Business transformation, information technology and competitive strategies: learning to fly

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Abstract

‘Business transformation’ is an overarching concept encompassing a range of competitive strategies which organisations adopt in order to bring about significant improvements in business performance. These strategies include business process re-engineering, organisational development/learning, Total Quality Management and use of information technology. In this article different models of business transformation are explored. This is followed by a full case study analysis of how a leading aerospace company, Short Brothers (now known as Bombardier Aerospace—Shorts), have transformed themselves since privatisation from an organisation in crisis to a leading performer in their market sector. The findings identify the realities of business transformation and support the argument that true business transformation should be viewed as a multi-stage process which demands an integrated approach to the application of supporting competitive strategies.

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1. Introduction

“It will not be the brightest or the strongest who will survive but those who are most adaptive to change”

Charles Darwin

This is an age of fundamental and accelerated changes characterised by the globalisation of markets, ubiquitous presence of information technology, dismantling of hierarchical structures and the creation of new organisational forms and networks (Baden-Fuller & Volberda, 2001). Growing around these is a new information age economy whose fundamental sources of wealth...
are knowledge and communication rather than natural resources and physical labour (Kanter, 1994). Conway (1999) goes further to suggest that whilst the second half of the 20th century was about the revolution in technology, the challenge of the 21st century is to keep pace with the international time element as businesses move from local and regional to a truly global environment.

If history is a guide no more than a third of today’s major corporations will survive in an economically important way over the next 25 years (Anon, 2001a). Those that do not survive will die a slow death of transformation as they are acquired or merged or liquidated. The demise of these companies will come from a lack of competitive adaptiveness, essentially most of these companies will die because they are too slow to keep up with the pace of change. The assumption of continuity, on which most of our leading companies have been based for years no longer holds.

In the field of managing change debate has ragged for some time as to whether industry is best served by continuous improvement or radical business transformation (Anon, 2001b; Wetlaufer, 2001). From research, theoretical and case based, the general conclusions would seem to be that both forms of change are relevant (Gallagher, Austin, & Caffyn, 1999). Examples of the former include Virgin Atlantic and General Electric (GE) Capital who continually innovate their services to keep ahead in their market. Examples of the latter include CISCO and Microsoft who re-invented computing/networking in the 1990s, displacing such incumbents as IBM, Hewlett Packard and Digital Equipment Company. Lessons from radical transformation include the fact that it leads companies into areas where the company have much to learn, the risk of continuous improvement is that it does not challenge companies to learn quickly enough (Hamel, 2001).

The key is knowing in practical terms which will achieve the overall goals best for the organisation at a specific time in the evolution of the company. For example, Reginald Jones presided over the change of GE in the 1970s primarily through a process of continuous improvement which netted significant revenue gains before handing over the reigns to Jack Welch in 1980 who proceeded to revolutionise both the structure and culture of GE in the succeeding two decades. Each could be argued was right for their times based on the levels of competition, demands from their shareholders and the abilities of there respective teams to sustain the change processes. Interestingly, during Jones’ decade in charge GE lost approximately 8% of its stock value whilst Welch more than quadrupled the value in his first decade in office (Techy & Sherman, 1993).

Set against this background, this paper seeks to address two complementary and intertwined issues:

- Is successful business transformation a single stage or multi-stage process?
- Is it the application of independent competitive strategies or the integrated use of strategies most effective in bringing about successful business transformation?

To establish or discount these propositions, in-depth case studies have been undertaken on a number of organisations or business units which have demonstrably changed/transformed themselves and their bottom-line (profit, growth) performance. This paper discusses one such case study of an aerospace company namely, Shorts. However, in order to set the context, a brief review of the relevant literature on business transformation and the major competitive strategies is provided first.
1.1. What is business transformation?

Business transformation is a term used by strategy writers for many years, yet the literature defies easy summarisation because of the range of definitions. An attempt to create a common definition during a conference convened by the Corporate Renewing Centre in INSEAD resulted in a two-dimensional concept: ‘A fundamental change in organisational logic which resulted in or was caused by a fundamental shift in behaviours’ (Muzyka, de Konig, & Churchill, 1995). Prahalad and Oosterveld (1999) identified a number of characteristics of successful business transformation. First, transformation is not just about reducing costs, improving profitability, or reengineering. Transformation is the invention of strategies and management processes. It must be driven by new ideas, a new concept of opportunity. Second, transformation must involve the whole organisation. Top managers leading the transformation effort must dramatically change the worldview of the entire organisation—the perception of the firm’s opportunities. Only a new and shared perception of opportunity can lead to new ways to compete. Third, transformation must deal with deeply embedded and often tacit values and beliefs. They have a significant influence on how managers act. Fourth, transformation requires building a new portfolio of skills within the corporation. New markets and businesses and new approaches to creating and sustaining competitive advantage inevitably demand changes in the skill sets at all levels. Finally, transformation must be cemented with new management processes. Performance evaluations, rewards, career management, product development and operations all must change.

