

The Value of Design-led Innovation in Chinese SMEs

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Abstract

This paper focuses on understanding the role and use of design-led innovation in Chinese SMEs. The insights were gained by undertaking a pilot study, based on an applied developmental research approach involving participatory workshops, quantitative and qualitative positioning activities, in depth case studies and an individual pilot project undertaken with SMEs in the Pearl River Delta [PRD] over an 18 month period. It will discuss the findings, highlighting key areas of uncertainty that SMEs experience when attempting to make the transition from OEM to OBM, and how the findings have contributed to the development of a new design-led innovation framework.

Keywords:

Uncertainty, Design-led Innovation, Transition, Creative Risk Management

1 INTRODUCTION

Research shows that design has been established as a critical competitive tool, and a means of economic value creation for manufacturing industries [1,2,3,4]. However, large numbers of manufacturers and service providers have as yet failed to explore the potentials and opportunities that might be afforded by positioning design more centrally in their business and strategic development processes [5,6].

This paper focuses on understanding the role and use of design-led innovation in Chinese SMEs. The insights were gained by undertaking a pilot study, based on an applied developmental research approach involving participatory workshops, quantitative and qualitative positioning activities, in depth case studies and an individual pilot project undertaken with SMEs in the Pearl River Delta [PRD] over an 18 month period. This process was undertaken in conjunction with Hong Kong Productivity Council SMEs training program activities. The PRD is a region with many SMEs who have achieved substantial financial success from being original equipment manufacturers (OEMs). However, government organisations such as the Hong Kong Design Centre and the Hong Kong Productivity Council had realized that there was a need to encourage SMEs to shift from OEM based business to developing and owning their products and brands [OBM]. This was being driven by ever decreasing margins and realization that only one company can be cheapest in the market place, what Kotler [7] refers to as “hypercompetition”.

This paper will discuss the findings generated through the study, highlighting key areas of uncertainty that SMEs experience when attempting to make the transition from OEM to OBM. The pilot study findings have contributed to the development of a new design-led innovation framework tool that provides a usable systematic support structure to help SMEs understand how to: [1] integrate design-led into their business processes; and [2] manage the transition from OEM to OBM more effectively. It concludes by providing a case study example of the design-led innovation framework tool “Half Step Innovation Process” [HSI] in action.

2 CHALLENGES AND CONTEXT OF THE PILOT STUDY

The key challenges facing many companies, in particular Chinese SMEs, relates to remaining competitive and increasing market share. Kotler [7] argues that we have moved to a state of “hypercompetition”, associated with Michael Porter [8], which occurs when all companies focus on being the low cost producer. Each company tries to improve their processes by adopting the best practices of their competitors. In effect each company works harder and faster to be more efficient and their profit margins keep dropping. Hong Kong manufacturers Farhoomand, [9] have become increasingly marginalized by this phenomenon, often competing in global markets unable to pass on higher costs to customers, due to Mainland Chinese manufacturers and new and emerging low cost producing countries such as Vietnam gaining in production quality and establishing business connections with international buyers. In order to remain competitive and sustain growth it has been suggested that companies must produce products and services that exceed functional expectations and meet the emotional needs of users [10]. Given the current “hypercompetition” situation within the Pearl River Delta (PRD) it would be anticipated that manufacturers would be keen to embrace design and innovation to differentiate them against low price driven strategies and insulate themselves against local competition.

Innovation is viewed as an important aid to both sustained success in business and the exploitation of new ideas ahead of the competition [11]. Innovation activity and investment is clearly of growing importance to businesses, with greater numbers of companies listing innovation as one of their organisation's top three priorities [12]. More significant is the proportion of companies that indicate that innovation is their number one priority: this figure has more than doubled to 40% in the past 12 months [12]. For example, Apple's policy of continuous innovation, saw their business's brand value increase by 24% [13].

