

DESIGN LED INNOVATION – EXPLORING THE SYNTHESIS OF NEEDS, TECHNOLOGIES AND BUSINESS MODELS

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ABSTRACT

The term Design is used to describe a wide range of activities. Like the term innovation, it is often used to describe both an activity and an outcome. Many products and services are often described as being designed, as they describe a conscious process of linking form and function. Alternatively, the many and varied processes of design are often used to describe a cost centre of an organisation to demonstrate a particular competency. However design is often not used to describe the 'value' it provides to an organisation and more importantly the 'value' it provides to both existing and future customers. Design Led Innovation bridges this gap. Design Led Innovation is a process of creating a sustainable competitive advantage, by radically changing the customer value proposition. A conceptual model has been developed to assist organisations apply and embed design in a company's vision, strategy, culture, leadership and development processes.

INTRODUCTION

Design enhances the outcomes of numerous innovation activities, bringing benefits such as increased quality of goods and services, improved production flexibility and reduced material costs (Cox Review, 2005). Design is increasingly being viewed as a vital and important strategic business resource (Dell'Era, Marchesi and Verganti, 2010; Gemser and Leeders, 2000). Consequently companies worldwide look to design to help them innovate, differentiate and compete in the global marketplace. Design brings a different way of thinking, doing things and tackling problems to generate novel

solutions. The value of design is not just in new products or services, but through employing and skillfully managing and soundly implementing design throughout a company's business strategy (UK Design Council, 2004) Design Led Innovation further defines the values of design to an organisation. As noted broadly by Verganti (2008) rather than considering design as being solely driven by user needs or technological developments, Design Led Innovation is pushed by a firm's vision about possible new product meanings and languages that could diffuse in society (Verganti, 2008). This paper presents a conceptual model

to allow a firm to explore the value of adopting a Design Led Innovation approach. The paper aims to expand the body of work on this topic with its contribution being to the practical considerations an organisation should consider to explore and adopt such an approach.

DESIGN ACTIVITY

Traditionally, the role design has played within companies has been confined to the manufacturing and production arena or as a styling afterthought. Design is increasingly being viewed as a vital and important strategic business resource (Dell'Era, Marchesi and Verganti, 2010) and consequently companies worldwide look to design to help them innovate, differentiate and compete in the global marketplace. These firms are carefully evaluating, skillfully managing and soundly implementing design throughout a company's business strategy (UK Design Council, 2004). The value design brings is a different way of thinking, doing things and tackling problems from outside the box. In practice design is key to greater productivity, whether by way of higher-value products and services, better processes, more effective marketing, simpler structures or better use of people's skills (Fleetwood, 2005). Design is no longer a niche market luxury. It is the most persuasive priority for solving problems, ensuring



Figure 1: Framing design activity

long term sustainability and gaining competitive advantages (Queensland Smart State Council, 2008).

Although the role of design is constantly evolving, the fundamental underpinnings of design as an activity have remained largely unchanged.

Schön (1983) proposed an “alternative epistemology of practice, based on a constructionist view of human perception and thought process. He sees design as a ‘reflective conversation with the situation.’ Central to design thinking is that problems are actively set or ‘framed’ by designers, who take action (makes ‘moves’) improving the (perceived) current situation”. This is in contrast to a deductive or top down thought process which begins with an assumed hypothesis, which is then narrowed down through data collection and evaluation.

The work of Polanyi and Ehn complements Schön’s description of design activity. Polanyi (1998) addresses the relationship between enquiry and creativity and the difficulty is bridging the “logical gap” which is found between existing knowledge and any potential significant new discovery or innovation. Polanyi (1998) refers to the need for a leap of illumination, “the plunge by which we gain a foothold in another

shore of reality” and assist in visualising new concepts. Ehn (1988) furthers this by referring to the concept of traditional and transcendence outlining how design is concerned with the social and creative activity founded in our traditions. However he contends that design must still aim to transcend these traditional concepts by constructing alternative futures (Ehn 1988).