2. Models of business transformation

Now the questions one has to address are: What really accounts for the success of some corporations and the failure of others? How did some organisations turn around transformation processes that clearly had stalled?

2.1. Silver bullet theory of business transformation

The silver bullet theory emphasises a single methodology or process (e.g. process re-engineering, e-business, etc.) or competitive strategy for changing the performance and behaviours of an organisation. These have been very popular over the past 25 years. In a study, funded by the European Commission, it was found that organisations were struggling to keep up with the endless flow of corporate ‘transformation’ initiatives (silver bullets) as well as the emerging technologies. The COBRA team, a group of 20 experts in their fields, were asked to examine business process re-engineering (BPR) and other means of corporate ‘transformation’ across Europe. Overall the COBRA team found most efforts were focused on short-term requirements and immediate needs. They went on to conclude that this need not be the case and that there were many options for major radical performance improvement and opportunities to harness and apply the talents of people. The key finding of the COBRA project is that a more holistic, sensitive and people focused approach to corporate transformation is required (Coulson-Thomas, 1997).
Management literature is in fact littered with a number of ‘silver bullets’ which are claimed to have the ‘power’ to transform one’s business. These include Information Technology, BPR, Total Quality Management (TQM), new approaches to strategy, human resources initiatives, etc. Much of this literature is singularly focused with little reference to the integration of competitive strategies which have been required to make transformation happen. In reality what often occurs in these transformation efforts is a series of unconnected, non-integrated initiatives with differing priorities depending on an individual manager or managers. In research carried out by Davidson (1999) one enterprise listed 114 discrete operations improvements projects in its annual plan. Rankings by senior and middle management showed number 1 on the senior management list was number 47 on middle management’s list and number 2 was number 44. He concludes that little alignment was evident and the ability to really transform the organisation was minimal.

2.2. Need for an integrated approach to business transformation

In the course of 5 years of research into the nature and implications of radically different organisation and management models that have begun to emerge in the last decade Ghoshal and Bartlett (1996) studied more than a dozen companies as they implemented a succession of programmes designed to rationalise their inefficient operations, revitalise their ineffective strategies and renew their tired organisations. In the process they gained insight into the reasons why some made recognisable progress in their transformations whilst others only replaced the dead weight of their bureaucracies with change programme overload. In observing how the successful corporate transformation processes have differed from those that struggled or failed outright, Ghoshal and Bartlett (1996) were struck by one major distinction. Successful transformation processes almost always followed a carefully integrated approach that focused on developing particular organisational capabilities in appropriate sequence enabled by supporting strategic enablers such as process change and information technology initiatives.

2.2.1. Holistic model of business transformation

Spector (1995) identifies a methodology for holistic business transformation which has three organising concepts:

Customer alignment: All efforts at transformation start with the requirements of the customer, their needs and values and the internal and external processes which must be aligned to meet these needs.

Sequencing: The process of identifying the priorities and the sequence of implementation.

Learning: The maximisation of learning through the transformation process, from customers and market-place and from all participants involved in the transformation process.

Kilmann (1995) in his paper, “A Holistic Program and Critical Success Factors of Corporate Transformation” describes work he has been involved in for a number of years to develop a holistic approach to corporate transformation by integrating and aligning what he describes as the separate pieces of the puzzle. Not dissimilar to other works in this field the approach identifies
what are essentially key aspects of business change; culture, skills, team-work, vision, continuous improvement, process re-engineering and learning organisations.

2.2.2. Multi-stage model of business transformation

In recent times research has indicated a number of major multi-stage business transformations including GE, France Telecom and Intel. From these and other transformation efforts, the view of many is that it is simply impossible to transform every aspect of an organisation at the same time to achieve the totality of Business Transformation made up as they are of a multitude of highly interdependent elements; strategies, shared values, structures, systems, processes, styles, skills and staff. Furthermore, if such an all-at-once transformation were possible it may still be undesirable, e.g. the organisation may not wish to take such a major single step.

Kotter (1999) states that

The most general lesson to be learned from the successful cases is that the transformation process goes through a series of phases that in total usually require a considerable length of time. Skipping steps creates only an illusion of speed and never produces a satisfying result.

Handy (1994) in his book ‘The Empty Raincoat’ discusses the business performance curve and the effects of revision. He identifies the need for business transformation journeys and formats a business transformation model based upon the Sigmoid Curve (Fig. 1).

