

A LEADING ROLE FOR DESIGN AS AN ECONOMIC DEVELOPMENT ENABLER

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ABSTRACT

Economic development agencies at national and regional levels have recognised the importance of design and creativity as a driver toward growth, wealth creation and potentially company and job creation. Many regions employ a strategy of promoting the crucial nature of design and then proceed onto promoting a number of design companies either locally or internationally, this activity although important is only part of the answer. There are a number of projects that have actively developed a strategy of firstly supporting design activity, the outcomes of which can then be promoted to wider audience. The project developed in Glasgow, United Kingdom (UK), as an experimental project for a celebratory motive has successfully supported the development of new products, facilitated new company start-ups and created wealth. The project has also been agile enough to be transported to other locations in the UK and internationally resulting in the same high level of success. This has led to the project strategies and management now being utilised as a economic development tool closely related to design and creativity.

Keywords: Design, Design Management, Economic Development

1. INTRODUCTION

The following paper will give a historical account of a process that has been designed in order to allow the intervention of the economic development agencies of appropriate local and national government bodies in design and creativity. The process was developed in Glasgow UK and has been moved to two other regions in the UK; The North East region of England (main city Newcastle) and Staffordshire in England (main city Stoke on Trent). The process has also been moved to one other location outside the UK; Curitiba, Brazil. In all instances the programmes applying the process have recorded successes by surpassing all targets while also developing new products. In all cases the new product would not have happened without the intervention. Furthermore, in all cases the companies and clients would not have engaged with designers at all or at this scale. This paper will outline the various processes in each region and give a case study from each region as a typical illustration of the outcomes. The programmes will also be compared and discussed in relation to their respective performance.

2. BACKGROUND

The Creative Industries in the UK are recognised as one of the fastest growing sectors in the economy (DCMS)[1]. It is also recognised that the company birth rate throughout the UK is too low and that the mortality rate of company “start ups” is too high. So not enough companies are starting up and of those that do start up, not enough survive and thrive. This question has taxed economic development agencies and regional development agencies for some time. Another factor to bring to this issue is the design question, there is a strong belief that design can be a major factor in finding solutions to this problem, the question is how? This paper will describe a process whereby a public intervention programme, directed by Bruce Wood, has directly facilitated economic growth through design and design management practises. In all cases the project has been deemed a success and in all cases the core of the project has remained constant, however, great care was taken in each location to ensure the local conditions and environment were taken into serious consideration in order to inform and assist strategy and tactics in the local area in such a way as to maximise the benefits on as wide a scale as possible.

3. GLASGOW

THE GLASGOW COLLECTION (GC) 1997 - 2000

Like many other cities of its age and history Glasgow has suffered the loss or substantial downsizing of its main industries these being in shipbuilding and heavy engineering. Also, like many other city regions across the UK and Europe there is a pro-active economic development agency, Glasgow Development Agency (GDA) in place working with a wide spectrum of activities from land and property and development through to training. The GDA was aware of the need for improved design performance and that the overall design message could be a significant contributor to the economic growth and development. The GDA had developed some initiatives over some years all of which met with limited success and none of which were in any way sustainable.

In 1997 Glasgow won the accolade of "UK city of Architecture and Design 1999". Glasgow set about a series of programmes and projects that would mean that during the year 1999 a comprehensive programme of events would be developed in order to celebrate, examine and study all aspects relating to the City, Architecture and Design. GDA, although involved in many aspects of the overall year of events, were interested in developing a programme that they could be the sole funder and that would give design a prominent role throughout the year.

The GC was established in late 1997 [2] as a project that would deliver the GDA's requirements. The project developed a new methodology that was focused on applying professional design practises to deliver new products, this in turn would create new opportunities for companies to start up, or develop and grow.

A fund was made available to the project to be utilised against new product design and development. Targets were set at 45 new products to be designed and developed, with 15 of those reaching commercial availability by the end of 1999.

