Critical Success Factors of Business Process Reengineering, Case Study: IBM

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Abstract: This research seeks to determine how capabilities can be reengineered in an organisation by fitting the right skills to the right job so as to achieve dramatic improvement in business performance. Taking IBM as a case study, the Business Process Re-engineering (BPR) concept was examined and the critical success factors (CSFs) to its successful implementation were elicited. An inductive approach and research philosophy of 'functional paradigm' was applied by analysing the findings of the pre and post BPR issues in IBM and creating a link between the theory and practice of BPR with recommendations for future implementations. A model was created outlining the wider perspectives of BPR concept and the principles underpinning it and narrowing it down to the objective of this research using the funnelling approach of literature review. The findings of the literature review was used to develop a new model. Finally it was concluded that, BPR does not only reengineer processes but functions or core competencies. The CSFs of implementing the initiative are egalitarian leadership, collaborative working environment, top management commitment, change in management technology, appropriate BPR planning and methodology and use of information technology system. However for successful implementation, BPR must influence the content of the business strategy while the business strategy must support the BPR initiative. This is in addition to the fact that a BPR initiative should be driven by customer perception for optimal results.

Keywords: Business Process Reengineering (BPR), Critical Success Factors (CSFs), International Business Machine (IBM), Business Strategy, Information Technology, Business Processes, Change management, drivers, Inductive approach and Functional Paradigm.

I. INTRODUCTION

1.1 Introducing Business Process Reengineering:

The concept of Business Process Reengineering had been around in the 1980s but mainly the focus was more academic than organisational; however in the 90s an organisational awareness of the concept was created by Michael Hammer, Thomas Davenport and James Champy (Harmon, 2007). According to Harmon, (2007) BPR was first introduced into management concepts in Michael Hammer's book: ''Reengineering Work: Don't Automate, Obliterate''. Furthermore, Hammer and Champy (2006), stressed the fact that BPR is focused on dramatic and radical process redesign which entails overhauling of existing processes. This principle was buttressed by Smith, (2007) as the difference BPR presents when compared with other process improvements concepts like TQM and JIT. According to Smith, (2007) BPR approach is therefore a more aggressive one that seeks to breakdown existing business processes and starts up new ones without considering current organisational barriers.

As put forward by Smith, (2007), although BPR can result in dramatic improvements in a company's performance, it can also be source of problems for companies because some use BPR as an excuse to downsize instead of matching the right skills to the right job thereby losing skills. On the other hand, companies that truly want to embark on BPR and enjoy it's immense value will have to be ready to face the technical challenges (designing and developing the process) and behavioural challenges such as resistance to change that come from the employees due to the fear of losing their jobs or their significance (Smith, 2007). As a result of this, the focus of this research is to determine the critical success and failure factors of BPR and thus provide practical recommendations for successful implementation in order for companies to be able to take full advantage of the value BPR adds to organisations.

1.2 The essence of the research:

Following from the previous section, BPR often arises as a result of pressures of competition, change in customers' perception and technological change and have been seen as a solution to a company's inefficiency or a useful tool to accomplish a turn around for a dying company, nevertheless 70% of it's implementation tend to fail (Hammer and Champy, 2006). Therefore this research seeks to find out why most BPR projects fail and as a result give viable recommendations on the sure road to success in BPR. This will be done by analysing the BPR operations in IBM as well as the critical success and failure factors of the project in relation to the findings of the literature review thereby gaining a critical enquiry and practical insight to BPR.

IBM is the choice of case study because the company is into an ongoing application of BPR through the making of their technicians consultants. Thus as much as this research will provide an analysis of the company's BPR initiative in last ten years, it is also vital to note that the BPR initiative under study is an ongoing project in the company. IBM leveraged on the capabilities and expertise of their technicians in the manufacturing and development of computer mainframes for the provision of IT business solutions for their clients (Chacko, 2005). Hence this research seeks to determine how capabilities can be reengineered in an organisation thereby fitting the right skills to the right job so as to achieve dramatic improvement in business performance.

1.3 Brief introduction into the controversies on BPR:

According to Kock, (2005), business process reengineering can be defined as *''radical organisational redesign of projects, particularly when they are focused on cross-departmental business processes or sets of interrelated activities''* (Kock, 2005). However, several authors perceive BPR in different ways, for example Grant, (2002) argued that BPR should not just be focused on processes but also on other important aspects of institutions such as organisational structure, people, communication and technology.

The principle of BPR made it clear that it involves the redesigning of the whole business and not just a single process, thus if a company reengineers a single process or develops a new product the other process left untouched in the organisation such as marketing or sales will slow down the effectiveness of the reengineered process or cause delays in the marketing of the new product. Controversies on the BPR concept will however be addressed in the literature review.

1.4 Research Objectives:

In order to address the aim of this research which is to provide an insight into the major causes of BPR failures and successes thereby ensuring successful BPR implementations, the following research objectives will be pursued and met.

➢ To undertake a relevant literature review of BPR

➢ To provide a critical analysis of the relationship between the theory and practice of BPR

➢ To provide an understanding of the key BPR issues in IBM

➢ To map the critical concepts, theories and ideas derived from the literature to the management practice of BPR in IBM

➢ To provide viable recommendations to the major causes of success and failure in BPR

1.5 Overview of each chapter:

In order to meet the above research objectives this report has been divided into six chapters:

Introduction:

The introduction will set the tone of the report as well as the intention of the author. It will entail an outline of how the research objectives will be met.

Literature review:

A literature review on BPR will be carried out by developing a framework which will show the key elements that will be addressed in the literature review. The literature review will entail a critical analysis of the perceptions of different authors on the key elements of the framework and at the end of the review a more sophisticated framework will be developed based on the results of the literature review.

Research Methodology:

The research methods section will give a detailed outline of the research methodology used in this research. This will entail the method/approach of data collection and the research strategy employed in analysing and interpreting the data

collected. In addition, the reason for the chosen methods will be stated as well as the limitations of the research methods used.

Data collection and analysis:

In this section relevant data on the IBM BPR initiative case study will be presented and analysed. This analysis will be done by mapping the findings of the literature review to the practice of BPR in IBM. Thus providing the relationship between the theory of BPR and it's practice.

Findings:

In the findings section, a more explicit mapping of the BPR literature review to the management practice of IBM will be done and the key findings of this analysis will be presented.

Recommendations and Conclusions:

Finally based on the discoveries in chapter five, a practical and relevant recommendation will be given towards successful BPR implementation. The research will be completed with a brief summary on how objectives have been met and conclusions on the key findings of the research.

2.   LITERATURE REVIEW

2.1   Introduction:

This section seeks to review the various perceptions of the concept and theories of Business Process Reengineering (BPR). The key elements to be addressed in the literature review are represented in the model below (Fig 1) and it shows the relationship between the key elements of review in this literature.
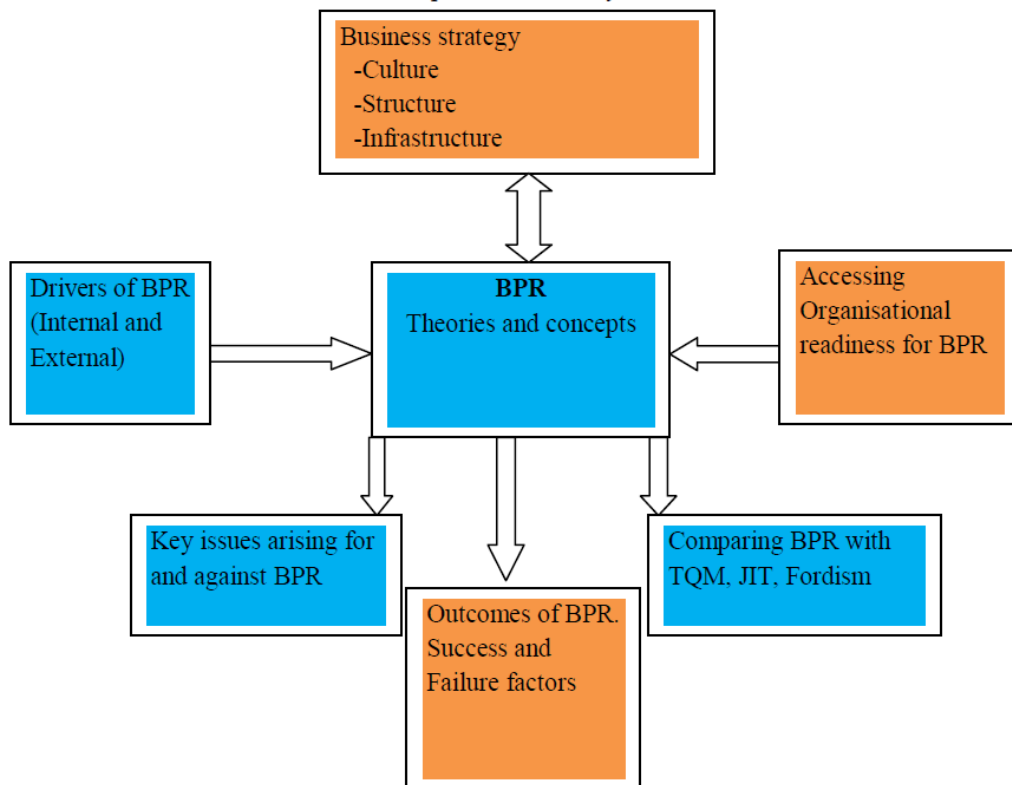

FIG. 1 BPR LITERATURE REVIEW FRAMEWORK

This model has been designed by considering the wider perspective of Business Process re-engineering (BPR), the various issues arising on the BPR concept and narrowing it down to the objective of this research. This is known as the funnelling approach of literature review (Saunders *et al.* 2007: 61). The model has therefore been divided into two parts: A wider perspective of Business Process Reengineering (blue colour) which gives a general overview of the concept and the principles underpinning it.

However, organisations as well as authors have different views about the concept of BPR and therefore approach it in various ways (Green and Waythan, 1996) thus this literature will re - examine these views by considering the key issues for and against the BPR theory and thus drawing reasonable conclusions about the concept.

Also the drivers of BPR i.e factors (internal and external) that influences BPR implementation will be examined and this is the reason why the arrow points from the drivers' box into the BPR box in the middle.

Furthermore due to the fact that BPR is a new management concept that emerged from TQM (Kock, 2005), of which TQM was also preceded by other concepts such as JIT and Fordism, there is therefore a need to discover the relationship between BPR and previous management concepts so as to determine the relevance and reasons behind the shift from the previous concepts to BPR. And at the same time drawing out the strengths and weaknesses of BPR in relation to the other management concepts (TQM, JIT, Fordism). Moreover BPR is often confused with other management concepts like TQM (Al–Mashari and Zairi, 2000), hence the literature review finds it necessary to draw out the differences and similarities between these concepts.

Furthermore, the key issues arising for and against the BPR concept and the comparison of BPR with other management concepts are off shoots of the theories and concepts of BPR hence the arrow goes out of the BPR theories and concept box.

The second part of the model (orange colour) will be more focused and will drive towards achieving the objectives of this research. A critical analysis of the link between organisational Business strategy and BPR will be undertaken with respect to analysing the significance of organisational culture, structure and infrastructure on BPR implementation. Also, because the relationship between business strategy and BPR is considered to be interlinked the arrow therefore goes up and down at the same time. Furthermore it is necessary to consider the factors that determine the readiness of an organisation for a BPR project so as to minimise the risk of failures and pain that comes with organisational change thereby maximising the chances of success (Pfeffer and Sutton 2006). As a result of this, the review will be concluded with an analysis of the factors that determine or contribute to the success and failure (outcomes) in BPR projects.

2.2 Business Process reengineering Theories and Concepts:

2.2.1 Defining Business Process Reengineering:

From the name of the concept it is evident that Business process reengineering (BPR) entails the reengineering of business processes thus there is a need to understand what a business process is. According to Hammer and Champy (2006: 38) ''*business process is a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer''*. Also Kock, (2005) defined business process as *''a set of interrelated activities, usually carried out by teams, whose outputs are the goods or services that are typically sold by an organisation to its customers''*. Reengineering on the other hand, According to Coulson, (1997), was first introduced into common business usage in 1990 in a seminal Harvard Business Review article: *reengineering work: don't automate obliterate* by Michael Hammer. Also Kock, (2005) ascertained that the reengineering work was heralded by Michael Hammer in conjunction with James Champy and Davenport in conjunction with James Short. According to Hammer and Champy (2006 :35), reengineering is the *''fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed''* Hammer and Champy (2006), emphasised four key words in their definition. The first is the fact that reengineering is 'fundamental', implying that organisations need to ask questions like ''*why do we do what we do? And why do we do it the way we do?''.* Therefore no assumptions must be made about what processes should be done and which one should be eliminated (Hammer and Champy 2006). The second key word is 'radical' meaning that reengineering goes beyond making superficial changes but '*disregarding all existing structures and procedures and inventing completely new ways of accomplishing work'* (Hammer and Champy 2006 :36). Thirdly the definition stressed the word 'dramatic', which according to Smith, (2007: 17) means ''*starting with a blank sheet of paper and drawing up the perfect process, without regard to the incumbent organisational barriers'';* as opposed to marginal improvements which entails fine tuning (Hammer and Champy 2006: 36). And lastly the fourth key word is 'processes', reengineering should be focused on processes not tasks, jobs, people or structures because all these other activities takes place in a process and in order to make a change the whole process need to be reengineered not functions (Hammer and Champy 2006 :36).

However there were other definitions by other authors; Alter, (1990 :32) cited in Al-Mashari and Zairi (2000), defined reengineering as *''a methodical process that uses information technology to radically overhaul business process and thereby attain major business goals''* also Lowenthal, (1994 :62) cited in Al-Mashari and Zairi (2000) defined it as *''the*

fundamental rethinking and redesigning of operating processes and organisational structure, focused on organisational core competencies to achieve dramatic improvements in organisational performance''. Al-Mashari and Zairi (2000) argued that though there are differences in the three definitions, the four authors (Hammer and Champy, Alter and Lowenthal) however all emphasised that: (a) business process redesign is facilitated by technology particularly IT, (b) BPR need to be radical and (c) the need for organisational change.

However comparing much more recent BPR definitions to the ones of the early eras of BPR, Kock, (2005) referred to BPR as *''radical organisational redesign projects, particularly when they are focused on cross-departmental business processes or sets of interrelated activities''.*

Conversely, Grant, (2002) argued that the Hammer and Champy's definition of BPR is inadequate because it focuses more on processes and ignores other important aspects of institutions such as organisational structure, people, communication and technology according to him this narrowed definition which is being followed by organisations is one of the causes of failure in BPR. Grant, (2002) further analysed that technology, people, communication and structure are important parts of any organisation that can also be reengineered if need be so as to yield better results and not just business processes only. In the same vein Coulson, (1997) argued that reengineering can only be effective when used to redesign the business itself and not just its processes. Organisations should utilize the potentials and skills of members of the organisation; in other words putting the right person in the right job Coulson, (1997). However the principle of reengineering as put forward by Hammer and champy(2006) shows that Hammer and Champy's claims agrees with the argument of Grant and Coulson. According to Hammer and Champy (2006) reengineering in an organisation has several implications not only does it affect business processes but affects every aspect of the organisation. According to Hammer and Champy (2003 :69-84), Work units change from functional department to process teams, Jobs change from simple tasks to multi-dimensional work, people's roles change from controlled to empowered and job preparation changes from training to education. Also, focus of performance measures and compensation shifts from activity to result, advancement criteria change from performance to ability and values change from protective to productive (Hammer and Champy 2006).

In addition the management of the organisation is also not left untouched as managers change from supervisors to coaches, organisational structure changes from hierarchical to a flattened structure and executives changes from score keepers to leaders (Hammer and Champy 2006). It is not enough to reengineer an organisation's business process, but all other aspects have to fit together to record success in the reengineering projects as illustrated in the business system diamond model (Fig 2) (Hammer and Champy 2006: 85).
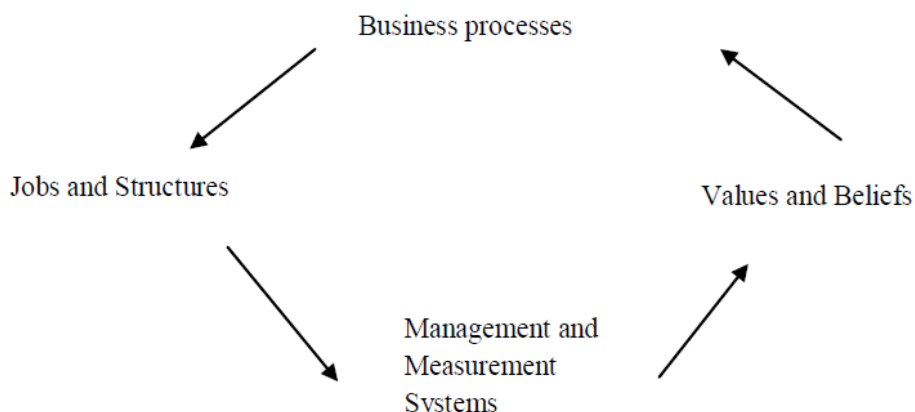
Source: Hammer and Champy (2003: 85)

FIG 2 BUSINESS SYSTEM DIAMOND

The above Fig shows that reengineering an organisation's business processes is linked to all other aspects of an organisation (people, jobs, managers and values) and therefore will determine the design of jobs and structures, which will in turn lead to the management system of the company (how workers are paid and assessed) the management system thus determines the organisation's values and beliefs and consequently shapes the organisation's business process all over again (Hammer and Champy 2006).

In a sum the principle of reengineering emphasises that work must not be designed on hierarchical management and specialisation of labour but on end-to-end processes and focus on value creation for customers (Hammer and Champy 2006). Furthermore, Grey and Mitev (1995 :7), view BPR as *''the unwinding of traditional modes of organisation based on bureaucratic structures and taylorised work systems'',* the author believes that BPR is de-division of labour because it reduces the number of steps in performing an operation and also leads to a flatter hierarchy. Furthermore the only way by which an organisation can achieve a flatter hierarchy and eliminate bureaucracy is by reengineering it's process so that they are no longer fragmented (Hammer and Champy 2006). BPR emphasises empowerment implying that staff are given the training to perform a variety of roles with a high level of autonomy in order to cut costs and create more efficient processes (Coulson, 1997). On the other hand, Grey and Mitev (1993) views empowerment has a form of control from the top management to the employees, because the top management tell workers that they are empowered so as to motivate them and thus making them ignore the need for an overseer hence indirectly reducing cost of overheads. Moreover, Hammer and Champy, (2006) argued that reengineering should use IT to enable a new process and not to automate the existing one, according to him workers are fully empowered to carry out their functions when supported by technology. In the same vein, Groover and Manjor, (1997, cited in Češnovar, 2006) stressed that ''*BPR relies on the use of innovative information technology'',* because it enables easier communication with customers and suppliers and thus instant response to demands.

Harmon, (2009) argued that IT professionals and department need to be incorporated right from the beginning because they can tell if the BPR plan will be compatible with the existing IT infrastructures or if an upgrade or replacement is needed thereby challenging Hammer's suggestion on excluding IT professionals from the BPR planning team until BPR plan is complete due to the fact that they are usually resistant to BPR changes.

Also technology on its own cannot deliver transformation/change because organisational change usually depends on right management hence, technology is not a solution to organisational problems since BPR also presents technology as a problem to be solved, (Grey and Mitev 1995: 15)

2.2.2 Summary:

In sum the review of BPR definitions has shown that there are slight differences in emphasis by various authors. Hammer who is a seminal author on BPR, and the more reason why the author has been referenced a lot on the theories and concepts of BPR, emphasised the outcomes, aim and the underlying principle of BPR rather than the means/methodology in his definition while Alter, (1990) emphasised that BPR can be achieved in an organisation with the help of technology and Lowenthal, (1994) argued that it could be achieved by leveraging on a company's capabilities. However, it can be summed up that BPR can be said to entails fundamental, radical and dramatic change of processes which invariably will affect the entire organisation (jobs, tasks, structures and so on), so as to reduce cost, increase speed, improve quality and deliver efficient service.

Moreover most of the BPR definitions have been outdated which is because of the historic origin of the concept in the 90s, in the bid to rethink the way of doing business so as to meet up with competition and customer demands. However a more recent definition by Kock, (2005) emphasised more of the radical approach of BPR so as to achieve better performance at a minimal cost. Although this definition is more recent it does not differ fundamentally from the old ones. Furthermore, BPR involves putting the right person in the right job that is ensuring a perfect match of capabilities with job responsibilities with the top management creating a work environment of empowerment so that workers can work with a degree of autonomy using technology as an enabler of the redesigned process and not the solution. In addition IT professionals should also be involved in planning from the beginning to ensure viability of the changed processes. Furthermore the decisions of BPR execution has been said to be top down thereby negating the idea that BPR implementation results in a flattened hierarchy in organisations.

Although this section has addressed the definition, theories and concepts of BPR, it is important to analyse the controversies on the concept so as to get a wider and in-depth perception. The next section will therefore critically analyse these views.