‘The Sigmoid Curve sums up the story of life itself… It is the story of…a corporations rise and fall.’ Handy goes on to suggest that there is life beyond the curve, ‘the secret of constant growth is to start a new Sigmoid Curve sufficiently early to ensure that growth is continued’.

Combining this literature and related case study material (Muzyka et al., 1995; Davidson, 1999; Chakravarthy, 1996; Groves, 1996) a multi-stage business transformation model (see Fig. 2) evolves with specific goals and key elements:

(i) objectives,
(ii) strategic focus,
(iii) key activities during the execution, and
(iv) culture pre-eminent during the execution.

![Fig. 1. Sigmoid Curve.](image-url)
It has three stages: restructuring, revitalisation and renewal.

Stage 1: Restructuring

Objective: minimum threshold of profitability
Strategic focus: cost reduction, increasing capacity, optimising operations
Key activities: right sizing (often downsizing), product portfolio pruning, overhauling organisational structures and business processes
Culture: controlled from the top (often autocratic)

Stage 2: Revitalising

Objective: enhanced profitability and growth
Strategic focus: customer focus, service and delivery, additional value added processes
Key activities: redefining company vision, identifying new business opportunities, acquisition and alliance, renewing core competencies
Culture: empowering

Stage 3: Renewal

Objectives: long-term sustainability
Strategic focus: competitive advantage through technology or customer knowledge, continuously eliminating waste, renewing of economic portfolio
Key activities: building new capabilities, introducing new business units, rejuvenating the strategy
Culture: empowerment, entrepreneurial, goal directed, collective learning
This model encompasses:

- profit/growth characteristics,
- degree of transformation and the sustainable advantage from transformation.

It should also be noted that these stages are not purely sequential. Restructuring activities often continue during revitalisation and into renewal, likewise some of the key activities identified in revitalisation or renewal can be seen at the restructuring stage. The key distinction between the stages is the overall objective or goal and the nature of the strategic focus.

Most researchers are agreed that full Business Transformation is not a rapid process lasting a short period of time but rather a more encompassing process which can take many years. The complexities and levels of organisation which require to change makes this a process of perseverance and trust. This is often a problem and a reality shareholders and boards of directors fail to appreciate, compounded by the short-termism so often discussed in relation to stock-markets.

3. Competitive strategies

Paramount to realising business transformation is how enablers of change are integrated into the enacted strategy, i.e. the organisations competitive strategy. Scott-Morton (1995) discusses this subject in the context of internal and external forces of the organisation (see Fig. 3).

Scott-Morton suggests that not one of these forces dominate but rather that it is the dynamic interplay among them that determines the ability of organisations to transform their performance. Failure to invest in and integrate:

1. organisational development (competencies, culture, organisational structure and learning);
2. process improvement and re-engineering (TQM, BPR, Benchmarking, etc.);
3. information technology

can block effective change in many organisations. He also emphasises the need for ‘creating an organisation which knows how to innovate constantly’.

![Fig. 3. Dynamic tensions between external forces and internal dimensions of the organisation (Source: Scott-Morton, 1995).](image-url)
3.1. Organisational development

Within the scope of organisational development a number of themes are of particular relevance with regard to competitive strategies and business transformation. These include core competencies and learning. In a landmark publication Hamel and Prahalad (1990) espoused the core competency theory which is a basis to formulate strategy around the key skills and attributes which an organisation requires to compete successfully. Similarly, Mascarenhas and Baveja (1998) suggest that the most successful organisations rely on three types of competency:

- superior technological know-how,
- reliable processes,
- close external relationships.

Their work focuses on how core competencies arise and how organisations can develop these whilst also emphasising that as an organisation’s core competencies evolve over time then a static view can be misleading. Their analysis and conclusions are based on case study work carried out on 12 very successful multi-national corporations (characterised by their longevity, high levels of profitability, low top management turnover) across US, Germany, Japan and India. Ultimately, leading companies do not stand still and rest on their traditional competencies. Instead they respond to or anticipate emerging business conditions. Secondly, a shift is occurring in relative emphasis from internal technological and reliable process competencies towards external relationship competencies. Having multiple competencies can make it more difficult for competitors to imitate. A similar view is taken by Kay (1993). It also increases the adaptability of the organisation and should promote long-term survival. These are significant considerations within the framework of Business Transformation.

3.2. Process improvement and re-engineering

The term BPR was coined by Hammer and Champy (1993). Initially, BPR was focused upon the use of IT to enable radical business change but has evolved into a focus upon the process, organisational architectures and cultures in its widest context and the overall linkage between strategy and business process in a top down scenario. The basic premise of BPR is that the rapid redesign of critical core processes of a company will generate breakthrough improvements on the performance of the company and create the competitive advantage in the global marketplace. BPR is supported by many authors and practitioners, while companies that have applied BPR have claimed dramatic gains as a result. (However, there is no shortage of failed BPR projects, Mumford & Hendricks, 1996.)