The team developed a methodology and systems that:

- Minimised bureaucracy, in order not to stifle creativity
- Moved funding efficiently and effectively
- Traced all funding and project development
- Reported back to the GDA in a manner, which was appropriate and timely.
- Could be easily communicated to the creative industries and other industries in a manner, which developed a high rate of early adopters.

3.1 The process and design management issues

As already stated, there was a real determination to minimise bureaucracy normally associated with public funding. Recent interventions in design aid had met with limited success or were more aimed at design promotion rather than support. The distinction is drawn here to be, design promotion dealing with all matters of design activity that is actually occurring independently, design support is the act of intervening to assist some new aspect of design activity in its broadest sense.

The opportunity for Glasgow during the year of Architecture and Design was to take up the offer to be experimental and focus on the outcome rather than process issues. This said as the project was utilising public funds the normal professional standards would be applied to the design processes and the management and usage of public resources.

3.2 Glasgow Collection Process

The process had to be agile enough to deal with a range of product ideas from a number of sectors, additionally the process had to be able to deal with due process issues such as legal, plagiarism etc.

An essential element of the process development was to manage communication and the funding. To this end, some basic elements of the project were as follows:

- Free open and honest communications should take part between the client, the design resource/designer and the GC.
- Funding and contractual arrangements were established between GC and the client; the client will then establish their own arrangements between themselves and the designers. This gives the client full responsibility for the project allowing them to negotiate other arrangements as long as it does not abuse the public funding element regulations, GC ensure that any Intellectual Property or rights are the owned by the client.

- The contract outlines the overall objectives; the stated intent and a realistic time plan for the project.

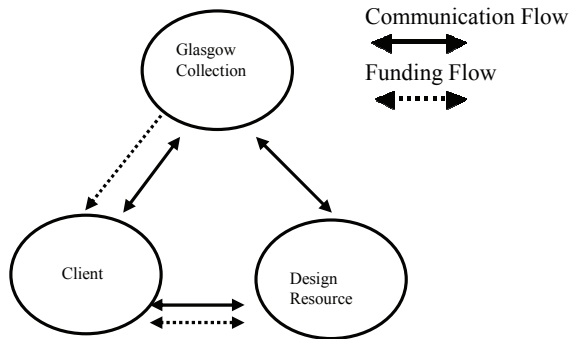


Figure 1 Communication and Funding flow

This process of communication and funding, see figure 1, was utilised in all projects and regional programmes, funding was released on a stage and gate process. The projects varied in scale, scope and technologies. The GC endeavoured to match appropriate designers and design resources to all of the projects. Furthermore, design resources were often matched to other appropriate resources such as manufacturing capability or marketplace.

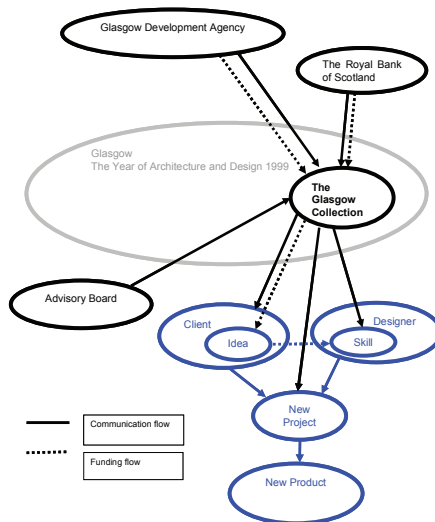


Figure 2 Glasgow Collection Process model

The GC Process model, figure 2, clearly shows the flow of information and communications in order to manage the project appropriately. Explanatory notes relating to the various parties noted in the GC Process follow.

There are two main regions of the GC process these being the actual design project itself, coloured blue, and the programme management bodies including the funding bodies, coloured black and grey. The funding bodies were kept at some distance from the actual design project the reasons for this are

simply the focus and management environment were so different that misunderstandings could lead to adverse views being taken. The GC programme team were positioned at the hub of both the overall programme and each individual design project. The GC programme team managed and monitored each individual project and ensured that contractual arrangements were maintained for all parties.