The benefits and problems attributed to the adoption and use of design is not a new dilemma. Kotler and Rath [14] previously contended, “design is a potent strategic tool that companies can use to gain a sustainable competitive advantage yet most companies neglect design as a strategic tool”. Design has clearly been identified as being vital to innovation and delivering enhanced financial performance [15]. Numerous studies and papers over the last two decades have indicated how design can improve existing products by fulfilling user needs, addressing new market opportunities and combating competitors’ products [16,4,18].

More recently the UK DTI [15] re-affirms that not enough businesses use design to connect new ideas to market opportunities. More specifically the Cox Report [11] pinpoints “that many companies simply don’t recognise opportunities or how to pursue them”. These traits can be attributed to many SMEs within the PRD.

3 COMMUNICATING THE COMPETITIVE VALUE OF DESIGN

By 2005 the Hong Kong Design Centre (HKDC) and the Hong Kong Productivity Centre had realized the need to encourage SMEs to shift from OEM based business to developing and owning their products and brands (OBM). HKDCs Reinventing with Design programs in 2006-07 focused on demonstrating how SMEs can profitability shift from OEM based business to developing and owning their products and brands [OBM]. During this period two important factors emerged that were potential barriers to the adoption of design-led innovation in Chinese SMEs: [1] the perceived costs of undertaking design activities [Design Council, 2008] and [2] Chinese aversion to risk. The HKDCs Reinventing with Design programs in 2006-07 focused on several themes, two specifically concentrating on the financial benefits of investing in design and how companies reduce the risk of developing and owning their products and brands [19]. From undertaking and reviewing SME training program activities, run in conjunction with Hong Kong Productivity Council in 2006, it became apparent that Chinese SMEs appeared to respond more positively to numbers first [return on investment] and quality of design second. From these learnings, added value benefits associated with using design effectively were communicated to SMEs via a “numbers first strategy” at the 2006 Reinventing with Design [19]. Table 1 provides a summary of added value benefits associated with using design effectively.



Chart 1:Design Contribution to Business Performance, Adapted from [20]

The “numbers first strategy” was supported by communicating, through case study examples, how rapidly growing companies: [1] use design more strategically within their business processes and [2] systematically search out ideas by understanding their customers. In these design-led companies, where design is seen as integral to their business activities, it was possible to demonstrate improvements in financial performance, defensible innovation, improved flow of new

products/services and how they had become more competitive in their key markets [21].

Added Value	Company Responses
Business Performance	97% of rapidly growing companies get ideas by understanding their customers [21]
	83% of companies believed that has design contributed to an increase in market share [22]
	44% of companies that see design as integral to business see an increase in competitiveness and turnover [23]
	39% of companies that see design as integral to business are opening up new markets due to design [23]
Competitiveness	80% of companies believed that design contributes to increased competitiveness [22]
	75% of business comes from products/services launched in last five years, in innovative companies [24]
	58% of customers now buy on added value versus 29% who buy on price - availability is a key issue [21]
	50% of business who where manufactures reported that design had sharpened their competitive edge [23]
Return on Investment	6.3% is increase in market share that design led companies attribute to the use of design. [23]
	75% was the average ROI achieved their most successful design projects compared the expected a return of around 50% [22]
	30% grow was achieved by 39 tracked FTSE 100 Businesses, who invested heavily in R&D. The group out performed the FTSE 100 every year since 1997 to July 2003, while the FTSE declined by 15% [15]
Design Effectiveness	40% of companies that achieved rapid growth used design in the idea generation, research, R&D phases [22]

Table 1: Added value benefits associated with using design effectively

In practical terms it was still necessary to convey how and where the use of design contributes to improving business performance and competitiveness (Chart 1). Hong Kong it could be argued has had a dollar driven culture for many decades. It was therefore important to build a clear financial case for investing in design and demonstrating the specific areas successful design-led companies invest in design.

Return on investment (ROI) is often quoted as the key measure of innovation [12] and a deciding factor in the

decision to invest or not invest in design. Sometimes ROI is criticised as an over simplistic measure on it's own [25]. The Design Council has provided evidence that for every £1 spent solving a problem in product design, it will cost £10 to tackle in development and £100 to rectify after product has been launched. More specifically they have determined that design-led companies achieve on average a £ 2.25 return on every £1 spent on design [21].

