

MODELING THE STRATEGIC IMPACTS OF DESIGN IN FINNISH EXPORT COMPANIES

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1. Introduction

Studies conducted to date have provided either correlations between good design (with indicators such as design awards and prizes) and business performance, or management views on the impacts of design. These kinds of studies, however, have not been able to ascertain, without doubt, the causal connections between the design usage and results.

The goal of this research project was to provide proof of the impacts of design usage, and also to define typical differences in design usage through studying design usage in different company and business types. The purpose was to develop 'The Evaluation Model for the Strategic Impacts of Design', containing several indicators with which the links between design usage and its impacts can be assessed.

Objectives of this research included:

- Developing the generic evaluation model for strategic impacts of design in corporate business
- Finding causal connections between design and economic impacts
- Developing evaluation criteria for the design usage in different company types.

The project was carried out at the University of Art and Design Helsinki by Designium, the New Centre of Innovation in Design; in co-operation with MUOVA, the Western Finland Design Centre. The expertise of the International Design Business Management (IDBM) –program from Helsinki School of Economics was also exploited.

Participating companies represented broadly the Finnish export industry, including ABB, Ekeri, Iittala, Kone, Nokia, Oras, SK Tuote, Suunto, and T-Drill. Most of these companies already utilize design at the strategic level (such as brand, corporate identity management). However, the experience in design usage varied from few years to decades.

The Finnish Government made a resolution on Finnish design policy in 2000. The objective of the design policy was to establish a dynamic system of design in Finland to enable the nation to achieve the status of a forerunner in the utilization of design, and to improve the competitiveness of Finnish industry through design. This project is part of the Design 2005 technology program - launched in 2002 by Tekes, the National Technology Agency of Finland - one of the key measures in the national design policy statement.

2. Research Methods

In this research design is defined simply as the work carried out by professional designers. The following approximate list defines aspects of design know-how important from the business perspective, according to the literature research:

- Creativity / innovativeness / future vision
- User focus: aesthetics / usability / functionality
- Corporate / brand profile

- Problem-solving, e.g. for cost reduction
- Visualizing and concretizing ideas and viewpoints of different disciplines / creating tools for the decision-making.

The basis to develop the model for evaluating the strategic impacts of design was to position design into a general view of business activities. The purpose was to monitor design through practical business experiences and to separate the impacts from those of other functions; nevertheless, design is never solely responsible for the success. The purpose was to depict the design decision-making at the strategic level; and the extent of design usage, i.e. the processes in which design is utilized.

The first year of the project (1.9.2003-31.8.2004) consisted of background research and interviews of the executive management in the participating companies on the benefits of design in their business. The framework for the evaluation model was developed through the business performance measurement models, e.g. EFQM-model and Balanced Scorecard. At the same time, the success factors in design usage were searched from numerous case studies and design literature. The research team had access to case material on about 100 companies gathered by Designium, MUOVA and the IDBM program. In addition, the research group scanned the case studies from Design Management Institute (DMI), Harvard Business School, and Design Council. The background research and the executive management views created the foundation for the preliminary evaluation model.

The second year of the project (1.9.2004-31.8.2005) concentrated on the case companies' successful product cases described by the representatives of the operative level. The emphasis was on the role of design, and the goal was to deepen the results of the first year, as well as to find successful design strategies. In addition, an inquiry on design usage in Finnish companies was conducted, the objective of which was to verify the data collected from the interviews. It was sent by mail to 500 CEOs at Finnish production companies in spring 2005. The sample covered companies from different branches of business employing over 3 people. The response rate was 25 %, and 125 responded to inquiry, but 24 % sent the inquiry form empty. Eventually 98 filled the form, which means that final response rate is 19.6 %.

3. The Evaluation Model for the Strategic Impacts of Design

The model works as a tool, with which the company's drivers, the design usage, and the results of that design usage can be modeled and assessed. Financial indicators show the ultimate success and outcome but in order to find the causes for these achieved results, customer result and process indicators are needed as well. In addition, especially in the innovation driven companies, the learning perspective is important to take into account which also give hints of the future prospects of the financial result and makes possible to react in time for things that require action. In other words, both result and cause (process) indicators are needed to provide proof of design's contribution (Figure 1).