The Client

The Client is the owner or originator of the idea; this could be an individual or a company. The client would be the recipient of the funds. The Client would also be required to provide evidence that they did in fact own or have the potential to own any associated Intellectual Property (IP). The Client would also be the recipient of the contract.

The Designer

The designer was a professional designer with a proven track record and portfolio in the case of a designer being applied to a project. Designers from the local region could also apply to the GC for funds to help develop their embryonic ideas.

The Glasgow Development Agency (GDA)

As previously mentioned the GDA was the major funding agency and their interests were in the overall project progress and development and not surprisingly the management of the funds.

The Royal Bank of Scotland (RBS)

The Royal Bank of Scotland was involved in the GC in terms of a complementary funding source. Their funding was available to small companies involved with a successful GC project, the company could then apply to the Bank for additional funding in order to create some additional aspect of the project, this could be tooling, market testing, industry standards conformance testing, branding etc

The Advisory Board

The Advisory board was comprised of a number of international influential designers, and economist, representatives of the GDA, RBS and the local authority (Glasgow City Council)

The advisory board was established with the key players of the GC and internationally respected design authorities and appropriate representatives with the purpose of being the independent view of the activities of the collection.

The remit of the panel was to:

- Advise on strategy
- Review status of projects
- Comment on and suggest new projects and project areas
- Support and promote the GC where appropriate

The advisory board proved to be a useful mechanism for building confidence with the public bodies and suppliers of public funds and ensuring appropriate fiscal management is in place and operational. The advisory board model has been applied in all the project locations.

3.3 Glasgow Collection Case Study

The following is a case study highlighting the outcomes from one of the GC projects

Wallace Cameron (WC) First Aid Kits (fig 3)

Wallace Cameron is an established operator in the market place of commercial and domestic first aid kit, used mainly for commercial properties as matter of legislation. Their market place had become commoditised and they were under constant attack from other internationally based operators on cost. This position was simply untenable and it was clear to WC that they could not continue to compete on cost given the background economic position of their home base (UK) and the comparatively low cost base of their competition. Their plan to escape this low cost driven market area, was to go “up market” by sourcing a better product and supply for a higher price and therefore profit. Initial marketing investigations suggested this would offer some opportunities.

WC realised that they may have discovered a niche that was as yet untapped and then they decided to embark on design and development programme to respond to the market opportunity. The resulting product was launched in 1999 after significant capital investment. It was extremely successful and the

demand increased rapidly also for other related products in the range, smaller, more specific locations, colours etc , see figure 3.

The product range won a Millennium Product Award (Design Council)[3], which boosted the profile of the company, and their products. WC now has a new market niche that they created for themselves while also designing their way out of a cost cutting market.

WC through a business development programme based on this new design have now extended the range of products and services and have achieved an annual turnover £20million, sell in 39 countries and employ over 140 staff at their manufacturing facilities in Scotland. [4]



Figure 3 The Wallace Cameron ranges of first aid kits

3.4 Glasgow Collection Achievements

The project delivered a number of outcomes overall:

- 51 new products were designed and developed (target 45)
- 23 of which were commercially available by the end of 1999 (target 15), approx 43% success conversion design ideas into commercially available products.

The project had met and surpassed its targets, additionally the project delivered:

- 27 National and International design awards
- The project delivered 9 Design Council Millennium Product design awards (Scotland achieved 39 millennium product awards in total)[3]
- The GC exhibition was visited by thirty six thousand visitors
- The GC exhibition was the only exhibition to leave Glasgow and be exhibited internationally (Paris, New York, Taipei, Johannesburg, Hamburg & Milan)

4. THE NORTH EAST REGION

NEW PRODUCT PROGRAMME (NPP) 2001- 2003

This is another of the UK's industrial powerhouses now suffering with the rapidly disappearing industry and related businesses. This region was and is working hard to develop new industries to replace the lost businesses and wealth creators. The region has identified design and creative industries as a real opportunity and the regional economic development agency; One North East (ONE) was actively seeking ways to develop intervention initiatives that would help their cause. The NPP was essentially the GC imported to the region; the overall establishment was similar but altered to suit the local conditions, environment and history of previous initiatives.

