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EVOLVING STRATEGIES, STRUCTURES AND RELATIONSHIPS IN COMPLEX AND TURBULENT BUSINESS ENVIRONMENTS: THE TEXTILE AND APPAREL INDUSTRIES OF THE NEW MILLENIUM

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ABSTRACT

Over the past four decades the textile and apparel industries have witnessed rapid technological change, global integration and shifting demand requirements. Consequently, many of today's firms look radically different, compared to forty years ago, in terms of their capital and technical intensity, their manufacturing and business process capabilities, and their business scope, structure and relationships. As the business environment in which textile and apparel manufacturers operate continues to become more dynamic, diverse, complex and hostile, the process of transformation will continue. New strategies and organisational forms are emerging with a trend towards de-integration, involving a focus on core competencies and the separation of the physical processing functions from the creative 'brain functions' within the supply chain. In some ways, this represents a return to the pre-industrial system of manufacture where physical production was in the hands of commission manufacturers, while the creative design and marketing functions were performed by merchants.

INTRODUCTION

Over the last 50 years, the internationalisation of markets and competition, advances in product, process and business technologies and changing consumer requirements have brought about radical and continuous change in the textile and apparel industries. A few of the transformations over this period have included the emergence of large, powerful retail groups; widespread integration and then de-integration in textile manufacturing, the emergence of diversified apparel companies without factories, and the development of new channels to market, such as the Internet.

The paper is split into two parts. Part I provides an overview of how environmental change has shaped and re-shaped the textile and apparel industries since the industrial revolution. Part II (in the next edition of this journal) will contemplate the likely competitive and organisational characteristics of the industry and company of the future.

Although the patterns of change have varied significantly between firms, industry sectors and nations, the underlying forces shaping the industries are pervasive. Diversity between companies and nations typically reflects different environmental conditions affecting the technologies they employ, the strategies they pursue and the specific nature of the product markets in which they operate. This paper presents a generalised view based on a synthesis of the experiences within the industrialised nations.[1]

ENVIRONMENT, STRATEGY, STRUCTURE DYNAMICS

Strategies and structures of firms and industries reflect the nature of the environment in which they operate.[2] When environments change, companies have to adjust their strategies and organisational structures to match. Business environments are shaped by a combination of sociological, political, legal, technological, natural and economic forces.[3] For simplicity, this paper will focus on 3 key drivers: demand, technology and competition.

Mintzberg [4] describes four dimensions along which business environments can be classified. These relate to their degrees of stability/dynamism, simplicity/complexity, homogeneity/diversity and their munificence/hostility. Each of these dimensions plays an important role in shaping the organisational structures which firms adopt. Dynamic environments call for flexible structures, while stable conditions on the other hand, will favour more bureaucratic structures. The more complex the environment, the more decentralised successful organisational structures tend to be, while extreme hostility in the environment, such as an economic depression or the loss of a key customer, may drive a firm to centralise power temporarily so that it can respond quickly and in an integrated fashion. Finally, the greater the degree of diversity facing a firm, the greater is its propensity to split itself into discrete units organised around the source of diversity.

Toffler [5] and Ansoff [6] have noted that business environments are becoming progressively more turbulent, driven by events that are increasingly rapid, more difficult to understand, originating from a wider array of sources and becoming more unpredictable.* Thus, in Mintzberg's terms, they see business environments becoming increasingly dynamic, complex, diverse and, perhaps, hostile. Toffler argues that industries are currently in a stage of transition from the industrial era to the information or knowledge era. In this transition they are being re-organised and re-defined. IT is seen as transforming business capabilities by reducing traditional capital and geographic barriers to competition; by permitting micro-segmentation of markets and efficient, demand-responsive, small batch or custom manufacturing; by enabling an accelerated pace of innovation; and by increasing the importance of knowledge as a core competence.

