DESIGN MANAGEMENT AS CRUCIAL CREATIVE ESSENCE FOR BUSINESS SUCCESS IN SMALL AND MEDIUM-SIZED ENTERPRISES

Jan KRAMOLIŠ 1 *, Eva ŠVIRÁKOVÁ 2, David KRÁL 3

1 Tomas Bata University in Zlín, Faculty of Management and Economics, Department of Economics nám. T. G. Masaryka 5555, 760 01 Zlín
2 Tomas Bata University in Zlín, Faculty of Multimedia Communications, Department of Theoretical Studies, nám. T. G. Masaryka 5555, 760 01 Zlín
3 Sting Academy, Department of Applied Disciplines, Stromovka 114/1, 637 00 Brno, Czech Republic

Received 7 April 2019; accepted 6 December 2019

Abstract. The main purpose of this paper is to work with a proposal that small and medium-sized enterprises are aware of the importance of design and also attribute an important role to it in the competition in the future. Is design really a company’s potential and will it be of greater importance to companies? The approach is based on theoretical sources and completed studies dealing with design management and its relation to prosperity. Two hypotheses, that verify the thesis, are statistically tested on the significance level 0.05. Practical implications confirm the thesis and undisputedly support the issue of the importance of design for business success in small and medium-sized enterprises. Both in the area of increasing the competitive potential and the increasing importance in the future. Therefore, future commercial impact is proven by statistical tests. The originality of the article lies primarily in the data freshness in connection with the current economic situation. There is a prediction that the Czech gross domestic product is at its peak and significant growth is not expected. It means that this is the last opportunity for companies to prepare for hyper-competition. One of the power that companies have at their disposal to assure a place in the market is design management.

Keywords: business success, creativity, design and company’s prosperity, design management, innovation.

Introduction

The word design is often incorrectly seen in its narrow meaning, i.e. the outside aspect of products or the visual style of companies, i.e. the graphical design. The aim of the article is to show design as a power for creative innovations in small and medium-sized enterprises (SMEs). Its benefit for the prosperity of a company is indisputable. Countries that
systematically develop design rank among the most economically competitive countries in the world. Design leads to higher profit: investment in design results in an increased turnover, export and net operating profit of SMEs. Creativity is of great importance in design. It allows designers to focus on solving problems in relation to customers. A designer who puts the customer first uses their own creative approach which becomes evident in increased demand. Therefore, creativity gives company a competitive advantage by adding value and differentiating from the competition (Pink, 2006).

The design which is customer-oriented brings constant innovation, high-quality and meaningful development of the product portfolio of companies. Cooperation with design at the very assignment helps the company to bring a clear structure and better offer not only in the area of product innovation but also in the field of marketing tools, product and service distribution which are sought-after by the customer. Thus design is always a result of mental activity and the author's creative work. The creativity of the author of the design brings a solution tailored to the customer’s needs.

The design is, therefore, a process whose objective is to connect the aesthetic and functional aspect of the designed product, service, marketing tool or internal processes in a company. Creativity is in this way connected to technical requirements and helps to bring suitable solutions. Creativity is a tool that connects aesthetical qualities to functionality based on technological and economic limits. Quality design is not art than, it is a business trigger that serves companies to prosper.

1. Theoretical background

Creativity is a productive style of thinking that reflects in all person's activities. Teresa Amabile and Steven Kramer (2011) considers a problem solution creative as long as it is a new, correct and beneficial solution. The creative approaches are then called such mental processes that lead to solutions, ideas, conceptualizations and artistic forms, theories or products that are unique or new.

Globalization itself creates enormous pressure on innovations of products. Products must be improved, understand the risks and opportunities in the market as well as ensure their own sustainability (Kozubíková, Belás, Ključnikov, & Virglerová, 2015).

The following scales (Žáková et al., 2015) of the sophistication of the design represent four different levels of intensity (Level I: absence of design: design plays a minimal role in the product development process and a company does not involve professional designers; Level II: design as a styling – companies use design as a process of final touch. Professional designers or other professionals can do these tasks; Level III: design as a process – the design is integrated into the product development process from the very beginning; Level IV: design as an innovation – designers work together with owners or managers to achieve renovation of the whole company or some essential business goals). It uses from a purely aesthetic view (the last touch) to a sophisticated influence on the production process (maximizing product value and reliability).

Design management according to Kathryn Best (2006) includes three main phases:
1. Managing design strategy;
2. Managing design process;
3. Managing design implementation.
In the context of innovations, it is able to specify interpretations of the term “design” (Stamm, 2008). Author especially highlights, that design is a tangible outcome and is a creative activity. Moreover, the author also mentions the fact that design is the process by which information is transformed into a tangible outcome.