4 UNDERSTANDING OBSTACLES TO CHANGE IN CHINESE SMES

The objectives of the pilot study centred on gaining an insight into: [1] the key areas of uncertainty that SMEs experience when attempting to make the transition from OEM to OBM and [2] the factors impacting on effectiveness of design-led innovation.

The methodology for the pilot study was based on an applied developmental research approach involving participatory workshops, quantitative and qualitative positioning activities, in depth case studies and an individual pilot project. The pilot study sample comprised of 16 SMEs operating in fashion, electronics and jewellery sectors. The size of companies ranged from 10 – 150 employees with turnovers from HK\$750k to HK\$10m. The pilot study focused on understanding the effectiveness of design-led innovation at:

- Company Level: strategic, management and operational
- Functional Level: marketing, production, personnel and R&D
- Activity level: company positioning, product development, brand development and customer insight

Effectiveness of Design-led Innovation at a Company Level: At a company level positioning, generating and screening ideas were two main areas of concern that were impacting on the effectiveness of design-led innovation activities. The inability to shape design-led innovation activities through clearly defined brand values and characteristics was clearly impacting on operational activities, in particular idea generation and screening of ideas (see Table 2). A high proportion of the sample felt that their businesses were operationally weak in delivering design-led innovation. The reasons for poor positioning (table 2) started to be explained when exploring the effectiveness of design-led innovation at a functional level.

Company Activities	Factor Impacting on the Effectiveness of Design-led Innovation
Strategic level	Defining brand values and characteristics Delivering distinctive competitive advantage
Management level	Competitor analysis Promotional planning Sales activities
Operational level	Idea generation Communication Screening and evaluating ideas

Table 2: Factors Impacting on the Effectiveness of Design-led Innovation at a Company Level

Identifying and developing new product opportunities appeared to be the two main areas where more consideration was needed. Over two thirds of the SMEs rated themselves ineffective in the marketing area. From the pilot study findings, understanding user/consumer knowledge more effectively appears to be a significant factor impacting on design-led innovation activities.

Effectiveness of Design-led Innovation at an Activity Level: A reactive culture prevailed among the SME sample (75%) This was characterised by an over emphasis on production (81%). A high proportion of the companies lacked outward facing capabilities [customer insight, market segmentation] with an over reliance on competitor activities (93%) as a stimulus and driver for product innovation. Many of the sample companies articulated that they lacked confidence to identify and translate their core capabilities into brand values. This lack of confidence resulted in low levels of investment in brand development (62%).

Company Functions	Factor impacting on Effectiveness of Design-led Innovation
Marketing	Record of new product/service development poor compared to competitors Speed of converting and bring new products to market Sales force not involved in idea generation and do not submit new ideas
Production	Responding to customer requirements Adoption of new processes and materials
Personnel	Motivating staff Leveraging staff experience to improve innovation performance
R&D	Poor internal communication of R&D capabilities

Table 3: Factors impacting on Design-led Innovation at a Functional Level

Summary of Findings: In summarizing the key findings of the pilot study it became apparent that more consideration was needed on the following factors:

- Maximising capabilities
- Connecting with customers and consumers
- Logo's versus branding
- Fear of the quantum leap
- Worry of investing in intangibles

When unpacking the emergent factors it was possible to identify a number of underlying reasons attributed to the key areas of uncertainty that SMEs experience when attempting to make the transition from OEM to OBM:

Maximising capabilities: Many of the SMEs in the sample misunderstood and or had difficulty in communicating their company strengths. This was reflected in a weakness in identifying and prioritising key internal

capabilities from which to build brand experience. There was an over emphasis on price driven innovation underpinned by an absence of market based procedures for evaluating opportunities. There appeared to be a constant struggle in identifying which issues / parameters to compete on other than price. Insufficient time and resources were allocated on developing ideas to a point where appropriate creative risk assessment could take place.

