplier quality management</i> <i>Willingness to learn from customers and suppliers</i> <i>Engage in networking</i>	7	21.21	<i>Ahire, Ravichandran (2001); Bessant (2003); Boddy (1998); Dow (1999); Longbottom (2000); Nohria et.al (2003); Pannizolo (1998)</i>
<i>Goals, objectives, targets</i> <i>Identify clear goals and objectives</i> <i>Ensure agreement with goals</i> <i>Continued consistent reviews against set targets</i>	6	18.18	<i>Boddy (2000); Fullerton (2002); Guimaraes (1999); Bessant (2003); Davies and Kochar (2000); Longbottom (2000).</i>
<i>Communication</i> <i>Ensure that both formal and informal communication routes are effectively used</i> <i>Nominate a communications co-ordinator</i> <i>Regularly share information on the project with key stakeholders</i>	6	18.18	<i>Ascari et al. (1995); Bessant (2003); Boddy (1998); Krause (1999); Longbottom (2000); Nohria et.al (2003).</i>
<i>Empowerment</i> <i>Empower employees and managers to make independent decisions</i> <i>Increase participation of stakeholders in decision-making about implementation</i>	5	15.15	<i>Ascari et al. (1995); Collins et al. (1996); Fullerton (2002); Nohria et.al (2003); Taylor (1998).</i>
<i>Control issues</i> <i>Have clear reporting relationships</i> <i>Set up control and monitoring systems</i> <i>Have less direct control</i>	4	12.12	<i>Banker (1993); Boddy (1998); Boddy (2000); Majchrzak and Paris (1995)</i>