Work by Harrigan [7] indicates that, under turbulent conditions, manufacturers which emphasise horizontal and vertical integration may be out of 'congruence' with their environments. Shifts in demand, competition or technology may make vertical capacity configurations less appropriate. It can also tend to make companies inward looking and slower to identify, learn and deploy new capabilities.[8] In these circumstances, non-integration or 'quasi-integration' may be better.

Hope and Hope [9] note that IT-based automation has led to a collapse in transaction costs between independent firms. Such IT-based automation and escalating competitive pressures have led to an explosion of outsourcing a break-up of conglomerates and the development of alliances and economic webs. The result has been fewer large corporations supported by networks of small independent businesses. The ultimate expression of this new movement is the 'virtual corporation' which uses these technology links to co-ordinate its supply and marketing activities without owning any of them.

Finally, Ansoff [6] describes how companies adapt to environmental change. He describes a continuum of environmental turbulence ranging from 'stable' or unchanging, to 'creative' or extremely turbulent. Where an environment has remained in a particular state of turbulence for some time, he says, the largest proportion of incumbents will exhibit similar strategies and capabilities, as appropriate to that level of turbulence. When turbulence escalates, companies need to develop new capabilities that match the new level of turbulence. However, responses are often determined by a company's level of organisational openness to change. Stable firms, he describes as closed-off, change-resisting cultures that refuse all pressures to change. These are often the first firms that are shaken-out of an industry as turbulence escalates. Reactive firms are also change-resisting cultures but they will respond, albeit only after the change has damaged their performance. Anticipating firms, he describes as change-seeking cultures that will only change with the crowd, when the full impact of an increase in turbulence has been felt. Exploring firms he describes as cultures that seek out new developments and exploit them ahead of the crowd. Finally, creative companies he describes as cultures that create the changes themselves through innovation.

* Alvin Toffler was among the first to make these general observations in his book, "Future Shock".

THE PRE-INDUSTRIAL AND EARLY INDUSTRIAL TEXTILE AND APPAREL ENVIRONMENTS

Prior to industrialisation, textile and apparel manufacture was characterised by a cottage form of organisation. Manufacturing processes were typically performed by a series of independent specialists that performed a single activity. The supply chain was co-ordinated by a series of merchants. Poor communications meant most markets were local or national in nature. A wide variety of yarns and fabrics could be produced in small quantities. Finished products were either home-made or customised by tailors or seamstresses.[10,11]

With mechanisation, the industry gravitated from homes into factories. As markets expanded through a combination of population increase, economic expansion, real price reductions and technological change, demand became more varied and subject to more change influences. Despite the movement into factories, the industry remained highly fragmented, due to a lack of capital, low product differentiation and few economies of scale in production. Another important factor was the unique combination of skills and equipment needed to convert a given input into a particular end product. Companies were also horizontally specialised, typically focusing on a limited range of items whereby they achieved many of the economies of specialisation but alleviated some of the concomitant risks. Where companies did diversify horizontally, it was usually associated with the co-existence of flexible production technology and marked seasonal variations in demand (knitwear and apparel) and with industry consolidation in mature and declining sectors.[10,11]

Specialisation on a single activity in the production chain was also encouraged by a combination of factors. Firstly, markets were varied and subject to significant demand fluctuations. Secondly, demand swings were often between products related in consumption but not in production. Thirdly, there were a large number of process stages and their diversity in terms of capital, scale and skills, and input-output requirements made integration problematic. Vertical integration tended only to occurr in sectors where production was more flexible such as the woollen and weft knitting industries; and where demand was standardised and stable, such as household textiles; and where there was a combination of influences, such as men's suits.