4.1 New Product Programme Process

The North East region included the "Business Link" network; the Business Links were established as local economic development companies that would operate on a regional basis aligned with a national strategy. This network would assist all sectors and sizes of companies with the exception of retail and generally they focused on Small to Medium Enterprises (SME). In the NE region there were 4 neighbouring Business Link companies, the fund was managed through one of them with the other three reporting to the fund holder. The Funding agency in this case was One North East, the regional development agency for the region.

The NPP programme was independent of the business link network and managed the fund through this network. See figure 4

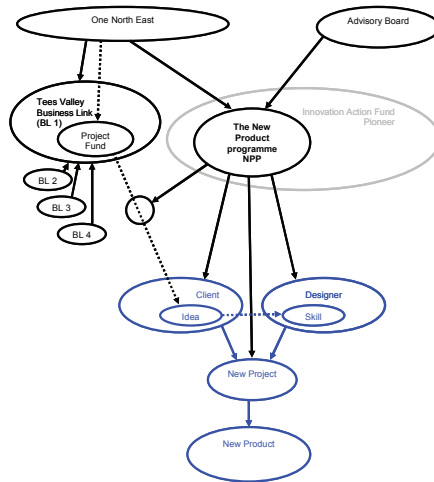


Figure 4 the New Product Programme Process model

4.2 New Product Programme Case study

The following case study from the NPP outlines one of the successful projects

MJR Smoke detector for people with hearing disabilities (fig.5)

MJR is a small company involved in electronic engineering and design; the company had developed a business area in the supply of equipment for people suffering from hearing disabilities. The product was a smoke detector indicating fire for this market. The company had developed the technology that can detect the smoke in a more sensitive way in order to maximise the warning time given to the owner and could communicate with various other sensory devices that could be applied around the owners home. The additional devices include a range of audio signals, bright lights and stroboscopic lights and vibration pads all intended for the user or owner to adapt the product to their particular needs and home.

The technology had impressed various market place leaders and influencers such as the Royal National Institute for the Deaf (RNID) however the technology alone was not solving enough of the problem. The RNID in assessing the technology was then able to identify that some of the major problems with product in this market were in the “softer” product characteristics like the aesthetics, product character, ease of use and user interface and importantly the product should not stigmatise owners and users.

Local design company the Product Group was engaged to develop concepts for the form of the product. After a series of development iterations a product, which encapsulated the new technology, originally developed by MJR and the form and interface developed by the Product Group, the product was immediately adopted by the RNID as a recommended product.



Figure 5 MJR Smoke detector for people with hearing disabilities

5. STAFFORDSHIRE REGION

DIFFERENT BY DESIGN (DXD) 2003 - 2006

This region is famous in the UK for the ceramics industry and being home to companies such as Wedgwood and Royal Doulton. The indigenous businesses has survived and struggled over recent years and rapid decline is now the prevalent trend with 200-year-old companies going out of business and their names disappearing forever.

The remaining companies' key to survival up until now has been highly skilled craftsmen linked to traditional incremental design processes. This in conjunction with severe cost management had lead to some successes in terms of buying time for the companies.

The local economic Regional Development Agency Advantage West Midlands (AWM) had invested a huge some of money into assisting the regions companies' survival. AWM were now aware that as well as carrying out this maintenance approach to the development of the region something new with real outcome was required.