The work of Schön, Polyanyi and Ehn has formed the foundation of the Design Led Innovation model which is proposed. Central to this approach is the ability of the designer to construct and visualise multiple futures of an unknown complexity, which are then deconstructed to reveal needs and opportunities.

FRAMING DESIGN ACTIVITY

There are many dimensions of design activity which can be undertaken within an organisation. The following framework (Figure 1) highlights the potential value which can be achieved through the application of various design activities within an organisation. The framework references a company’s competitive strategy continuum as the basis to consider the role and value of design within the organisation. A com-

pany’s competitive strategy continuum has been defined as spanning Customer Value, Technology and Cost. This continuum has been further expanded to separate out incremental and radical innovation activities. This framework is not exhaustive, but provides as simple matrix to describe innovation activities within an organisation.

Activities which may relate to incremental change include: product feature change to achieve cost efficiencies; feature additional when a new technology is adopted; and positioning of the product / service through company branding. Within the radical innovation spectrum, a company may adopt a process change such as the implementation of lean systems to achieve radical cost changes; it may adopt new technology platforms and it may look to new markets and customers for growth opportunities through new products and services.

Mapping these activities to the various design tools and process which are commonly available, will reveal the value in achieving a strategic competitive advantage for that firm. For example User Centre design tools such as user observations have high value when undertaking incremental innovation as it generally provides insights which results in new feature additional and modification. However when applied to radical innovation, this often results in less value as the goal is to create new to the world products and services which observations of existing customers can not reveal. To achieve these radical innovations from new users, the process of Design Led Innovation is proposed.

Design Led Innovation is broadly defined as a method which allows a company to consider and evaluate radically new propositions from multiple perspectives, typically spanning user needs, business requirements and technology demands. The final design solution is not presented as an artefact in isolation, but as an integrated product and service concept which anticipates future user needs, builds future proposals and encourages feedback. Key to this process is that design is core to a company’s vision, strategy, culture, leadership and development processes. The Design Led Innovation model which is proposed is currently being

evaluated through several industry projects. It is hoped that this evaluation will demonstrate that this approach is feasible for an organisation to create a strategic competitive advantage through design. It is hoped that this method complements and builds upon existing approaches used within the organisation.

DESIGN LED INNOVATION – CONCEPTUAL MODEL

The proposed model which is presented in this paper has been developed through an action research approach where Design Led Innovation has been explored through several industry and student based projects (Further information on one evaluation of this model can be found in Bucolo and Matthews 2010).

As noted Design can contribute to the development of innovation activities which allows a company to transform the way it looks at strategy. Design methods can be used as a basis to develop a future vision and then reveal the opportunity and need to a wider stakeholder and development team and to assist in acceptance of the vision and strategy.

A key aspect of the model is in the co-development facilitated by design experts with stakeholders throughout all stages of the process, from ideation through to commercialisation. Stakeholders are defined as both internal (design, engineering, marketing, management) and external (existing customers, future customers, buyers, dis-

tributors, supply chain, manufacturers etc...) groups.

Therefore the goal of the model is to ground stakeholder conversations around future propositions which aim to synthesise needs, technologies and possible business models. The future proposition is then refined through continued iterative stakeholder engagement. Therefore the model is better described as follows.

In the context of an industry setting, often a project may start with a defined product/service activity. Therefore the model uses existing understandings of activity as its starting point.

From this perspective internal stakeholders are invited to explore this current proposition. The process starts by looking at immediate user features/needs relationship, but quickly expands to consider the temporal elements of the activity.

Unlike typical human centred design processes (such as user observation) the goal is not to evaluate the particular features or experience of this existing product, but to relate this to the value proposition and strategic competitive advantage. Therefore the internal stakeholders are encouraged to unpack the product/service in terms of needs, business models and technologies for a particular point in time and then across time.

Due to the diversity and knowledge mix of such teams the role of design visualisation and illustration is used as the common language within the project, not just to record but to present



Figure 2: From Product to Temporal experiences

future propositions. Therefore visualisation is central to the model being proposed (Figure 3).

The result from this extremely dynamic process is a multidimensional visual scenario of the user/technology/business model interaction over time.

