

# Design and Local Development, Case Studies from the UK

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## Abstract

This paper will discuss, through the vehicle of case studies, how Design has been instrumental in regenerating local commerce. The examples will compare and contrast the UK Government's Knowledge Transfer Partnership initiative (KTP), which has been operating for some thirty years with live industrial design projects which are also the focus for certain aspects of the undergraduate design curriculum.

The Design Division has been actively involved in numerous KTP projects, which have benefitted local industry. One such KTP, located at a company within the vicinity of the University embedded a new design capability into a charitable organization, 'Sue Ryder Care' and reviews how the income generated was used for palliative care.

In contrast with the highly successful government funded KTP scheme a design brief will be presented that attempted to support a traditional and local manufacturing company, typical and historical to the local economy. The design brief was developed in conjunction with the senior management of the company, to harness existing manufacturing capability but with a new and innovative product range. The paper reviews the journey taken by both parties, and discusses the relative fortunes of the outcomes.

This contribution is informed by the authors' decade long engagement, with UK government funding organizations, as academic partners of knowledge seeking companies. The Northampton case constitutes a newer university that has grown out of

a technical college and art school, this mirrors various other UK situations.

The authors have been researching and contributing to the discussion on the role of knowledge transfer in the global marketplace (Schaber and Thomas 2008), but also learning from the practical experience of acting as supervisors and working with industry on KTP, and understanding benefits and negative aspects for all the partners involved. (Betts, Schaber and Turner 2007) Conference participation and publications are the routine ways that academics share knowledge. In this case allowing the authors to identify and map out best practice and develop networks within the academic system. In conclusion the authors attempt to provide the international context of industry-academy collaboration in new product development.

**Keywords:** Knowledge Transfer Partnership, Live Client Project, Industry-Academy Collaboration, New Product Development.

## 1. Introducción

Universities including design colleges have a record in supporting innovation and local enterprise, thus helping to create wealth and job-generating opportunities in the community surrounding the campus. The support they give to business ranges from educating the workforce to research and development facilitated by established approaches to knowledge transfer. In the U.K., this has been detailed in a number of government reports, such as the Sainsbury Review (Sainsbury 2007). They examine the role of science and innovation in ensuring Britain remains competitive in an increasingly globalised economy. Sainsbury in particular, recommends support for business facing universities, high-tech clusters and extending the Knowledge Transfer Partnership programmes. This paper aims to illustrate this government policy and local development, through case studies at the University of Northampton.

Knowledge Transfer Partnerships (KTP) is a U.K. government initiated programmes where academics provide business solutions while putting research into practice. A recent graduate, referred to as the “associate”, is placed within the knowledge seeking company to research, plan and implement new methodologies, supported throughout the project time by an academic and his university, the knowledge base. Two of the authors of this paper are teaching within the design subject area at university level in the U.K. and have been involved in design focused KTPs for a decade. (Schaber and Thomas 2008)

In design education, the engagement with commerce through “live design projects” is generally encouraged; whilst they are student assignments (not textbook exercises) they are also linked to real clients from business or from the local community. The outcomes from these projects may or not go into production, however, the students gain valuable experience in dealing with real design problems, including access to production processes

and feedback from marketing teams and sales staff. This kind of two-way support may be a model to understanding and engaging with a variety of small and medium sized enterprises (SMEs), to offer their support quick, flexible and responsive to their needs, whether through consultancy services or training and placing workforce.

## 2. Context

### 2.1. Government Policy and Local Development

In the U.K., the government provides strategic guidance on innovation, employability and industrial engagement through a number of publications, issued by the Treasury Department, namely the Cox Review of Creativity in Business (Cox 2007), the Leitch Review of Skills (Leitch 2007) and also the Lambert Review of Business-University Collaboration (Lambert 2003). George Cox put forward several recommendations promoting multi-disciplinarity in Higher Education as a driver of innovation. Sandy Leitch focused on skills and employability, with implications on Higher Education's engagement with learners, industry and community partners.

But how does the apparent university focus relate to local development? It has been noted that communities are rediscovering a Victorian-era drive for education. "It is easy to see why municipalities have rediscovered the passion for higher education that animated Victorian councillors. The big manufacturing towns lacked an educated elite steeped in the new sciences required by the Industrial revolution – engineering, chemistry, medicine – so they set up establishments to provide them." (Kelly 2008) Correspondingly, the Design Council, an organisation promoting design in the U.K., encourages competitiveness in industry and supports growth in the creative economy. It concludes that business and creative disciplines need

to be brought closer together in education for the U.K. to have a competitive economy driven by innovation. (Design Council 2005) In the Cox Review, former Design Council chairman Sir George Cox proposed a number of ways universities and small businesses should work together more closely. Higher education courses should better prepare students to work with and understand other specialists. Centres of excellence should be established, where multi-disciplinary courses combining management studies, engineering and technology and the creative arts are taught. As we will see in the casestudies, this has been a lengthy process with all stakeholders learning along the journey.