2.3 Key issues arising for and against BPR:

According to Green and Wayhan (1996) organisations have different perceptions about BPR and thus approach it in different ways, which therefore gives a different result from the expected BPR outcomes. Moreover Carr and Johansson (1995) Cited in Boudreau and Robey (1996) referred to the result of a research carried out by Forrester on 50 organisations that claimed to be embarking on reengineering, revealed that 30% of organisations were pursuing orthodox

reengineering, 42% were only into incremental changes and 28% are not reengineering at all. According to the authors reengineering has been confused with restructuring which is the way by which companies reduce capacity for example labour during economic downturn so as to meet current lower demand and it is usually focused on a downsizing process. However the focus of a downsizing process entails providing remedies to poor financial performance through layoffs while BPR is focused on reinventing the company's process for strategic advantage (Green and Wayhan, 1996), Also Harmon, (2007) argued that though BPR might involve downsizing, it is not the main target and laying off of workers is usually a result of the slowdown in business cycle. However, Inglesby (1993) cited in Grey and Mitev (1995) argued that one of the unavoidable consequences of BPR is unemployment for example in the reengineering of IBM credit checking system, four generalist were replaced by one specialist and in the reengineering at Ford 500 people working in vendor payment were reduced to 125 (Hammer and Champy (1993 :38,42) cited in Grey and Mitev (1995), thus resulting in more work being done by the remaining few in order to increase overall output while reducing head count (Grey and Mitev 1995). But according to Pfeffer and Sutton, (2006) there is no evidence to proof that cutting the number of workers will lead to an increase in organisational performance.

Another organisational activity confused with BPR is restructuring, which is the breakdown of hierarchical structure or removal of middle managers and it is focused on organisational structure not the underlying business processes (Green and Wayhan 1996). Hammer and Champy 2003, says ''*overlaying a new organisation on top of an old process is pouring soured wine into new bottles*'' and this is contrary to the BPR principle. In the same vein, Hammer and Champy (2006) argued that downsizing and restructuring means doing less with less while BPR means doing more with less. Also there is a mix up between BPR and software reengineering according to (Al-Mashari and Zairi 2000) even though software reengineering outcomes has been efficient and resulted into faster systems and applications it is not the same as BPR. One of the causes of failures in BPR is employees resistance to change thus companies in an attempt to win employees' commitment have presented BPR has an inevitable action to be taken for survival/profitability thereby instilling fear in them to gain their commitment (Strassman, 1994, Cited in Grey and Mitev 1995). Therefore organisations cover up the redundancy result of BPR with the need for a technological change and the fact BPR is a top down process makes it difficult for organisations to win employee commitment (Smith, 2007).

Furthermore it is not the redesign of work processes that scares employees from giving their commitment but the fear of the BPR process infringing on how their work will be performed henceforth and how they will be evaluated, rewarded and supervised (Kock, 2005). In other words the reengineering decision is hierarchical and inconsiderate to seek for the commitment of the employers that will eventually lose their jobs anyway (Grey and Mitev 1995). However Hammer and Stanton (1995 :174), argued that ''*Dramatic improvement has to be paid for in some way,...when a situation calls for drastic change, drastic actions must be taken and endured''.* Furthermore the pain of reengineering that an organisation experiences serves as immunity to the pain it might face if it refuses to reengineer Hammer and Stanton (1995).

In the same vein Pfeffer and Sutton (2006) argued that companies that refuse to respond to change are most likely to die at the long run because they will not be able to meet up with customers' change in demand and requirements. According to Moskal, (1996) reengineering at Hoechst Celanese Corp's chemical group was done with a reduced number of layoffs because the company put workers removed from a job at one part of the organisation into other areas of the organisation. According to Boudreau and Robey (1996) the fact that BPR entails total breakdown of existing processes is a fallacy because it is impossible to clear the slates of shared understanding and mental models that have built up overtime in the minds of employees. Furthermore Boudreau and Robey (1996) challenged the issue that technology serves as an enabler for BPR because it might as well disable the implementation of BPR when next there is a need for the organisation to make further changes in future because technological automation usually exists in form of software and it might be difficult to change when these software conventions have been considered outdated alongside with the business processes and functions that it once enabled. Furthermore as much as information technology enables organisational flexibility by creating variety in time and work space thus increasing the speed of response, it also puts constraints on flexibility by pushing in routines into software programmes that are difficult to change; however to ensure flexibility, organisations should embark on continuous technological development to prevent programmed routines from being hardened in the organisations (Lucas 1994, cited in Boudreau and Robey 1996).

As earlier discussed, one of the consequences of BPR implementation in organisation is workers' empowerment as put forward by Coulson, (1997). However Mckenna, (1995) sees empowerment as a behavioural trait which needs to be developed in workers and to say that employees will attain such a quick change in behaviour is unrealistic because it is quite unsure how possible it is for BPR to induce such behavioural change in workers. In the same vein, Grey and Mitev,

(1995) argued that empowerment is developed over time rather than conferred. In the same vein Boudreau and Robey, (1996) pointed out that the notion of empowerment is a way by which managers intend to put BPR in a more positive and politically correct perception while the design of the system in which employees are expected to operate is completely top down. Although the principle of empowerment is for employees to have a degree of autonomy and be able to make decisions concerning their jobs without close supervision thereby creating a flatter hierarchy, the use of information technology (IT) to enable business processes only exposes employees to an increasing likelihood of being monitored implying that BPR is completely hierarchical in it's approach to organisational control (Boudreau and Robey 1996).

2.3.1 Summary:

The arguments in the last section are quite dated because it has been discovered during the cause of research that authors of BPR in recent years are more concerned with how BPR can be successfully implemented in organisations while the dated authors like Grey and Mitev, (1995), Boudreau and Robey, (1996) and Green and Wayhan (1996) reviewed BPR more in an academic context. This is however one of the limitations encountered in reviewing this section of controversies on the BPR concept.

In sum, Harmon, (2007) and Hammer and Champy, (2006) strongly believe that reengineering is not downsizing, restructuring and re-organisation, as a result organisations that perceive BPR to be any of these is heading towards failure. Furthermore, although BPR might involve downsizing it is not the main intention; it is rather focused on achieving competitive advantage through the redesign of the company's processes. Also BPR is not restructuring even though it might entail breaking down the chains of command it's not the target and it only does that to ensure that the management structure fits the new process.

In addition, Grey and Mitev (1995) believe that seeking commitment for the BPR initiative from employees is difficult to achieve because these employees are aware that they might eventually lose their jobs therefore seeking commitment from workers is seen to be unfair. However an organisation need to be ready to bear the pain that comes with BPR so as to enjoy it's value.

Also as pointed out by Boudreau and Robey (1996), achieving a total breakdown of old processes as BPR entails is not possible because organisational change involves people not just processes and infrastructure therefore it is not that easy for human memories to fade up so quickly implying it to be a gradual process. Furthermore, technology might as well be a disabler because it might be difficult to change when next there is a need for reengineering since it involves the use of programmed software.

Finally, empowerment was also seen as a level that workers need to attain gradually implying that it's not automatic as painted in the principle of BPR and it is not yet sure if BPR can actually bring about such behavioural changes. With the advent of the BPR concept and it's implementation by companies, it is necessary to determine what leads an organisation to the implement BPR. Thus the next section will give a critical evaluation of the drivers of BPR.

2.4 Drivers of BPR:

Hammer and Champy (2006: 27) classified the drivers of BPR under three Cs namely: customers, competition and change; according to them, customers' perceptions about their needs have changed and so are their demands therefore organisations need to be responsive to them. However (Johansson *et al* 1993: 37) points out that customers are not just to be responded to but ''*they need to be an integral part of the team that defines an organisation's business processes, strategies and competencies''*. Thus making it easier for the needs of customers to be easily and quickly responded to if they are considered as part of an alliance in designing an organisation's business process (Johansson *et al* 1993). Conversely, Grey and Mitev (1995) argued that there is no evidence to show that organisational practice is a product of what customers want, the authors stated that the fact that customers ' expectations is a driver for BPR implementation is an assumption that customers have autonomy thereby debunking Hammer and Champy's assumption on customers being a driver for BPR. Grey and Mitev (1995) argued that there are other BPR drivers in an organisation such as profitability other than customers' expectations. In support of this statement Johansson *et al* (1993) stated shareholders as one of the drivers for BPR in an organisation, the authors analysed that companies want to be perceived as being capable of providing returns on investment to their shareholders by implementing performance improvement practices including reengineering so as to increase profitability and consequently the company's share value.

Furthermore the competitive environment has made organisational structures, work design and management style outdated because emphasis have changed from efficiency and control to innovation, speed, service and quality (Harmon,

2007). Therefore an organisation's survival depends on it's ability to meet up with the competition both locally and globally (Chan and Peel, 1998). On the contrary Grey and Mitev (1995) believe that the implementation of BPR is what creates competition implying that BPR is not only recommended to companies in difficulties as Hammer and Champy (2006) had put forward *''but also as a pre-emptive strike against competitor companies which have not engineered or as a necessary response to those who have''* (Grey and Mitev 1995: 10). The authors therefore refer to this has destructive competition where companies instigate competition through BPR practices.

In addition, technology, customer preferences, and geopolitical realities are changing at an alarming rate, thus *''what was unthinkable yesterday is routine today''* (Hammer and Stanton 1993: 12), and response to government regulations can lead to a total change in the business structure of an organisation (Chan and Peel, 1998). However Johansson *et al* (1993) argued that politics, economic, legislation, and regulation are not drivers of BPR but influencers because companies are able to determine their fate by implementing BPR in response to other drivers such as customer satisfaction, cost control and technological upgrade, but cannot determine the results of responding to change in environmental, health regulations, politics or economical changes. Johansson *et al* (1993) stated that changes in products standards for example regulations on health and safety standards in the automobile industry which requires cars to have air bags, child safety belts and the likes, have great impact on business processes because it costs more to add new features or replace an old feature with a new one than for a company to reengineer it's processes (Johansson *et al* 1993). But as much as some companies see responding to changes in regulations as expensive, some are using it as a platform to gain competitive advantage (Johansson *et al* 1993).

Grey and Mitev (1995) argued that BPR is not a long lasting solution in response to changes in the market because change is a continuous phenomenon that will not end even after an organisation implements BPR thereby challenging the notion of change being a driver for BPR and BPR being a corresponding solution to both environmental and technological changes.

On the other hand Chan and Peel, (1998) classified the drivers of BPR into external (customers, competition, change and government policies and political pressures) and internal (technology, increase in efficiency, cost reduction and strategy redefinition). However, a survey (Fig 3 and Fig 4) conducted by Chan and peel (1998) revealed that customer's perception is a major influence in the implementation of BPR compared to other external drivers while cost reduction drives company more to execute BPR compared to the other internal drivers as well.
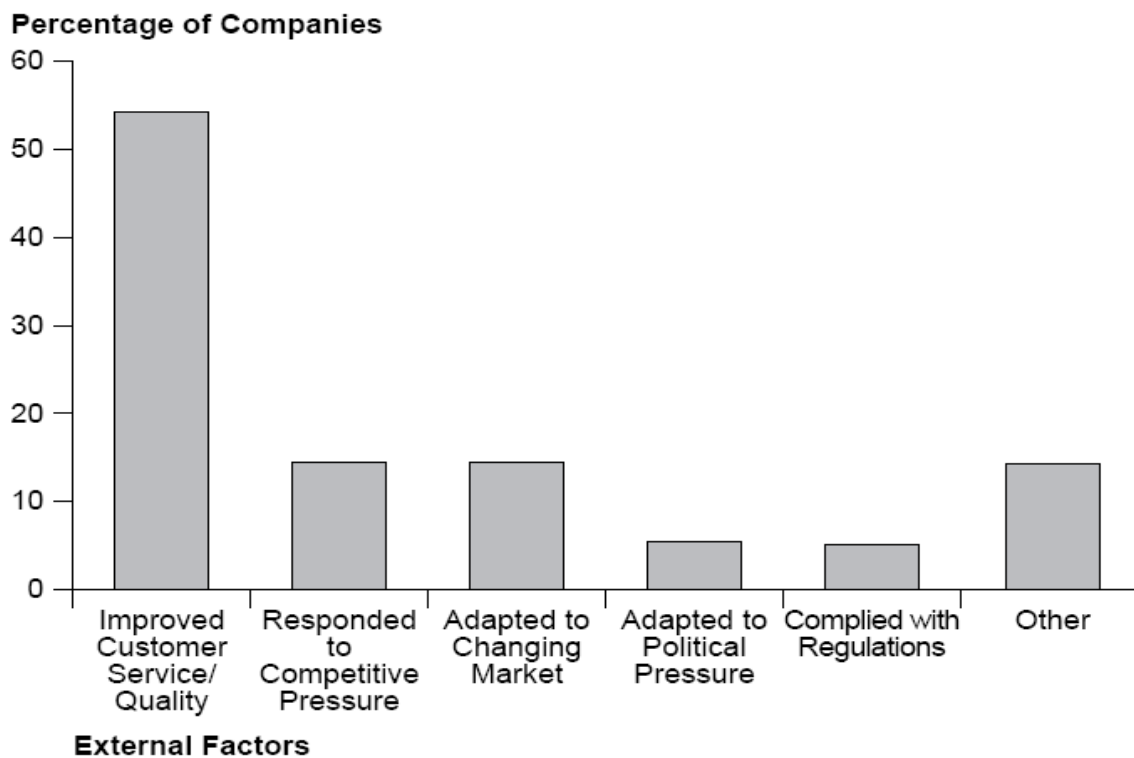
Source: Chan and Peel (1998: 50)

**Fig 3 EXTERNAL FACTORS DRIVING REENGINEERING**
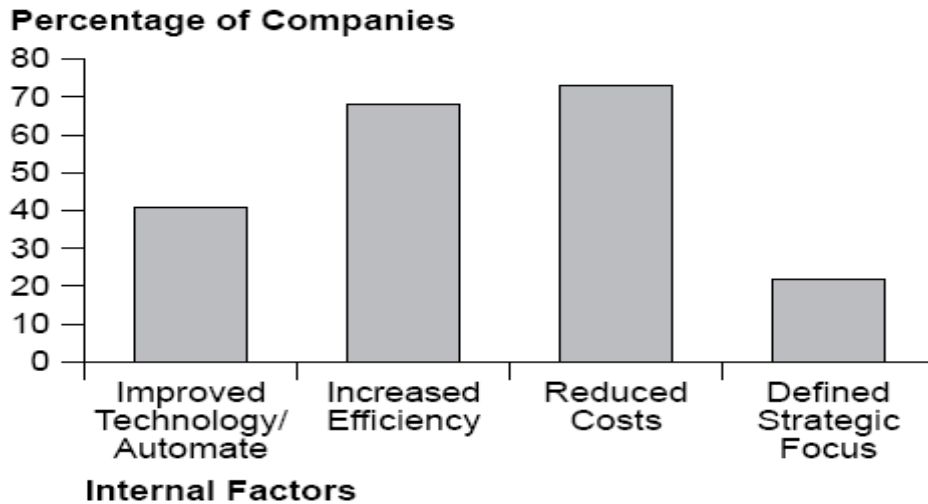
Source: Chan and Peel (1998: 50)

Fig 4 INTERNAL FACTORS DRIVING REENGINEERING

Al-Mashari and Zairi, (2000) stated that external drivers are usually related to increase in competition, changes in customer's preferences and technology while internal drivers are motivated by changes in organisational structures and strategies.

In considering technology as an external driver, (Harmon, 2007) argued that organisations are forced to redefine their businesses and reengineer their business process due to a shift or upgrade in information technology and the introduction/development of new technology which competitors do so as to gain competitive advantage and market share especially in industries where main operations are hinged on technology.

In analysing the internal drivers, Chan and Peel (1998) claimed that the need to increase efficiency by embarking on activities like: *''ontime performance, reducing defect rates, increasing accuracy of quotes, eliminating repetitive tasks, reducing turnaround time, speeding up product development, improving human resource practices''* prompts an organisation to embark on BPR. Furthermore the need to reduce cost especially in times of economic downturn has forced companies to devise cost reduction strategies so as to increase their profitability and survive under intense market competition (Chan and Peel, 1998). In addition Chan and Peel, (1998) postulates that an organisation can reengineer it's business processes in the bid to develop new strategic directions or redefine it's focus. Also according to Plowman (1995) cited in Al-Mashari and Zairi (2000), one of the internal drivers of BPR is when an organisation experiences changes in capabilities in relation to it's processes, methods, competencies and employee behaviours.
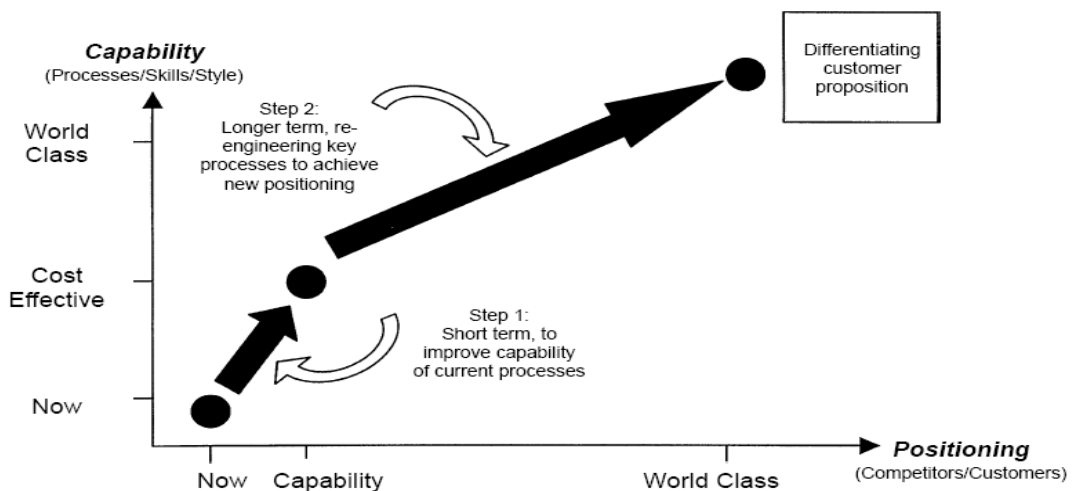
Source: Plowman, 1995

Fig. 5 BUSINESS TRANSFORMATION THROUGH CAPABILITY IMPROVEMENT (Al-Mashari and Zairi 2000: 17)

As illustrated by Plowman (1995) cited in (Al-Mashari and Zairi 2000: 17) in Fig 5 above, transformation of business process is determined or driven by an organisation's strategy that leads to short term capability changes and this creates long term changes in strategic position amidst it's competitors and customers. In line with above, Edwards and Peppard (1994) points out the fact that in the 1980s, organisations were focused on planning strategies that will combat the competition and global market changes but their capabilities sometimes do not match or meet up with this challenge thus in the 1990s companies are more concerned with building capabilities that will flesh out these strategies by implementing BPR. In the same vein, in challenging whether crisis is a driver or not, Dixon *et al.* (1994) in a research conducted on fifteen companies on the drivers of BPR, discovered that crisis is not a primary driver of BPR implementation in an organisation because only three companies reengineered it's processes due to crisis (internal and external) and the other twelve reengineered as a result of the development of a new management vision which required the development of new capabilities because the old capabilities were inadequate in supporting the new vision.

2.4.1 Summary:

Conclusively, the drivers of BPR has been classified under three Cs: Customers, competition and change while others classify it as external (customers, competition, change and government policies and political pressures) and internal (technology, increase in efficiency, cost reduction and strategy redefinition). However Grey and Mitev (1995) argued that organisations implement BPR irrespective of what customers' perceptions are and saying customers' needs drive companies to implement BPR is a cover up. Also profitability and shareholders drive companies to implement BPR and they are interwoven into each other because if the profitability of a company increases, it is expected that the company's share value would increase correspondingly. In addition, Hammer and Champy, (2006) the driver of competition has caused a change in emphasis from efficiency and control to innovation, speed, service and quality; thus organisations implement BPR so as to meet up. On the contrary Grey and Mitev (1995) believe that competition is not a driver for BPR but it is the implementation of BPR that initiates competition.

Change as a driver comes in form of technological, political, regulative, legislative, and economic changes. However Johansson *et al.* (1993) argued that politics, economics legislation, and regulations are influencers not drivers of BPR because adhering to them will lead to changes in business processes and organisations do not have control over the outcomes of these changes unlike other BPR drivers.

Finally, according to Plowman (1995) the development of new strategic directions in an organisation is a driver because it often requires the need to develop capabilities that will match and help deliver the new business strategy. Despite the above analysis Chan and Peel, (1998) research showed that the major external and internal drivers of BPR are customer's perception and cost reduction respectively.

Before the advent of BPR there had been a number of management concepts in play in organisations but as argued by Smith, (2007) the impact of the previous changes are incremental and does not fit and neither can it deliver the emphasis of the changing times. Thus there is a need to compare different management concepts that were in operation before BPR so as to establish the need for BPR as well as it's strengths and weaknesses.