There are a number of other competitive strategies which are used in improving or re-engineering processes in support of business improvement. These include TQM, and Benchmarking. These are seen as less radical in nature to BPR which in its most radical form has been focused on the full end-to-end aspects of the business incorporating both suppliers, customers and competitors—quantum leap/fundamental reshaping focus (Hammer and Champy, 1993). Whilst, like many other enablers, BPR has been found wanting as a concept in some situations (Mumford & Hendricks, 1996), it remains a key element of many organisation’s strategy for business transformation and evolution.
3.3. Information technology

In the current passage from physical production to knowledge working enterprises are increasingly dependent upon information and the means to communicate and manipulate these resources. Because competitive advantage accrues to those enterprises that effectively generate, maintain and exploit knowledge of their business, competition, customers, suppliers, etc. then information technology has become critical to most organisations. In fact ‘competitive advantage through IT’ used to be slogan through which some academics responded to all the business ills of the past two decades or so.

Many writers have alluded to the importance of aligning and integrating the IT strategy with business strategy and the resultant implications for BPR and business transformation processes (Harty, 1998). This alignment whilst captured within the best companies often is missed by top executives more focused on product/service development or marketing. The results are that the business changes so desperately required by the organisation become the domain of the IT department and this function rather than playing the enabler becomes the owner of these projects. To understand and analyse how effectively organisations are utilising IT to support business transformation Venkatraman (1994) developed a very relevant model as part of his work at Massachusetts Institute of Technology (MIT) in which he differentiates between evolutionary business change, requiring minimal process change, and revolutionary levels of business change. The primary proposition was that;

the benefits of IT deployment are marginal if only superimposed on existing organisational conditions. Thus benefits accrue in those cases where investment in IT functionality accompany corresponding change in organisational characteristics (strategy, structure, processes, culture).

4. Empirical study

Having examined the literature on business transformation and the primary competitive strategies, what are the realities? Do the models hold when applied to the complexities of business, the pressures of global competition and the demands of the stakeholders?

4.1. Research methodology

A number of options were considered for performing this research; experiments, surveys, archival analysis and case study (Yin, 1989). Given that the nature of the research is primarily ‘how’ does business transformation occur, the researcher has no control over the behavioural events of the organisations being researched and the focus is on contemporary events the strategy of ‘case study research’ has been chosen. The nature of the research has thus been in-depth case study analysis of business transformation using interviews from key personnel, available documentation such as strategy documents and financial/business reports, archival records and direct observations. Interviews were the primary source of material. These interviews were semi-structured in nature which offered a high degree of flexibility.

The first of these case studies has been Short Brothers (now known as Bombardier Aerospace—Shorts), a leading aerospace organisation based in Northern Ireland with sites and customers
around the world. Short Brothers have gone through major transition from a government owned organisation consistently losing money and on the brink of closure to a successful global player in the market-place, respected for both its business performance and its technical acumen. The participants included Sir Roy McNulty, Managing Director/President from 1987 to 2000, executives in marketing, engineering and manufacturing and various other members of the workforce of Short Brothers during these years of major change.

What follows is an overview of the transformation which has occurred within Short Brothers and how this transformation has been achieved. Also considered is the applicability of the business transformation models to Short Brothers transformation. This transformation has taken the company from public ownership into private hands and in a relatively short period turned what was a consistent loss maker into a world class company on a par with the best performers in the aerospace industry globally.

4.2. Short Brothers—the business transformation

The history of Short Brothers goes back to the beginning of aviation history. The company was formed in Kent, England in 1908 and won the first ever production order for aircraft, given by the Wright brothers in 1909. In 1936 Shorts were established in Belfast and in 1943 was expropriated by the British Government. This ownership remained until 1988 when the Conservative Government under Margaret Thatcher set about the process of moving Shorts into private ownership and into the Bombardier Group on 4 October 1989 where it has remained since. Over the latter years of Government ownership Shorts went from one crisis to another, lack of profitability and no financial investment.

4.2.1. CEO’s strategy—approach to business transformation

Sir Roy McNulty was appointed managing director of Short Brothers in 1987 after periods of employment at senior management level at a number of large engineering/manufacturing organisations throughout the UK. The primary issues which faced Sir Roy McNulty in 1987 were:

- Getting accountability into the organisation.
- Obtaining investment and re-facilitating the company in terms of plant, equipment, systems, training and development. As an example some of the key manufacturing equipment was more than 50 years old.
- Pruning the organisation structure and overhauling the management processes including some re-aligning of the ‘product’ portfolio.