However, the fragmented industry structure was regarded as a major handicap, resulting in too many small orders and product variations. Firms were regarded as too small to attract good management and financially too weak to invest in new equipment. The horizontal structure of the industry was also regarded as having several disfunctional effects, including a process orientation and distrust and suspicion between firms at successive stages. These resulted in a lack of co-ordination and hindered re-equipment and innovation.[10,11]

Overall, companies operated in environments that were relatively simple, stable and homogeneous. Firms worked to the requirements of merchants and demand patterns changed relatively slowly. Although, competition was intense, owing to the many suppliers and the commodity-like nature of products, firms in the industry were relatively homogeneous and the nature of competition was easily understood. As a result, firms had simple, bureaucratic structures. At the industry level, flexibility was built in through the looser network linkages between the many manufacturers and merchants at every stage.

THE MASS PRODUCTION ERA.

I. Introduction

As industrialisation proceeded, mass production techniques were adopted by an increasing number of textile and apparel firms. Large-scale production of standardised products in vertically-integrated mills first began in the US in the early 1800s. However, it was not until the 1960s that the manufacturing philosophy established by the Waltham Company of Massachusetts in 1813 became more widely adopted outside of the US.

II. Environmental Changes During The Mass Production Era

From the late 1950s the textile and apparel industries experienced a trend increase in environmental turbulence. On the demand side, the growth of casual and informal lifestyles, the penetration of fashion into mass markets and the emergence of youth culture, heralded increased market segmentation. At the same time, synthetic fibres expanded the technical applications for textile and apparel products and stimulated rapid growth in demand for carpets, hosiery, warp and weft knitting and non-wovens. In parallel, automation in textiles enabled higher production volumes and lower unit costs through the substitution of capital for labour.[10,12]

Competitive pressures also intensified, as a steady stream of new entrants to international markets resulted from falling trade barriers and improved international communications. In addition, the industries witnessed the growth of large retail groups that lowered prices to the consumer by exploiting economies of scale and standardisation. These exerted increased bargaining leverage over their suppliers and a few, such as Marks & Spencer, established vertical marketing systems to control all aspects of production and marketing.

These changes served to increase environmental turbulence along all four dimensions. Demand shifts made the market more diverse, difficult to understand and subject to more frequent and difficult to predict changes. The advent of synthetic fibres resulted in a need for more product and process innovation and higher technical skills, thereby increasing the environmental dynamism, complexity and diversity facing companies. The expansion of foreign competitors with different costs structures and competitive orientations made the environment more diverse and hostile, and more dynamic through increased uncertainty. Similarly, retail bargaining power increased the hostility in the environment, although manufacturers could retain a relatively simple environment by servicing the needs of these major retailers.[10,12,13]

III. Strategic and Organisational Changes During the Mass Production Era.

In responding to these changes, there was a trend towards vertical integration and horizontal diversification. Vertical integration in the textile industry was prompted by the belief that it would improve supply chain co-ordination, facilitate product innovation, permit investment in more modern process technologies and allow the development of brands. Horizontal diversification in both textiles and apparel was influenced by the growth of new sectors, such as texturising; warp and weft knitting, non-woven fabrics, carpets, casualwear and sportswear. Further advantages were foreseen in the spreading of risks. In textiles, a process of product range rationalisation and re-equipment in the pursuit of lower unit costs also accompanied integration. The resulting emphasis was on large scale production of basic fabrics manufactured on more automated, high output equipment.[10,11,13,14]

IV. The Outcome Of Changes During the Mass Production Era

Consolidation via acquisition and merger, resulted in the creation of large groups and a shake-out of smaller, less capable manufacturers. In the process, many family-owned operations and many intermediaries were eliminated. Productivity rose significantly, but in textiles, the focus on standardised fabrics made companies vulnerable to any shift towards more varied demand, while verticalisation did little to alter the industry's process orientation.[10]

CHANGES DURING THE INFORMATION ERA

V. Introduction

Since the late 1970s, the structure that developed during the 1950s and 1960s has increasingly broken down. Mass production and standardisation have given way to an emphasis on variety, flexibility, speed, innovation, and brand positioning and promotion as a means to differentiate from competitors. These changes have encouraged the development of more flexible manufacturing and supply chain technologies, resulting in extensive de-integration as textile and apparel companies have focused on core competencies and striven for greater flexibility. Another important development has been the increasing internationalisation of manufacturing and marketing operations, with an increasing number of firms sourcing, manufacturing and marketing their products across many countries. The antecedents to these changes have been the continued escalation of international competition, the application of new information technologies and greater demand fragmentation.

