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# TEXTILE LAB: CONNECTING DESIGN INNOVATION WITH MANUFACTURE

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## ABSTRACT

This paper reports on the *Textile Lab* project as a case study focusing on the role of design innovation in relation to the challenges facing today's Scottish textile manufacturing industry. This research aims to explore how new methodologies can be developed to facilitate greater dialogue between academia and business. The paper examines the role academia might play in re-negotiating new, often complex and transitory relationships between industry and consumer design.

As academic partner on the project in collaboration with Scottish Enterprise, the author reflects on the methodologies developed for mapping the creative process during the different stages of the *Textile Lab* case study focusing on the intimate collaborative relationship between designer and manufacturer whilst also examining the journey from concept to marketplace. Over a three-year period a total of twelve collaborative partnerships have been supported through *Textile Lab* resulting in a major strategic change for one company and a European design award for another. This dialogue with the Scottish textile industry has resulted in a number of key findings to be discussed in this paper on the relevance and importance of design to its future identity, economic growth and global success. The paper concludes by discussing the value of Higher Education in developing research partnerships with industry.

*Keywords: textiles; design innovation; manufacture; collaboration; regeneration*

## 1 INTRODUCTION

Government policy recognises that the future of British manufacturing lies in a focused approach towards premium value niche market products with a high level of design content. (BERR, 2008) Mechanisms are being put in place to facilitate this shift in manufacturing towards a more design led economy. As one of the six key sectors within Scotland (Scottish Enterprise, 2008), the textile industry today faces considerable new challenges. A new approach to manufacturing is required with specific emphasis on design innovation. (Jones, 2009) As a response to these dynamic global changes affecting the sector, Scottish Enterprise, the main economic development agency in Scotland set up a seed funded initiative entitled *Textile Lab*. *Textile Lab* aims to embed new design thinking within textile companies, who may currently exist with little or no in-house design capability.

## 2 A SCOTTISH PERSPECTIVE: GLOBAL VERSES LOCAL

The industry in Scotland has a unique cultural identity with a commitment to quality and heritage whilst at the same time an ability to innovate and re-generate. (Scottish Enterprise, 2008) It has a long and distinguished heritage where reinvention has been key to its global success. These core strengths of Scottish textiles for quality, re-generation and an ability to innovate are of particular significance to the author.

In the 1980's the industry focused predominately on mass manufacture rather than niche markets both within the clothing and technical markets. However, by the 1990's these markets had moved offshore mainly to China and the Far East. Niche markets less affected by this manufacturing trend tended to be businesses with a strong Scottish identity related to tartan.

The industry today has radically changed, no longer concerned with mass markets it has retained the skills and heritage of the past and is now characterised by its capabilities within design, production and innovation. Scottish textiles have retained a reputation for quality and by moving towards niche markets, which are more linked to contemporary fashion and lifestyles has an opportunity to succeed in a global context (Scottish Executive et al. 2000).

### **3 GLOBAL MARKETS & GOVERNMENT INITIATIVES**

The importance of design innovation within British industry has been recognised as a government concern if businesses are to survive the increasing international competition of new economies. New mechanisms and initiatives were implemented as a result of the Cox Review of Creativity in Business (Cox 2005). The review highlights the importance now being placed on design led product innovation as a valuable commodity in a competitive global market, which the government is keen to strategically harness through policy.

There are, however some deep cultural issues related to how design is currently perceived within business. British industry has one of the poorest records in Europe for investing in design (Elliot, 2005) and where Scotland has an even worse record (Design Council, 2005) with few companies understanding the contribution that design can make to their business (Hood et al, 2002). Design is seen as a luxury with companies currently perceiving investment in design as a waste of time. In order to change this culture, risk aversion needs to be overcome and mechanisms put in place to exploit design potential with minimum threat to the business.

### **4 TEXTILE LAB**

*Textile Lab* was initiated by Scottish Enterprise in 2005 to “encourage Scottish textile businesses to experiment with product, or market diversification: through new partnerships, collaborations and research. The project supports textile companies to develop a creative strategy and undertake an innovative project that will lead to new markets, increased sales and an increased innovative culture within business.” (Scottish Enterprise, 2005)

A total of twelve collaborative partnerships between design and manufacture have been supported through the initiative. As part of the programme, the University of Dundee worked alongside the project as academic partner and project facilitator to map the creative process in each of the partnerships involved capturing the dialogue from initiation to conclusion between the designer and the host company. The case study provides a unique opportunity to gain insight into the relevance of design innovation within today’s textile manufacturing industry in Scotland.

