THE ATTITUDE OF CZECH COMPANIES TOWARDS DESIGN – COMPARATIVE STUDY OF 2012 AND 2014

The purpose of this paper is to review the sources of design management and links between design and business prosperity. The study shows current situation in Czech business in the years 2012 and 2014. Furthermore, this paper also attempts to analyse (comparative study) and identify the awareness of companies concerning design as a condition of business prosperity. The primary aim of the research is to compare managers’ attitude to design in Czech businesses. The results of the research offer interesting findings that indicate a change in attitudes. This paper identifies several interesting aspects regarding design within Czech companies, including the mind-set of management.

Keywords: long-term marketing, design, design management, competitiveness, business prosperity.

Formulation of the problem generally. Success in business is a vital question for those businesspersons who want to have a long-term success. The main topic of this paper is how “design” is linked to business success. Czech market is almost fully saturated; there is no primary key for the lowest price. Consumers’ preferences may change with increasing living standards and rising incomes. There are common keys for having a business successful: innovation, attractive product and effective marketing. A product should have not only its strong marketing support, but also its design and package.

The success of a company and the question of design is therefore a major challenge, especially for those companies with high ambitions in business. These companies are not afraid of innovation and investment of precious financial resources together with a long-term marketing.

Analysis of recent researches and publications. Design management defines Hollins [16] as the organization of processes related to the development of new products and services. Simultaneously, Kathryn Best [3] indicates the area of design management, which consists of different views and can be very individually oriented. Fundamental problems of design management according to Bruce and Bessant [7]: “Different views on the whole design process, Various techniques to help design, How to measure the effects of design, How to improve processes in design”. According to Design Management Institute in Boston [11], the definition of design management encompasses the ongoing processes, business decisions,
and strategies that enable innovation and create effectively designed products, services, communications, environments, and brands that enhance our quality of life and provide organizational success. It is the art and science of empowering design to enhance collaboration and synergy between "design" and "business" to improve design effectiveness. It includes the use of design thinking or using design processes to solve general business problems.

On the other hand, Belas stated that the most important business risk of Czech companies represents the market risk [2]. Design offers four powers or directions through which to create value in management, and these four directions can be seen as a system with the vision in the center according to Mozota [22-24]. Oakley [25] deals with a specific field of management. He presents the differences between managers and designers. Main advantages of design management describes Bruce and Bessant [7]: Increasing profit by increasing sales or by decreasing manufacturing costs, increasing market share, gaining a competitive advantage, revamp of mature and failing products, providing a strategy for growth, design is a way of launching a new product or service.

Mazota [23] deals with the topic of design as a competitive edge. The author measures the impact of design on product, classifying the reasons for launching new products and the tacit knowledge of design. According to Bruce, Cooper & Vazquez [8], small companies have a range of business needs for design, but have varying levels of awareness and competency to manage design effectively. Two different types of companies could be discerned from the study: ‘confident’ and ‘apprehensive’ design users. Bruce, Junginger & Lockwood [9] also identify the ways in which small manufacturing and service companies use professional design skills and their approaches to managing product, engineering and graphic design in relation to effective design for small businesses. The Roy and Potter [27] research study confirms the finding that graphic design projects are significantly more likely to be profitable than projects involving product design expertise or projects involving engineering or engineering plus industrial design. The UK Design Council focuses on the contribution made by design and presents mail responses [7]: 91% felt it improved the image of their company. 84% felt it helped to increase profit. 80% felt it helped into new markets. 70% felt it reduced costs.

An important concept is also thinking about design named “design thinking”. “Design thinking involves creating choices and then making choices. Design thinking depends upon observing how people actually use products. They use design thinking in all disciplines and markets” [5]. Cross [10] defines an overall strategy from the concept to detail of design. Authors also outline the nature of design thinking, and set it within broader contexts of product development and design process management.