Connecting with customers and consumers: Endemic in the SME sample was an inability to identify and connect with customers and consumers due to a lack of market research capabilities. This was reflected in a lack of understanding of the role and use of user and market research in identifying and developing new opportunities. This was evidenced in an over emphasis on “me-too” products lacking unique product features and differentiation against competitors. There appeared to be a fear of investing in customer and market research activities. This was attributed to a lack of short term pay back and more importantly linked to poor experiences with local agencies delivering outcomes that the SMEs felt were too generic and of little use to their business activities.

Logo’s versus branding: There was a common misconception regarding branding amongst the SMEs. Many of the sample perceived branding as a logo activity. Much of this attitude can be attributed to short-term views of the role of promotion and again attributed to poor experiences with local agencies. Naming was problematic, as it required a shift in attitude from traditional family and trade-associated names to re-naming that was more appropriate to international markets.

Fear of the Quantum Leap: A key factor impacting on the transition from OEM to OBM was the perception that they needed to go from OEM straight to ODM via a ‘quantum leap’. Their anxiety was partially fuelled [other than costs] by their awareness of their lack of understanding of the role and use of user and market research in identifying and developing new opportunities. This perception was “freezing” attitudes to change. Greater recognition was needed to the fact that the change process takes time, driven by clearly defined transitional phases in order to build confidence, capabilities and brand values.

Worry of investing in intangibles: A fundamental cultural change is needed in terms of attitude and culture towards investing in soft-innovation activities such as customer research. Soft-innovation activities need to be considered just as significant as purchasing new machinery to long-term business success. Investing in internal services has to be prioritised in order to facilitate the transition from OEM to OBM.

5 DESIGN-LED INNOVATION FRAMEWORK FOR CHINESE SMEs

The participatory workshops, the quantitative and the qualitative positioning activities provided a solid

foundation for the pilot study. From the in depth case studies a tendency emerged amongst SMEs who had attempted or were considering developing and launching their own brand products. The predisposition was to incrementally develop their core capabilities to facilitate the development of their own branded products servicing existing markets, often piggy backing existing client intellectual property and routes to market [see diagram 1]. The emergent “overlapping innovation strategy” [see diagram 1] initially appears to offer easy entry into higher margin business at minimal risk. Its premature attractiveness relates to its apparent potential to negate the need to invest in user or market research and related infrastructure. However the “overlapping innovation strategy” only masks the need for user and market research. Weaknesses of the “overlapping innovation strategy” emerge at the transition point from ODM to OBM. The sharing and use of client intellectual property and knowledge of routes to market in OEM and ODM activities is often acceptable and advantageous to achieving success and building strong long supplier relationships. On the other hand when SMEs attempt to develop their own brand products driven by insight and market knowledge taken directly from key clients, this habitually leads to the fracturing of relationships often resulting in the loss of core business. For many SMEs the fear of lost business frequently halts any attempt to move towards own branded products.

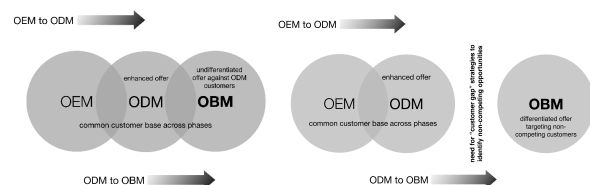


Diagram 1

Diagram 2

For many in the pilot sample there was a requirement to attain a balance between maintaining existing business and the need to develop more higher margin activities developed through own brand ownership. To achieve these goals the SMEs need to create a “customer gap” that enables them to target non-competing customers, ideally within the same industry, focusing on niche and or specialist markets (see diagram 2). Coughlan and Prokopoff [26] suggest that designers create frameworks that can help simplify and unify design opportunities in order to conceive of possible futures. An easy to use framework that could help facilitate the development of new products by building confidence to anticipate, predict and act upon new market opportunities was a prerequisite for the SME sample companies