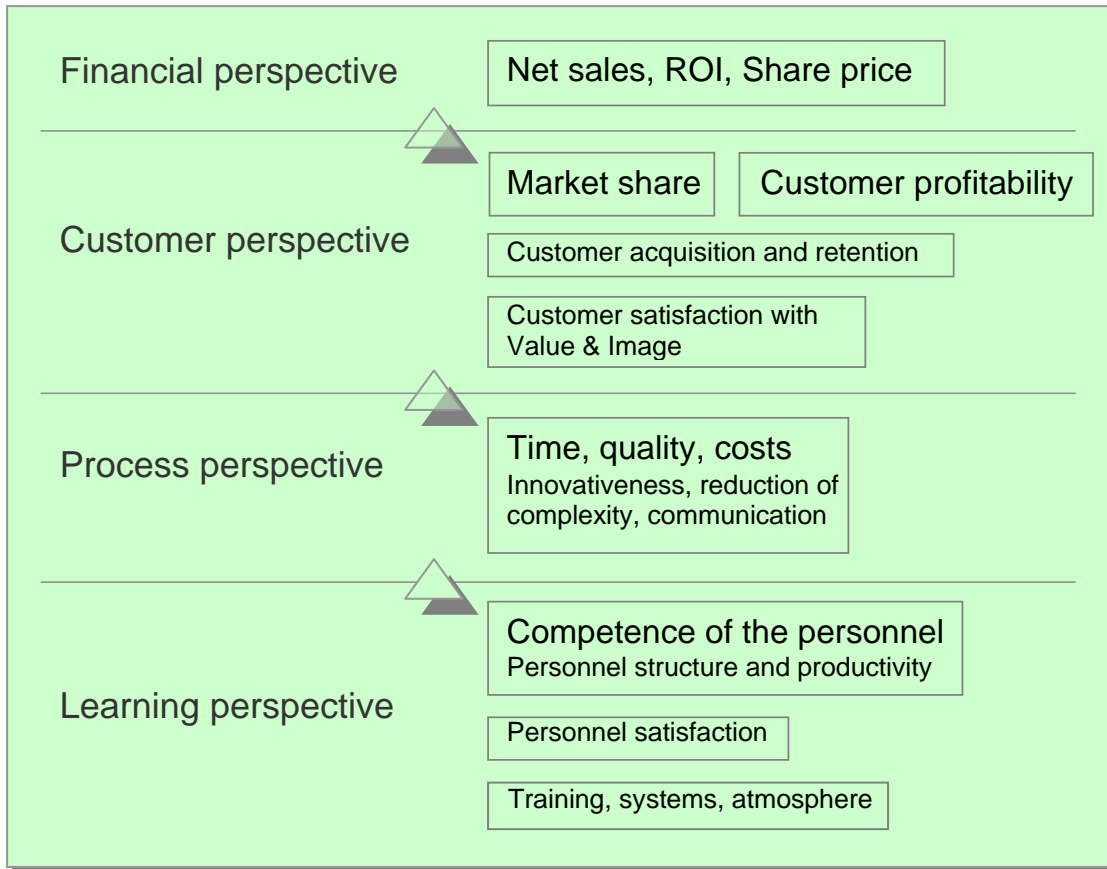


FIGURE 1: Relationship between different indicators in business performance adapted from the concept of the Balanced Scorecard

Design wise, different perspectives indicate:

Financial perspective → Achievement of strategic goals,

Customer perspective → Success of design,

Process perspective → Development of design integration,

Learning perspective → Organizational design competence.

The developed Evaluation Model for the Strategic Impacts of Design (Figure 2) consists of three parts:

- Drivers, reasons for design usage in the company in different strategic situations;
- Enablers, which indicate that design usage has been strategic, including both learning and process perspective; and
- Results, which measure the impacts of design usage, including both customer and financial perspective.



FIGURE 2: The Evaluation Model for the Strategic Impacts of Design

The applicability of the model will be tested in the third phase of the project, the purpose of which is to transfer the generated new knowledge forward to the participating companies to facilitate the application of the research results in practice.

3.1 Drivers

Drivers concern the reasons for design usage in different strategic situations. Drivers for design usage include both external drivers such as the market need and internal drivers such as corporate values. Drivers emerge often because the prevailing conditions are changing, for example the rivalry in the business environment increases. On the other hand, unexploited business potential can become a driver, for example when a customer’s unsolved problem requires action.

Internal drivers, in other words **company drivers**, include resource-based drivers, such as the *company size*. *The corporate culture* influences the brand and corporate identities and outlines the role of design concerning the brand image, products, and services. At the corporate level, internal drivers influence the design usage through the firm’s choices as core values and the so called long-term ambitions in business. The visionary goal describes the desired future state for the company. The *design competence* of the company is also an important driver for the design usage.

External drivers refer to the factors - economic, social, and technological factors - dealing with the basic characteristics of the environment for the corporate level decisions. These drivers determine, for example, how (and if at all) design can bring the competitive advantage in the particular **industry**; for example, whether design is utilized in the industry in general, and how intensive the design usage is. *Maturity and velocity of the industry* influence the design usage, but also *the product type* and *standards and legislation* may affect. For the company business, **competition** as a driver concerns *the structure of the rivalry* and *the threat of new competitors and substitute products*, challenging the design usage. **Customer** drivers deal with the customer

characteristics considered in the design usage: *the customer type* (consumer versus professional buyer), *the share of new customers*, and *the market diversity*.