2.5 Comparing BPR with TQM, JIT and Fordism:

Fordism has been mostly used in the motor industry and it's focused on mass production in relation to mass consumption in such a way that products are produced in large volumes and standardized form with the use of technology which results in jobs being deskilled (McAuley and Johnson 2006). However, Just-In-Time is used to minimise waste and to remove ''non-value-adding'' activities in operations, manufacturing, distribution and purchasing (Isa and Keong, 2008) On the other hand, smith, (2007: 13) defined TQM as *''a set of systematic activities carried out by the entire organisation to effectively and efficiently achieve company objectives so as to provide products and services with a level of quality that satisfies customers at the appropriate time and price''.*

In contrast to BPR and the other management concepts, production in Fordism is in form of assembly lines while market is focused on mass consumption as earlier pointed out moreover, the management style is taylorist, workers are semi-skilled and technology is dedicated to aid the system in functioning (McAuley and Johnson 2006 :214). In the same vein Behrisch *et al.* (2002) says economics of scale is taken advantage of in Fordism with the employment of large numbers of workers. Furthermore, Kock, (2005: 20) stated that according to Hammer and Champy, ''TQM projects only led to 5-15% of improvements while BPR provided as much as 300% improvements''. Thus according to Nhira, (2001) cited in Češnovar, (2006) BPR creates competitive advantage, by enhancing flexibility, reducing cost so as to improve operational effectiveness thereby creating new opportunities for the organisation in the market place. On the other hand Burke and Peppard (1995) states that JIT and TQM work well together especially in the manufacturing sector because JIT requires an effective quality system such as TQM in place to work well. Furthermore Burke and Peppard (1995) argued that JIT and BPR can be seen as close in concept because in his own view JIT is also radical in his approach to reorganise

manufacturing systems, utilizes automation to achieve system integration, focuses on quality as well as process efficiency and delayers management structures for easy communication.

In sum the process orientation family (JIT, TQM and BPR) are improvements on the principles of Fordism in the industrial age and thus can be easily compared with each other, thus the differences between these three concepts are stated in table I according to Peppard and Rowland (1995).

TABLE I COMPARING TQM, JIT AND BPR CONCEPTS

Elements	TQM	JIT	BPR
Focus	Quality attitude to customers	Reduced inventory, Raised throughput	Process Minimise non-value added
Improvement scale	Continuous incremental	Continuous incremental	Radical
Organisation	Common goals across functions	'Cells' and team working	Process based
Customer Focus	Internal and external satisfaction	Initiator of action 'Pulls' production	Action driven
Process focus	Simplify improve measure to control	Work Flow/throughput efficiency	Ideal or streamlined
Techniques	Process maps, Bench-marking, Self-assessment, SPC, Diagrams	Visibility Kanban Small batches	Process maps Benchmarking Self-assessment IS/IT Creativity/outbox of thinking

Business philosophy comparisons Extracted from: Peppard and Rowland (1995: 16)

On the other hand, Pereira and Aspinwall, (1997) argued that BPR and TQM can work closely together because reengineering processes requires quality checks to be effective. However according to Edwards and Preppard (1994), even though it is said that TQM and BPR can be integrated due to fact that the two concepts emphasises quality improvement, it has not been clear on how to deal with the differences of these two concepts and it was therefore better to say that for an effective BPR implementation quality need to be incorporated and it's not necessary that TQM and BPR have to be integrated. Also Edwards and Preppard (1994) argued that BPR often emerges from TQM initiative, and the authors' research revealed that 94% of companies that embarked on BPR have previously implemented TQM and only 6% of the companies did not previously have any affiliation with TQM and that the likelihood of achieving success in BPR was higher for companies that had already implemented TQM or JIT initiative because they were already familiarized with change programmes.

Moreover BPR and TQM are similar based on the fact that both concepts take into consideration the importance of processes and the needs of customers (Hammer and Champy, 2003). Also, both processes focus on process measurement, improving business performance, benchmarking and also recognizes the need for organisational change, cultural change, top management commitment and the importance of team work (Selladurai, 2002). Even though the two concepts have these similarities yet, they are fundamentally different because TQM works on existing processes by enhancing the quality through continuous incremental improvement in order to improve on what exists while, BPR seeks improvement by discarding existing processes and replacing it with new ones (Selladurai, 2002). In the same vein Smith, (2007) argued that TQM is like patching holes in existing processes while BPR is a radical approach to process improvement thus BPR is preferable to deliver positive organisational performance in the rapidly changing business world. Furthermore the role of IT is central to BPR implementation while in TQM it is not as important (Green and wayman 1996). The differences between BPR and TQM can be summed under the following headings as shown in table II an extract from Davenport, (1993: 11).

TABLE II DIFFERENCE BETWEEN TQM AND BPR

|	TQM	BPR
Level of change	Incremental	Radical
Starting point	Existing processes	Clean slate
Frequency of change	one-time/continuous	One-time
Time required	Short	Long
Participation	Bottom up	Top down
Typical scope	Narrow, within functions	Broad/cross-functional
Risk	Moderate	High
Primary enabler	Statistical control	IT
Type of change	Cultural	Cultural/structural

Adapted from Davenport, (1993: 11)

2.5.1 Summary:

Fordism focuses on quantity, that is how many more products can be produced and consumed in a standardised and mechanistic way while JIT targets how to satisfy customer's needs by reorganising manufacturing operations so as to ensure customers' demands are met on time thereby reducing lead time and increasing throughput. JIT also emphasis waste reduction and the elimination of unnecessary activities thus ensuring that inventory do not sit on the shelf when they are not needed. Also TQM emphasises continuous quality improvement throughout business processes and operations and getting it right the first time. However it has been revealed by Johansson *et al.* (1993) that JIT, TQM and BPR emphasises the significance of improvement on business processes and that BPR utilizes JIT and TQM capabilities to achieve strategic advantage by turning it into a core competence. On the other hand according to Selladurai, (2002), BPR is like a total break away from the old principles of Fordism (assembly lines, Taylorism and so on) to establish new rules of how work is done and as much as BPR and TQM share some similarities yet they differ in a number of ways and the fact that they can be integrated is questionable. Table II above gives an overview of these differences and the main differences seems to be positioned in the depth of change and the fact that TQM is narrowed and focused on particular processes while BPR cuts across the business.

The analysis of the previous sections have given us an overview of BPR concepts, it's importance, and it's drivers. However how can organisations incorporate BPR into a company's strategic architecture or vice versa? This question will be analysed in the next section revealing the link between BPR and business strategy, so as to determine how a company shapes it's response or it's decision to reengineer it's business processes in order to suit organisational business strategy**.**

2.6 The link between organisational business strategy and BPR:

Tennant and Yi-Chieh (2005) cited in Češnovar, (2006) argued that the implementation of BPR should support the corporate strategy of an organisation so as to record effective use. Moreover, Pereira and Aspinwall, (1997) argued that an accurate choice of which process to reengineer can only be done when an organisation relates the decision making to it's mission and goals. Grant, (2002) argued that the primary target of the BPR process in an organisation depends on the project objective, current situation and organisation's mission and goals. In the Grant's view, reengineering implementation may differ due to a company's strategic direction, in other words there is no exact method to BPR implementation but it largely depends on the company's business strategy, structure and project objective.

According to Coulson, (1997) there are usually two reasons that motivate an organisation to implement BPR namely: a desire to cut costs and a desire to rethink the organisation's strategy thus creating a platform to grow and shape the company as illustrated in Fig 6.
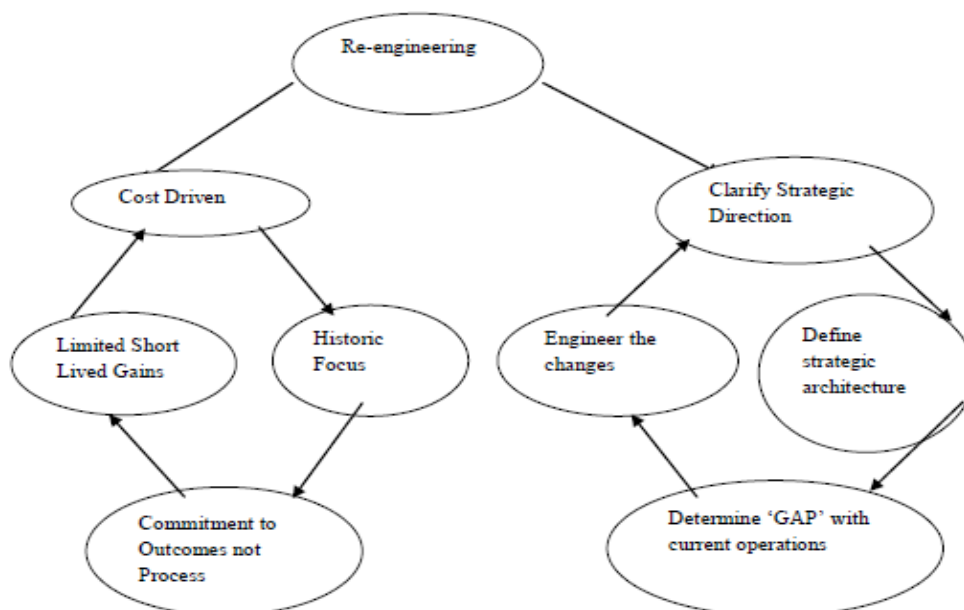
Source: Coulson (1997: 48)

Fig. 6 INTEPRETING THE OPPORTUNITIES OF BPR

From the above Fig, the left hand loop usually results in failure of the BPR implementation because cost cutting as a driver focuses on historic cost information causing the redesign of business processes to meet outdated and not recent needs (Coulson, 1997).

Moreover in the cost driven approach of BPR, managers are more concerned with the outcomes of the BPR execution instead of the process of change which entails monitoring and this is one of the reasons why workers are not motivated during the BPR process since there are no proper communication and the sense of care and concern from the top management is neglected.

On the other hand, the right hand loop usually involves clarifying of strategic direction and this requires a closer look on the vision, mission, goals, commercial proposition (resource, capabilities, alliances, partnership products and services), stakeholders and performance measures to evaluate the company's progress against stakeholders' expectation (Coulson, 1997).

Conversely, Hanafizadeh *et al.* (2009) argued that the choice of motivation or focus of BPR is entirely dependent on the business strategy of the organisation; either cost leadership, prompt response, or differentiation.

The research analysis of the authors showed that cost leadership strategy is usually more focused on cost reduction and less concerned about other BPR performance objectives (flexibility, quality and time) while prompt response strategy is concerned about increasing speed and enhancing flexibility (Hanafizadeh *et al* 2009).

Differentiation on the other hand focuses on quality and speed and less concerned about flexibility (Hanafizadeh *et al* 2009). In the same vein,

Wu (2002) cited in Hanafizadeh *et al* (2009), argued that as much as it is a known fact that organisational goals and mission should be aligned with the BPR implementation, it is not always possible due to the technical challenges of BPR. Thus it is necessary for an organisation to map it's BPR focus with the adopted business strategy - this is known as best practices (Hanafizadeh *et al* 2009).

Furthermore on Coulson's analysis (Fig 4: 33), when an organisation is motivated to implement BPR as a result of clarifying of strategic position it often leads to defining of the company's strategic architecture which usually involves creating a plan on how to pursue and fit the BPR plan into the organisation's business strategy as shown in Fig 5 below (Coulson, 1997).
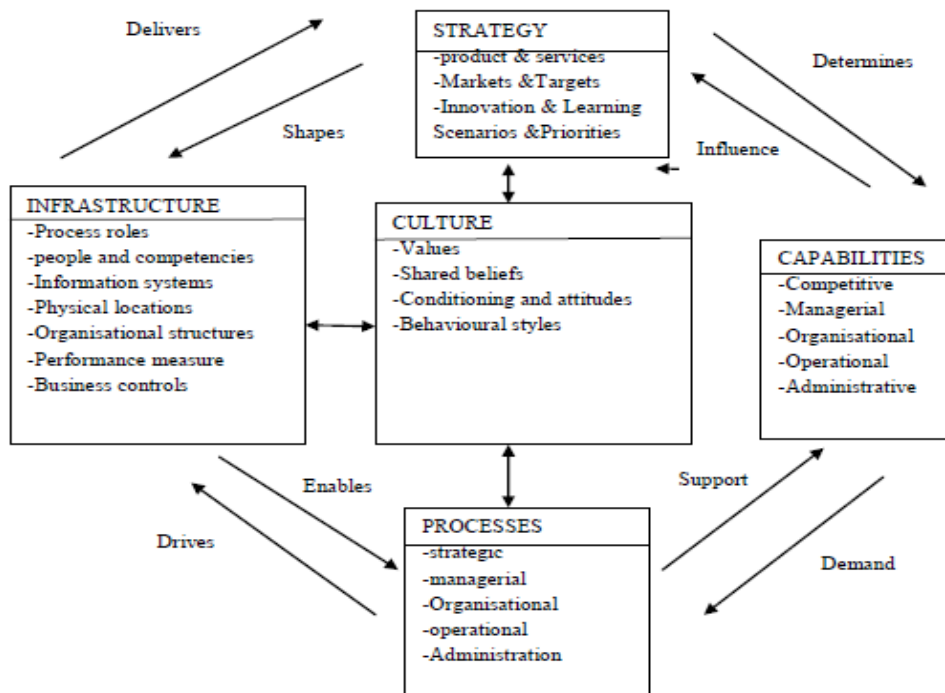
Source: Coulson, (1997: 49)

Fig. 7 DEFINING STRATEGIC ARCHITECTURE

From Fig 7 above Coulson (1997) argued that an organisation's strategic infrastructure is designed with the organisational structure and culture at the centre of the overall business design and should be interlinked with all other aspects of the organisation (strategy, infrastructure, capabilities and processes).

Furthermore, it is believed that the organisation's infrastructure enables the efficiency of processes thereby taking advantage of the organisation's capabilities so as to support the business strategy (Coulson, 1997). In support of this, Schmidt (1998) cited in Al-Mashari and Zairi (2000) argued that contrary to the traditional approach of ''process follow strategy'' which emphasises that process influences strategy through the use of core competencies to achieve competitive advantage; strategy should follow process that is, utilizing a company's core processes to develop strategic capabilities that will deliver service of superior quality to customers.

According to Schmidt (1998), cited in Al-Mashari and Zairi (2000), proper definition of an organisation's strategic architecture will set the stage in discovering the gap between where the company wants to be and where it is presently. Similarly, Coulson illustrated this in Fig (6: 33) as: ''determine GAP with current operations'' arguing that it usually leads to the engineering of the required changes for BPR execution (Coulson, 1997). Furthermore, the only way by which the gap between the plan of an organisation and it's execution can be bridged is when the definition of the company's strategic architecture is done in relation to business strategy and at the same time meets the need of customers and the core competencies of the organisation (Edwards and Peppard, 1994).

According to Bhattacharya and Gibbons (1996: 48) cited in Al-mashari and Zairi (2000) process, infrastructure, core competencies and capabilities are linked to the business strategy and are both necessary for the successful implementation of BPR. In their argument, the formation of the content of strategy is based on core competencies and capabilities of the organisation while processes form the core of organisational structures. In contrary to this, Leedham, (2009) argued that an organisational core capability should not be allowed to drive the business strategy but the competitive context should drive the strategy and the organisation can therefore develop the corresponding capability needed to support the strategy (Fig 8 below). This is because the former will make the organisation rigid in it's approach and thus less responsive to the external/business environment which can lead to the organisation losing its competitive advantage or strategic positioning in the market place (Leedham, 2009).

Source: Leedham, (2009: 8)

Fig. 8 STRATEGIC CHALLENGE

In the same vein, Jarrett, (2009), argued that in harnessing change an organisation need to monitor changes in the external environment and this influences strategic decisions, in Jarrett's view as illustrated in Fig 9, environmental dynamics affects strategic leadership which shapes the culture and structure of the organisation and the three determines the strategic capability for change and hence the overall performance of the company.
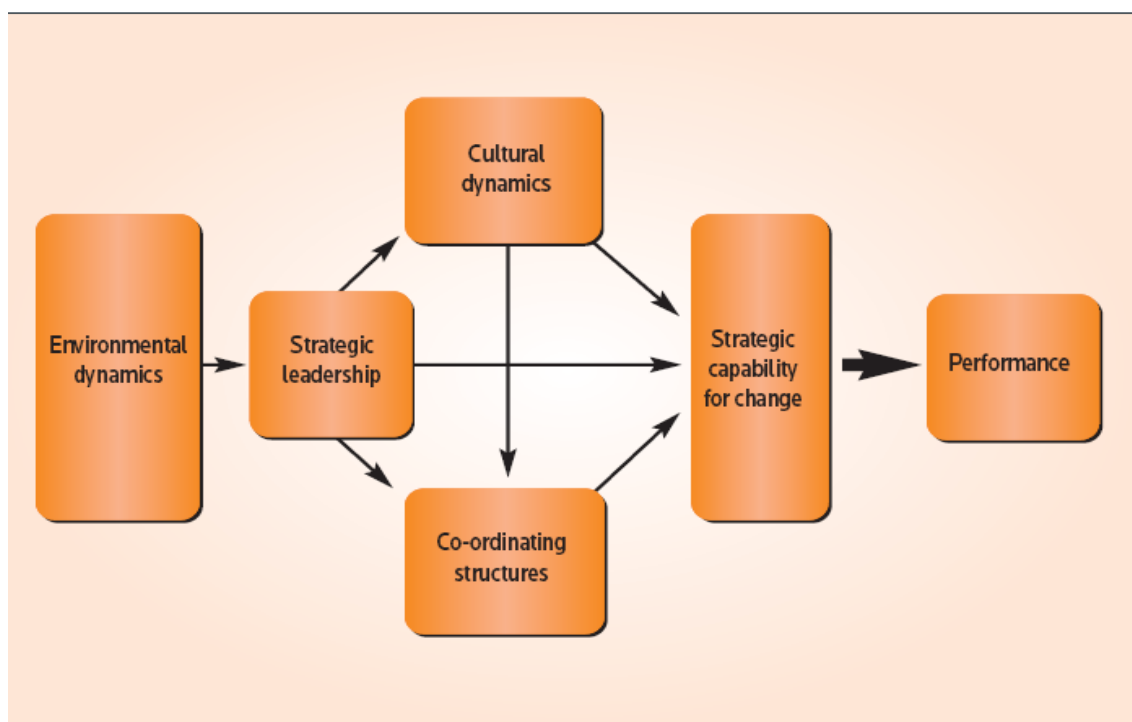
Source: Jarrett, (2009: 9)

Fig. 9 HARNESSING CHANGE

In analysing the link between BPR and business strategy, Hammer, (1994) cited in Burke and Peppard (1995) argued that BPR shifts the focus of business strategy formulation from products and services to the processes that achieve them thereby causing the organisation to develop new strategic directions and this usually results in the development of corresponding capabilities to support the strategy. But in contrast to this, most companies usually use BPR to enhance already existing processes when they actually need to change into a new business (Hammer, 1994, cited in Burke and Peppard 1995).

In the analysis of the role of organisational structure, culture and human resources in the implementation of BPR, the holistic frame work of BPR implementation (Appendix A) put forward by Al-Mashari and Zairi (2000: 16) classifies organisational structure and culture under managements systems and in their view structure and culture are facilitators of BPR processes.

Grant (2002) argued that technology cannot be perceived as the only critical enabler of business process because IT on it's own cannot deliver change in business process without proper incorporation/configuration of organisational culture, structure and human resources into the change particularly in managing people to support the change. According to Grant (2002: 87), *''structures define the relationship between people and technology''* , thus organisations change their structures from mechanistic to more organic forms and from hierarchical to a flat structure where workers are empowered to work with a degree of autonomy to meet the BPR implementation requirements. The implementation of BPR has influenced the design of work structure and organisations have therefore embraced team work approaches to work so as to ensure broad range of contributions for multi-functional tasks and also to enhance the level of social interaction in offices and consequently the quality of work life and job satisfaction (Davenport 1993). However Smith, (2007) referred to this cross functional nature of reengineering as causing stress on the existing functionally oriented organisational structure.

Organisational culture is essential in helping with the delivery of service to customers with value and can be defined as *''shared values and believes which take the form of rules of behaviour''* (Peppard and Rowland 1995: 101), thus just as BPR, culture should be aligned to the business strategy but should not be allowed to drive it even though it might influence the formulation of strategy. The culture of an organisation will determines the type of organisational structure it embraces and an innovative culture could increase the chances of success in BPR (Davenport 1993). However, as effective as structure and culture are in enabling BPR implementation, they can also hinder it's chances of success due to

''strict hierarchical structures, cultures that are unreceptive to innovation and general organisational rigidity or inability to accommodate change'' (Davenport 1993: 106). In the same vein, cultural conflicts as a result of subcultures in organisations can also affect the smooth running of work across processes (Peppard and Rowland 1995).

Human resource enablers are linked to structure and culture as well as technology because workers will need to be trained so as to perform with the new requirements of their job which involves technological advancements, empowerment, autonomy and being able to cross function that is act as a generalist (Smith, 2007). In support of this Grant (2002) argued that human resources is an essential component in designing the human architecture and the author also emphasised the importance of having the right mix of skills in employees and proper communication channels between teams and individuals that will enable effective decision making. Sometimes there might be a need to employ new employees with the desirable qualities/skills needed for the new process innovation but it is not always the best because it can lower the morale and motivation of existing employees which might lead to a behavioural challenge in which the management team will have to deal with (Smith, 2007).