    In transformation it is critical to know where you are starting from and what needs to be done, different companies start from different points. I have personally seen companies who need to grow to be able to transform rather than downsize [Sir Roy McNulty, field interview].

    For Shorts there was a major need for investment and a new beginning. Also, very obviously, there was a major need for management development and the development of a senior team who could work together. Sir Roy McNulty would maintain at the initial stage he did not see much further than ‘the need to start to change’. Why was there a need to change?
- Losses were very significant.
- The competition were undoubtedly well ahead of us.
- Customers were getting more and more frustrated with our lack of performance.
- Human relations/industrial relations were not good (us and them).
- Government policy was privatisation (an opportunity).
- The feeling within the organisation was that we were ready to change.

The first senior management conference held by Sir Roy McNulty in May 1987 agreed that radical change was urgently required. As part of this early process of change and learning a number of the senior management team were tasked to study and take lessons from other global companies in a benchmarking exercise:

British Airways Ford
Pratt & Whitney Boeing
Japanese companies Lucas
Rolls Royce IBM
Deutsche Airbus ICL
British Steel Dana Corporation

The change programme was developed gradually and presented to the full management team in May 1988. It was named Project 2000 (Fig. 4).

These building blocks evolved over a period of years through privatisation in 1989 to a coordinated strategy for business transformation.

The ‘leadership now’ programme, a management development programme, was a critical element of this strategy. It was used as the mechanism to introduce new organisation structure and evolve accountability and core management practices. As the organisation went from a centralised organisation to a decentralised, divisionalised organisation the ‘leadership now’ project supported the management teams. Multiple components were knitted together as the Project 2000 strategy evolved and learning was gained from both internal experiences and external expertise as performance began to improve. In the late 1980s and early 1990s the board implemented a new bottom-line orientated management philosophy focusing on individual programme profitability and turnaround. This fitted succinctly with the divisionalisation. The funding for privatisation allowed the company to focus on ‘fixing what we have got’, including the

![Fig. 4. Project 2000—the building blocks.](image-url)
exiting of SD360 (Shorts own regional aircraft) which had been the mainstay of the organisation for the past 20 years, before pursuing new business.

Total quality became a central theme of the turnaround programme. Introduced in 1987 it grew into a very successful process for both cultural and business performance improvements supporting the philosophy of decentralised ownership, accountability and team-working. Further, management and unions worked hand in hand to improve industrial relations, support corporate wide training and encourage employee involvement in the whole transformation process from the top of the organisation to the bottom. The implementation of divisionalisation and the introduction of business units, the developments of the professional functions across all disciplines, the introduction of multi-disciplined design/build teams in all new programmes, the deployment of multi-disciplined cellular manufacturing introduced in all operational areas, the advancement of younger managers and significant spend on training, the capital investment of £200M, resulted in rapid improvement in performance including quality, schedule adherence, productivity and cost reduction. It also resulted in improved customer satisfaction and improved competitiveness as the 1993 results illustrate (Table 1).

Sir Roy McNulty’s conclusions from this phase of the business transformation are that privatisation was the essential catalyst for the transformation of Shorts. However, privatisation of itself was not a guarantee of success. In Shorts case many other factors contributed to the successful process of change including investment, capital restructuring, the cultural developments focusing on team-work, and the fact that management philosophy and values developed by Shorts fitted well with those of Bombardier, Shorts parent company. A good strategy for change, with management and workforce involved and enrolled was also seen as critical as was the capability and perseverance of workforce and management to see it through.

According to Sir Roy McNulty, stage two of the Business Transformation Process commenced in 1994, with what he calls “Becoming a world class competitor”. The business background for this were the recession in the aerospace sector, ever increasing competition and the desire and need within the company and from the parent organisation for increased growth and improved business performance.

The key change drivers were new partnerships and programmes and a changing aerospace industry in which Bombardier was playing an increasingly significant role. Short Brothers also invested in new business sectors including services such as repair and maintenance and strategic alliances (Table 2).

Having these new business sectors and a refocused organisation structure, governance systems became vital to holding the company together without losing the decentralised, accountable philosophy which had served the company well in the turnaround period. Thus, the governance processes including strategic and operating planning processes were revisited and improved for

Table 1
Comparison of 1988 and 1993 results (in millions)

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<th>1988</th>
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the updated situation. New elements of the competitive strategy were also introduced including intensification of benchmarking, especially across Bombardier Aerospace to improve the ways of working. Lower-cost suppliers were also sought and supplier consolidations were introduced. The implementation of Bombardier Manufacturing System based on MRP II principles was commenced and development of Bombardier Engineering System based on concurrent engineering principles was undertaken. Total Quality evolved still further through the 6-sigma project which commenced in 1996.