Figure 1. Northampton in the English Midlands.

Case study One describes a knowledge seeking business (part of a charitable organization) that is characterized by its location within an industrial estate, conveniently situated at the motorway intersections between the major metropolis of London and Birmingham. Manufacturing has been outsourced to overseas, and product development is situated within a large distribution warehouse. Typically, London based organizations relocate because of cost of land, living and infrastructure with the workforce commuting over long distances. So, this development increasingly characterizes the economy in the English Midlands growth area. (SRES Sub Regional Strategy). To quote a regional planning document: “The preferred economic scenario is also consistent with the ambition to create better jobs and thereby an improving level of productivity ...The SNEAP study has shown that without additional transformational actions, the county will fall short of its targets for a prosperous and successful sub-region. Although the sub-region would deliver an increase in the number of jobs, it would not reach the levels planned for in the North of the county. In addition the increase in jobs is forecast to be in relatively low value jobs which, overall will contribute to Northamptonshire falling behind the UK in productivity terms.” (SNEAP 2008). So, design is perceived to generate high value jobs, leading to regeneration.

In case study Two the university is seen to developing networks with sub-contractors for leather component production in Northamptonshire and to the global footwear and luxury goods industry, in support of traditional and local manufacturing, typical and historical to the local economy. This exemplifies the changing network of specialist distributors in the region, constituting clusters and industrial districts. (Markusen 1999) Design is seen at the hub in these networks. (Figure 3)

### 3. Case study One

#### 3.1. Sue Ryder Care Direct

Sue Ryder Care is a charitable trust and is a leading provider of palliative, neurological care and homecare, dedicated to helping people get the best from life. In order to deliver this level of care, Sue Ryder Care Direct Ltd, its retail trading subsidiary, contributes a significant revenue stream to the charity by selling non-bespoke goods bought from the Far East to the public through its chain of 370+ high street shops.

To increase its turnover, increase profitability and market position, Sue Ryder Care Direct Ltd needed to offer a range of bespoke products which were designed in-house. Although the company had previously commissioned its Far-Eastern manufacturers to carry out its rudimentary design work, this was often of poor quality and required expensive re-working. It was clear that the embedding of a high quality product design capability was required, however Sue Ryder Care Direct did not have the necessary expertise or experience to develop new products or to embed the development and introduction of them within its existing infrastructure.

Sue Ryder Care Direct Ltd approached the University of Northampton in order to address this problem and began a KTP program which sought to address this by researching, planning and implementing a new product design methodology by designing 3D novelty giftware products, decorative items and toys. As part of the KTP, a recent high caliber product design student was employed as a KTP associate to implement this design capability and carry out the project.

Sue Ryder Care Direct had no design experience whatsoever and that meant it had no design tools too. One of the first tasks of the project was to implement these tools which included setting

up a 3D CAD capability and creative design software in order to communicate designs effectively to Far East manufacturers which enables to get prototypes right the first time, dramatically reducing lead times and making deadlines possible. Once these tools were setup, the remaining project objectives were delivered by recognizing development opportunities in Sue Ryder Care's core product lines which included dolls' houses and wooden toys.

Having established a CAD capability within Sue Ryder Care, a range of dolls' houses and wooden toys were designed over the length of the project. One such product was the design and development of the Sue Ryder Care fantasy castle dolls' house and figurines.

This opportunity came about when a national newspaper, the Daily Mail, approached the charity to design a toy castle for a promotional offer they were planning to run in the newspaper. After some initial research, several design concepts were generated which were developed and refined into final design. Scaled models of the design were produced using the Universities model-making facilities which were later realized into 3D generated CAD models. This data was sent to one of Sue Ryder Care's Chinese dolls' house manufacturers where they made production samples ready to present to the Daily Mail. This involved the associate traveling overseas to review their manufacturing methods and agreeing production plans with them.

The Daily Mail representatives were happy with the results and the final product was delivered on time for the newspaper promotion. The castle and figurines had a brilliant response from readers creating 11,150 orders being placed for both the castle and the figurines resulting in a £123,600 gross profit being made and achieving a further £200,000 worth of free advertising in the process, which promoted Sue Ryder Care's good cause.