Half Step Innovation Process	Phase 1: OEM Original Equipment Manufacturer	Phase 2: OEM - ODM Original Equipment Manufacturer to Own Design Manufacturer	Phase 3: ODM - OBM Own Design Manufacturer to Own Brand Management
Steps	OEM Capability Requirements	ODM Capability Requirements + the OEM Capabilities	OBM Capability Requirements + the ODM Capabilities
Step 1: Positioning Internal Capabilities	<ul style="list-style-type: none"> • Comparable best practice manufacturing expertise of key competitors • Knowledge and understanding of core materials and technologies of components • Understanding and translating given product specifications • Ability to produce high quality components to price and time constraints 	<ul style="list-style-type: none"> • Expanded manufacturing expertise to encompass all elements of proposed product offer • Introduction of new materials and processes • Introduction of in-house design and R&D capabilities 	<ul style="list-style-type: none"> • Ability to identify and apply differentiated materials and technologies • Enhancement of in-house design capabilities to cope with brand and marketing activities
Step 2: Defining Market Sector Requirements	<ul style="list-style-type: none"> • Knowledge and understanding of regulatory requirements • Knowledge of component price points 	<ul style="list-style-type: none"> • Knowledge of market size and value • Knowledge of key players/competitors • Knowledge of product price points 	<ul style="list-style-type: none"> • Development of in-house marketing capabilities • Development of distribution channels • Customer service support
Step 3: Researching Customer Profiles	<ul style="list-style-type: none"> • Understanding of User groups • Awareness of Customer profiles 	<ul style="list-style-type: none"> • Understanding of customer profiles • Understanding of consumer attitudes and motivations • 	<ul style="list-style-type: none"> • Ability to identify and translate new and emerging customer trends
Step 4: Developing Product and Brand Experience	<ul style="list-style-type: none"> • Introduction of brand name • Development of brand identity 	<ul style="list-style-type: none"> • Development of a brand position 	<ul style="list-style-type: none"> • Development of associated brand values and promises • Development of product and service experience
Step 5: Targeting New and Existing Customers	<ul style="list-style-type: none"> • Retaining current customers – delivering effective products and services • Heightening brand awareness – promotion of core services 	<ul style="list-style-type: none"> • Introduction of competitor analysis skills • Development of distinctive product/service offerings 	<ul style="list-style-type: none"> • Development of differentiated products and service offerings • Ability to identifying and translating customer and user needs into new products /services

Table 4: Factors and Characteristics Impacting on Design-led Innovation at an Activity Level

necessitate change a proposed SME design-led innovation framework would therefore need to address and support:

- The deficiencies in identifying and prioritising key internal capabilities on which to build brand experience.
- A lack of understanding of the role and use of user and market research in identifying and developing new opportunities.
- An absence of confidence in developing new product ideas

- The fear of the quantum leap – transition from original equipment manufacturer to own brand management

The “Half Step Innovation Process” [HSI] was developed in response to the needs and challenges faced by the SME sample companies. The HSI focuses on connecting company capabilities with new customer opportunities. It places emphasis on having an external focus encouraging the SME to understand the role and use of user and market research in identifying and developing new opportunities. In practical and operational terms the HSI process concentrates on building internal capabilities to enable the transition from original equipment manufacturing to own brand management. It centres on providing a practical framework for helping SMEs to identify their core capabilities, building a brand position, developing differentiated product opportunities and identifying new market opportunities that do not cannibalize existing business (see diagram 2). The HSI introduces a practical support structure to help SMEs understand how to: (1) integrate design management into their business processes and (2) manage the transition from OEM to OBM more effectively. The transition is built around a three-phase procedure underpinned by a repeating five-step process that progressively introduces new capability requirements at each phase. The integrated design management is introduced through the progressive and repeatable five-step process (see table 5).