VI. Environmental Change During The Information Era

A. Demand

During the last two decades consumers have become increasingly sophisticated, demanding more frequent innovation, greater exclusivity, more choice and better service. They have also become more discriminating on the total value for money package. At the same time, the growing trend towards more informal and active lifestyles has created demand for new fabrics and garments, while demand for more traditional formalwear has declined. These changes have not only increased the diversity of products on the market, but future needs have become more uncertain and subject to more frequent change. A high level of market segmentation has also occurred as niches and micro segments based on age, ethnicity, income, lifestyle and location have developed. Superimposed on these trends has been the emergence of international market segments. These have developed as a result of a convergence of lifestyles towards an industrialised, urban, consumer lifestyle model. Underpinning this movement has been continued trade liberalisation and improved international communications. The ability to identify and exploit the above trends have been behind the international success of companies such as Benetton, Polo Ralph Lauren, Laura Ashley, Nike, the Gap and Tommy Hilfiger.[10,11]

B. Technology

While new technical applications and performance characteristics have continued to improve and widen the application of textile and apparel products, the most significant technological changes have been brought about by IT. IT has made a major contribution to the reshaping of textile and apparel manufacturing and retailing by enhancing the operational, logistical and marketing capabilities of companies. Initially, IT was applied to improve internal efficiency, flexibility and quality control through automation. Increasingly, it has been applied to management of the production process itself and extended to include linkages with customers and suppliers. This has enabled a re-engineering of business processes and a reconfiguration of business networks within the supply chain. The outcome has been shorter product development and replenishment cycle times, lower stockholding and improved supply chain accuracy through close integration of operations at successive stages with the retail point of sale.[11,15]

IT has also brought about a re-definition of business scope in many companies. Improved data capture, processing and low cost automated communications have permitted the spin-off of non-core activities; encouraged the separation of manufacturing from marketing and enabled the targetting of a wider array of merchandise at specific customers. IT has also intensified international competition by enhancing communications with distant customers and suppliers, spawned new channels to market such as the Internet, and it has given rise to an expansion of customised products and services.[10,15]

In addition to IT, the international diffusion of management systems and philosophies such as TQM and ISO9000/9002 as global standards has intensified international competition. Other, newer management systems and philosophies have also significantly impacted the industry. These include quick response/efficient consumer response, and concurrent design or simultaneous engineering methodologies. These new techniques are permitting compression of manufacturing lead times, new product developments cycles and the development of more agile manufacturing systems.[15,17,18]

C. Competition

Since the 1970s, international competition has steadily escalated, spurred by a continued reduction in trade barriers, further improvement in international communications and a more conducive attitude towards international investment by national governments. Within the overall pattern of global integration, the creation of regional trading blocs, such as the EU, NAFTA and ASEAN has resulted in more rapid regional integration.[10,20,21,22]

The intensification of international competition has seen the range of internationally traded merchandise expand. As new entrants have continued to appear on international markets, companies in the more established developing and newly industrialised countries have diversified, moved up-market and some have established a global presence. In parallel with these developments the growth of markets in the industrialised countries has moderated.

Competitive pressures have escalated even in the upper market segments, where manufacturer, retail, couture and non-traditional brands all compete for the consumer's attention.[10,12,13,16,19]

Consequently, the profitability of the two industries has been severely squeezed. Conditions have been exacerbated by the increased volatility of the world economy since the mid 1970s, with a series of sharp recessions punctuating periods of strong growth.