Throughout the two year KTP program many dolls' houses, toys, gifts and other products like guitars were designed and produced along with the introduction of in-house photography and graphic design which contributed to a total gross profit of £589,000 for the charity.



Figure 2. Local Member of Parliament with KTP team.

### 3.1. KTP Summary

For the partners involved, this KTP project was an outstanding success and exceeded all objectives and financial expectations. The embedded design capability has enabled the charity to capitalize on opportunities that previously would not have been explored. However and perhaps more importantly, these new products and design capabilities have considerably impact the charity's sales and profits going forward. All this progress and profit would not have been possible without the introduction of

the KTP partnership. (Figure 2)

The KTP scheme has proven to be very successful in making stakeholders see the importance of design in a retail environment and to enable the organisation stand apart from its competition through bespoke products. It also benefits all parties involved as the associate develops their current design skills and gains new business experience. The University has also reaped benefits including conference papers, student projects, and lectures and gaining commercial contacts.

After the completion of the KTP program, Sue Ryder Care Direct employed the associate and has continued to enjoy healthy growth and is currently 27% up on the previous year's sales, which is a remarkable achievement particularly in the current economic recession where many other U.K. companies have defaulted.

## 4. Case study Two

### 4.1. Springline Shoe “Last” Makers

The second case study describes the interaction between the university and local commerce, represented through a small business within the ailing shoe and leather industry. Scope for new product development is being investigated and networks furthered, leading to access to new markets and ultimately to regeneration. The established relationship between The University of Northampton and a locally based company (Springline) has grown through a two-way support system, originally with the footwear design undergraduate provision, to a recent successful live student project with the product design department. Springline is Britain's sole remaining shoe last manufacturer and key supplier of wooden and high-density polyethylene lasts for boot and shoe manufacture. The company

is located in Northampton, the centre of UK's shoe industry. (Figure 3) The market is characterized by a continuing decline of shoemaking in the UK and Europe, with ‘Goodyear welted’ gentleman's shoemaking stabilized on a sustainable level. The production is mechanized, with highly specialized staff and machinery including CNC and CAD CAM, with the capability for rapid prototyping, customization and reverse engineering, through 3D scanning. Data transfer to distant manufacture sites is a reality, and Springline prototypes samples for ranges produced in the Far East and Europe.

In response to a declining market and economic situation, the company has started to diversify and manufacture shoe-trees. The firm started to investigate the possibility of diversifying further but realized that more innovation and knowledge would be required to open up new markets for them. Their own knowledge of markets outside the shoe industry appears highly limited. Contact was made with the University and with a team actively researching design and production in the global market for gift and toy products. They are also developing new forms of knowledge transfer between the academic world and industry. So, initially in order to explore possibilities, the product design team at the University worked with Springline on a live project and created a series of product concepts based on new market opportunities. Out of this process came a number of important developments that can enhance the company's capabilities and productivity. Funding through regional development agencies would further these new processes and new products to prototype stage, in order to elicit customer feedback.

### 4.2. New Product Lines

With the company's management, the design team investigated New Product Development, a methodology leading to innovation. The initial project suggested a number of domestic, personal grooming, and toy concepts complementing the current manufacture. The options put forward were limited because

of the specialist nature of the existing equipment in-house at Springline but there is scope to adapt the existing equipment and augment it. For example, improved spray facilities to allow production playthings that meet international toy standards. This type of development would allow the firm to respond to inquiries to design and produce toys for the heritage attractions' retail outlets. As well as develop high quality trophies, desk accessories and collectibles for themselves and their current high-end clients as their marketing expertise and flexible production process develops.

All these products would be produced in limited editions or short runs and at a very high quality. They would be tailored to their market, be it an individual or small retailer. It would be a service as much as product. The innovation will be in part the combination of traditional craftsmanship and skill, but also the integration of new high tech manufacturing using traditional and new materials. Drawing on the knowledge base not only at the university but within the region's industries, both traditional and those using the newest technologies and materials. The firm will raise the impact and profile of their products and also their commitment to high quality British manufacture. In discussion with Springline, one or two products will be developed initially in order to gradually develop the internal systems and capabilities and at the same time establish new contacts and distribution networks. The project will enable the team from the university to develop and implement its design consultancy, research skills, and design management knowledge developed within the University in running several successful Knowledge Transfer Projects, undertaking research and consultancy work. In this case there was the initial design project which allowed some analysis and diagnosis of the company's needs, and it is now important to put in place a flexible design and development process that will enable this firm to compete, but also allow others to learn from the experience of developing viable quality manufacture through the enhancement of company

productivity and access to high level technologies that meets the needs of their customers.