A significant aspect of the refining of activities in this second phase was the ability of the organisation to manage and support people in different parts of the organisation as the company evolved;

Roles and structures continually need redefined as the business evolves. We have seen this over the years as we introduced new business processes. As we become more aware of the value and need for ‘world class human resources processes’ our people tools need reviewed and redefined. [Sir Roy McNulty].

Results for Shorts as they evolved further through phase II, ‘Becoming a World Class Competitor’, were encouraging (Table 3).

The late 1990s have seen a revisioning of Shorts as a fully integrated element of a single organisation which is Bombardier Aerospace. This has enabled the further development of new synergies and capabilities at the new organisation level and the development of holistic strategies for enabling further business transformation, an example being the evolution of the 6-sigma programme across the organisation to eliminate waste and improve product quality. These directions supported by a singular corporate strategy continues to strengthen Bombardier’s competitive position for the long term in both the business and regional jet market and thus the position of the former Shorts Aerospace company within this larger organisation.

4.2.2. Empirical evidence versus models from literature

When comparing the business transformation of Short Brothers with the models presented from literature

- singular,
- holistic, and
- multi-stage
evidence reflects a multi-stage approach to business transformation. Whilst the transformation does not align totally with the proposed multi-stage business transformation model, it is more closely aligned to this model than either the singular or holistic models as defined. From the empirical evidence approximate dates can be attached to the multiple stages of transformation which Shorts have gone through:

Phase 1 Privatisation and turnaround 1987–1993
Phase 2 Becoming world class 1994–late 1990s
Phase 3 Long-term sustainability late 1990s–on-going

Each of these phases are distinctive in some ways but in many respects phase 2 is a continuation/refocusing of the first, building on the strengths of phase 1 whilst adding necessary focus and direction and stage 3 is an evolution of stage 2 but within a different organisational framework of a singular corporate organisation (Bombardier Aerospace). Included in the different stages has been the use of a range of different yet complementary strategic enablers to increase the overall business performance: benchmarking, evolution of Total Quality, Process Re-engineering and IT.

When comparing Shorts phase 1 with the multi-stage business transformation model (Fig. 2) a number of similarities are evident but also a number of dichotomies.

Stage 1: Restructuring

Objective: Minimum threshold of profitability
Key activities: right sizing, product portfolio pruning, overhauling organisational structures and business processes
Focus: Cost reduction, increasing capacity, optimising operations
Culture: Controlled from the top

The focus of ‘Privatisation and Turnaround’ was on the return of the company to profitability after many years of significant losses. Some right sizing was done, however, downsizing was not part of the transformation, rather a re-alignment of resources to focus on the key strategic areas. Organisational structures were overhauled in line with going from a centralised non-accountable organisation to a decentralised accountable one. In phase 1 the major process focus was on the operational re-engineering of the total production planning and control process, introducing associated organisational aspects, with significant investment in manufacturing facilities in

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*Note: In 1996 Fokker went into liquidation. The Fokker programmes represented 17% of sales. Short Brothers has withstood this major loss of sales.*
particular to remove bottlenecks, increase capacity in certain areas and upgrade product quality and cycle times. There was some focus on cost reduction but more-so on cost management and accountability and the turning of contracts into profitability. From a cultural perspective direction was given from the board but the whole ethos was to drive accountability and teamwork into the organisation.

When comparing phase 2, ‘Becoming World Class’ with the consolidated model again there are both similarities and dichotomies.

Stage 2: Revitalisation

Objective: enhanced profitability and growth
Key activities: redefining company vision, identifying new business opportunities, acquisition and alliance, renewing core competencies
Focus: customer focus, service and delivery, additional value added processes
Culture: empowering

The focus was primarily on growth of the business whilst enhancing profitability. No major redefining of the company’s vision took place although the move from ‘turnaround’ to the focus on ‘becoming world-class’ is a significant shift on emphasis. New business opportunities were identified and alliances/joint ventures did take place, the Defense Systems Division went into a joint venture company with Thompson CSF and the Nacelle Systems Division formed an alliance with Hurel Dubois. During this stage further development and honing of core competencies has taken place but in most cases this was primarily a continuation of work already undertaken in previous years. Customer focus is a major theme of this phase but again primarily an expansion of work already underway in the previous phase as is the focus on service and delivery. The major operational processes focus was on ‘product introduction’, where concurrent engineering was introduced with significant success. Empowerment continued to be the style of management.

Stage 3 is somewhat more difficult to specifically define, however, there has most definitely been a redefining of the company vision as part of the parent organisation with the emphasis on long-term sustainability through strong cost management, significant growth and excellence in the chosen markets and the development of skills and competencies within the corporation.