3.2 Enablers

Enablers concern the critical issues that need to be considered when implementing design strategies, such as the organization of the design usage to benefit the company. There does not exist one general way to organize the design usage; furthermore, the drivers influence the organization of design through corporate and business strategic goals; and, withal influence the content of design strategies.

The further categorization divides enablers into three factors: design in vision and strategy development, design management, and operative design usage. The enabler classification is based on the Universal Process Classifications Scheme, which contains 13 business processes that are applicable to almost any business:

Operational processes:

- Understand markets and customers
- Develop vision and strategy
- Develop products and services
- Market and sell products and services
- Produce products and services
- Deliver products and services
- Invoice and service customers

Management and support processes:

- Develop and manage human resources
- Manage information resources and technology
- Manage financial and physical resources
- Execute environmental, health and safety programs
- Manage external relationships
- Manage improvement and change.

A team of business professionals from Arthur Andersen, IBM, DEC, Xerox, and the American Productivity and Quality Center developed the scheme, and the International Benchmarking Clearinghouse has endorsed the scheme as an industry standard. The development of the evaluation model for strategic impacts of design brought forth some alterations to the business processes made in mutual understanding with the case company representatives. Two alterations were made to operational processes: process to understand markets and customers was modified to research process and after-sales marketing process was added.

The extent of design usage in different functions can be evaluated through observing in which operational processes design is used; while the integration, organization and management procedures of design are the issues of management and support processes.

Design in vision and strategy development process focus on design's contribution to the corporate and business unit strategies. It contains the cultivation of the design competence in the company, especially at the business administration; for instance, envisioning the future and the mediation between the corporate strategic goals and their implementation by design.

The *corporate strategy* concerns typically the selection of businesses in which the company will compete; and, the development and coordination of the business portfolio. At the corporate level, a company decides its commitment to long-term design usage - the best possible benefits of design necessitate continual and consistent design usage and development. Strategic design projects have long-term effects on the company success.

Moreover, the company has to decide at the corporate level whether to standardize the design strategies in different business units. Competitive strategies within large multidivisional firms are usually determined at the *business unit* level; different divisions within a large corporation may well adopt dramatically different approaches to the issue of competition¹, also for design. Design related issues at the business unit level concern design as a competitive tool in the business, and following the design framework specified at the corporate level.

Design management concerns how design issues are integrated into the management and support processes. Above all, design management aims at controlling, coordinating, evaluating and developing the management of the resources and processes, i.e. promoting the operational activities to succeed. Themes of design management are *financial and physical resources, human and knowledge resources, external relations, and project management*.

Operative design usage is the third factor in enablers. The number of processes in which a company uses design indicates the scope of operative design usage. It is important that the company understands the wide possibilities of design usage and expands the design utilization from merely product design.

Design may lose its profitability in many ways. It is important, for instance, that design solutions are defended by designers or others by reasonable design knowledge during the whole R&D process to avoid losing good design solutions for cost efficiency and repeating design projects over the same problems.

3.3 Results

The third part of the model, results, concerns the measurement of results of the design usage. Accordingly, result indicators concern the realization of the corporate goals, identified through company and business drivers and build into strategic goals. Results include both customer results and financial results. **Financial indicators** include net sales, ROI, and share price, for instance. They indicate ultimately the impacts of design in businesses. The contribution of design can be proven through **customer results**, which indicate for instance design's significance during the purchase decision.

Measuring the financial benefits can set forth from the cost-savings to the product development costs, stretching the lifespan of a product or its technology, increasing the market share and observing the coverage in the competing product segments, for example.

¹ Olson, S.F. Slater, R.D. Cooper (2000): Managing Design for Competitive Advantage: A Process approach, DMI Journal Vol.11 nr.4.

4. Successful Design Strategies

The role of design in companies varies depending on the strategic situation. Strategic design usage necessitates that strategic decision-makers are aware of design's possibilities in different circumstances. The product case study outlined a pattern for gaining financial benefits through design. Here, different design strategies are presented through Ansoff's "Product / Market Growth -Matrix" framework, which consists of four parts: market penetration, product development, market development, and diversification.

1. Market penetration - existing products for existing markets: Utilizing market's filling degree e.g. widening or going deeper to the customer segments with existing products in existing market.

The company can benefit from design in market penetration; the investment in design is typically 1% or less of the investment in R&D. **Design is often the major competitive edge: Advantage is gained through design variations and improvements** (appearance, form, material, color etc.) **of the basic technology to ensure the market coverage.** The goal for design usage is to speed up the payback time for the technology investment and lengthen the lifecycle of the technology. All case companies had used design for developing product variations in mature markets.

2. Product development - new products for existing markets: Product development is successful strategy especially when the target customer group is limited (e.g. professionals of a certain field).