#### **4.1 Methodologies Used To Map Design Innovation**

From the outset a clear set of methodologies were established to capture the intimate relationship between host-company and designer from start to finish. A quantitative evaluation tool was developed using a structured series of questions to interview the involved participants at key stages during the project. A series of site visits were made during the project where a range of visual media was used to capture and document the collaborative process.

##### **4.1.1 Beginning**

In all cases projects were initially scoped out with the manufacturer to identify opportunities for collaboration with an external designer or design company. The current business was mapped through dialogue with a company representative with a review made of their existing manufacturing and design processes. A clear understanding of the company’s ambitions and expectations for the project was established. Through providing design management expertise a project brief was then drafted including proposed costs, outcomes and timescales and evaluated for seed funding support (Press & Cooper, 2003). An initial meeting was then organised between proposed designer, manufacturer and project facilitator to establish a clear set of project objectives, deadlines and goals.

##### **4.1.2 Middle**

Regular monitoring of the individual project’s progress between both the designer and manufacturer was made to ensure current expectations were being met by both parties. It was important in all cases to ensure that there were clear lines of communication between both parties at all times. A further site visit was made at this stage to capture the emergent relationship and dialogue between the two parties and evaluate the progress of the project to date. At this stage a series of textile samples were evaluated for

further development towards prototypes. A further site visit was also made to the designer's studio to gain additional insight into the designer's working methods, environment and individual insights concerning the industrial collaboration.

#### **4.1.3 End**

"It's been a real partnership." (Manufacturer's comments on the value of the project)

A detailed case study for each individual collaboration was made post completion highlighting areas of good practice and areas of opportunity for future design development. An analysis of the case study on an individual project basis was undertaken. The analysis specifically focused on the observations made during mapping and suggested a number of key recommendations to Scottish Enterprise through white paper reports for the continuing regeneration of Scottish textiles. The projects were further reviewed six months later to ascertain the longer-term benefits to the businesses in terms of increased sales, an increased culture of innovation within the business and the wider benefits to the Scottish textile community.

## **5 FINDINGS FROM THE TEXTILE LAB PROJECTS**

Due to the commercially sensitive nature of many of the projects it is not possible to discuss the details on a case-by-case basis. Instead, in this paper a number of important generic issues that have resulted from the case study are presented.

### **5.1 High-end niche markets**

All of the host companies involved acknowledged that the only sustainable way forward was in the production of premium priced niche market products. All projects focused on this area of development and used their new design capability to add value to new high quality products.

### **5.2 Brand identity**

Many of the companies involved in the case study did not have a strong unique brand identity. In house marketing and branding expertise were also seen as superfluous to requirement. This has only been possible previously due to the strength of the Scottish brand, which remains a significant market differentiator. However a re-definition of the Scottish brand is now required which is not linked solely to Scottish traditional products for a changing international market.

Working with design companies with their own high value brand has for a number of the businesses significantly increased their own brand value. Through collaboration with high-profile designers, manufacturers have gained access to new more contemporary international markets.

### **5.3 The Changing Far East Market**

Even though Scottish textile businesses can currently maintain market share through well designed and manufactured products, promoted under the Scottish brand, most companies were conscious of the fact that the Far East market is catching up fast. They are aware that they cannot rely on these unique selling points in the long term and that they need to develop strategies for staying ahead of their competitors. Central to this longer-term vision is the effective use of design for regenerating and reinventing products and markets. The opportunity to outsource a large proportion of manufacturing to the Far East is possible, however this undermines the quality of the established Scottish brand and customers perceptions of the product's Scottish authenticity. All of the companies involved demonstrated a real commitment to keeping the main proportion of their manufacturing within Scotland.