In summary, from the case study findings, during the early years of change (1987–1994) within Shorts the objectives of minimum threshold of profitability was achieved through radical transformation which mirrors closely the definition of stage 1, ‘Restructuring’, as described in the multi-stage model proposed. Secondly, during the period 1994–1999, from the case study findings, the business grew significantly and profitability was enhanced. The methods and approaches to achieving this was largely in line with the definition of ‘Revitalisation’ as described in the Multi-stage Business Transformation Model. Thirdly, there are signs of a transitioning to stage 3 with the confidence of long-term sustainability, focus on renewal and evolution of skills and product set and the continuity of significant profits. Fig. 5 summarises these findings.

4.2.3. Competitive strategy adoption—the evidence
4.2.3.1. Organisational development. Going back to 1988, an initial step taken was the reorganisation of the company into accountable divisions to support the key programmes in
which the organisation was involved. Further pruning and re-alignment of this organisation continued to support the strategy for business growth and diversification.

At a product level Shorts went from an organisation developing and producing a full suite of aircraft components as well as its own aircraft to an organisation focusing primarily on the design and production of Fuselages and Nacelles. This shift in focus allowed the organisation to develop its design and manufacturing core competencies in these areas to great effect through the learning from a number of major product developments and a focus on continuously improving on previous performance. Shorts are now regarded as competitive on a global basis with anyone in the design and manufacturing of these major structures.

Driving accountability into the organisation required a significant culture change from where the organisation was in 1988. At the commencement of the transformation process a major focus was put into management development. Consultancies, universities and other groupings were involved. Organisation structure changes, development of competencies, investment in people and facilities, including amenities such as canteens and work areas, the feeling of being part of a success, the globalisation of the company (e.g. joint development programmes with other Bombardier companies, Mitsubishi, GE, etc.) and the support of unions all contributed to the changing culture within the organisation. Significant focus was also put on team-working and good communications.

Thus, the empirical evidence supports the wide-spread usage of organisational development:

- structure,
- core competencies,
- learning ability, and
- cultural shift
as a key competitive strategy in supporting the business transformation. These have been integral themes in the overall change activity within Shorts.

4.2.3.2. Process improvement/re-engineering and IT. From the outset significant focus was put on Quality

- TQM started in 1987 initially using Juran methodology.
- Approved Operator Programme and Delegated Supplier Approval.
- Updated internal auditing.
- Statistical Process Control.
- Implementation of Boeing’s Advanced Quality System.

TQM was used as a basis for cultural change, improved team-working and overall performance improvement with many of the tools and processes at its core being used to support its implementation. Benchmarking was introduced. Various approaches were adopted including the use of external consultants to benchmark the company’s manufacturing capabilities against the best in class. Benchmarking was also heavily adopted across the Bombardier group to review processes and cost structures between group companies. After benchmarking came the European Functional Quality Model (EFQM), a basis for self-audit and improvement. EFQM had limited success as other significant change mechanisms were underway within the company which EFQM was not integrated too. Six-sigma was introduced in 1997. The primary focus was the reduction of defects and costs by improving processes which had a significant impact on the bottom line. Thus, Total Quality went through various stages of transition (Fig. 6) from a centrally controlled initiative based upon team-working, to a process focused perspective, to a product focused initiative.

This has evolved and transitioned in line with where the organisation has been focused at the time and the key competitive strategies at work. Where Total Quality has been successful is when it has been integrated. This view is supported by Richbell and Ratsiatou (1999).

Fig. 6. Shorts development of total quality.
The main thrusts of ‘BPR’ have been at a corporate level, the re-engineering of the strategic planning, financial planning and governance processes and at an operation level on the product introduction process, production planning and control process and the procurement and supplier development processes. They were chosen based on the view that much work needed to be done in these areas and significant business advantage could be achieved, thus they were viewed as very strategic. This corresponds with the views of Edwards and Peppard (1994). It was also a critical part of the company’s drive for competitiveness in the 1990s.

The implementation of this strategy has been a significant cornerstone in the transformation and has complimented and been integrated into the other elements of the overall change/ transformation strategy. These re-engineerings/process improvements when focused have resulted in dramatic improvement in product quality, schedule adherence, productivity and cost reduction and provided for improved customer satisfaction and improved competitiveness as the business results have shown. Fragmented processes and practices which were decades old have been replaced with up-to-date forward looking ways of working using the latest technologies to enhance and enable new ways of working.

Through the re-engineering of the production planning and control processes, replacement of many legacy applications with integrated systems and the driving of improvements in key metrics (e.g. inventory accuracy levels) significant improvements in performance were achieved. As an example, Table 4 shows the reduction in levels of manufacturing shortages per month during the period 1989–1999. Shortages have a significant effect on inventory levels and on-time delivery to the customer.