6 OMNI CASE STUDY: HALF STEP INNOVATION PROCESS

Omni had taken part in both the 2006 and 2007 Hong Kong Design Centre’s Reinventing with Design programs and had seen the preliminary finding presented at the 2007 event. They agreed to pilot the HSI Process based on these findings. Established in the early 1990s, Omni had over 16 years experience of manufacturing and marketing in the sports and fitness industries through OEM/ODM programs for major retail chains as well as with major brands in the USA and Europe. The company employs over 150 people with facilities located in China and the United States including its own dedicated 80,000 square feet manufacturing and product development facilities. Omni wanted to develop its own brand to target the USA and European markets. It had established Omni Sports Trend and Technology (OSTT) in order to focus on marketing Omni premium line products but realised that they were struggling to develop a differentiated product and brand position (see Figure 1).



Figure 1:



Figure 2:

The pilot project started in September 2007. The process commenced by undertaking a detailed HSI review of Omni’s design-led innovation capabilities. The review process identified several factors impacting on the effectiveness of their design-led innovation activities:

- Deficiencies in defining brand values and characteristics
- Lack of experience of promotional planning
- Poor track record of new product/service development compared to competitors
- Weak response rate to customer requirements
- Lack of confidence in developing new product ideas
- Undifferentiated products/services

Omni introduced the HSI Process following the three-phase procedure underpinned by the five-step process. They progressively developed and introduced new capabilities to the company to address the factors impacting on their design-led innovation activities. Investing and developing the brand identity and brand experience appeared to cause the greatest problems. The process reflected the findings from the pilot study attributing initial reluctances to previous short-term views of the role of promotion and poor experiences with local agencies. However by May 2008 Omni had launched its new brand image and differentiated product range at the Denver (USA) Health and Fitness Business Trade Show (see Figure 2).

Omni Case Study: Half Step Innovation Process	
Steps	Capability Development
Step 1: Positioning Internal Capabilities	<ul style="list-style-type: none"> • Enhanced manufacturing capabilities • High quality warehousing • Logistics • Procurement • In-house Industrial design
Step 2: Defining Market Sector Requirements	<ul style="list-style-type: none"> • Premium home gym market in USA • USA distribution channels • European professional gym products market • European distribution channels
Step 3: Researching Customer Profiles	<ul style="list-style-type: none"> • USA premium home gym retailers • European professional gym products distributors
Step 4: Developing Product & Brand Experience	<ul style="list-style-type: none"> • Development of new brand image • Brand message and positioning • Development of differentiated product range
Step 5: Targeting New & Existing Customers	<ul style="list-style-type: none"> • USA premium home gym retailers • European professional gym products distributors

Table 5: SME Design-led Innovation Framework: Half Step Innovation Process

The HSI process helped Omni to build the internal capabilities needed to make the successful transition from own design management activities to own brand management. It provided a practical framework for helping them to identify their core capabilities, build a clear brand position and develop a differentiated product range. Most importantly it enabled Omni to identifying new market opportunities that did not impact on existing business activities.

7 CONCLUSIONS

The findings from the study highlighted the emergence of the following issues:

- Many SMEs misunderstood and or had difficulty in communicating their company strengths. This was reflected in a weakness in identifying and prioritising key internal capabilities on which to build brand experience.
- Endemic in the SMEs was an inability to identify and connect with customers and consumers due to a lack of market research capabilities. This was reflected in a lack of understanding of the role and use of user and market research in identifying and developing new opportunities.
- There was a common misconception regarding branding amongst the SMEs. Many of the sample perceived branding as a logo activity. Much of this attitude can be attributed to short-term views of the role of promotion and again attributed to poor experiences with local agencies.
- Greater recognition was needed to the fact that the change process takes time, driven by clearly defined transitional phases in order to build confidence, capabilities and brand values.

To necessitate change the “Half Step Innovation Process” was developed, providing a practical framework for helping SMEs to identify their core capabilities, building a brand position, developing differentiated product opportunities and identifying new market opportunities that do not cannibalize existing business (see diagram 2).

The HSI process demonstrated its ability to help Omni, a Chinese SME, to build its internal capabilities needed to make the successful transition from own design management activities to own brand management.

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