2.6.1 Summary:

Conclusively, authors like Hanafizadeh *et al* (2009), Hammer, (1994) cited in Burke and Peppard (1995) and Tennant and Yi-Chieh (2005), cited in Češnovar, (2006) established that there is a need for BPR implementation to be linked to organisational business strategy so as to ensure success and this will therefore influence the choice of the process to be reengineered and the focus of the BPR project. On the other hand, Bhattacharya and Gibbons (1996: 48) cited in Al-mashari and Zairi (2000) argued that the content of strategy is influenced by competencies and capabilities of an organisation while organisational structure is formed or defined by the organisational process and these altogether influence the design of business in an organisation. On the contrary, Leedman, (2009) and Jarrett, (2009) argued that capabilities should not drive strategy but rather, strategy should be influenced by the competitive context and the company will thus develop the corresponding capability to support it.

Also, according to Coulson, (1997) the driver of BPR implementation matters because it was clear from the review that BPR projects executed as a result of a drive to clarify strategic directions is usually more successful compared to other BPR drivers such as cost.

In sum, Grant, (2002) emphasised that organisational culture, structure and infrastructure can also be seen as enablers as much as technology, because technology alone cannot deliver change. In addition Davenport, (1993) stated that structure in an organisation defines the design of work as well as the structure of management and culture is also of influence to the business strategy but not a driver. Furthermore, Davenport, (1993) argued that it is vital to note that culture and structure could also serve as hindrances to BPR success due to cultural conflicts, rigidity and hierarchical structures and that the role of Human resources is essential to the success of BPR projects and of an organisation, therefore workers need to be trained in order to function effectively in their jobs due to the changes that come with BPR implementation.

Nevertheless, despite an organisation's effort in ensuring the link between business strategy and BPR, there is a need to ensure readiness for the BPR implementation before embarking on it and this goes a long way in determining the success or failure of the BPR project. Moreover in the alignment of business strategy with BPR, one of the elements of consideration is how ready the organisation is to implement it and the capabilities needed to be developed so as to ensure a successful execution. Therefore the next section which gives a critical analysis of how to access readiness for BPR in an organisation is a necessary activity in the strategic implementation of BPR.

2..7 Accessing readiness for BPR implementation:

BPR is a complex project with high failure rates, thus accessing the readiness of BPR execution in an organisation is important because it determines whether the organisation will succeed or fail in the project (Abdolvand *et al.* 2008). In line with the above, Abdolvand *et al* (2008), argued that the readiness of an organisation can be either positive or negative because, when a company exhibits the criteria for the critical success factors of a BPR change it has a positive readiness and when it exhibits signs of failure factors then it has a negative readiness for BPR. The critical success factors/positive readiness for BPR is: *''egalitarian leadership, collaborative working environment, top management commitment, supportive management and use of information technology,''* while the critical failure factors/negative readiness is *''resistance to change''* which signifies that some critical success factors of the company such an supportive management, top management commitment are not in place (Abdolvand *et al* 2008).

In the same vein Pfeffer and Sutton (2006), argued that the management of an organisation need to ask themselves certain questions before going on with a major organisational change such as BPR and the answers they get will determine if they need to go forward with the change, delay it or avoid it (Appendix B).

➢ Is the practice better than what you are doing right now?

➢ Is the change really worth the time disruption and money?

➢ Is it best to make only symbolic changes instead of core changes?

➢ Is doing the change good for you, but bad for the company?

➢ Do you have enough power to make the change happen?

➢ Are people already overwhelmed by too many changes?

➢ Will people be able to learn and update as the change unfolds?

➢ Will you be able to pull the plug?

According to Pfeffer and Sutton (2006), these eight questions above will enable the top management of the organisation to determine if the change (e.g BPR) is worth doing, likelihood of success or failure and the impact of the change on the company. This is referred to by Jarrett, (2009) as 'changeability' which is the readiness to respond and understand the requirements of change in an organisation and according to the Jarrett (2009), an organisation can be characterised has being ready for change when it exhibits these factors:

➢ Scanning the horizon including both external and internal analysis; for example competitive analysis, customers' insights, and the grapevine.

➢ Interpreting the trends by taking note of external changes so as to make decisive decisions for change.

➢ Harnessing innovation and collaboration by enhancing an innovative culture and team work approaches.

➢ Countering resistance such as cultural conflicts in organisations and workers' resistance to change.

➢ Coherent structures that enable fluid execution such as fluid communication around tasks, easy workflows and minimal organisational silos.

2.7.1Summary:

In sum Abdolvand *et al* (2008) identified factors that determine if an organisation is ready for BPR implementation to depend on how they have been able to enhance critical success factors like: egalitarian leadership, collaborative working environment, top management commitment, supportive management and use of information technology an exhibition of these qualities can be referred to as positive readiness while negative readiness can be an offshoot of poor management of the CSFs which results in employees' resistance to change even though they might understand why the change is needed. Furthermore, according to Pfeffer and Sutton, (2006) since BPR decisions in an organisation is a top down process, the management of an organisation need to ask themselves questions that will assist them in making the right decision as to whether their organisation need and can handle the change or not so as to ensure that the BPR decision will benefit the company and it is not just a narrow-minded decision. For example, 'is the practice better than what the company is doing right now'? Or 'Is it best to make symbolic changes instead of core changes'?

Finally, Jarrett, (2009) argued that being ready for a radical change is not automatic because an organisation must have been engaging in activities such as: scanning the horizon, interpreting the trends, harnessing innovation and collaboration, countering resistance and coherent structures. These activities will prepare the company structurally in making informed decisions when the time comes for a change.

As a result of the above analysis it is clear that the readiness of an organisation for BPR execution to a large extent affects it's success thus, the readiness of an organisation for BPR can be a success factor or a failure factor for BPR. Hence the next section will give an in depth analysis of the critical success and failure factors of BPR.

Moreover, despite the wide spread awareness and research on BPR most of the BPR projects tend to record more failure than success. According to Hammer and Champy (2006), 70% of reengineering projects fail, thus the next section will give a critical analysis of the Critical success factors and failure factors of BPR.

2.8 Critical Success and Failure Factors of BPR:

According to Abdolvand *et al* (2008) the research carried out by Crowe *et al* (2002), Guimaraes (1999), Motwani *et al* (2005), Terziovski *et al* (2003), showed that the critical success factors (CSFs) for BPR can be classified into four main groups namely: ''egalitarian leadership'', ''working environment'', ''top management commitment'' and ''managerial support'' However, Motwani *et al* (2005) Cited in Abdolvand *et al* (2008), argued that change management and technological innovation are the two main CSFs of BPR, as a result of these the CSFs are then grouped under these five headings and the failure factors as ''employee resistance'' with subgroups as illustrated in table III and Fig 10 respectively.

TABLE III CRITICAL SUCCESS FACTORS OF BPR

Egalitarian leadership	Collaborative working environment	Top management commitment	Change in management technology	Use of information system
Shared vision/ information	Friendly Interactions	Sufficient knowledge about BPR projects	New reward system	The role of IT
Open communication	Confidence and trust	Realistic expectations of BPR results	Performance measurement	Use of up to date technology
Confidence and trust in subordinate	Teamwork performance	Frequent communication with BPR team and users	Employee empowerment	Adoption of IT
Constructive use of subordinate idea	Cooperative environment		Timely training and education	
	Recognition among employees			

Adapted from: Abdolvand *et al* (2008: 499)
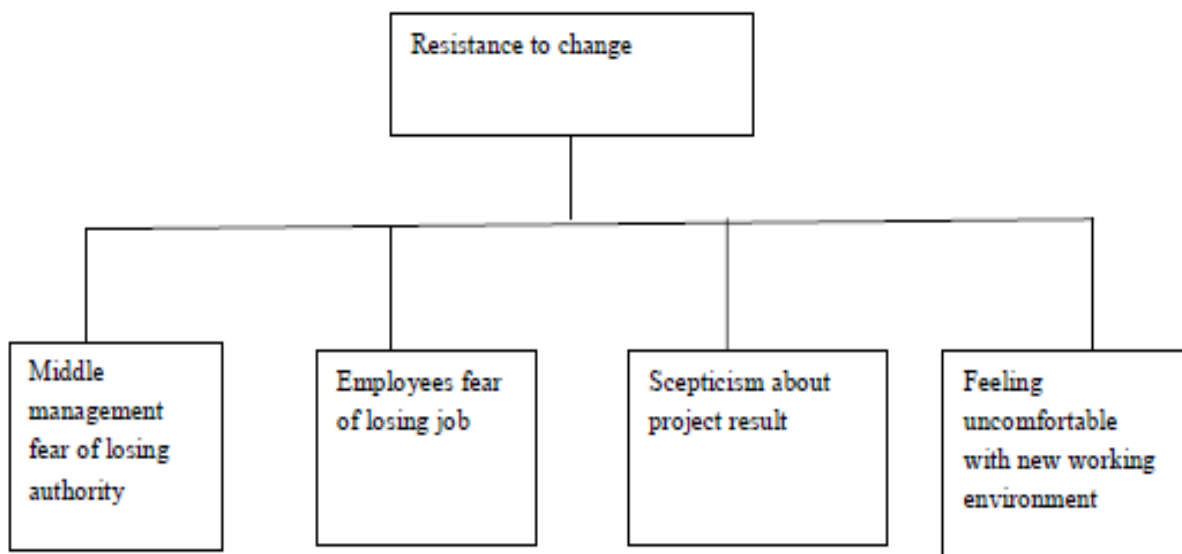
Adapted from: Abdolvand et al (2008: 499)

Fig. 10 FAILURE FACTORS OF BPR

Table III and fig. 10 gives a breakdown of the characteristics of each of the failure and success factors of BPR as earlier discussed.

Similarly, Al-mashari and Zairi (1999: 87, 88) grouped CSFs and failure factors of BPR into 5 groups under the same heading (Appendix E) which are: ''change management'', ''management competency and support'', ''organisational structure'', ''project planning and management'', ''IT infrastructure''.
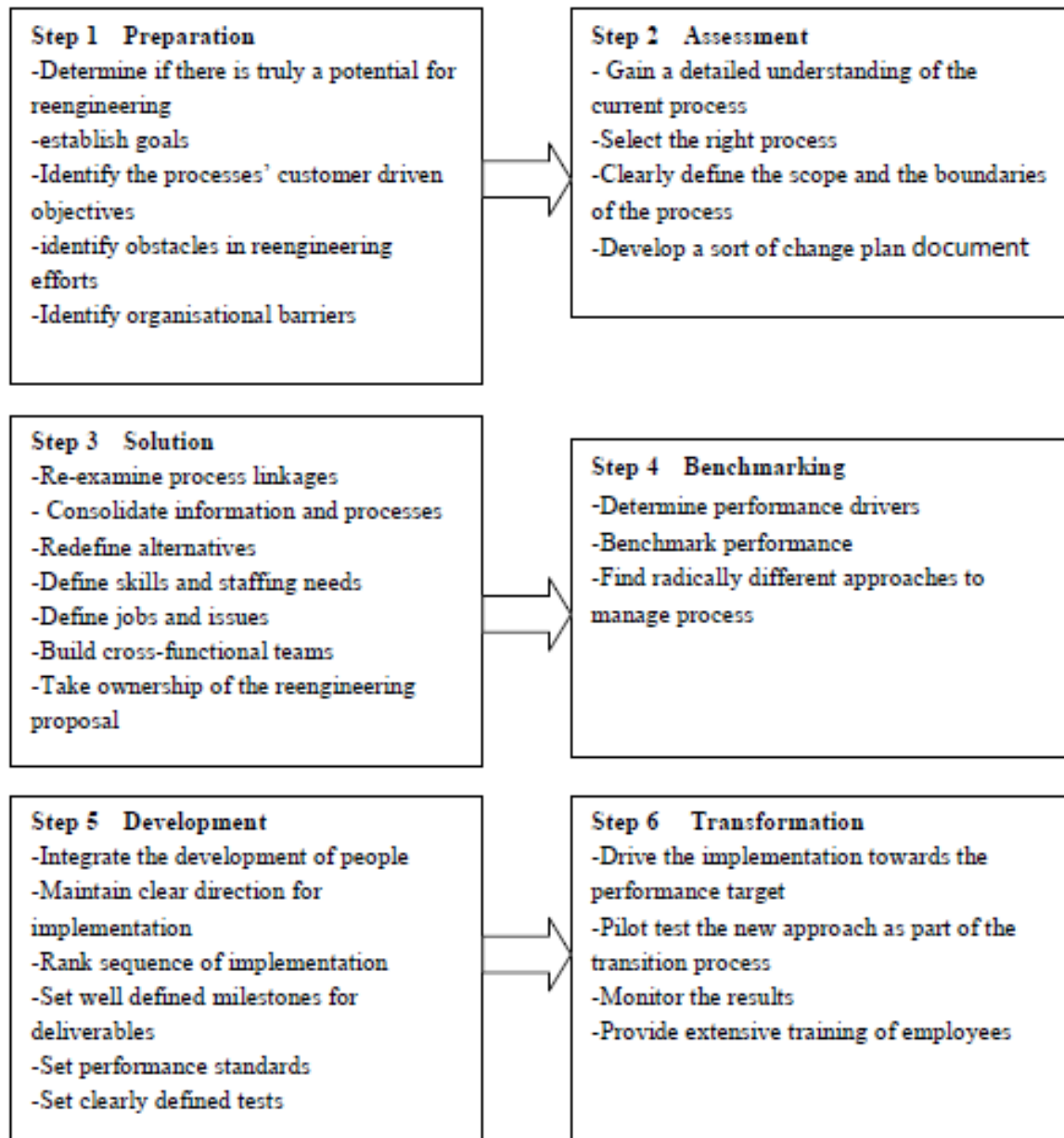
More explicitly, Al-mashari and Zairi (1999) attributed the lack of good ''change management'' as a factor responsible for the social and cultural issues in organisations and therefore need to be handled so as to minimise the resistance that comes with change from employees. In line with change management issues, an organisation should consider putting in place reward systems, effective communication, empowerment, employee involvement, staff training and education alongside with creating a culture of change and encouraging receptivity to change so as to succeed in it's BPR project (Al-mashari and Zairi, 1999).

Also, ''management competence'' which was earlier pointed out by Abdolvand *et al* (2008) should be potent enough in an organisation such that it exhibits qualities like support and commitment, championship and sponsorship and effective risk management (Al-mashari and Zairi, 1999).

Moreover, Al-mashari and Zairi (1999) argued that in order to achieve success in BPR ''organisational structure'' needs to be redesigned with respect to work design, team work approaches and human resource management. ''Project management techniques'' is considered to be an essential factor that leads to a successful BPR implementation because improper planning, lack of set performance measures, inappropriate methodology, and a lack of all that has to do with putting an effective programme management technique in place will inevitably lead to the failure of the BPR project (Al-mashari and Zairi, 1999). Also, proper alignment of the appropriate ''IT infrastructure'' with the business strategy is necessary for success owing to the fact that IT is an enabler of BPR (Al-mashari and Zairi, 1999). However, Attaran (2000: 796) argued that success in BPR does not depend on the size or resources of an organisation but on proper planning and in circumventing likely drawbacks; the author thus attributes failure factors to:

✓ Poor top management support and involvement – a rework of management philosophy which is evident from: replacing generalists with specialists, focusing on meeting customer demands, flatter hierarchy and total commitment in terms of time, money, and other resources.

✓ Lack of flexibility – as a result of rigid company infrastructures, hierarchical structures, lack of autonomy and cross functional barriers.

✓ Lack of effective organisational communication – that is an effective communication system that provides a clear understanding and update of the change process and allows for feedback from employees.

✓ Lack of proper training – proper and continuous training of employees in the new requirements of their jobs.

✓ Failure to cope with employee resistance – alleviating the resistance to change that arises as a result of employees' fear through reassurance.

✓ Failure to assign organisation's best – having a balanced team involving relevant departments so as to create a right perspective for the reengineering process.

✓ Misunderstanding and misapplication of the concept – clarifying what reengineering is and what it is not.

✓ Failure to test the process - understanding the impact of the change process.

Similarly, Ranganathan and Dhaliwal (2001) cited in Hanafizadeh *et al* (2009), attributed the failure factors of BPR to be ''lack of financial and human resources'', ''lack of IT internal skills and capacity'' and ''lack of hero to promote the BPR plans''. Similar to Al-mashari and Zairi's view, Attaran, (2000: 798) believes that success in BPR projects can be achieved as long as an appropriate BPR methodology is followed and the author outlined six steps to successful reengineering (Fig 11): ''preparation'', ''assessment'', ''solution'', ''benchmarking'', ''development'', and ''transformation''.

Step 1   Preparation
-Determine if there is truly a potential for reengineering
-establish goals
-Identify the processes' customer driven objectives
-identify obstacles in reengineering efforts
-Identify organisational barriers

Step 2   Assessment
- Gain a detailed understanding of the current process
-Select the right process
-Clearly define the scope and the boundaries of the process
-Develop a sort of change plan document

Step 3   Solution
-Re-examine process linkages
- Consolidate information and processes
-Redefine alternatives
-Define skills and staffing needs
-Define jobs and issues
-Build cross-functional teams
-Take ownership of the reengineering proposal

Step 4   Benchmarking
-Determine performance drivers
-Benchmark performance
-Find radically different approaches to manage process

Step 5   Development
-Integrate the development of people
-Maintain clear direction for implementation
-Rank sequence of implementation
-Set well defined milestones for deliverables
-Set performance standards
-Set clearly defined tests

Step 6   Transformation
-Drive the implementation towards the performance target
-Pilot test the new approach as part of the transition process
-Monitor the results
-Provide extensive training of employees

Source: Attaran (2000: 798)

Fig. 11 A PRACTICAL GUIDE TO SUCCESSFUL BPR IMPLEMENTATION

However Boudreau and Robey (1996) argued that it is wrong to compare the success rate of companies that implemented BPR with one another because the criteria for measuring BPR success is not clear and it is basically focused on economic results therefore making the report on success rate questionable. Furthermore, the assumption that BPR should contribute positively to organisational performance is not valid because BPR is an independent variable while organisational performance is a dependent variable (Boudreau and Robey, 1996). In the same vein, Attaran, (2000) argued that the only way to know if a BPR project was successful or not is to measure it with respect to the objective it was designed to accomplish from the start.

Also, a survey carried out by McAdams and Donaghy, (1999), argued that the most important CSFs for BPR implementation are ''top management support and commitment to BPR'', ''communication'', ''empowerment'', ''alleviation of downsizing fear'', ''preparedness for organisational change'', ''choosing the reengineering team'' and ''enlisting customer and stake holder's support''. Likewise, in summing up the CSFs and failure factors of BPR, Smith, (2007) argued that technical solutions can easily be developed and implemented to solve the technical problems of BPR but 80% of the failure recorded by BPR are caused by social issues such as employee resistance which cannot easily be tackled.

2.8.1 Summary:

Summarily, the views of Abdolvand *et al* (2008), McAdams and Donaghy, (1999) and Al-mashari and Zairi, (1999) show that the most important CSFs for BPR are: ability to manage change, top management support and commitment, organisational structure and IT infrastructure and communication. Other CSFs are equally important but are embedded in the above success factors namely: project planning ability, work design organisational culture, effective training and education for employees.

In addition, Attaran (2000) argued that success in BPR is not solely dependent on these CSFs but on the method of implementation thus six steps to successful implementation of BPR were outlined namely: preparation, assessment, solution, benchmarking, development, and transformation.

Also, failure factors of BPR according to Abdolvand *et al* (2008) and Attaran (2000), have been attributed solely to employees' resistance to change, lack of flexibility, failure to put together a good reengineering team, failure to test the process, lack of proper training, misunderstanding and misapplication of the BPR concept. Most often than not, the failure factors of BPR usually result from the failure to respond to the CSFs.