The DxD programme is the GC model imported in to the region as its main design and innovation tool and was established to deliver this agenda across the whole region by facilitating the design and development of new products across a wide range of industry sectors. [5]

5.1 Different by Design Process (DXD)

The DXD process evolved again to take account of the local situation; in this case the fund was managed by Staffordshire University on behalf of the DXD programme, a lot of effort was put into ensuring that the client base did not experience any difference to the management of funds, see figure6

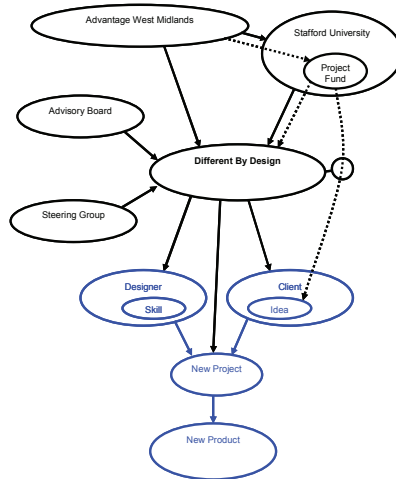


Figure 6 Different by Design Process model

5.2 Different by Design Case Study

The following case study from DXD gives an overview of one of the successful projects

Matrix Composites carbon fibre tables (fig.7)

Matrix Composites (MC) had developed a successful business in the technical design and supply of complex mouldings in Glass fibre and Carbon fibre composite products. The main market for these products was the Automobile industry.

MC realised two factors about this business model that would need to be addressed in the near to medium term.

1. The MC business was entirely based on the “Supply Chain” model, which presents its own limitations.
2. The Automobile industry in the UK was clearly on a downward trend.

MC found itself in a limited business sector that was reducing on a yearly if not monthly basis.

The above factor helped MC focus its attention on a long held desire by the company owner to develop its own range of products that utilized its current skill and technology set and the company could market and sell on its own behalf.

Designer David Raffa was given the opportunity to develop a strategy followed by a range of products that would appear to serve the companies needs. The resulting range of high value tables was well received at all public exhibitions and publications resulting in early commercial interest in the products themselves. There were also a number of expressions of interest from a variety of sources to work with MC on new products and ventures. The range of new products had raised awareness of the MC Company, capability and motivations. The new range of products is not a direct replacement for other business sectors however they have opened new opportunities for further development and growth.



Figure 7 Matrix Composites Carbon Fibre Tables

6. BRAZIL

CRIACAO PARANA 2000- PRESENT

Brazil, for entirely different industrial and historical reasons, had identified design as a major factor in adding value to its products. The national government was having difficulty in maintaining economic position and was determined to strategically move away from the “sweat shop” business model that had evolved.

The state governments were given authority to set up and develop programmes that would assist in this area. The state of Parana with its main city of Curitiba imported the GC model to do this. The Centro de Design, the state design body was tasked with running “Criacao Parana” (Creative Parana). In this case no direct funding was available so projects that were successful in being selected for the programme were assisted in applying for funding from a variety of other government and city organisations in conjunction with the banking and Venture capitalist clusters. [6]

6.1 The Centro de Design

The Centro de Design do Parana is a non-profit organisation acting in the south of Brazil (Curitiba, Parana). It was created in 1999 with the purpose of providing support for local industries and companies interested in using design for the development of innovative products.

For the Brazilian team, the most attractive aspect of the GC programme was the power of the example. [7] In a business environment where copying is an usual way of developing new products, the idea of taking a group of SME's across the blurred road that goes from an original idea to a fully working prototype seemed strategic.

6.2 Criacao Parana process

The process in Brazil, figure 8, was distinctly different in that Criacao Parana as it had no funds to allocate or deliver to projects. Clearly this matter complicates the issue considerably as the clients, once convinced of the need and likely design partners and outcomes, then had to resource the whole project by their own means. This could be entirely their own funding or, as in many cases, could be a mix of their own resources and some additional resources from various public bodies. Criacao Parana performed this influencing role very well and achieved 44 new products that were highly acclaimed throughout Brazil.