For example, the heritage sector is looking for British heritage toys. Facsimiles could be produced using reverse engineering, using the original to digitize the data, for the production of new editions. External components such as brass, cord and suitable packaging would have to be sourced and the design staff has existing links with Birmingham based manufacturers from the traditional metal-working trades of that city. The production of such items for a heritage shop would open doors to other specialist markets.

The design team suggested also furniture for use in menswear and shoe retail. The links with shoe retailing already exist but the university has expertise and contacts in leather tanning and production. So the design development process would extend the firms network of local suppliers and laser-cutting technology being developed at the university and could be fed back into another sector of the local industry. Quirky stylized designs aimed at the fashion buyer, would open another market to designing one-offs, producing facsimiles, or creating bespoke ranges for the interiors market, not just furniture but distinctive fixtures and fittings. Correspondingly, the university now runs a popular interiors course and trends here point to buying from local suppliers, restoration and creating something distinctive and exclusive, marketing and promoting "British-ness".

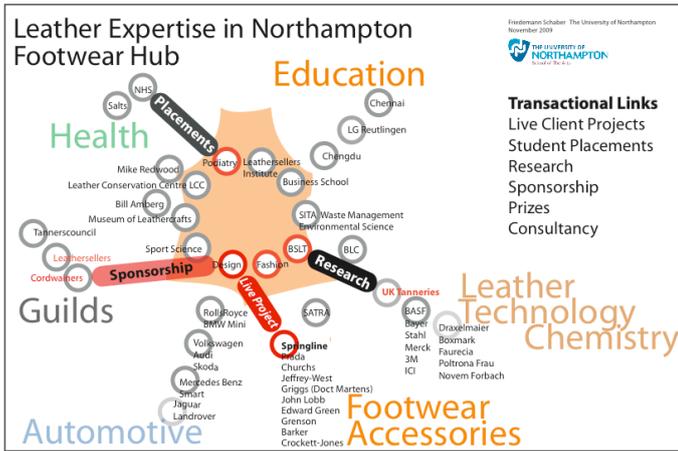


Figure 3. Local and Global Networks in the Footwear and Leather Industry

## 5. Best practice models and networks

The literature (Cox 2005), (Design Council 2007) points out that university-led and inspired innovation has helped U.K.s global economic competitiveness in major sectors such as pharmaceuticals and aerospace, and has helped to make the creative industries world leaders. But universities are also increasingly working with small and medium-sized firms in their own communities to help them become more productive and profitable. They also help large and small companies come together to innovate. A good example is ‘Metropolitan Works’, the furniture profit centre managed through the London Metropolitan University, in support of the British furniture industry concentrated in London’s East End. Volume manufacture has long gone, but a new generation of design led makers is reoccupying the vacant space, this community

is also highly regarded as pioneers inner city areas plagued by deprivation and decay such as the Hackney area of London, with activities leading to regeneration. Another example would be ‘Design London’, a business outreach initiative led by the Royal College of Art and the Imperial College, focusing on interaction with SMEs, transferring design know-how. Another example is the ‘ProfitNet programme’ at Brighton University, developed with support from the Higher Education Funding Council for England (HEFCE) and the Regional Development Agency. It offers practical and hands-on advice for local firms through monthly sessions targeted at their sector. Bringing together 500 companies across Sussex, it has helped in the creation of supply chains, developing new processes and exploring joint venture opportunities and sharing of best practice in business planning, strategy and innovation.

## 6. Conclusions

Businesses increasingly compete in a global market place and producers in the U.K. have to compete through raising their capacity to take on innovative process and practices. As we have seen in case study One, many have closed manufacturing routes in the U.K. and shifted their production to the Far East. Others, like in case study Two, have survived because of the specialized service they offer. What are the factors encouraging the growing trend to find British production?

1. Retaining skilled jobs and expertise
2. Face to face contact
3. Shipping delays and transport costs can be minimized
4. Volumes can be small
5. Shared knowledge of home market
6. Traditional British products valued abroad
7. Ethical and safety concerns can be managed
8. Access to UK based innovation

The creative industries are defined by their ability to generate intellectual property. Springline is already a major supplier to the fashion industries, but the collaboration with the university will enable the company to work with other creative companies such as interior and display designers. Finally, with the university's expertise, these kind of companies will also be creating their own intellectual property based on their unique craft skills and technology they have developed to serve the market with bespoke products.

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