As a result of the above literature review the initial BPR literature review frame work has been updated to a more sophisticated one (Fig 12) which reflects and summarizes the major findings of this review.
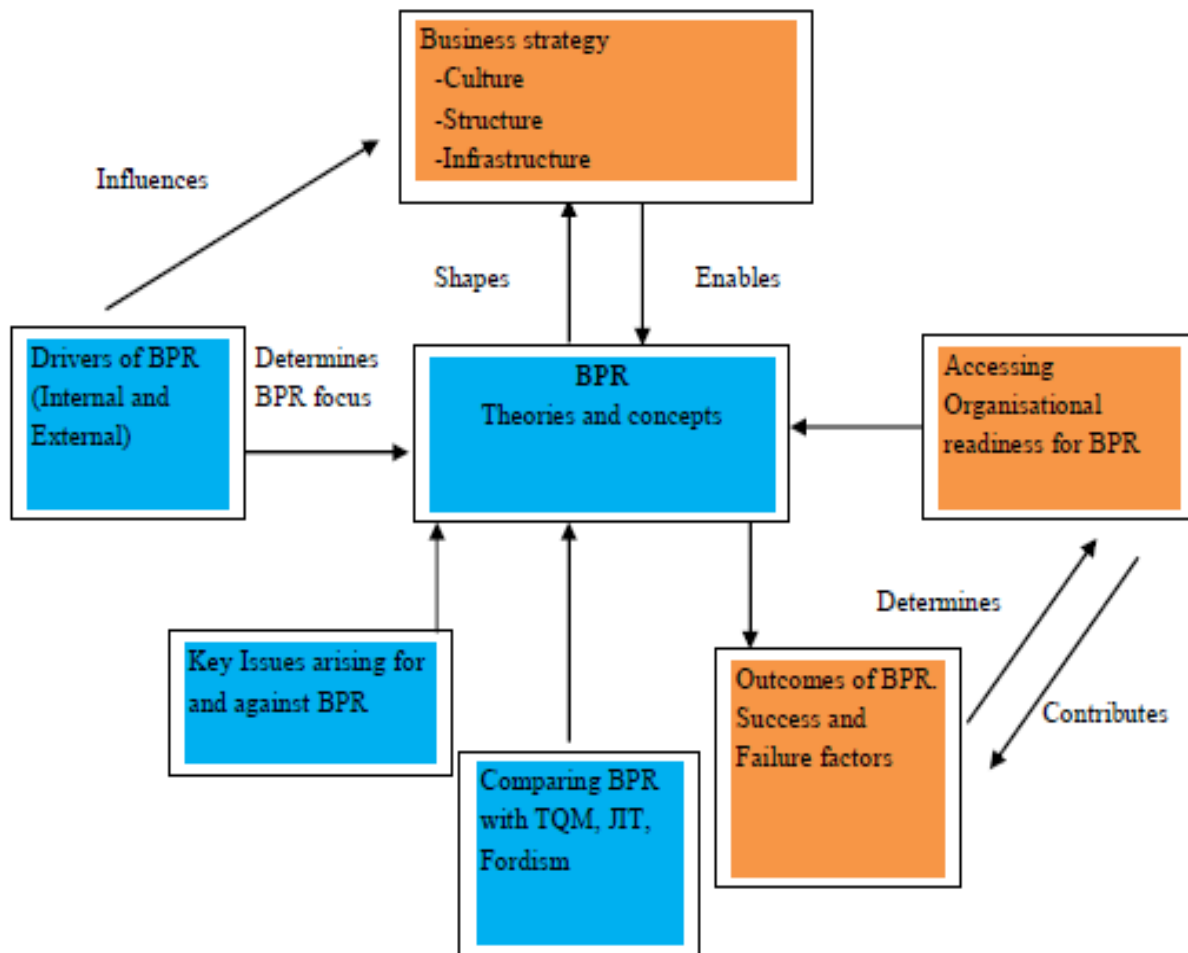

Fig. 12 FINAL BPR LITERATURE REVIEW FRAMEWORK

The model in Fig 12 is an illustration of the outcome of the literature review. As a result of the literature review the following were discovered:

➢ The drivers of BPR determines the type of BPR that will be implemented and it's focus. These drivers also influence the business strategy because it determines the context and content of the strategy.

➢ The business strategy which entails the organisational structure, culture and the infrastructure enables the delivery of the BPR initiative.

➢ BPR shapes the business strategy because it entails radical reforms of the business and requires new thinking and operating principles to function.

➢ The readiness of an organisation for BPR contributes significantly to the success or failure of BPR implementation.

➢ The CSFs and failure factors determine to an extent the readiness of an organisation for BPR because it is dependent on whether the organisation exhibits the CSFs or failure factors.

2.9 Conclusion:

In conclusion, this literature review has been able to carry out a critical analysis of the theories and concepts of BPR and the review revealed that fundamentally BPR is a radical management concept that seeks a total replacement of existing business processes with a new one so as to achieve dramatic improvements in performance in the major areas of organisational performance objectives such as cost, speed and quality. This can be successfully achieved with the use of technology and human resources as enablers. Although some strongly argued that BPR is not just about reengineering business processes but capabilities, organisational structures, functions, technology, people, and communication. Thus BPR is a radical redesign of the entire business in an organisation.

Furthermore, the key issues arising for and against BPR were also considered and this showed that even though the execution of BPR may involve downsizing, restructuring and reorganisation, it is not the main target rather these are just consequences of the process of BPR implementation. In addition, in order to ensure successful implementation of BPR the whole organisation system has to be redesigned to ensure a perfect fit with the new process which usually involves work redesign, greater level of autonomy and empowerment for workers and a flattened hierarchy. Although some argued that the notion of empowerment is just a way to gain employees' commitment for the BPR implementation rather than an original intention by the management.

Also the review pointed out that technology can also be a disabler as well as an enabler because the software of the technology can be difficult to change when there is a need for another change.

Moreover, the drivers of BPR was also considered and grouped under internal and external drivers. The major drivers that were said to influence BPR implementation were: customers' perception, competition and change while others range from technology, profitability, government regulations, economic change, to a need to increase efficiency, cost reduction and strategy redefinition. However amongst all the drivers, a research carried out by Chan and Peel, (1998) showed that customer's perception is the main external driver while cost reduction is the main internal driver of BPR.

 In addition the comparison of BPR with other management concepts like; Fordism, JIT and TQM revealed that there is no basis for comparison between BPR and Fordism because the latter is focused on mass production and consumption while JIT and TQM are process oriented which is similar to the focus of BPR. More explicitly, JIT is focused on reduction of inventory and increase in throughput efficiency so as to meet customers' demands without wasting time and incurring more cost with non-value adding activities while TQM is focused on incremental changes of existing single process and it is more narrowed in it's functions.

BPR however rides on the activities of JIT and TQM and makes it a core competence for the organisation so as to gain competitive advantage. Even though JIT, TQM and BPR seek process improvements, BPR has been seen as a more potent and radical approach to achieving this, due to the rapid changes in the business world. Furthermore it was been discovered that the likelihood of success is high for companies that have previously implemented TQM or JIT prior to a BPR implementation because it will be easier for the organisation to go through the changes that come with BPR due to their similarities.

The analysis of the BPR concepts, contradictions, drivers and the comparisons of BPR with other concepts has resulted to answering the question on how an organisation can link BPR with business strategy and vice versa. Thus after the analysis of the link between an organisation's business strategy and BPR, it was concluded that strategy enables BPR because the focus of the BPR project is sometimes determined by the type of business strategy an organisation practices (cost leader, prompt response or differentiation) while BPR shapes strategy in the sense that it determines the context of an organisation's strategy. This is because the review has considered the culture, structure and design of work processes in an organisation as part of strategic definition and they have been seen as a support for the effective functioning of the reengineered processes.

Thus the organisational architecture must be redesigned to fit with the demands of BPR because the implementation of BPR usually leads an organisation to changing it's culture to an innovative one, the structure from hierarchical to a flatter one and to creating an effective communication network, training and education for staff and in putting in place an appropriate   technology. Furthermore a company's capabilities should not drive strategy rather strategy should be redefined as a response to the external environment for example competition and the right capabilities should therefore be developed as a result of this. There is a need for an organisation to access it's readiness for BPR because of the demand that BPR places on an organisation. On a large scale, it was ascertained that a company's readiness is interwoven with it's CSFs and failure factors for BPR in that an organisation can be said to be ready if it exhibits the CSFs and not ready if it exhibits the failure factors of BPR. For example, an organisation with support and commitment from top management on the BPR project and good a change management in place will be expected to be ready for BPR and vice versa.

Summarily, the CSFs for BPR are basically the ability to manage change, top management support and commitment, organisational structure, IT infrastructure and communication while the failure factors are: employees' resistance to change, lack of flexibility, failure to put together a good reengineering team, failure to test the process, Lack of proper training, misunderstanding and misapplication of the BPR concept.

Finally, the analysis of the key elements of the literature review has provided a clear picture and understanding of the BPR concept. The review have also given the research a platform on which the theory of BPR can be compared with it's practice in organisations.

In addition, the review also serves as an eye opener as well as a guide for companies planning to implement BPR so that they can successfully implement it without falling into the outlined pitfalls.

3. METHODOLOGY

The research methods section gives an overview of the purpose of this research and the method in which it was achieved. The reasons for the methods employed will be outlined as well as how it was carried out. Finally this section will be concluded by stating the limitations of the methods employed and how they were addressed.

3.1 Research Questions:

The purpose of this research is to identify the factors responsible for success and failure in business process reengineering (BPR) by mapping the theory of BPR with it's practice in IBM. The result of the findings will therefore aid the provision of viable recommendations that will help companies in strategic decision making in relation to current thinking for future BPR implementation.

According to Saunders *et al* (2007) research questions helps to set the tone and purpose of the research and maps out a plan on how to achieve it.

This research seeks to answer the following research questions:

➢ What are the theories and concepts underpinning Business Process Reengineering

➢ What are the key BPR issues in IBM

➢ What is the relationship between the theory of BPR and it's practice

➢ What are the main causes of failure and success in BPR implementation

3.2 Research Objectives:

The objectives of this research which has been generated from the research questions have been clearly defined to satisfy the purpose of this research. These objectives are stated below:

➢ To undertake a relevant literature review of BPR

➢ To provide a critical analysis of the relationship between the theory and practice of BPR

➢ To provide an understanding of the key BPR issues in IBM

➢ To map the critical concepts, theories and ideas derived from the literature to the management practice of BPR in IBM

➢ To provide viable recommendations to the major causes of success and failure in BPR

3.3   Research Design:

In order to answer the above research questions and consequently achieve the research objectives a research design has been employed using the research 'onion' model in Fig 13 below. The research 'onion' model outlines the different steps towards achieving the objective of the research in a convergent manner starting broadly from the 'research philosophy', 'research approach', 'research strategy', 'research choices', 'time horizons' and narrowing it down to the techniques and procedures of the research (Saunders *et al* 2007).
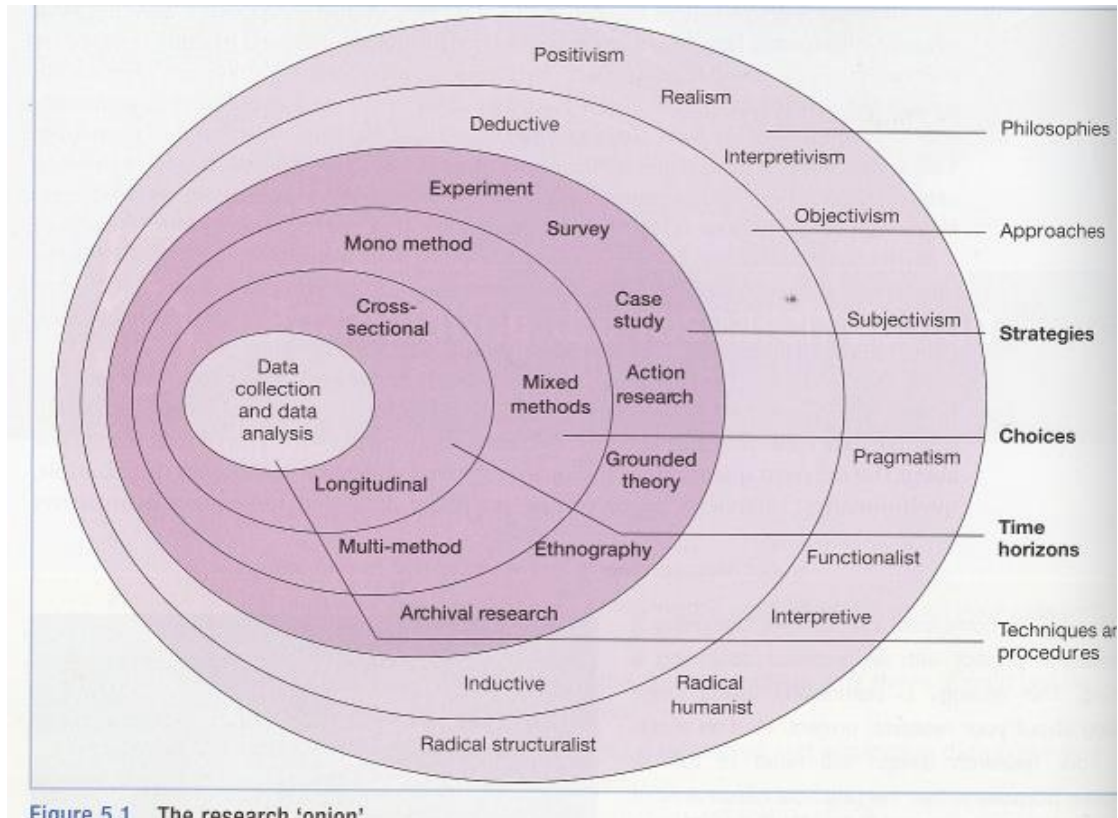

Source: Saunders et al (2007: 102)

Fig. 13 RESEARCH 'ONION' MODEL

3.4 Research Philosophy:

Research philosophy, also known as research paradigm ''*is a framework that guides how research should be conducted, based on people's philosophies and their assumptions about the world and the nature of knowledge''* Collins and Hussey (2009: 55). Therefore the philosophy on which this research was conducted is 'Functionalist Paradigm' under the ontological assumption of objectivism. The functional paradigm sees organisations as rational entities with rational problems which can be solved with rational solutions (Saunders *et al* 2007). Thus the findings of the pre and post BPR issues in IBM was analysed with respect to the BPR theories streamed from the literature review so as to create a link between the theory and the practice of BPR with a practical recommendation for future BPR implementations. This paradigm and assumption forms the basis of the research approach employed for this research.

3.5 Research Approach:

This research was conducted using an inductive approach by moving from the area of observation to the development of general hypothesis (Partington, 2002). According to Gill and Johnson, (2002: 40) '*induction involves moving from the plane of observation of the empirical world to the construction of explanation and theories about what has been observed'.* However this is the opposite of the deductive approach to research which involves the development of a theory and subsequently testing that theory through empirical observation (Gill and Johnson, 2002). Thus the inductive approach was used because it is an appropriate approach to determine what is happening in a particular context (e.g in a case study) which in this case is the 'Practicality of BPR in IBM' (Esterby-Smith *et al.* 2002) while a deductive approach is usually

employed to explain the causal relationships between variables (Saunders *et al* 2007). Also, the inductive approach was employed because it aids the achievement of the objectives of this research via the analysis of data collected on IBM thereby arriving at a conclusion based on the findings obtained from the data analysis (Saunders *et al* 2007). Table 7 below gives the basic differences between the inductive and deductive approaches to research.

TABLE IV DIFFERENCES BETWEEN DEDUCTIVE AND INDUCTIVE APPROACH

Deductive emphasis	Inductive emphasis
Scientific principles	Gaining an understanding of the meanings human attach to events
Moving from theory to data	A close understanding of research context
The collection of quantitative data	The collection of qualitative data
The application of controls to ensure validity of data	A more flexible structure to permit changes of research emphasis as the research progresses
The operationalisation of concepts to ensure clarity of definition	A realisation that the researcher is part of the research process
A highly structured approach	Less concerned with the need to generalise
Researcher independence of what is being researched	
The necessity to select samples of sufficient size in order to generalise conclusions	

Source: Saunders et al. (2007: 120)

3.6 Research Strategy:

This dissertation is carried out with the use of a case study strategy because it helps to get a rich understanding about a particular context in this case the key issues associated with the implementation of BPR. According to Robson (2002: 178) cited in Saunders *et al* (2007) a case study is *'a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within it's real life context using multiple sources of evidence'*. However the case study strategy used in this research is a single case study and it will be based on the analysis of BPR implementation in IBM. The choice of case study was because of the ongoing application of BPR in IBM thereby making the research a living one and also the availability of resources relevant to this research which has helped to answer the research questions for this dissertation. Case study strategies usually go along with a secondary research method thus, the case study is presented in the form of secondary research and not a primary research. Furthermore, this research is not an empirical investigation but a desk research by critically analysing the relationship between the results of the literature review and the case study findings through the mapping of the critical concepts, theories and ideas derived from the literature review to the management practice in IBM in the implementation of BPR. This according to Partington, (2002) is an analytical inductive research which supports a case study strategy thereby revealing the disparities that exists between the theory and the practice of BPR.

3.7 Structure of the Literature review:

First a critical literature review on BPR was conducted using the 'funnel approach' in designing the structure/indicative content of the review. According to Saunders *et al* (2007: 61) the funnel approach involve starting from a more general approach and then narrowing it down to the specific research questions and objectives. Thus a model was developed which covered the relevant areas for the purpose of achieving the objectives of this dissertation and highlighted the various areas that will be addressed in the review and how they relate with one another. At the end of the literature review a more sophisticated model was developed as a result of the critical analysis of the literature review. Also a conclusion was made at the end giving a summary of the relevance of the review to strategic decision making.

3.8 Techniques and procedures of data collection and analysis:

The method of data collection for the literature review and case study analysis was secondary as earlier stated. Relevant information was obtained from secondary literature sources like journals and books. For example, academic and professional journals used were: *'Business process management journals', 'Personnel review', 'Journal of organisational computing', 'Total quality management' and 'Information and management journal'* Books written on BPR by seminal authors of BPR and other relevant authors were also used to draw out the underpinning theories and principles of the BPR concept. Tertiary literature sources such as databases like; *Business source complete (EBSCO), Emerald, Mintel, Factiva*

and the *Academic Source Complete* were also used. Most of these resources and data were accessed through the university's library and electronic library access.

This method of data collection and analysis was used because it is appropriate for a case study research. (Saunders *et al* 2007). Also to ensure the relevance of the research and current thinking, data was collected on IBM from ten years back.

3.9   Research Limitations:

The credibility of this research has been ensured by paying attention to the reliability and validity of the data collection techniques and data analysis procedures as suggested by (Saunders *et al* 2007). Although this research relies mainly on secondary data, *'construct validity'* which entails ensuring that the observations and research findings can be explained by the research construct (Collins and Hussey, 2009) will be achieved by following an analytical inductive method in analysing the data and ensuring that the conclusions drawn validate the observations and findings in the case study. *''Reliability can be defined as the extent to which the data collection techniques or analysis procedures will yield consistent findings''* (Esterby-Smith *et al*., 2002: 53)*. However according to Robson, (2002) there are threats such as observer's error and the difficulty in replicating results which is one of the limitations that affects the reliability of a case study research; therefore data was collected from multiple sources and compared for the purpose of verification. This was done so as to enhance the reliability of the data obtained by comparing and contrasting the different approaches taken by different organisations with those adopted by IBM. Also the research analysis has been carried out without subjection to personal bias during the interpretation of the findings. Thus ensuring that data are reported accurately and analyses are critical and objective.

Validity involves ensuring findings accurately reflect the phenomenon under study (Collins and Hussey, (2009). Validity can be both internal and external (generalisability) (Saunders *et al* 2007). Internal validity '*is establishing a causal relationship whereby certain conditions are shown* to *lead to other conditions as distinguished from the spurious relationships''* (Partington, 2002: 165). Case study research gives the opportunity to test causal relationships, therefore this research has adopted the case study strategy and an analytical induction research method to ensure internal validity (Partington,   2002).
External validity refers to the extent in which the result of a finding can be generalised or applicable to other research settings like other organisations (Collins and Hussey, 2009). However it is quite difficult to generalise findings from a single case study because of it's narrowed relevance to other organisations operating in a different reality from the case study organisation but it can be generalised to theory instead (Partington, 2002). Hence the result of this research will not be generalised but could be considered by other organisations embarking on business process reengineering or companies facing BPR challenges.

4.   DATA COLLECTION AND ANALYSIS

Business Process reengineering in IBM is an example of how a company can leverage on a capability and turn it into a core competence. The company at first was a leading manufacturer of computer mainframes in the computer industry until competition became fierce in the 90s (Hammer and Champy, 2006). However IBM was not sensitive to their external environment because they assumed they had just enough capability to withstand the changing times and were almost eroded by the competition (Jarrett, 2009). But the company awakened before the situation got worse and reengineered their business processes; for example the IBM credit, IBM accounts, Human resources and the integration of consulting services (Hammer and Champy, 2006). However the focus of this research is the company's diversification into management consulting by capitalising on the expertise of their technicians on PCs design and manufacturing to deliver IT business solutions to their clients, thus the company ''*moved from being a point-to-point product vendor to an end-to-end solutions provider''* (Datamonitor, 2008: 21).

4.1 Case study Background:

4.1.1 IBM Business History:

The International Business Machines Corporation (IBM) is one of the world's largest systems integration and technology consulting services with it's headquarters in Armonk, New York and it provides other services such as business consulting and outsourcing services (Mintel, 2009). The company also develops and manufactures computer systems, software, storage systems and microelectronics (Datamonitor, 2008).

The history of IBM dates back to 1906 when Harlow Bundy the owner of International Time Records (ITR) decided to move the company's operations to Endicott from Binghamton and in 1911 ITR was incorporated into Computer tabulating Record (CTR) (IBM 2008a). In 1924 the name CTR was changed to IBM (Datamonitor, 2008).