D. Retailing

Changes at retail level have been another important source of competitive pressure on the industries. Retail competition has intensified as large retailers have reached the limits of expansion nationally, as non-traditional outlets such as supermarkets, hypermarkets and discounters have expanded their presence, and as tele-shopping and Internet-based retailers have developed.[10,15,23]

Retailers have pursued new avenues for growth, broadening their range of merchandise and establishing new chains or formats to service different market segments. To control costs, they have increased their use of international sourcing. They have also emphasised fashion and heavily promoted their own private labels. In addition, a growing number, such as Benetton, Wal Mart, Marks & Spencer, Carrefour and Gap Inc. have expanded internationally.

These changes have had far reaching effects on suppliers. Firstly, the ability of retailers to switch orders overseas has been used to constrain the prices of domestic firms. In addition, they have also demanded higher levels of product innovation, more services and greater flexibility from suppliers. Increasingly, this has included the transfer of costs and risks associated with stockholding. There have also been reductions in the supplier base to large retailers in the pursuit of scale economies in manufacturing and distribution. [10,11,23]

Overall, these developments have increased environmental turbulence along all four dimensions. Market requirements, competitive dynamics and the technologies utilised by the industries have all become more complex. Similarly, the diversity of customers served, competitors faced and marketing channels used has increased. There has also been an increase in environmental dynamism because future needs and competitive conditions have become more uncertain and subject to more frequent change. Hostility has increased through the escalation of international competition and the pressures applied by large retail groups. These conditions have underpinned the transformation of industry and organisational structures that have been seen over the last two decades.

VII. Strategic Responses During the Information Era

The escalation of environmental turbulence has resulted in major strategic changes in the textile and apparel industries. However, as many firms were change-resisting cultures, these often came after the effects of poor profitability, a shake-out of weaker companies and significant reductions in capacity. Faced with the need to adapt, firms have generally closed under-utilised capacity and withdrawn from loss-making businesses. In textiles, capacity reductions within the industrialised nations have been concentrated in apparel. There has been a consequent shift towards home textile and technical textile products and markets. By contrast, apparel companies, faced with market fragmentation and shifting consumer requirements, have continued to diversify and expand their retail involvement. A wave of acquisitions and mergers have accompanied consolidation across the two industries.[11,24,25,26]

Overall, the pattern of change has reflected a focus on core competencies. Some companies, such as Burlington Industries, Courtaulds and Coats Viyella have focused on core product competencies. Others have focused on servicing the needs of specific customers and market segments with a wide range of merchandise. These include companies such as Dewhirst group in the UK, Polo Ralph Lauren, Liz Claiborne, and Kellwood & Company in the US. An increasing number of companies are also de-integrating non-core functions and business processes, including logistics and manufacturing, itself. An increasing number of apparel companies such as Sara Lee are deciding that they do not need to manufacture. Rather, they see their core competencies as being in design, supply chain management and marketing. Contrary to the general flow, there have been instances of vertical integration between textile and apparel manufacturing where demand is relatively homogeneous and stable. In the past integration between textiles and apparel (with the exception of knitwear) have usually met with little success because of the diversity of the two activities. The most recent cases include Burlington Industries and Galey and Lord in the US, both of whom have acquired apparel manufacturing capacity complimentary to their fabric operations. These companies have stepped in as their customers have stepped out of physical assembly.[11,24,25,26]

Three other important strategic changes over the last 20 years are noteworthy. Firstly, there has been the increasing internationalisation of manufacturing and marketing operations, in response to intense competition and emerging global market opportunities. Secondly, there has been increased involvement in consumer marketing by apparel manufacturers, notably through catalogs and factory outlets, in response to more dynamic and complex market conditions. Finally, there has been the growth of owner-managed companies through management buy-outs, in response to the threat of hostile takeovers and the perceived under-valuation of textile and apparel shares.[11,24]

Business strategies have reflected intensified efforts to establish bases for differentiation. These have included market segmentation and brand positioning, product promotion, continuous product innovation, rapid and flexible response to customer requirements and the provision of value-added services. The rapid growth of brand licensing has reflected the need to utilise brand assets to target a wider assortment of goods at existing companies or to appeal to new market segments. At the same time there have been intensified efforts to engineer costs downward through automation, improved supply chain management, and transfer of manufacturing, sourcing or sub-contracting to low cost off-shore locations.