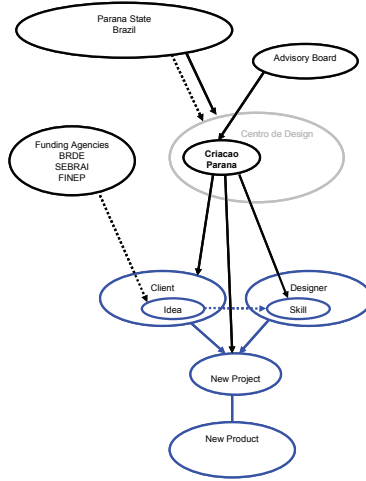


Figure 8 Criacao Parana Process model

6.3 Criacao Parana Case Study

The following case study outlines one of the successful projects from Criacao Parana

Cisco Skate (fig 9)

Shape, truck, and wheels are the basic components of a skate, a typical teenager product. Imported skates, of unquestionable quality and design, are very expensive; national products are less robust and their performance is not fully satisfactory.

These considerations led Flying Skateboard to identify a new market niche. Until then, the company produced shapes for other brands. The idea was to manufacture the three parts to occupy a vacant space in the intermediary market between imported and domestically produced quality skates, at affordable prices.

Based on designer Fabrício Costa's experience, who is also a skater, the product began to be developed with full attention to all of its parts. Flying Skateboard is ready to prove that it is possible to create a high-quality product, with technology and good design, in Brazil, at an extremely competitive price



Figure 9 Cisco Skate

7. CONCLUSION

Design and Design Management are at the core of the success of these programmes each individual project had elements of speculative creative design, which was divergent in thinking, and many possible solutions would be proposed. This speculative phase could be initiated from a range of sources including recognition of a market niche but also included enquiry based experimentation. Speculation was complemented, in all cases with, specific design implementation or manifestation activity in order to realise market and business opportunity. Clearly balancing these issues is critical to ensure that these programme do deliver real outcomes. In order to manage this issue a project matrix was devised in for the GC in an attempt understand the range and diversity of the programme and the projects therein see figure 10. The project matrix was originally devised as a communication tool to help inform the funding bodies etc however this became one of the most important management tools of the GC and was implemented in all the regions. The Project Matrix identifies each project by a number and is placed on the matrix relative to the grid values. The positioning was based on intelligence-based subjectivity. For example “Project 18” was concerned with decorative glass ware and was positioned on the boundary of pre-commercial and commercial, was not technically sophisticated and was of moderate value. This information was derived from the project clients. “Project 8” represents a battery powered endoscope for ear examination, this project was highly technically sophisticated, commercial and was of high value. The ability to observe the relative positions of projects in this manner not only served as a communication vehicle it also assisted and informed the strategic decisions of the programme teams. Each location, by using this technique, understood that there would be a spread of outcomes with associated opportunities and attached value. Each location also used this technique to inform decision making regarding new projects.

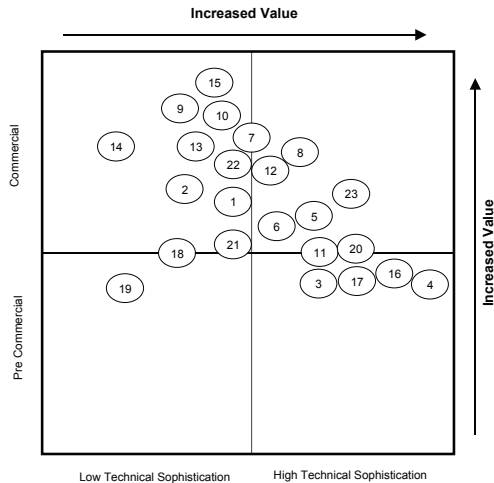


Figure 10 the Project Matrix

The Project matrix is an intelligence based, subjective and holistic view of the programme and individual active projects at the time of recording.