4.1.2 IBM's Strategic Choices:

However, the findings of IBM's movement and development over ten years reveals that in **2002,** the company acquired the technology service unit of PricewaterHouseCoopers (PwC) management consulting firm and crossworlds (Datamonitor, 2008). In **2003,** IBM acquired rational software and IBM chips were also used by Microsoft in the design of it's Xbox game and consumer electronics (Datamonitor, 2008). In **2004,** IBM embarked on several acquisitions ranging from the Logicalis group to Daksh an outsourcing company in India, Trigo Technologies and Candle Corporation amongst others (Datamonitor, 2008). In the same year IBM sold it's PC business to Lenovo (Datamonitor, 2008). Furthermore, the company continued in it's acquisition activities in **2005** and acquired Ascential Software, Corio, Healthlink, Equitant a business transformation outsourcing company, Gluecode software and others (Datamonitor, 2008). In **2006**, IBM made strategic decisions ranging from acquisitions to alliances through signed agreement and at the end of the year the company went into collaboration with Astron to design, engineer and manufacture high performance customized analogue mixed signal processing chips' (Datamonitor, 2008: 10). In **2007,** the company got a contract to operate the city congestion charge by London transport (Mintel, 2009).

4.1.3 The link between IBM's strategic choices and the BPR initiative:

However, It is important to note here that not all of IBM's strategic initiatives are of relevance to this research, However the point of interest lies on acquisitions like that of PricewaterHouseCooper (PwC) a consultancy company in 2002 (Datamonitor, 2008); because it is a demonstration of how the company developed and in this case bought the needed capabilities for their related diversification into consulting services. In other words the acquisition of PwC was a strategic choice necessary to flesh out the IBM BPR initiative of making technicians consultants.

4.2   IBM portfolio of business:

The IBM business operates under two segments; 'Global Technology Services' (GTS) and 'Global Business Services' (GBS), (Datamonitor, 2008). The 'GTS' portfolio which entails infrastructure services, standardization and automation is made up of; Business Transformation Outsourcing (BTO), Strategic Outsourcing Services (SO), Integrated Technology Services (ITS) (Datamonitor, 2008). The GBS on the other hand offers professional services like business solutions with the use of the company's technical skills and these services includes consulting, systems integration and application management services (Datamonitor, 2008).

4.2.1 Business restructuring and reorganisation at IBM:

Following from 4.2 above it is important for clarity to note here that the 'GBS' segment of the IBM portfolio of business came as a result of the BPR initiative because it is the segment that now deals with the company's IT consultancy services as stated above aside from the usual operations of the company which was under the 'GTS' segment. It can therefore be said that the company went through some kind of business restructuring as a result of the BPR programme which resulted in additional business portfolios and reorganisation of the entire business.

Furthermore, the company's consultancy services are focused on client relationship management, financial management, human capital, business strategy and supply chain management (Datamonitor, 2008).

4.2.2 Revenue analysis of IBM:

On a global scale, IBM recorded $103.6 billion, an increase of 5% in financial year 2007 with a pre-tax income from continuing operations of $16.7 billion an 15% increase over 2007 (IBM, 2008b). In 2007, the company recorded $54,144 million during the financial year 2007 (FY2007) ended December which was an increase of 12.1% over 2006 (Datamonitor, 2008).

However, in analysing the revenue of the company by division, the Global Technology Division (GTS) of the business recorded $36,103 million an increase of 11.7% over 2006 and the Global Business Services division recorded $18,041 million an increase of 13% over 2006 (Datamonitor, 2008).

This therefore shows that the consulting services arm of the company which was as a result of the application of it's technical expertise to business consulting resulted in an added value to the company in terms of revenue and has invariably accounted to the company's increase in revenue.

Following from the revenue analysis above, the 'GBS' division recorded more percentage increase over 2006 (13%) compared to the 'GTS' division (11.7%) which was the period of economic downturn implying that the delivery of IT consulting services thrived more during these periods than the sales of technological software or hardware, thus serving as a shield in the times of technology crash.

4.3   Making Technicians Consultants:

IBM led in the PC market due to its high competitive advantage and the threat of new entrants into the industry in the early 90s was minimal (Hammer and Champy, 2006). However the intensity of rivalry among already established companies increased as new innovations were developed by competitors in order to gain competitive advantage and also in response to customers' demand and technological advancement (Hammer and Champy 2006). On the other hand IBM could not keep up with the changing PC market as reported by Jamie Hewitt vice president business process (cited in Hammer and Champy 2006: 186) *''until recently, many people thought of IBM as a large, bureaucratic, and unresponsive company. While our product lines were diverse and our market reach broad, we were unable to keep up with our newer and more streamlined competitors''.* In addition Chacko, (2005: 1) stated that *''IBM had lost $16 billion in three years and half of its share value in eight years in which 175,000 employees lost their jobs''.*

4.3.1 The BPR initiative:

As a result of this, IBM developed a strategic initiative under the umbrella of the CEO Louis V. Gerstner Jr., and in his time (1993-2002) he came up with an idea of moving the company from building systems to defining architectures and running and managing computers for their clients (Chacko, 2005). According to Gerstner cited in Chacko, (2005), IBM referred to this as an integration strategy because the company believed that the future was in providing technological services. Similarly, Kante, cited in Bulkeley, (2009) stated that IBM have decided to migrate from just selling computer mainframes to showing customers how to revamp their business functions.

Thus BPR was executed in IBM:

* *Leveraging* - extending the capability of the company's technicians into the creation of IT business solutions to clients.

* *Integration* - creating a new resource base which is the consulting arm and using the existing assets and resources i.e. the technicians and the company's technological expertise to run it.

Furthermore Gerstner, (2003) stated that IBM moved from a technology led company to a service based company; thus the company envisioned being a ''client/server'' operator with the 'client' referring to the PC and the 'server' referring to the mainframe and other business systems such as processing, providing applications and storage support in service to 'the client'. According to Gerstner cited in Ominsky *et al* (2002) IBM is thus set to focus on providing business solutions to customers through the integration of technology and the approach is otherwise known as User Centred Design (UCD) in which the focus will be on the end user of their products.

It is clear from the analysis that the CEO of IBM at that time – Gerstner spear headed the BPR initiative and has been instrumental to the change in strategic direction of the company certifying Grey and Mitev (1995) claim that BPR decisions are usually a top down process that comes from the top management and takes little consideration of employees in the decision making. However the emphasis here is the significant role played by Gerstner as a leader/hero and a change agent to ensure a strategic redefinition through the initiation of the reengineering of the company's core competence into consultancy services which according to Ranganathan and Dhaliwal (2001) cited in Hanafizadeh *et al* (2009) is one of the CSFs of BPR.

Furthermore It can be said that IBM's plan to be service led other than being technology led was to be achieved by stimulating IBMers to leverage their greatest strength of technical expertise to provide customers with the products they need (Chacko, 2005). According to Gerstner, (2003) this was done because at that time they believed that customer's value on IT business solutions will be on the increase and clients will value the IT services more than the technology itself.

In other words the company demonstrated here a trait referred to by Jarrett, (2009) as 'scanning the horizon' which

involves competitive analysis and customer insight. Gerstner – the CEO has been able to demonstrate foresight and was able to draw accurate and incisive conclusions based on consumer behaviours and perception; which enabled the company combat the competition in the PC industry.

For example according to Kirkpatrick, (2004), IBM worked on Wal-Mart's model in order to get more revenue per shopping cart by putting together it's management team, operations and consultants and they tested inbuilt scanners and LCD screens so as to help wall mart's customers locate their choices on time to achieve a reduction in the time customers use in navigating round the superstores instead of making purchases. Hence IBM was able to integrate technology into the processes of an enterprise and also provide end to end solutions for their clients (Gerstner, 2003).

4.3.2 *Drivers of BPR in IBM:*

According to Gerstner, (2003) the brain behind this idea was the fact that if IBM could offer integrated technological solutions for clients then they will also be in the position to influence the architecture decisions as well as the supply of most of the hardware and software required thus pushing the sales of their technological business via the delivery of their IT consulting services.

However according to Gerstner's testimony cited in Chacko, (2005) it took time before this operational change initiative was embraced and given a total go in the company. Although employees were resistant to the change at first they were forced to respond when they began to see the positive outcomes of the reengineering initiative implemented by Gerstner (Hammer and Champy, 2006). This implies that positive results could be a source of motivation for employees who at first are not in support of the BPR initiative in an organisation or who do not see the need for it.

Alongside with this was the challenge of getting the right skill mix, this was because the human resources needed for a product based company was much more different from that needed by a service company and IBM was used to selling products, managing inventories turns and manufacturing processes; but being a service led company required more of selling and managing of capabilities and knowledge (Chacko, 2005). As a result of this the leaders of IBM realised that there had to be a change in the company's business model and economics because the creation and selling of the products now occurred simultaneously (Chacko, 2005). According to Kirkpatrick, (2004) Gerstner's effort only expanded the business by 40% and Sam Palmisano his successor needed to work harder to save a big technology company from the biggest tech downturn in history. This shows that the start of a BPR initiative might not be a guarantee to it's success therefore there is need for continuity and commitment by the leadership of the organisation.

4.3.3   *Mapping BPR with business strategy:*

In order to improve IBM's capabilities and functionalities in consultancy, the company made an ally in 2004 to achieve synergistic value creation with 'Infosys' a consulting and information technology services firm; provide solutions in the area of retail, banking and manufacturing processes using the hardware and software provided by IBM (Infosys, 2009). As a result of this ally, Infosys invested financially in ''thought leadership'' which included areas of knowledge management, collaborative technologies, converging technologies and web services and IBMers were encouraged to come up with ideas that can serve as solutions to customer's needs and these ideas are usually tested to certify it's viability (Infosys, 2004).

The strategic step taken by IBM above showed the building of capabilities in support of a business strategy coined out of a response to external changes in the market and interpretation of trends as emphasised by Leedman (2009). Also, Belkeley, (2009) stated that in 2002 shortly after Palmisano was CEO He made a decision to buy Pricewaterhousecooper (PwC) consulting so as to add the company's consulting expertise to IBM's existing computer installation and software writing capabilities in order to reshape the company.

A critical analysis of the acquisition of PwC shows that although it is a costly strategic choice compared with the alliance with Infosys it is however a safer approach to capability development because it minimises the possibility of imitation of capabilities and it also indirectly combats the competition by lowering the barriers of entry that IBM might face in the consulting market. However, considering the alliance with Infosys systems, IBM stands a risk of losing vital information to a major competitor through this.

According to Kirkpatrick, (2004), the $3.5 billion acquisition of PwC led to 3500 workers losing their jobs and Palmisano utilized the 25,000 technicians who have now turned into consultants with an approximately equal number from PwC and created the IBM business consulting services. As seen in IBM it seems as though it is impossible to implement a BPR project without having to downsize even though Harmon, (2007) emphasized that the focus is not on downsizing.

4.4   IBM's Organisational Culture:

According to Chacko, (2005: 17) the integration of the CEO's (Gerstner) idea into the operating system of the company was not as easy as presumed because the company's culture of *''disinterest in customer's needs, pre occupation with internal politics lack of collaboration and a bureaucratic infrastructure'',* could not accommodate *''Gerstner's customer centred, network centric and market orientation''* new culture, the author described it as *''putting a new wine in the old bottles''* thus it took three years according to Gerstner before the new system became part of the people.

Changing the culture- paradigm of thousands of employees was the hardest part of the reengineering process and Gerstner referred to it as *''taking a lion raised all of it's life in captivity and suddenly teaching it to survive in a jungle''* (Gerstner, 2003: 177). This certifies the claim of Smith, (2007) that social problems are the most difficult issue to deal with in implementing BPR in an organisation than the technical problems.

Furthermore, Gerstner, (2003) stressed that dramatic change in the habit/behaviours of thousands of employees that has been part of them cannot be imposed neither could it be engineered, rather it could only be achieved by creating an environment that allowed the organisation to transform it's own culture – *''What you can do is to create the conditions for transformation, you can provide incentives, you can define the marketplace realities and goals but then you have to trust, infact in the end management does not change culture, management invites the workforce itself to change the culture''.* Gerstner, cited in Chacko, (2005: 9). In addition IBM made efforts to empower it's workers and change their attitudes to work but workers were used to being told what to do thus even when they were given a level of autonomy it took time and continuous communication for them to accept the culture of collaboration and the fact that they have been empowered (Hammer and Champy, 2006).

This expression by the IBM workers buttresses the arguments of Grey and Mitev, (1995) that empowerment is developed over time rather than conferred and Mckenna, (1995) sees empowerment as a behavioural trait which needs to be gradually developed in workers thus looking forward to such a quick change in behaviour is unrealistic. This therefore shows that BPR does not automatically cause behavioural change in workers but rather the behavioural change (e.g empowerment) is a requirement that is attained with time for successful BPR implementation.

4.4.1 Restructuring at IBM:

According to Hammer and Champy, (2006) Gerstner took radical steps organisationally by declaring war against geographic fiefdoms (when an organisation begins to operate as separate entities in different geographic locations with lack of collaboration) and turned the organisation into global industrial teams. This was done by creating twelve customer focused groups and putting them in charge of the budgets and personnel and reengineered the business operations by funnelling the strengths of technicians in providing solutions to customer's needs Chacko, (2005). But before Gerstner could achieve the reengineering project, he had to replace the ''institutional memory'' of the company because he believed that *''Culture is not just one aspect of the game-it is the game....When the original environment institutionalised in the corporate culture shifts, it becomes an enormous impediment to the institution ability to adapt''* (Gerstner, 2003: 182). In other words, culture is an essential ingredient that strengthens an organisation's vision, mission and goals hence the two has to be in alignment and one of the ways by which Gerstner transformed the IBM culture to suit the new operating system was through Communication (Chacko, 2005).

Furthermore, according to Chacko, (2004), the reward systems had to change as well as the measurement of performance in order to institute the reengineered operations and system, thus success was determined by the level of satisfaction of customers and shareholder's value; this helped to measure the progress of workers and they were paid with respect to the company's performance.

Hence the BPR initiative in IBM affected not just the business process in question but the restructuring of the whole organisation and consequently a pulling down of old system of thinking and approach to work according to the BPR principle advocated by Hammer and champy, (2006), thus leading to a more collaborative way of doing work, a team based culture and less emphasis on individual excellence (Gerstner, 2003).

4.5   Communicating the BPR Initiative:

According to Chacko, (2005) Gerstner communicated to the people the performance downturn the company was going through, the fact that it might result in more people losing their jobs and the company going down if nothing is done. In

addition He also communicated the new culture which is expected to support the new strategy as well as expectations needed from the employees in order to drive the new system which he termed 'performance culture'.

This was done because the CEO believed that members of an organisation find it difficult to respond to a change or new strategic initiative except there is a knowledge of an existing crisis that needs to be averted, and it is the duty of the CEO to communicate to the people the severity of the crisis as well as the way out which might include a well-defined strategy, a new business model and consequently a culture reform. (Chacko, 2005).

However in analysing the above occurrence in IBM, it shows that even though Dixon *et al.* (1994) argued that crisis is not a driver for BPR, it can be seen from IBM's experience that it can be a means of motivating or gaining the support of employees for a BPR programme in an organisation. In other words following Strassman, (1994)'s arguments, organisations portray the implementation of BPR as an inevitable action to be taken for survival/profitability thereby instilling fear to gain employees' commitment.

According to Reger, (2007) the ''tangible culture'' approach which involves three elements: 'Outcome Narratives' (how to get to the right place the right way), 'Right versus Right' (two right options but yet in conflict with each other), and 'Business Practices' (laid down rules on what serves as a compass on how work is done in an organisation), was developed and used by IBM team of consultants and researchers to ensure integration and also to resolve the cultural issues that arose through the alliances and acquisitions IBM ventured into in the bid to acquire the right capabilities for the BPR initiative; for example the acquisition of PriceWaterHouseCooper consulting in 2002.

In sum the IBM case study has revealed that communication is an important as well as an effective tool that can be used to ensure successful BPR implementation and also to combat the resistance that may come from employees as a result of the BPR project, certifying one of the CSFs mentioned by Abdolvand *et al* (2008).

4.6 Problems IBM Faced executing the BPR initiative:
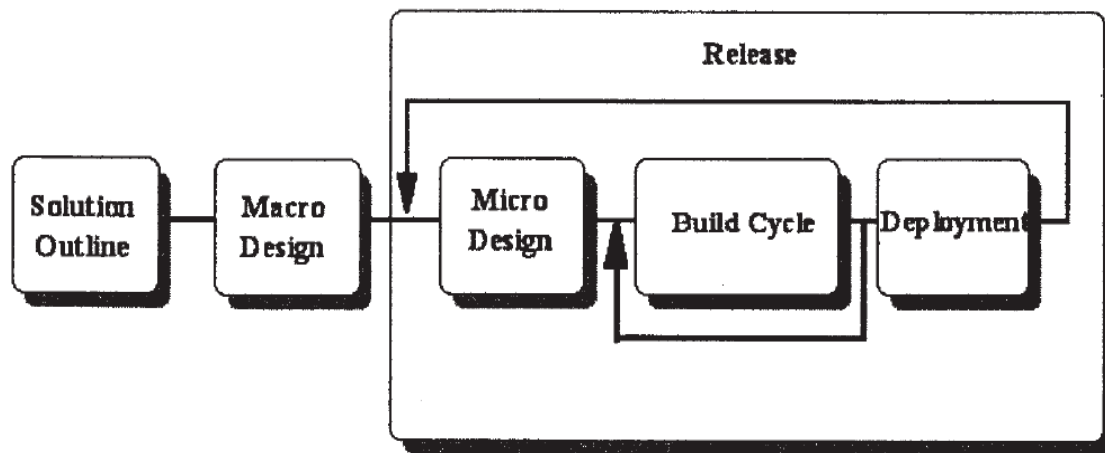
Source: Ominsky et al (2002: 354)

Fig. 14 GLOBAL SERVICES METHODOLOGY PHASES OF DEVELOPMENT

From Fig 14 above according to Ominsky *et al* (2002), the '*solution outline*' phase represents the phase where the consultants get to understand the client's problems, develop an appropriate plan and determine the scope of the other phases of the project while the '*Macro Design*' defines the architecture of the would be developed system and also serves as a measurable foundation for the '*release phase*' which has three dependent phases that is each of the 'Micro Design', 'Build Cycle' and deployment stages are addressed and designed for each release.

In addition Springsteel, (2003) added that IBM needed to show it's clients that the acquisition of PwC was properly integrated, therefore the company ensured objective delivery of services such that it does not in any way affect the quality of the service that clients receive from IBM implying that the consulting advice are not just out to favour more sales of IBM products and services except when the IT components of a solution are similar with what IBM offers then there is no point referring a client to a competitor. Moreover IBM integrated PwC by operating an egalitarian system where the focus

is a win-win approach with even allocation of jobs Springsteel, (2003). Similarly, Reger, (2008), affirmed that IBM integrated the acquisition of PwC by a ''Right Versus Right'' approach ('tangible culture') which aids blunt discussions of areas hindering current or future results.

4.7 IBM's Success:

IBM measured it's success by the level of customer's satisfaction and shareholder's value as a result of the principle put forward by Gerstner, according to him ''*no company can be termed successful without satisfied customers''* (Chacko, 2004: 12). This principle was communicated throughout the organisation and was also a criterion measure for the performance of ''Infosys''. Table V below gives an illustration of how shareholder's value and customer's satisfaction increased since the radical transformation of the organisation's operations and the entire business with more emphasis on consulting services.

TABLE V CANDIDATE SINGLE SYSTEM CRITERION FUNCTION FOR INFOSYS

Year	Book value per share per value Rs.5
1998	26.15
1999	86.84
2000	125.97
2001	210.05
2002	214.34
2003	431.84
2004	288.20

Source: Infosys, (2004: 28, 18, cited in Chacko, 2004: 13)

As seen in the above table each year's value served as a criteria for rewards and base pay of both employees and executives (Gerstner, 2003). In other words employees were paid in relation to the success of the reengineering initiatives and the business in general and Gerstner termed these act of performance related pay as giving the employees direct stake in IBM's success, which served as a source of motivation and commitment for the IBM workers (Hammer and Champy, 2006).

This single system criterion adopted by IBM resulted from the multi system criterion which was based on ''knowledge of man-in-space environment'' according to the annual report 2003/2004: '' *The chairman and Chief Mentor is responsible for mentoring Infoscious core management team in transforming the company into a world class next generation organisation that provides state-of-the-art technology-leveraged business solutions to corporations across the world''* (Infosys, 2004: 1).

The new reward system implemented in IBM typifies one of the areas that consequently get redesigned as a result of BPR in an organisation which Hammer and Champy, (2006) refer to as management and measurement systems as illustrated in the Business System Diamond (Fig 2).

4.7.1 Financial impact of BPR on IBM:

Furthermore, according to Chacko, (2009) IBM increased their client base because of the belief that by addressing their customers' IT requirements, a long term relationship will be built and consequently an increase in revenue of about 80% will be generated by the consulting services the company offer. In the same vein Bulkeley, (2009) attested to the fact that the consulting division contributed to fifth of the company's revenue of $103 billion in 2008.