This is also a philosophy of using the individual stones enabling development of new product design in order to have business successful. Lidwell et al. [20] state that design is not just a question of being seen, but it also represents deeper thoughts. The research of Kozubiková et al. [17] confirmed that perception of innovativeness is very important for the entrepreneurs in Czech Republic, particularly in the segment of business. The majority of entrepreneurs in this segment confirmed that they develop new products and services in their company regularly. According to Verganti Design plays a key role in innovation and has three key tasks related to innovation management according to design [28]: 1) listening, identifying customer needs, 2) interpretation, creativity – express solutions, 3) aiming at a selected target group in order to attract customers. Herrmann [15] mentions that design of product quality is to be seen not merely as the task of a single functional unit, but as a central challenge for any company. This altered perspective was brought about by the fact that superior products are
available in many branches of industry, in terms of both price/cost and quality. Indeed, Gmuer [13] states these facts in his study: design may contribute to understanding of the interaction between psychological factors (processing fluency) and sensory processes during the post-consumption evaluation. In addition, Gemser and Leenders [12] argue that the impact of design on company performance is very likely to vary depending on skills and talents of the people involved in design process. Consequently, Krenar and Taraba [19] mention that holistic competence of an individual should be one of the important factors in order to create a successful business.

There is a strong link between marketing and design management, which Gorb [14] mentioned. Also, Melewar, Dennis and Kent [21], and Adir and Pascu [1] present the importance of a logo as a graphic element to support a corporate identity. They describe the basic idea that the logo design is a creative aspect which enables a company to be seen through a symbol as a visual and graphic message. “Design thinking as a mechanism for brand ambidexterity” was explained by Beverland et al. [4]. The author highlights two key implications for brand managers recognizing the need for design thinking and organizing in a way to achieve brand ambidexterity. Similarly, the corporate identity which is related to design was also mentioned by Vysekalová and Mikeš [29]. Beverland et al. [4] defines design thinking associated with the branding. The authors focus primarily on a strong relationship of a company's image, brand and design.

Aims of the article. The primary aim is to explore approaches to the concept of design management in Czech enterprises. Design is a factor influencing the company’s competitiveness and a long-term business success. For this reason, there are three research questions (RQ), to be compared with the research results from the years 2012 and 2014:

- RQ1: How important is in general design for business success (managers’ opinion)?
- RQ2: How is a company satisfied with their own product design?
- RQ3: Does the factor “design” help to achieve company’s economic goals?

Subsequently, the research hypotheses will be statistically verified:
- H1: More than 75% of managers (2014) believe that design in general is important for business success.
- H2: More than 75% of businesses (2014) are satisfied with their own product design.
- H3: More than 75% of businesses (2014) believe that design helps to achieve economic goals.

Simultaneously, another goal is to find out managers’ attitudes to design and how design influences their company.

About 75% or more numerically defined “Most”. The term “firm or company” represents opinion of managers who have a key position in the company.

Methods. The research was done in two periods, the first survey (original research) was in 2012 [26]. The research in 2014 [18] was based on the same model.

The research was done by using an electronic questionnaire (16 closed questions). Respondents were addressed by email. The total amount of distributed emails (to the managers of major companies in the Czech Republic) was 305 out of the initial email database, which contained almost a thousand contacts (this database was updated to the final 305 verified contacts).

The return of questionnaires in 2014 reached 55% (168 completed questionnaires) and in 2012, it was 47% (144 completed questionnaires). The survey examined the attitude of firms to design, especially in the context of business prosperity and business importance.
The questionnaire included closed questions and was created by Google Spreadsheets technology (Google Forms). Subsequently, the data were verified and statistically analysed. Mosaic graphs (Statgraphics software) for comparisons were used. Research hypotheses were statistically verified by using Excel XLstatistics5.

The Tables 1 and 2 below show the research group characteristics (previous research of 2012 was very similar).

The research group was relatively balanced (58% of B2B, B2C 42%). None of the questionnaires contained an item B2G. The current evaluation criteria for public procurement of design do not assign crucial importance to the contract price.

**Table 1 – Research group characteristics – business transactions**

<table>
<thead>
<tr>
<th>Year 2014</th>
<th>Relative share</th>
<th>Business transactions*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producers</td>
<td>16%</td>
<td>B2C 42%</td>
</tr>
<tr>
<td>A service-oriented business</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Trade companies (merchant)</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Producers</td>
<td>23%</td>
<td>B2B 58%</td>
</tr>
<tr>
<td>A service-oriented business</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>Trade companies (merchant)</td>
<td>13%</td>
<td></td>
</tr>
</tbody>
</table>

* – some companies are in both B2B and B2C segments, the number of firms included in this research group is about 20%