Through design it is possible to develop products appearing as new to the customer.

The goal is to lengthen the growth period and the product life-cycle of successful product and to design a popular product model (form and qualifications) which appears as a new product to the customer. A case company had used design for modernizing the appearance of a successful product series and thus lengthened its lifetime. **Design is a means for humanizing new technologies and adding value through design solutions: improving desirability and intelligibility, cost-savings.** The goal for using design is to attract attention, improve desirability and user-friendliness as well as create recognizable brand features. A case company had developed a product with new benefits for the user, and design was involved since the beginning of the process in order to make the product user-friendly and desirable.

3. Market development - existing products for new markets: Bringing the existing product to new markets, continuing the lifecycle and expending the still existing capacity.

Design is a tool to meet the needs of global-local markets. The goal of design is to intensify the acceptance in the markets by cultural adaptation, product consistency and linking products to brand. Design can also be used for mass-customization: Defining mutually shared denominators in prevailing and potential markets, for example through modularity and standard collections of colors and materials. A case company had used design to develop products with different design language for different markets.

Design provides possibility for distinctiveness when pursuing into international markets. A case company had used design for creating new, distinctive look with reasonable price for the existing product and succeeded to tap into saturated international markets.

Design is an important tool when pursuing into higher segments (premium products). Co-branding with the designer or the design agency may be beneficial when the company pursues changing its image. A case company had co-operated with the famous foreign design agency to develop a product series for higher segments resulting in improved brand image and increased sales of lower segment products.

4. Diversification - new products for new markets: Market diversification refers either to new products in new markets or to business innovation transferring existing technology to another branch of business or industry.

The purpose of new design for new products and customer segments is to attract attention by distinctive, desirable and intelligible design. Design can also be used for stretching the brand limit for new business opportunities when competing on the customers' attention by creating solutions that correspond to customers' true needs. **Design facilitates the acceptance of an innovative product.** The design goal is to intensify the product acceptance by attracting attention but also creating trust. Too many new details and uncertainties in the decision-making process may intimidate the customer to choose new technology. For example, existing design can be adapted for the new product when the acceptance of new technology is uncertain.

5. Conclusions

In all presented design strategies desirability of the product and the brand profile are the major reasons for design usage. Differences in design strategies were found according to the strategic situation:

- Design as the main competitive edge or added value
 - o In mature markets design is one of the main competitive edges, but design can also bring competitive advantage in new markets where the competition is based on technology, for example through distinctiveness.
- Design for innovation vs. follower strategy
 - o The planning horizon of design usage – whether the company creates long-term design strategies or design usage follows current trends
 - o In all our company cases design was used for innovation, however, current design trends were recognized
- Design focus - aesthetics / usability / brand profile / cost reduction
 - o Design focus either on customer profitability or increasing market share
 - o Especially customer type, but also company size and market size as drivers affect this decision. A small company usually competes with premium products against bigger companies that can benefit on the economies of scale. In addition, when the customer group is limited, it is worthwhile to pursue increasing sales profits instead of volume.
- Design for differentiation or assimilation
 - o Design for repositioning the corporate/brand image or for facilitating the acceptance of novelty - design focus on new business opportunities or linking new product ideas to the existing brand profile. Corporate identity determines the extent of repositioning

- brand profile has to be based on true identity; however, the competition may bring pressures to modernize the image.
 - Coherent brand image or unique products for different segments. Global markets: Design focus on local adjustment or on the greatest common factors. Especially customer type and company size affect this decision. In consumer markets personified products are required. A large company can use design as a tool for mass-customization, for a smaller company it may be more beneficial to focus on certain segments or the greatest common factors.
- Co-branding with the designer or the design agency
- Especially market segment affects if co-branding is profitable. A ‘star designer’ brings added value for certain segments in consumer markets, but in industrial business the role of design is to emphasize the reliability of the company and functional features of products.

Company’s experience in design usage affects the impacts of design; the more experienced design user the company is the more difficult the implementation is to copy. Also, the less usual design usage is in the industry, the more beneficial design usage is. Companies considered the development of briefing and evaluation of design as the main ways of improving their design usage. The challenge of managing creative work is to steer the work in right direction with constraints but avoid restricting the creativity too much. Especially when it was a question of a large company, the representatives of the operative level stressed the significance of the information flow in design briefing. Intermediaries interpret and filter the information and designers may not receive all the crucial information. A creative person absorbs the information – the company should facilitate the networking and interaction with important parties, like customers.

Furthermore, the results of this research imply the importance of design competence of the entire organization: Justifying of design solutions becomes easier when the rest of the organization understands the benefits of design. Especially vital is that the executive management understands the possibilities of design in different strategic situations. However, even though it is important that design competence permeates throughout the organization, the company has to take care that there is someone responsible for design usage and its development.

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