Also, IBM's Success can be attributed to their shift in strategic focus from less of hardware to more of software and the provision of consulting services offered to government agencies and companies on their fundamental operations and through which they were able to drive the sales of other products (Bulkeley, 2009).
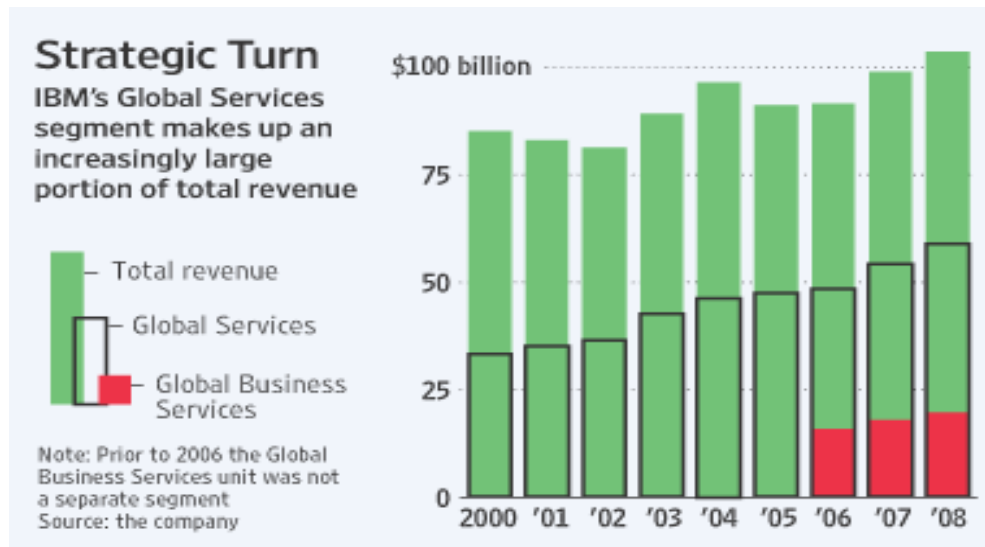
Source: Bulkeley, (2009) Fig. 15 STRATEGIC TURN

Fig 15 shows the impact of the Global Business Service (GBS) segment on the company's revenue.

Fig 15 above illustrates that the 'Global Service' segment accounts for almost half of IBM's total revenue with the 'Global Service Business' division being a significant part which was latter made separate in 2006. Furthermore Faze, cited in Bulkeley, (2009) stressed that the acquisition of PriceWaterHouseCooper (PWC) consulting services have contributed immensely to the success of the organisation because it gave the company a different perception in the sight of their customers - from IT to business outcomes. However Kirkpatrick's analysis revealed that although creating consulting the service arm has been of immense benefits to IBM it also has it's downside in that it can increase overheads thus affecting the company's bottom-line because of the cost of hiring lots of consultants.

It seems most authors agree to the fact that the development of the consulting arm in IBM had a significant impact on the performance of the organisation. However, can this be totally true or can this also imply that the financial improvements experienced by IBM are as a result of other factors apart from BPR. Or shall we just conclude that the implementation of BPR in an organisation will lead to an increase in organisational performance?

4.8 Conclusion:

Conclusively, IBM was in a difficult time at some point when they lost their competitive advantage and were beginning to become irrelevant in the PC market before the advent of Gerstner as the CEO who initiated the reengineering of the company's core competence of technical expertise into consulting by delivering IT business solutions to it's clients which was in response not just to the competitive market but in satisfaction of customer's perception and expectations. However the company's plans to implement BPR did not come without consequences such as business restructuring (flattening of hierarchical structures, redesigning of the reward system), downsizing and strategic initiatives like acquisition and alliances.

Furthermore, the organisational culture of the company was also affected by the BPR implementation due to the fact that the old way of operating in the company was said to be incompatible with the BPR strategic initiative. More importantly one of the ways by which IBM was able to manage it's BPR initiative was through effective communication to workers on the need for the creation of a consulting arm (BPR initiative), it's effects on job structures, attitudes and so on.

Finally the BPR initiative by IBM recorded an increase in financial performance for the company because the consulting division of the company generated more revenue than the other divisions and consequently the company's shares also increased which was the primary measurement of success by the company.

However comparing the key points drawn from the data and analysis, the objective views of writers like Jarrett, (2009), Bulkeley, (2009) and the subjective ones like Gerstner, (2003) and Infosys, (2004) seem to have a common place of agreement in most areas because even though Gerstner was reporting as the CEO of IBM, the author still tried to bring to air both the internal and external issues the company faced and how it was dealt with. For example, Gerstner's report was about IBM's situation at the time of the BPR implementation and did not in any way explain out the insensitivity of the company to the external situations in the market place at that time and this was also ascertained by Jarrett, (2009).

However, Gerstner's report was focused on presenting how IBM handled the issues that arose as consequences of the BPR initiative the company embarked on while on the other hand the objective views gave an account on the problems the company faced and were more analytical in interpreting the response of the company to those issues as well as analysing how successful the BPR project was rather than given an account of IBM's exploits.

5. FINDINGS

The data collected in chapter four on IBM's reengineering activities will be analysed using the outcomes of the literature review in chapter two as a benchmark. Basically this will be done using the more sophisticated literature review framework (Fig 12) which is shown below. Each of the key elements of the framework will be analysed with respect to the reengineering practice in IBM. However, only vital and significant issues will be raised and analysed to ensure focus, relevance and richness of the analysis' results.
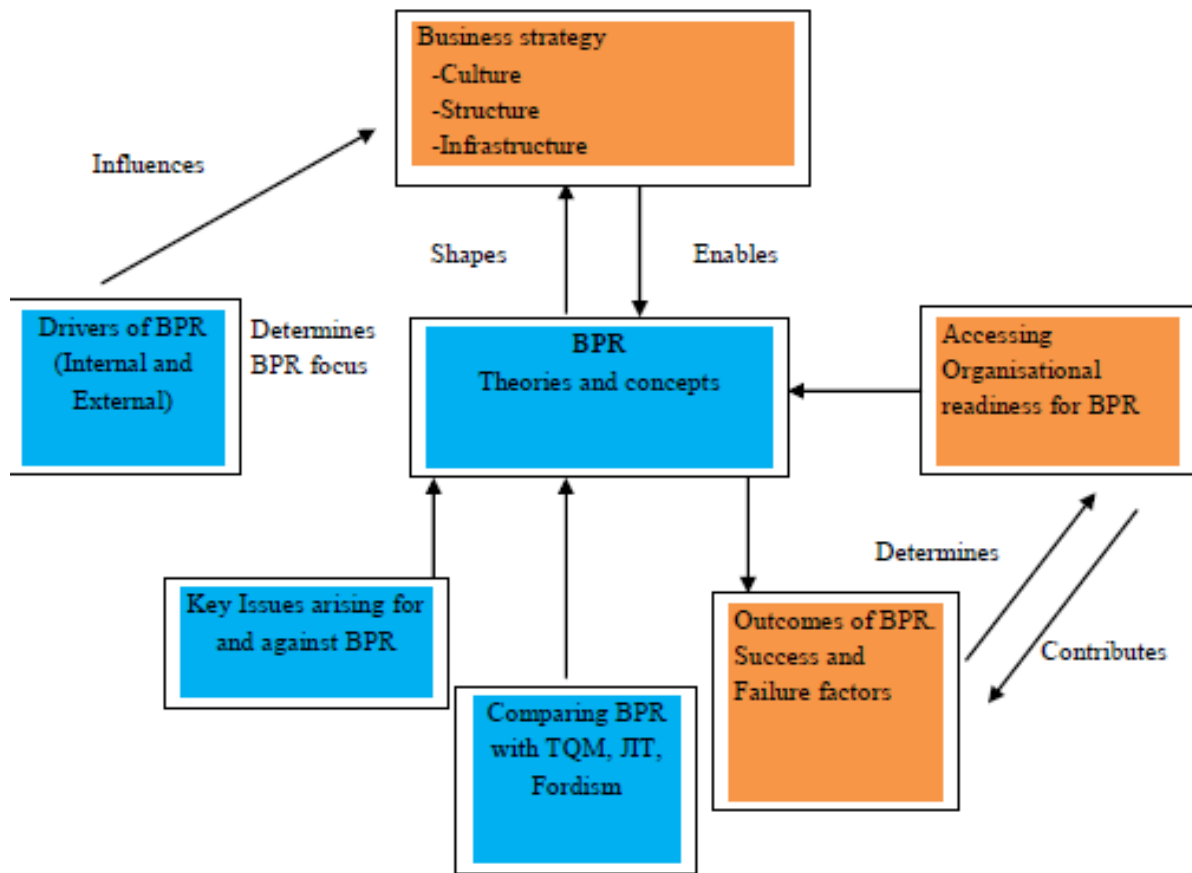

Fig. 16 FINAL BPR LITERATURE REVIEW FRAMEWORK

Just as seen in the Fig 16 above, the first issue that will be considered with respect to the findings in IBM is the theory and concept of BPR, followed by the key contradictions of the concept such as the issue of empowerment, downsizing and so on. Also the drivers of BPR in IBM will be analysed but the comparison of the other management concepts with BPR will not be analysed in IBM since this research is only concerned with the BPR project in IBM.

In addition, the link between IBM's business strategy and BPR will be analysed as it relates to the review and an assessment of IBM readiness for the BPR change. Finally the outcomes of the BPR initiative as well as the CSFs and possible failure factors in IBM will be analysed.

5.1 BPR Concept in IBM:

5.1.1 Defining BPR in IBM:

The analysis of the business process reengineering in IBM will be focused on the making of the company's technicians into consultants which is in line with the definition of business process by Hammer and Champy (2006): *''a set of*

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interrelated activities, usually carried out by teams, whose outputs are the goods or services that are typically sold by an organisation to its customers''. This is because the technicians were involved in the manufacturing and development of computer mainframes which is the end product which gives value to customers and IBM sought to reengineer this process by leveraging on the capabilities of the technicians in the knowledge and manufacturing of the computer mainframes to deliver business solutions to their customers..

BPR in IBM can best be captured by Lowenthal's definition of BPR compared to other definitions by other authors in the literature review. Lowenthal (1994: 62) defined BPR as *''the fundamental rethinking and redesigning of operating processes and organisational structure, focused on organisational core competencies to achieve dramatic improvements in organisational performance'',* and relating this to IBM we can see that a fundamental rethinking and redesigning of the computer mainframe manufacturing and development was made; which consequently led to the rethinking of the organisational structure and culture so as to focus on and create a core competence towards achieving dramatic improvements in the performance of the organisation.

This shows that the focus of BPR in organisations is not always dependent on cost reduction, quality improvement or speed as presented by Hammer and Champy, (2006) but it could be a means to revive an organisation experiencing a decline like IBM by changing the customer's perception of the company.

5.1.2 The Scope of BPR in IBM:

Furthermore, reflecting on Hammer and Champy's arguments which was illustrated by the Business System Diamond (Fig 2) that BPR involves not only the reshaping of the processes in question but also the organisation as a whole, shows that the principle holds true in IBM because the BPR initiative resulted in the redesign of the job structure of the technicians because they were now required to use their expertise not only to build computer mainframes but also to create business solutions that will enable the smooth running of the clients' processes (Datamontor, 2008). The initiative according to Chacko, (2004) also led to the institution of a new management and measurement system because the company became service led with a customer centred culture, therefore the principles of measuring success was revisited and was thus based on customer's satisfaction and shareholder's value.

Finally the reworked management and measurement systems in IBM led to the change in company values form disinterest in customer's needs, pre-occupation with internal politics, lack of collaboration and a bureaucratic infrastructure, to customer centred, network centric and market oriented (Chacko, 2005).

5.1.3 The Role of Technology:

Hammer and Champy (2006) attributed technology as an enabler of BPR while Grant, (2002) believe that technology cannot on it's own enable BPR without the support of organisational culture, structure and human resources. According to Ominsky (2002), the consultancy framework software (GS Methodology) used by the technicians who have now turned consultants was a technology which was developed to deliver efficient services to the IBM clients. Prior to the implementation of the GS Methodology, there have been record of in efficiency in the delivery of solutions and customers have given complaints on the services received due to poor communication between consultants (Ominsky, 2002). Thus the GS Methodology was used to ensure effective communication, adherence to laid down methodology and techniques and consequently effective delivery of consulting services to IBM clients, thereby serving as an enabler of the process. However, contrary to the argument of Grant, (2002), organisational structure, culture, and human resources only served as support to the Global Services methodology and technology was the primary enabler of the system.

5..14 Analysis of Downsizing and restructuring in IBM:

There have been several arguments by Hammer and Champy (2006) and Green and Wayhan (1996) of BPR not being the same as downsizing, restructuring or re-organisation but that it usually occurs as a consequence of the BPR process. Analysing these issues on IBM revealed that the implementation of the reengineering initiative resulted in the laying off 3500 workers and replacing them with consultants required to deliver business solutions that IBM wants (Kirkpatrick, 2004).

However the downsizing was not to reduce cost as pointed out by Grey and Mitev (1995), instead it occurred as the company tried to fit the right capabilities into the right job. Hence it can be said that the downsizing of workers that occurred in IBM was not the main target but a means to an end. Also, the BPR initiative led to the reorganisation and restructuring of the organisation by Louis V. Gerstner Jr. the CEO of IBM at the time, and this he did by changing the

company from operating as separate entities in different geographic locations (geographic fiefdoms) to global industrial teams thereby creating twelve customer focused groups putting them in charge of budget and personnel (Chacko, 2005).

5.1.5 Testing the Principles of BPR in IBM:

Furthermore, BPR has been argued by Hammer and Champy (2006) to involve a total breakdown and replacement of existing process with a new one while Boudreau and Robey (1996) argued that it is impossible to achieve a total break down because process involve people, infrastructure and human memories which cannot easily be erased but can rather be explained as the putting of the right person in the right job thereby ensuring a proper alignment of the right capabilities to the right job.

The latter holds true in IBM because the BPR initiative considered in this research in IBM did not entail a breakdown of the development and manufacturing of the computer mainframe process but rather an integrated strategy or can also be referred to as added service because BPR in IBM entailed a change of focus which resulted to technology being driven by the services the customers require(Gerstner, 2003). Hence work was redesigned to ensure an alignment of the right capabilities to job responsibilities. Nevertheless there was a migration from old principles and rules by which the business was previously run.

It was also discovered that it was not particularly easy to change the behaviour of workers or wipe out their memory of previous organisational routines or processes for example IBMers found it difficult to take responsibilities for outcomes and still waited to be told what to do despite the fact that they were told to be empowered (Gerstner, 2003). Thus it took more than the snapping of the fingers before the new system of thinking could be integrated into IBM.

5.2   Drivers of BPR in IBM:

The drivers of BPR have been identified by Chan and Peel, (1998) as both external and internal, with the external drivers attributed to: customers, competition, change and government regulations while the internal were attributed to: technology, cost reduction, strategy redefinition, increase in efficiency and profitability. However in analysing the drivers of BPR in IBM, the external drivers of BPR were competition and customers' perception while internal drivers are strategy redefinition and profitability.

This was because IBM was basically motivated by perceived customers' need which was the fact that customers will increasingly be in need of IT business solution services than the technology itself and this was the main driver behind the BPR initiative leading the company to be service led other than being technology led (Gerstner, 2003).

5.2.1 Competition as a driver:

Even though at that time other technological companies were being driven by change and upgrade in technology to develop new technological innovations, but IBM decided to respond to customer's perceived needs (Gerstner, 2003). Although the company had a chance of being wrong by moving in a different direction, yet they persisted with respect to customers' perception rather than competition.

Thus competition was an indirect external driver for IBM in this case thereby certifying the argument by Grey and Mitev (1995) that competition is particularly not a driver of BPR but it is the implementation of BPR that induces competition. Furthermore the IBM experience also agrees with the research by Chan and peel (1998) stating customers' perception as a major external driver for BPR.

5.2.2 Internal Drivers in IBM:

Internally IBM was motivated to reengineer it's business by the need to redefine it's strategy and the pursuit of profitability. Interestingly the company was driven by strategic redefinition and profitability because of the enormous competition in the industry and the inability of the company to keep up with the PC market because it had been attached to the old rules and ways of doing business which resulted in the lost of half of it's share value in eight years (Chacko, 2005). Therefore the strategic redefinition which was the shift from making computer mainframes to defining strategic architectures, running and managing computers for clients, was done as a necessary action to rescue the company from the competition and to gain back it's market share. However this is contrary to the result of Chan and peel (1998) research that cost reduction is the major internal driver of BPR in organisations. It is also important to note here that the drivers of BPR in IBM has somewhat influenced the business strategy; for example the need to increase profitability and combat competition has resulted in new strategic directions and integration as previously mentioned, therefore confirming the

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relationship between the drivers of BPR and organisational business strategy as illustrated in the literature review framework (Fig 12).

5.3   The Alignment of IBM Business Strategy and BPR:

As analysed above, The BPR initiative in IBM was clearly influenced by the drivers of the project which were: what customers want, competition in the industry, a need to increase profitability and a desire to redefine strategy and this according to Gerstner (2003) determined the content of business strategy as well as the BPR focus which was to satisfy customers' perceived needs and increase profitability by providing IT business solutions services to them. Relating the illustration of Coulson, (1997) in the literature review (Fig 6: 31), to IBM, it is evident that IBM's reengineering initiative resulted from the bid to clarify strategic direction that is, accessing the company's commercial proposition as it relates to resources, capabilities, alliances, partnership products and services, so as to evaluate the company's progress against stakeholders' expectation (Chacko, 2004).

Implying that the company to redefined it's strategic architecture so as to accurately make a fit between the BPR programme and the organisation's business strategy. This was achieved by leveraging on the internal capabilities they had by utilizing the expertise of their technicians in IT consultancy. However they realised their internal capabilities was not enough to achieve the BPR initiative so they acquired PriceWaterHouseCooper (PwC) by buying the capabilities needed to flesh out the strategy and also made an ally with Infosys to employ their IT consultancy services while making available the company's expertise in providing hardware and software (Kirkpatrick, (2004).

Thus it can be said that IBM's business strategy was driven by customer's perception and the company therefore developed corresponding capabilities to support the strategy as argued by Leedman, (2009). Conversely, Bhattacharya and Gibbons (1996) argued that the formation of the content of strategy is based on core competencies and capabilities of the organisation while processes form the core of organisational structures but this was not the case in IBM. The link between BPR and business strategy in IBM can be illustrated by the chain in Fig N below which gives an overview of the above analysis.
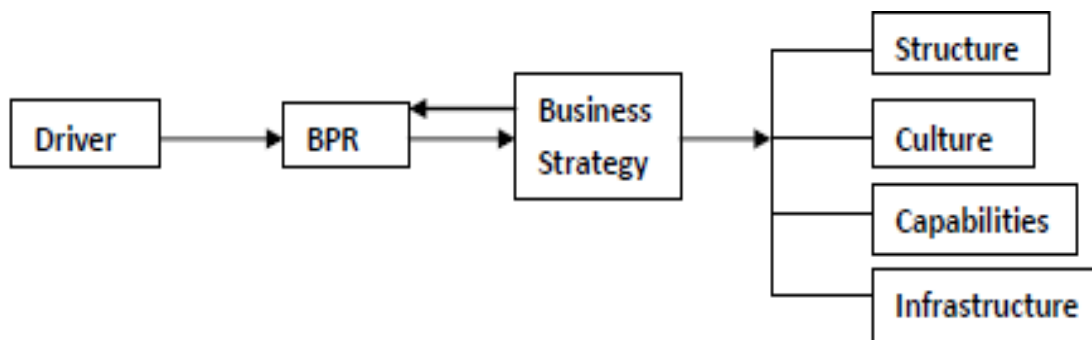

Fig. N THE LINK BETWEEN IBM BUSINESS STRATEGY AND BPR

In Fig N above, the author shows that BPR in IBM is influenced by the drivers of the project and the BPR project in turn shapes the business strategy while the business strategy at the same time enables the execution of the BPR initiative. The business strategy however determines the organisational structure, culture, capability development (acquisition of PwC) and the building of infrastructures (Global Services methodology, equipping technicians) which have been indirectly influenced by the BPR initiative.

The above analysis affirms the claim made by Jarrett, (2009) and Leedman, (2009) that environmental dynamics affects strategic leadership and direction which shapes the culture and structure of the organisation and the three determines the strategic capability for change and hence the overall performance of the company.

Moreover, Hanafizadeh *et al* (2009) argued that the BPR focus in an organisation is always dependent on it's business strategy which could be the reason why IBM's reengineering plans is not so much focused on cost reduction as it is on quality of their service and products as perceived by customers, being that the company practices a differentiation strategy.

However, the design of the strategic architecture of IBM prior to the implementation of BPR was done by putting organisational culture and structure as a central focus thereby realigning the company's culture and structure to support the BPR plans and business strategy as illustrated by Coulson, (1997).

In IBM Gerstner - the CEO practically replaced the organisation's system of beliefs which he referred to as the ''institutional memory'' in order to get the BPR idea smooth and running (Gerstner, 2004). This included a change of employees' behaviours from individual centred culture to collaborative culture, more emphasis on empowerment and autonomy by setting up programmes such as the ''thought leadership'' programmes (Chacko, 2004). This showed that the realignment of the company's culture was key to the successful implementation of the BPR initiative as though it was impossible for IBM to execute the BPR plans without a culture reformation. Hence IBM's new culture defined the organisational structure which was evident through the breaking down of bureaucratic structures, and the redesigning of reward systems.