**Table 2 – Research group characteristics – company size**

<table>
<thead>
<tr>
<th>Company size (2014)</th>
<th>Number of employees</th>
<th>Relative share</th>
</tr>
</thead>
<tbody>
<tr>
<td>micro</td>
<td>1-10</td>
<td>16%</td>
</tr>
<tr>
<td>small</td>
<td>11-50</td>
<td>17%</td>
</tr>
<tr>
<td>medium</td>
<td>51-200</td>
<td>22%</td>
</tr>
<tr>
<td>large</td>
<td>201 and more</td>
<td>45%</td>
</tr>
</tbody>
</table>

A group of companies from industry was not the focus of research. Results of the questionnaires were mainly from companies operating in services (including IT), 29% engineering (including automotive) 19%, trade 16%, construction 12%, and 5% of the food industry. Other segments were represented by less than 5%. The aim was to reach the largest number of companies on the market regardless the industry.

**Basic material.** The primary aim is to explore approaches to the concept of design management in Czech enterprises. Design is a factor influencing the company's competitiveness and a long-term business success. The following section will therefore analyse defined research questions (RQ) and compare these with the results of surveys from the years 2012 and 2014. This solution will be made by graphical and numeric comparative analysis. The analysis of the research questions is visualized in mosaic plots.

RQ1: How important is in general design for business success?

Visually, the mosaic chart demonstrates that colour distribution is almost the same in both rows, which indicates the independence of categorical variables. The importance of each field is differentiated by colour; dark colour means high importance, light colour means low importance. The darkest colour (extremely important) indicates declining by less than three percent. Generally speaking, only one tenth of managers believe that design is extremely important.
Figure 1 – Mosaic plot RQ1 (authors’ own results)

“Rather important” opinion is the most represented one in the whole group in both periods. It is more than two-thirds. Then, it is followed by “rather not important” and “unimportant” opinion. There was a rapid increase from around 2% to almost one fifth.

RQ2: How is a company satisfied with its own product design?

The mosaic plot (Fig. 2) graphically shows the layout of RQ2 results of polarity of values.

Figure 2 – Mosaic plot RQ2 (authors’ own results)

Each field of Fig. 2 is differentiated by colour lightness; light colour means high satisfaction, dark colour means dissatisfaction. It should be noted that manufacturing firms rate the products they produce, trade companies rate the merchandise, and companies providing services evaluate “design of services”. There are various aspects (the appearance of the place where the service is offered, corporate apparel, etc.)

In “dissatisfaction”, more than a triple increase of almost five percent can be seen. Generally speaking, most managers argue that their satisfaction with the level of design in the company is “half way, in some ways yes, in some ways no”.
The “fully satisfied” holds roughly one quarter (2012) and in 2014, there is a noticeable increase to around one-third.

Unfortunately, we cannot explicitly state that the situation in this area in 2014 improved because there is a significant increase in “dissatisfied” (almost a triple increase in dissatisfaction).

RQ3: Does the factor “design” help to achieve company’s economic goals?

The constructed mosaic plot (Fig. 3) graphically shows the layout of RQ3 results of the visualized polarity of values.

![Mosaic plot RQ3](authors' own results)

From the chart mosaic from above, polarity views are rather obvious. The light colour displays a positive view, whereas a negative view is displayed by dark colour. The neutral position is greyed out. There is a significant loss in positive opinion. Generally speaking, vast majority of managers was aware of the fact that design of their company helps to achieve economic goals. However, the awareness is slightly different in 2014. A negativism increased compared to the previous period by almost one third.

The opinion when managers believe that design does not affect the achievement of the economic goals of their company fundamentally recedes.

To sum up, the overall result of the mosaic graph shows that there is a significant indecision, more managers maintain a neutral attitude (compared to 2012). Managers (2014) appear to be sceptical about the effects of design on the economic performance of their company. The optimistic view in this area increased from one percent to 8%.

Comparative analysis of the years 2012 and 2014. In the table below, the results are calculated by using the chain index formula. It is done by comparing the values of selected research questions (RQ) in each period with the value of the same indicator in the previous period when the base period \((t-1)\) is the year 2012 and the current period is the year 2014 \((t)\).

As we compare multiple periods, chain indexes that are calculated on the previous year \((t-1)\) were used in the table below where these are designated as the pace of gains in percentage. In the comparative study, two events were examined and described in the form of a Table 3, where columns are for variations between the years 2012 and 2014, and rows are for specified research questions R1, R2 and R3.
Minor corrections were made because of inaccuracies settlement from a logical standpoint as follows:

RQ1: In positive opinions were included in the “extremely important, fairly important” to negative views have been included in the “rather not important” or “not at all important”.