### **5.4 Need for constant innovation**

As mentioned above the future of Scottish textiles lies in the development of high-end niche markets. To stay ahead of their competitors, the companies involved in *Textile Lab* recognise that constant innovation in these market areas needs to take place. Businesses are using design thinking in a variety of ways:

- To reassess the potential of existing manufacturing technology
- To develop the potential of new manufacturing technology
- To produce new cutting edge product
- To explore the use of traditional materials in alternative contexts

### **5.5 Collaboration**

Through conducting a number of collaborative projects it is clear that a strong sense of community exists within the Scottish Textile industry. Companies are happy to share information and resources with competitors to support the sustainability and growth of the industry. Building further links with universities can be developed to support future collaborative projects. With all companies there is a genuine aspiration to develop future collaborations. As a direct result of the *Textile Lab* project the companies have attracted a more contemporary clientele and new collaborative partnerships for the future have emerged. The project highlights the benefits for manufacturers in collaborating with cutting edge designers with their own strong international profiles.

### **5.6 Skill base depletion**

One significant effect of the reduction in textile manufacturing within Scotland is an associated depletion in a technical skill base (Hood et al, 2002). All of the companies involved struggle to find skilled expertise to support existing and new manufacturing projects. Appropriate manpower has become a limited and highly sought after resource. Ideally companies are looking for a strong understanding of traditional techniques used in textile manufacturing, with an ability to problem solve giving them the flexibility to innovate as they move into new markets. This resource often referred to as “technical designers” work closely with new design input into the company to realise ideas. It is very difficult for projects to progress without this interaction. Development of a new technical skill base in Scotland is required to embed new technological skills within the industry.

### **5.7 New types of hybrid designer**

The textile industry in Britain has changed significantly over the last 20 years. Thinking and business practices have had to adapt to these changes. Importantly, the role of the designer needs to develop to match evolving requirements. Textile designers must have the skills to innovate for companies to stay ahead of their competitors. They require design skills, a good understanding of and ability to experiment with technology and a clear view of market requirements. It is acknowledged that hybrid designers in this area are few and far between. There is a need to review design education in textiles (Sayer et al, 2006) and to bring it in line with a changing industry. New innovative working and thinking methods are required which bridge the gap between design and technology. A new type of designer is required who can innovate using technology. Strengthening in-house design capabilities with new types of designers who can engage with the technology required for manufacture and begin to frame this in the context of new strategies for marketing their products.

### **5.8 New ways of educating designers**

Design education is currently not in touch with the Scottish textile industries needs. Higher education courses should be reviewed for appropriateness. This can only be done in close collaboration and dialogue with business. (Whyte and Bessant, 2008) A shift in design education has already begun to take place in other areas, such as product design, where students learn design, business and technology skills. A similar approach now needs to be taken in textile design with the subsequent emergence of a new type of hybrid designer who can successfully innovate in today's responsive and dynamic market. Designers need to be able to understand and work across disciplines. New educational models are needed to re-define the role of the designer, bridging the complex technological issues with design innovation for new markets.

## **6 CONCLUSION**

*Textile Lab* has been instrumental in developing strong design partnerships to generate strategic change within the textile manufacturing industry. Through the project new cutting edge products have been

developed with design innovation being key to their success in the international market place. The project highlights the importance of design within the industry and the evolving identity of Scottish textiles in an international context. Key areas for future development of the industry have been identified.

The success of individual projects has relied heavily on the level of commitment of the manufacturer towards engaging in design innovation and the quality of the designer selected to push the boundaries of the project. In all cases both manufacturer and designers expectations have been met and in some cases exceeded and a meaningful collaborative relationship developed for the future.

However the current economic downturn has rapidly changed the luxury end of the market for which many of the textile businesses involved in this case study are focused into “the new age of austerity” (Finch, 2009). A new breed of consumer is emerging where quality, provenance and authenticity are central in their buying decisions. Scottish textile businesses are well equipped to respond positively to this emerging market and associated challenges and although not all will survive during this recession those that do will have used their strengths in manufacturing high-end niche products to their best advantage. The author has gained a valuable insight into the current position of textile manufacturing. Strong relationships and contacts have been established. Future opportunities with individual businesses to push further the work started through *Textile Lab* have begun. This continuing dialogue will further bridge the current gap between business and academia to provide a supportive and relevant role to the needs of Scottish textiles.

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