5.4   The critical success factors of BPR in IBM:

According to Abdolvand *et al* (2008), the major critical success factors of BPR were attributed to be: ''egalitarian leadership'', ''collaborative working environment'', ''top management commitment'' ''change in management technology'' and ''use of information system'' (table III). Using these factors as a benchmark for the CSFs of BPR in IBM, this section will determine the degree of alignment of IBM to these CSFs.

Egalitarian leadership: in IBM an egalitarian leadership was present because the vision and information of the BPR initiative was shared and communicated to everyone in the organisation (Chacko. 2005). Even though the decision was a top down process it was not imposed because the necessity of the BPR initiative as a strategic weapon to combat the existent IBM crisis at that time was made clear through an open and effective communication. Also the confidence in subordinates' idea was demonstrated by encouraging workers to come up with relevant ideas that can serve as solutions to clients' needs and these ideas were tested for relevance and viability which shows a demonstration of constructive use of ideas (Infosys, 2004).

Collaborative working environment: the working environment was changed from an individual centred culture to a team based culture (Gerstner, 2003). However as much as this environment was created it took time for workers to adjust to this new working environment.

Top management commitment: the top management in IBM spear headed by Gerstner demonstrated a commitment to the BPR initiative by working towards the success of the initiative; by making strategic choices such as the acquisition of PriceWaterHouseCooper (PwC) and alliance with Infosys so as to develop the capabilities necessary for the smooth running of the consulting arm of the company (Kirkpatrick, 2004). This could also be expressed as having an ''hero to promote the plans'' which was one of the CSFs put forward by Ranganathan and Dhaliwal, (2001). In other words Gerstner can be seen as the hero promoting the BPR plans in IBM.

Change in management technology: as a result of the BPR initiative, IBM went through significant changes in it's reward and performance measurement system. The company began to reward employees as a result of the success of the BPR initiative; thus reward was attached to the financial returns and outcomes of BPR). Similarly the measurement of performance which was referred to as a single criterion system, for both the company and the employees was based on clients' satisfaction (Chacko, 2004).

Furthermore employees were encouraged to work with a greater level of autonomy and were empowered to make certain decision as regards their jobs without having to go through the chain of demand that slows down processes (Gerstner, 2003). This is an example of the consequence of BPR which has been high marked as vital to the success of any BPR initiative by Hammer and Champy (2006). However contrary to Abdolvand *et al* (2008), little emphasis was placed on training and education for workers to develop the capabilities needed to operate and function effectively in the consultancy arm of the company. Instead 3500 workers' that seem not to be up to the task or better still no longer relevant were laid off and the competent ones were employed and acquired (Kirkpatrick, 2004).

The Use of information system: IBM used technology as the cornerstone of the BPR initiative because the business solutions provided to their clients usually require technology of some sort for it's actualisation (Ominsky, 2002). Therefore the company leveraged on their IT expertise to provide IT business solutions and consequently to drive the sales of their technology division through BPR (Gerstner, 2003).

In addition, IBM utilized technology (Global Services Methodology) to develop an appropriate methodology alongside with effective communication amongst it's consultants so as to ensure competent execution and delivery of business

solutions to clients (Ominsky, 2002). Hence IBM has shown that employing IT as a tool to enable the process of BPR in an organisation is an important factor for successful BPR implementation.

Summarily IBM have put into considerations the major CSFs of BPR in the implementation of it's BPR initiative with slight exceptions, for example low emphasis on training and development. However it is important to note that the company was able to minimise employees' resistance to the BPR initiative because of the commitment from top management and the implementation of continuous and effective communication.

Furthermore, the outcomes of BPR in IBM will be assessed in the next section.

5.4.1 Outcomes of BPR in IBM:

According to Boudreau and Robey (1996) the measurement of the success of BPR should not be based on financial assessment alone and Attaran, (2000) believes that it should rather be on whether the project achieves the purpose of executing it. However, Bulkeley, (2009) as well as Chacko, (2005) have assessed the success of BPR in IBM with respect to it's financial performance. IBM have been said to have recorded an increase in shareholders' value and an increase in revenue, which have been attributed to the revenue generated from the consulting division of the company (Bulkeley, 2009).

In analysing the above there is no doubts about the fact that the positive financial performance shows the success of BPR in IBM because the idea of offering consulting services only came as a result of the reengineering of the company's core competence which has become a source of revenue for the company. Thus it can as well be concluded that BPR is responsible for the positive change in organisational performance and increase in shareholders' value as stated by Chacko, (2004).

Furthermore, according to Ominsky, (2002) the purpose of the BPR initiative was to drive the sales of their technology hardware and software through the offering of integrated solutions to their clients but as much as this was their motive the consulting services of IBM had to be careful not to be perceived as intentionally creating a market for their technological products. This was because some customers like Dick LaFave, CIO of Nextel Corp, already picked on that fact saying they could not trust the business solutions provided by IBM as a result of this (Ominsky, 2002).

However from the account of Springsteel, (2003), IBM's consultants are not just out to favour more sales of IBM's products and services but to deliver expert and objective business solutions except when the IT components of a solution are similar with what IBM offers then there is no point referring a client to a competitor.

Therefore as argued by Attaran (2000) that the success of BPR ought to be measured by whether it fulfils the main essence of execution, BPR in IBM can be said to be successful because it fulfilled it's primary mission of providing it's customers with business solutions at the same time driving the sales of their technology products. As a result of this service is being seen as the driver for technology.

5.5 Conclusion:

Summarily, the key findings from the analysis of the business process reengineering (BPR) issues in IBM can be summed up as follows:

- As argued by Grant (2002), it has been evident from the case study that BPR can be used as a tool to redesign not only processes, but functions and consequently the organisation as a whole including job structures, performance measurement systems, values and beliefs towards creating or developing a new brand image for customers as illustrated by Hammer and Champy (2006) in the 'business system diamond' (Fig 2:10).

- In support of Česnovar, (2006)'s report that IT serves as an enabler of BPR implementation because it ensures effective communication to customers and suppliers, technology has been seen as an unavoidable tool for the effective implementation of BPR in an organisation in that IBM had to develop the 'global service methodology' to ensure effective delivery of consultancy services to clients.

- Hammer and Champy (2006) strongly argued that restructuring, reorganisation and downsizing is not the same as BPR. However, the research analysis shows that it is almost impossible to implement BPR without downsizing, restructuring or re-organisation.

Nevertheless as argued by Harmon (2007), downsizing, restructuring and reorganisation in IBM occurred as a result of the BPR process and in the bid to ensure that ''a new wine is put in new wine bottles'' as illustrated by hammer and Champy (2006).

- The research showed that BPR does not always involve the total breakdown of existing processes as advocated strongly by Hammer and Champy (2006), but could sometimes involve the realignment of capabilities in an organisation and a gradual rethinking of human behaviour and approach to work as seen in IBM.

- This however supports the claim of Boudreau and Robey (1996) that a total breakdown of existing processes is impossible because it entails the breaking down of workers' mind set and systems of beliefs that have been built over time thereby disregarding the arguments of Hammer and Champy (2006) and Smith, (2007) that BPR must be implemented with a complete overhauling of existing systems.

- In IBM Customers' perception has been seen as a major driver for BPR implementation in support of Chan and Peel (1998)'s research and even though competition and cost reduction might be a consideration as argued by Hammer and Champy (2006), they do not have as much influence as the former. However Hanafizadeh *et al* (2009) strongly believes that the driver of BPR is dependent on the business strategy of the organisation.

- The argument of Plowman (1995) cited in (Al-Mashari and Zairi 2000: 17) that one of the internal drivers of BPR could be when an organisation experiences changes in capabilities in relation to it's processes, methods, competencies and employee behaviours, matches the real life practice of BPR in IBM because the company had to reengineering and transform it's business processes as a result of the development of IT consulting capabilities by leveraging on their core competence (Kirkpatrick, 2004).

- In IBM the relationship between BPR and business strategy has been established as argued by Tennant and Yi-Chieh (2005) cited in (Češnovar, 2006); in that the content of the company's business strategy was influenced by the creation of the consulting arm (BPR initiative), and at the same time ensuring that the business strategy served as a support for successful implementation of BPR.

- Analysing the IBM case study in relation to the argument of Coulson, (1997) (fig 7: 33) and Leedman, (2009), shows that organisational capabilities, structures and culture are developed in relation to the business strategy and in alignment to the BPR initiative so as to ensure that all aspects of the organisation operates in harmony to support the BPR project.

- In IBM the main critical success factors (CSFs) for BPR has been discovered to be ''egalitarian leadership'', ''collaborative working environment'', ''top management commitment'' ''change in management technology'' ''appropriate BPR plan and methodology'' and ''use of information system'' thereby supporting the claims of Abdolvand *et al* (2008).

- More importantly the IBM case reveals that the CSFs of ''egalitarian leadership'' and ''top management commitment'' minimises the main failure factors of BPR emphasised by Abdolvand *et al* (2008) which is employee resistance due to the fear of losing their jobs and the unfamiliarity to new working principles and environment. In the same vein the arguments of Al-mashari and Zairi (1999) that effective change management and communication channels are necessary in order to achieve a successful BPR implementation supports this as well.

- Finally the success recorded by IBM so far on it's BPR initiative suggests that BPR initiatives driven by a redefinition of strategy and customer satisfaction is likely to be successful as argued by Coulson, (1997).

6.   RECOMMENDATION AND CONCLUSIONS

This research has succeeded in giving an insight into the practicality of Business Process Reengineering (BPR) in an organisation using IBM as a case study. This was achieved through the mapping of the results of the literature review to the management practice within IBM which led the author into reasonable findings and conclusions. Hence viable recommendation will be given based on the result of the analysis.

6.1 Recommendations:

Most often than not, the desire of any company is to record success (whatever the criteria for measuring that success is) in any project it embarks upon. Thus the following recommendations are geared towards ensuring successful BPR implementations.

✓ In making BPR decisions, the focus of the project should not only be streamlined to processes but to other strategic areas such as the reengineering of core competencies.

✓ BPR should not always be driven by a desire to reduce cost at least it shouldn't be a core reason for reengineering because the success results of such motivations are usually on the average.

✓ High priority should be put on employee training so that they can function accurately in the new requirements of their jobs.

✓ Appropriate methodology and techniques should also be put in place to ensure successful BPR implementation.

✓ To record success, BPR should be allowed to shape the business strategy and not the business strategy determining the focus of BPR.

✓ The top management of an organisation should be committed to the BPR implementation from start to finish by enhancing trust and creating a good working environment for workers.

The above recommendations are as a result of the findings of this research only and therefore cannot be generalised. However they can be considered for future BPR projects in IBM and also for other organisations proposing to embark on BPR or companies that desire a successful BPR implementation after several failed ones.

6.2 CONCLUSIONS:

6.2.1 How Research Objectives Were Met:

Summarily, this dissertation has succeeded in meeting it's research objectives; first, by providing a comprehensive literature review of BPR which was achieved by developing a framework that covered relevant aspects of BPR from the theories of BPR to it's alignment to strategy and the critical success and failure factors of the concept. Furthermore, after a critical analysis of the literature review on the key elements of the literature review framework, a more sophisticated framework was developed which served as a tool for determining the relationship between the theory and the practice of BPR in IBM.

Furthermore the understanding of the BPR issues in IBM was developed by collecting and analysing relevant information on one of the company's BPR initiatives which was the making of it's technicians consultants. This analysis was done with respect to the literature review by mapping the critical concepts, theories, and ideas derived from the literature review to the management practice of BPR within IBM; thereby achieving both the critical enquiry of BPR theory and the practical insight of the concept in IBM.

However meeting one of the objectives which was to provide an understanding of the BPR concept in IBM was limited because information gathering was limited to secondary sources only thereby narrowing the scope of the data analysed to the secondary data.

Finally the critical success and failure factors of BPR have also been determined and analysed by benchmarking the CSFs and failure factors provided by the literature review with the factors that actually aided the success of the implementation of BPR in IBM.

The findings derived as a result of the research served as a basis for providing viable recommendations to the major causes of failure and success in BPR.

6.2.2 Key findings of the research:

Detailed summary of the key elements and findings of this research have been presented in this report at the end of each chapter. However a brief summary will be given below for emphasis.

Business process reengineering (BPR) has been seen as a useful tool in improving organisational performance with it's major external driver being customer's perception and strategy redefinition. With the latter being the recommended internal driver for a successful implementation as compared to cost reduction being a driver. However for successful implementation, BPR must influence the content of the business strategy while the business strategy must support the BPR initiative.

Also, the outcomes of BPR depend largely on the readiness of an organisation for the change which has been discovered to be interlinked to the critical success and failure factors of BPR. In other words the more an organisation exhibits the

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critical success factors (CSFs) of BPR, the likelihood of the company's success in BPR implementation and vice versa. In Sum the major CSFs of BPR are: egalitarian leadership, collaborative working environment, top management commitment, change in management technology appropriate BPR planning and methodology and use of information system. While the major causes of failure in BPR are: employees' resistance to change, lack of flexibility, failure to put together a good reengineering team, inappropriate methodology, failure to test the process, Lack of proper training, misunderstanding and misapplication of the BPR concept.

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APPENDIX - A

HOLISTIC FRAMEWORK FOR BPR IMPLEMENTATION:
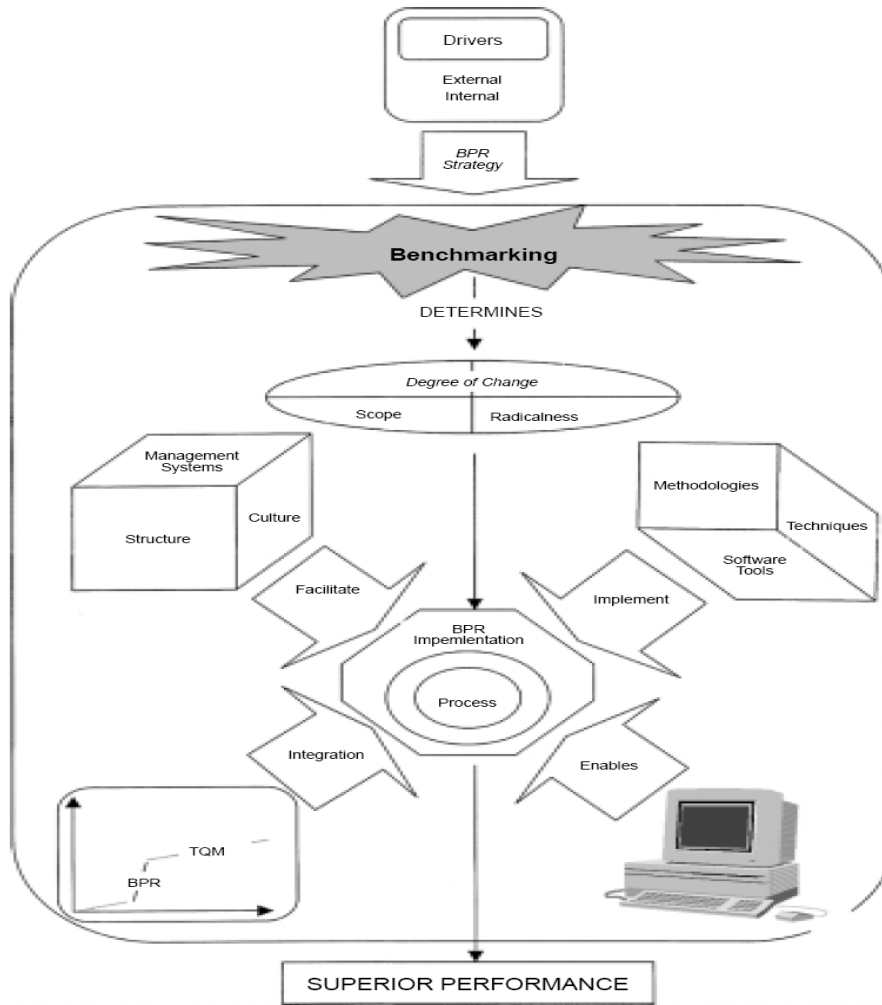
Source: Al-Mashari and Zairi (2000: 16)

APPENDIX - B

QUESTIONS TO ASK BEFORE LAUNCHING A MAJOR ORGANISATIONAL CHANGE

The big question	Probing for the right answer
Is the practice better than what you are doing right now?	Are you already doing it under another banner? How often does it succeed elsewhere? Can you test it in your organisation first?
Is the change really worth the time disruption and money?	Are your timelines and budgets realistic given what actually happens to other companies? Do the people who are selling you the solutions have incentives for underestimating the costs?
Is it best to make only symbolic changes instead of core changes?	Is this a core change that will actually hurt the organisation's performance? Are powerful groups inside or outside the organisation clamouring for this change anyway? If you fail to make any changes, will it damage your organisation's reputation and key relationships?
Is doing the change good for you, but bad for the company?	Will doing it increase your fame, prestige, or pay? Will doing it mean that someone powerful owes you a favour? Will it make your job easier and everyone else's harder?
Do you have enough power to make	Do you have enough internal support and resources?

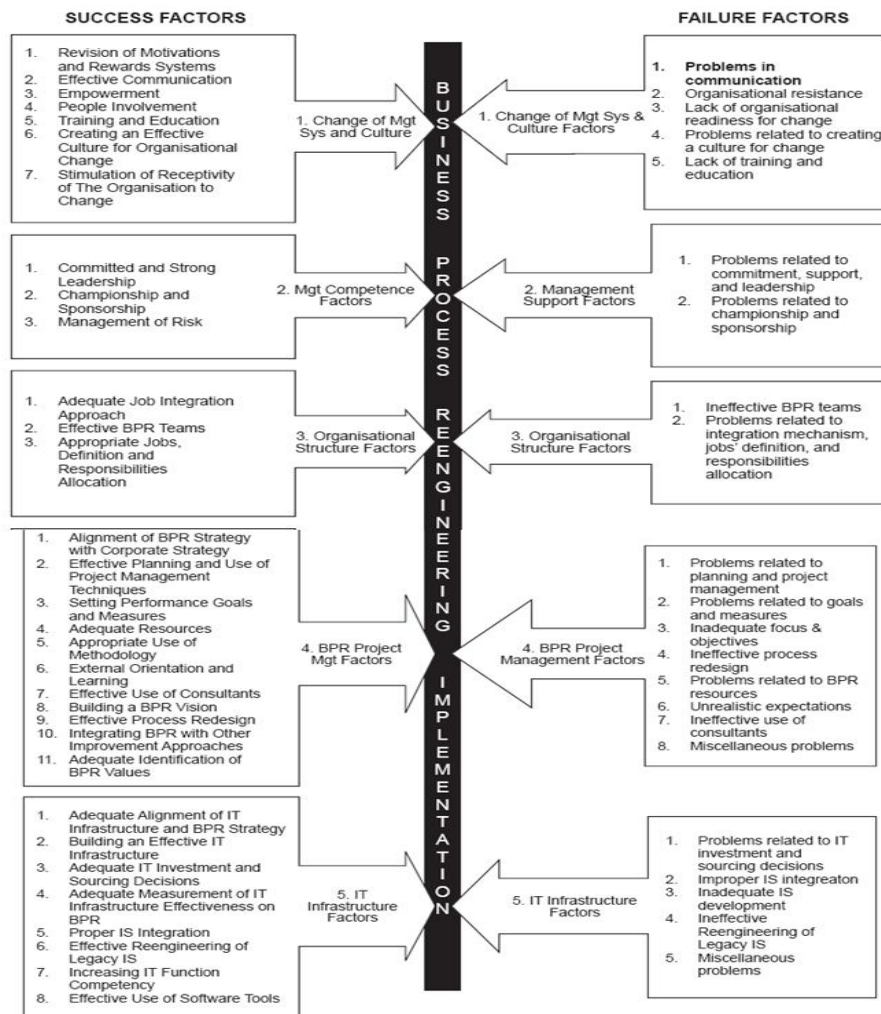|	
the change happen?	Are your current allies powerful enough? Do you have a strategy for strengthening supporters and weakening opponents?
Are people already overwhelmed by too many changes?	Do people believe that this change will actually stick or it is just the flavour of the month? Are people still trying to recover from the last major change? Are they still implementing it or still exhausted that they are not ready for the next one? Are so many other things being changed at ones that people couldn't possibly do everything well?
Will people be able to learn and update as the change unfolds?	Do they view the change as a beautiful and perfect thing, or prototype-work in progress-that will need to be tweaked, or even drastically changed, as new information emerges? Is the team showing that they can learn and improve the planned change in response to resistance, criticisms and suggestions- or do they simply dismiss all concerns as stupid ideas from stupid people?
Will you be able to pull the plug?	How will you know it is failing? How will you know when it is time to quit? Who will judge it a failure and pull the plug?

Source: Pfeffer and Sutton (2008: 167)

APPENDIX - C

A SUMMARY OF KEY SUCCESS AND FAILURE FACTORS OF BPR

Source: Al-Mashari and Zairi (1999: 106)