A second example is the re-engineering of the product development process. At privatisation it was recognised that a critical area for competitiveness was the product development process. Some work was initiated in the late 1980s, however, significant focus was commenced in 1992 following the winning of a major design contract for the new Lear 45 business jet. Although the Lear 45 project did not go completely smoothly it did achieve a reduction in first article component rework from an average of 12–2%.

Lessons were learnt from the Lear 45 project and improvements made for the next product development project, the Global Express. For Global Express the changes which were initiated on Lear 45 were re-enforced:

- Development of the Design Build Teams including increased multi-disciplined working. Also earlier interaction and working with the partners on the project, Mitsubishi and Canadair.
Evolution of the CAD and Engineering Data Management technologies and the introduction of formal procedures for control of this data.

Development of the planning, design, procurement and production engineering processes to perform more activities in parallel and focus on reduction of time to market.

After Global Express came the CRJ700 product development project. Table 5 gives examples of improvements in performance from the Global Express Project to the CRJ700 programme. These significant improvements resulted in Short Brothers being benchmarked as one of the three leading aerospace companies in concurrent engineering.

4.2.3.3. Information technology. At the commencement of the overall transformation in 1987 Information Technology was seen as a key enabler for the organisation to become competitive. At the outset the job of taking the IT function from a data processing department to a change enabler was given to a senior business manager. The IT strategy was evolved from and aligned with the overall organisation strategy and much effort went into ensuring business ownership for the key projects.

Significant technology investment took place during the first few years post-privatisation to ensure capacity for the ensuing transformation of business systems. This type of investment in technology and its importance in enabling or constraining change has been analysed by Broadbent, Weill, and St Clair (1999). Their study suggest that organisations which have developed a higher level of IT infrastructure before or concurrent with business change were able to implement change with greater speed and flexibility.

A great deal of effort also went into analysing the systems options and designing the best fit solutions. This was a process worked on jointly by business and IT personnel, often as part of BPR activities. The resulting implementations allowed both customers and suppliers to work as an integrated organisation. When relating the empirical evidence to Venkatramam’s model for IT enabled business transformation, the primary focus of the major developments for Short Brothers have been on enabling process redefinition. The IT developments have been used as a lever for the redesigning of the new organisation, its ways of working and the associated new business processes.

4.2.3.4. Integrated use of change enablers. Overall in the business transformation of the organisation the competitive strategies of:

- organisational/competency development,
- process improvement/re-engineering, and
- information technology.

have been combined to great effect as shown in Fig. 7.
Change has been a constant theme since privatisation. The ability to integrate the competitive strategies into a coherent change plan has been a skill learned by the organisation through management development, the utilisation of consultants, lessons learnt from other organisations and the experience of making change occur. The case analysis also found a number of instances where isolated efforts had been attempted at improving performance using a single competitive strategy, e.g. IT without changing the process or organisational responsibilities. These in general were less successful for the company as a whole.

5. Conclusions

Whilst business transformation initiatives often arise out of crisis and are driven by dedicated leaders, research indicates that transformation can also be triggered in response to opportunity, e.g. growth. The empirical evidence from our Short Brothers case study would strongly indicate that this organisation has been able to transform itself, a process which is on-going, through a multi-stage transformation process. Both leadership and the alignment of short-term programmes with the long-term vision have been critical to the success of the transformation as well as an integrated approach to the strategic change enablers of organisational development, process re-engineering and exploitation of information technology. These are consistent with Sir Roy McNulty’s view that key to the transformation is the understanding of both where you are at present, some view on where you wish to get to and thus the key strategies which need to be applied, i.e. business transformation is not generic. This is consistent with Mintzberg’s views on strategy and business transformation (Mintzberg, 1994).

Critically, leadership is one of the primary requirements to make business transformation successful. The leader is required to be both visionary and operationally focused, lead major change whilst also providing improved profitability and often change the organisations culture whilst also continuing to command the trust and commitment of the workforce. Without clear
and accountable leadership, progressively at many levels in the organisation by many people, business transformation is without doubt doomed to failure. Further risks to business transformation include the small isolated initiatives at change. Unless these are structured into broader programmes supported by organisational, process and often information technology developments then they will in the majority of cases have very limited benefit to the company.

Many organisations have failed to learn such lessons and have floundered on the ‘silver bullet theory’ of singular competitive strategies and ‘one-off’ approaches to transformation of their businesses. As each ‘transformation’ fails to meet its unrealistic objectives, shareholders run out of patience with the change initiative and the ability of the organisation to achieve its business transformation becomes more difficult. Employees become reluctant to give their commitment to the next ‘new’ initiative and the organisation’s ability to transform itself becomes weaker and weaker.

References


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