Overall, these changes have required heavy investments in technology, management systems, product design, marketing and people. Against a background of poor industry profitability, many firms have not succeeded.

VIII. Structural Change During the Information Era

Environmental changes have served to increase the pressures on textile and clothing manufacturers by removing stability of demand for their products, by placing more of the risk burden on them and by changing the combination of skills and equipment they require. Those geared to mass production of low fashion products that have lacked design and marketing capabilities have had the greatest difficulty adapting. In Europe, vertically-integrated groups have proved too inflexible in the apparel fabrics arena. Although some companies have retained a vertical element they are non-integrated. US companies have been better able to retain vertical structures (outside of knitting and household textiles) by concentrating on high volume production of more basic items such as denim, khaki and shirtings. In apparel, de-verticalisation is occurring as an increasing number of traditional manufacturers are reducing their direct involvement in assembly in favour of sub-contracting. To some extent, this is being counter-balanced by a movement downstream towards retail and direct marketing. Overall, de-integration in textiles and apparel is being driven by the increased need for flexibility and innovation, and facilitated by the lower transaction costs of maintaining external suppliers.[10,11]

Nevertheless, the growth of larger companies has still been encouraged by higher investment needs, reductions in their supplier base by retailers and growing international opportunities. These influences have helped encourage the growth of large apparel manufacturers and seen a reduction in the size and scope of diversified textile groups.

Through de-integration, a growing number of manufacturers have developed the characteristics of merchants, managing a network of sub-contractors. These companies perceive that their core competencies centre around knowledge of customers, products and/or markets rather than physical activities. Networks of smaller suppliers service niche markets or act as sub-contractors to the larger companies. Within this horizontal industry structure, speed, flexibility and innovation are being achieved by ‘virtual integration’ involving intimate inter-organisational linkages using IT supplemented by inter-company, multi-disciplinary project teams.

This has involved a radical re-engineering of organisational structures and systems, and inter-organisational cultures. There has been a shift from mutual antagonism towards partnership, a flattening of management hierarchies, and the decentralisation of power within companies to business units, teams and individuals dealing with the sources of environmental diversity, complexity and dynamism.[17,18,24]

IX. Outcome of Changes During the Information Era

The changes over the last 20 years represent a substantial increase in environmental turbulence. Firms are operating in significantly more complex and diverse environments that are more subject to intense competitive pressures, and rapid and unpredictable change. In Ansoff's terms, the business conditions in many textile and apparel sectors are akin to exploring or creative environments. Consequently, companies have also become more open to change. They have become more flexible and creative, with an emphasis on continuous development. Those that have not are no longer in business or are in fossilised segments.

Because of technological change, capital requirements in both textile and clothing production have continued to increase appreciably. As a result of the process of consolidation, a significant body of medium and large-sized companies has emerged. However, these often contain smaller business units that are able to focus on meeting the requirements of specific markets or segments. In this way, they hope to combine the micro flexibility of smaller, specialised firms in serving dynamic and fragmented markets with the financial strength and macro flexibility of large diversified groups, able to invest in the latest technologies, exploit international market opportunities and transfer resources into or out of specific business sectors. Nevertheless, a large number of small companies continue to compete with the major firms, by serving specialist market niches where demand is fragmented and dynamic.[10]

While IT and new management approaches are helping to transform textile and apparel supply chains, the process of change has been relatively slow and often the full benefits are not being realised. This has been due either to a lack of internal integration within companies themselves or due to external factors, such as mutual distrust between supply chain members, and companies being at different stages of ‘openness’.

Part II of this article, in the following edition of this journal, will look forward to consider the future dynamics of the global textile and apparel business environment and examine how these are likely to reshape the textile and apparel company of the future.

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