RQ2: The whole category of “half-way, in some ways yes, in some ways no”, was uniformly dispersed into categories “satisfied – positive” and “unhappy – negative” in the ratio 1:1.

RQ3: This category was reduced (weight) of the total value of the result by 24,3% due to a substantial proportion of answers in the “I am not able to determine”.

Table 3 – 2012 and 2014 comparative table of answers according to research questions (authors’ own results)

<table>
<thead>
<tr>
<th>Research question</th>
<th>Positive attitudes (variation)</th>
<th>Negative attitudes (variation)</th>
<th>Variation (%) (aggregated)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1</td>
<td>How important is in general design for business success (managers’ opinion)?</td>
<td>- 20,63 %</td>
<td>+ 961,90 %</td>
</tr>
<tr>
<td>RQ2</td>
<td>How is a company satisfied with its own product design?</td>
<td>- 0,11 %</td>
<td>+ 0,19 %</td>
</tr>
<tr>
<td>RQ3</td>
<td>Does the factor “design” help to achieve company’s economic goals?</td>
<td>- 23,81 %</td>
<td>+ 362,68 %</td>
</tr>
<tr>
<td>Σ</td>
<td></td>
<td></td>
<td>- 78,28 %</td>
</tr>
</tbody>
</table>

* – (.... + mark indicates an increase in positive values; mark - represents an increase of negative values)

The column of overall change is expressed as the sum of the absolute changes of negative and positive opinions on individual research questions (RQ) in terms of the total file where positive values indicate an increase in positive opinion, whereas a negative value indicates an increase in negativism.

From Table 3, it is evident that there was an increase in negative opinions in all three areas examined.

Managers, therefore, feel the impact of design in three surveyed areas more negatively in 2014 than in 2012. The cumulative change towards negativity accounts for 78%.

Hypothesis verification

The exact conclusion could be set by the p-value χ2-test below. The Analysis of Data for Two Categorical Variables was performed in accordance with the hypothesis in XLstatistics – Excel Workbooks for Statistical Analysis. All hypotheses were tested at a significance level of α = 0,95.

The definition of the term “majority” has been assigned by numerical value of 75% or more.

The results are shown in the following paragraphs.

– H1: More than 75% of managers (2014) believe that design in general is important for business success.

To test this hypothesis, a data correction was done. The categories “extremely important” or “fairly important” were assigned to the category of “important”. The category “important” includes “not important” and “rather not important”.

p-value: 0,7901; Z: 0,807.
The chi-square value was calculated 0.7901 and it is apparently higher than 0.05 value. Therefore, we can claim a confirmation of the hypothesis H1. As a result, we confirm that: “More than 75% of managers (2014) believe that design in general is important for business success.”

- H2: More than 75% of businesses (2014) are satisfied with their own product design.

To test this hypothesis, a simple data correction towards the poles was done, i.e. the answer “for half, in some ways yes, in some ways no”, was uniformly dispersed into categories "satisfied" or “dissatisfied” in the ratio of 1:1.

p-value: 0.000192; Z: -3.551.

The chi-square value was calculated 0.000192 and it is apparently lower than 0.05 value. Therefore, we claim a disproof of the hypothesis H2. As a result, we cannot confirm that: “More than 75% of businesses (2014) are satisfied with their own product design.”

- H3: More than 75% of businesses (2014) believe that design helps to achieve economic goals.

In order to test this hypothesis, a simple data correction was done, specifically records “I am not able to determine” were removed from the file. The reason is that these items are neutral and cannot be assigned to any pre-defined category.

p-value: 0.9932; Z: 2.469.

The chi-square value was calculated 0.9932 and it is apparently higher than 0.05 value. Therefore, we can claim a confirmation of the hypothesis H3. As a result of this, we can confirm that: “More than 75% of businesses (2014) believe that design helps to achieve economic goals.”

Discussion. To summarize the overall result regarding the importance of design in companies, we can state that the managers (2014) certainly evaluate design as a factor of less importance to corporate success than the ones in 2012.

In terms of satisfaction with the company's own design (products or services), we can conclude that there is a significant polarization of views, a neutral stance is taken by fewer managers. “Completely satisfied” or “dissatisfied” opinions are becoming more important.