7.1 Outcome Comparison

As can be seen from Table 1 the four programmes can be compared in general terms, this comparison although broad, does indicate that the programmes overall performance in each region is comparable taking into account the varying background economic environment and conditions.

Table 1. Outcome Comparison of the four programmes

Location	Project	No of New Products	Average Spend (£000's)	Timescale: Overall (Months)
Glasgow, UK	The Glasgow Collection	51	8.8	30
NE England, UK	New Product Programme	40	11	24
Staffordshire, UK	Different by Design	54	15	36
Curitiba, Brazil	Criacao Parana	44	N/A	24

This process has and is still proving to be a useful methodology for applying design thinking and practises to the economic development agenda by interfacing and intervening in a real and meaningful way with businesses.

Each location has a different set of local conditions that must be taken into account in terms of the funding agencies, legalities, historical and political issues. It can be seen from the process flow diagrams for each location that all of these matters are taken into account and managed appropriately. It can also be seen that the actual process of designing and client management is constant in all locations with the exception of Criacao Parana however, in this case the influencer role played by Criacao Parana in a region that is alien to this type of public intervention was more than sufficient.

The client companies or individuals do not need to know all of the intricacies of the bureaucratic background; their ideas are fragile and can be easily broken at a number of stages before actualisation. The client should remain focused on their product and associated matters rather than the local government agencies and public funding issues.

The key factors to its success are:

- Programmes managed by experienced design professionals.
- Flexible approach in order to adapt to new regional and cultural variances.
- Access to funds or routes to funding made clear.
- Bureaucracy minimised in order to enable a nimble and agile operation.
- Maintain the highest professional standards.
- Develop a strong vision of the core project but alter to suit the local conditions.

The Results

- Tangible new products developed.
- New companies created.
- New business relationships developed.
- Raised profile for the companies, region and projects at a national and international level.
- Real potential for wealth creation.
- New markets entered.
- Cultural development occurs in that a realistic sense of optimism is engendered.
- The new product development process is significantly time compressed

The scale and scope of these design intervention projects make them suitable for regional development agencies to support them, these intervention programmes are too big for any one company to wholly manage. This issue does not relate to the size of the programmes but does have a direct impact on scale and diversity of the programmes. The ratio of commercial success compared to projects started across all of the programme areas was measured at 43% to 48%.

The benefit to the macro region in that the impacts in the results, as stated previously, are real and realisable. It is also interesting to note that across the regions and time frames relatively similar average times are experienced.

The average spend on a development project is remarkably low and is a measure of the funds allocated to project development divided by the number of products developed. Even in the case of Different by Design (Overall highest funding investment package of £2.7million) if all costs are divided as a ratio per product the result is £52k per product. This still represents very good value for the investment.

These design intervention programmes have a positive affect on the economy at multi levels exhibited by:

- Companies engaging in design

- Design companies with an increased number of companies demanding design services
- Increased business generally with real outcomes
- Increased Intellectual Property activity,
- Increased market awareness for the companies and about the regions involved
- Cultural development resulting in increased confidence.

The long term benefits, as stated, in conjunction with the wide range of new products realised, none of which would have occurred otherwise, result in market opportunities becoming within reach of the client companies.

These interventions are not simply public funded subsidies of the design sector; the approach is to focus on the outcomes for the client companies, which utilise the appropriate design resources in order to achieve those outcome objectives.

This strategy results in a range and depth of product that have a increased probability of achieving commercial success while also, through knowledge transfer enhances the skills and experience base of the respective companies.

8. THE FUTURE

There are on going discussions with a variety of regions regarding the establishment of similar programmes in the respective regions. These discussions are considering the possibility of widening the remit of such programmes to consider additional sub sectors of design such as, graphic and communication design, branding and web design. The transition of this programme philosophy to other creative or design sectors would be entirely manageable and similar outcomes and results could be expected. Care would be required to ensure appropriate processes were established in order to create the right environment and circumstances for new things to be facilitated and enabled.

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