This process continues until the organisation believes it has sufficient information to release the product/service onto the market.

In undertaking this approach, the organisation will have undertaken and generated the following:

1. Understanding of the social cultural context for the product/service concept
2. Understanding of the spectrum from Product Interactions through to Temporal Experiential Journeys
3. The latent user need(s) of the new product or service
4. An ability to transform the latent user needs into temporal scenarios which embed business models and technology solutions.
5. The development of visual assets to communicate the results/developing the strategy

SUMMARY/FUTURE WORK

To better describe this approach the following illustration and summary is provided (Figure 4).

The application and goal of this model is to map the temporal experience of the product/service to identify the touch points which can be visualised as needs, which in turn can be expressed as business models and brand values of the one system. This interactive approach is facilitated by design experts with internal stakeholders with the discussion being summarised as visual scenarios of stakeholder interactions.



Figure 3: Common Language Visualisation Example

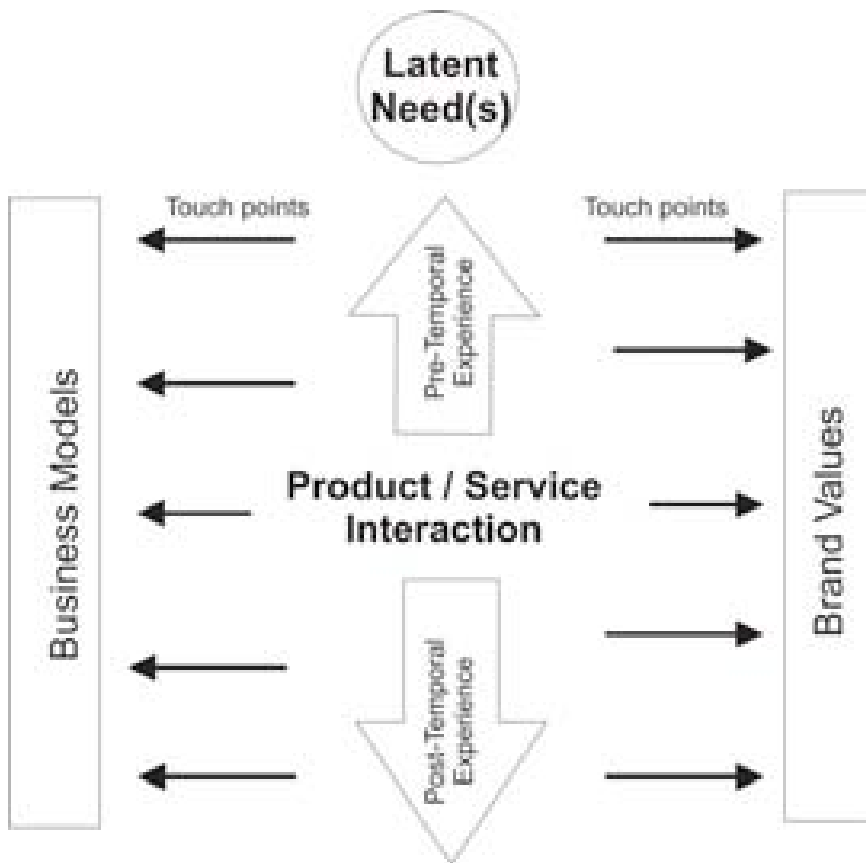


Figure 4: Proposed Design Led Innovation Model

Representing the project within this context often raises multiple questions and opportunities which are then further refined.

These visual assets can then be used to gain wider input from internal and external stakeholders through focus groups and workshops. However the goal of this activity is not to evaluate and obtain consensus of the idea, but to build upon gaps in the future proposition.

The emerging model presented in this paper is highly dynamic and engaging in its approach. It has been explored

and refined within several projects with highly successful outcomes from both the development of ideas and stakeholder engagement. Through the PINC 2011 collaboration an opportunity to explore cross cultural stakeholder engagement will be explored within a live industry project. Reflections on the outcomes from this engagement will be documented with the model being further refined.

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