From that result, a better ability to evaluate managers’ satisfaction regarding the level of design in the company is evident compared to 2012. In 2012, majority of managers were not able to formulate their stance.

Unfortunately, we cannot explicitly argue that the situation in this area improved in 2014 because there is a significant increase in “dissatisfied” answer (almost triple increase in dissatisfaction).

There is a possible explanation of that phenomenon that a number of companies having design on an average level have improved. On the contrary, other companies’ neutral condition significantly deteriorated. The average figures “in some ways yes, in some ways no”, are declining.

Does design help companies to achieve their own economic goals? There is a significant hesitation in managers’ attitudes. More managers have a neutral attitude (compared to 2012) when “I cannot decide”, nobody ticked.

This result means that there are managers not having ability to evaluate the effects of design in business well compared to 2012. At present, almost one third of managers are not able to assess this issue properly. Managers in the research of 2014 are sceptical about the effects of design on the business success. On the other hand, there is an optimistic view on this area, which increased from 1% to 8%.
After evaluating all three research questions, we can conclude that managers perceive this issue more negatively in 2014 compared to 2012. The cumulative change towards negativism is rather significant.

The general opinion of managers in 2014 research is as follows:
- most managers believe that design is important for a business success;
- most managers are not satisfied with the level of design of their company’s products;
- most company managers believe that design helps to achieve business success;
- despite the sceptical result from the comparative analysis, we can make this statement: Design is a crucially important factor according to the perception of managers.

**Conclusion of research and recommendations for enterprises.** Enterprises are strongly aware (77% of companies) of the fact, that the design is essential for their business success. Therefore, this area should not neglect even though they are not only in the B2C market.

Due to the economic crisis continued in the years 2009 - 2014 the company had other worries than to focus solely on the design. They had to deal with fundamental issues such as the decline in demand, reducing costs and tougher price competition. Czech Republic reached again the economic growth in 2015. These facts of economic growth indicates, that now is the best time to intensify efforts in design management.

Regarding the satisfaction of businesses with their own design, full of satisfaction is relatively low (about one third of respondents), demonstrating the critical thinking skills of managers and their desire for innovation. This critical insight is a major force for innovation, without which the company would not be successful in the future. Consequently research also shows an increase of dissatisfaction with their “own design” in the enterprise. This fact can be interpreted simply. The enterprises in 2012 have not been able to see, or did not confer a poor quality in their own design. Again this is a positive result, indicating that there is a tendency to improve their design and invest in design management.

In the opinion of design and its impact on the business prosperity, started in 2014, a big slump from 99% to 68%. It can be explained by the current problems remain on the market due to the ongoing economic crisis. Managers were skeptical in field of design, because due to economical crisis they did not have any resources to solve design. It should be noted that in 2014 was still a crisis, and businesses had no promising prospects for improving the economic situation in the Czech Republic.

In conclusion, it is necessary that enterprises (B2B and B2C) do not underestimate the power of design, because quality design management can significantly improve their competitive advantage. Indeed design management is not a short-term issue, it is necessary to invest in design at the right stage within each product life cycle.

Despite the negative development of opinions on “design as a factor of business success” in 2014 compared with 2012, we can still argue that design plays an important role in most businesses in the Czech Republic.

Design itself is generally a popular topic in the Czech Republic that we face almost every day and on every step. Czech managers following foreign models assess “the design” as variable which can influence the business success in a positive way, not only regarding its market position but overall competitiveness as well. Many managers, however, do not have conclusive evidence directly linked to a potential success of their company.

That fact may be concluded as follows: The formation and development of the new design is a long process, a coordination of a number of professions is needed, and the result is not expected in a short term. If strategic marketing has long-term effects, the effects of design are also reflected in a long term.
Acknowledgement. Both surveys in Design management was prepared with the support of my colleagues Pavla Staňková, and Michal Richtr.

Limitation. Companies addressed in both surveys are based on the same file, the number, size and structure of companies. However, various companies could have answered in both surveys (see Return of the questionnaires). Nevertheless, a general awareness of the market in this field obtained from questionnaires can be considered meaningful despite certain imperfection in a comparative analysis.


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Определены некоторые аспекты, касающиеся дизайна в чешских компаниях, в частности способ мышления управленческого персонала.

Ключевые слова: долгосрочный маркетинг, дизайн, управление проектированием, конкурентоспособность, процветание бизнеса.

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