Several authors (Kramoliš & Staňková, 2017; Life-Net Designing, 2013) deal with an influence of design management and its connection to the prosperity and innovation. It can be basically described as a total of successive elements: “imagination + creativity + empathy + innovation”. The result is value creation.

The benefit of the design management is not just for business; it also brings improvement of people’s lives. The Design Economy: The Value of Design to the UK. Executive Summary (Design Council, 2015) lists specific design-related figures and their impact on the United Kingdom economy that design as part of the creative industry in the economy.

Life-Net Designing (2013) also describes how achieve business prosperity using a designer, effective advice, maintaining consistency, determining a systematic approach, patience and time. Life-Net Designing also shows the relationship between emotion and the business prosperity: “When a customer chooses from similar products, indeed customer selects the one who attracts his attention by its appearance or by a new problem solution” (2013).

The effects of design can be measured and quantified in economic reports. Mariana Fonseca Braga (2016) confirmed the benefits generated by connection of business prosperity, competitive advantage, economic performance and design. Qualitative and quantitative dimensions and variables of the value of design (Fonseca Braga, 2016) according to the perspective of different groups (users, companies and society) and domains reported (economics, marketing, business, management, design) were also defined.

Best (2006) deals with the shift from the industrial economy over the knowledge economy to the creative economy: the author defines a model in which the position of companies in the economy changes. She explains the model in such a way that it is a subsequent reaction to a dramatic change in companies. Fast growing and stronger competition allowed the growth of technological progress and globalization. The value of new creative ideas and creative solutions grows considerably. Design helps create long-term values: the demand for a holistic approach in culture, environment, politics, society and corporate world increases. In the view of the nature of design as such, it is essential to focus it on people and solve their needs. If the design is of high quality, it can jointly form a holistic approach to address problems of the current world.

Creative industries are a sector with a great future with the most powerful economical source. The ability to propose new ideas and to find a better solution increases our productivity and a standard of living. The author also defines the creative industry in connection with design: creative industries are a sector and have a cultural dimension, even though their outputs are primarily functional, e.g. graphical design or interior design (Römerova, 2010).

Creativity is understood as a use of cultural tools as mediating products in the manufacturing process of companies and therefore as a source of innovation (Žáková et al., 2015).

In the next few years, there will be an increase in the number of companies that take design development as their goal to support key strategies with an emphasis on increasing competitiveness through innovation. Without quality product and services design, the potential for perfect business ideas will not be utilized. Design-driven creativity makes more
innovative products, services and environment that cater better for the needs of people, provide more aesthetic delight and enhance the quality of life – the interest shifts from the product to the user (Sedmerová, 2015).

2. Problem formulation

The aim of this paper is to clarify the attitude of companies to invest in design and find out how much this creative part is important as a component that leads to business prosperity. This issue is based on the Daniel H. Pink (2006) thesis. Author claims, that creativity gives a competitive advantage by adding value to product and differentiating business from the competition. Based on this theory, a certain link between design management and creativity is quite obvious.

Macroeconomic view can be seen in gross domestic product (GDP) growth in the Czech Republic that constantly increases (year 2017 = + 4.4%; year 2018 = + 2.8%; year 2019 forecast +2.5% (Ministry of Finance of the Czech Republic, 2019). It is understandable that also Czech companies in accordance with these macroeconomic results grow richer and they realize they have to innovate to be able to compete. The growth of the Czech economy encourages companies to invest in those areas that they regard as considerably influential on increasing competitiveness. Creativity as a partial component of design management is the essence of the innovation process. This attitude is the reason why companies are forced to innovate. And the secondary aim of the article is to confirm or refute this thesis.

3. Methods

Data came from primary research conducted in 2018–2019 in the Czech Republic. The main tool for acquisition was a paper questionnaire that was then digitized via smart electronic questionnaire using Google Form technology. The resulting data file was afterwards cleared of all invalid and incomplete records, with the final data set used in the compilation containing 174 valid records. Data from the research were transferred in Microsoft Excel using pivot tables. The obtained values were converted into a simple binary structure, coded respectively as 1 or 0 (yes/no). Data adjustment was necessary to help determine completion rates and conversion rates. And finally, statistical tests of one variable and one-way classification were performed. It was used the XLStatistics and the MedCalc software.

4. Research sample characteristics

The research sample were chosen after meeting these parameters:

1. Each firm is a producer and is able to modify the design or packaging of the products;
2. Each firm has the potential to employ design marketing communications materials;
3. Each firm offers services (banking, insurance) in which design can be used;
4. Each firm recognizes that it is in a competitive environment and searches ways toward prosperity by differentiating products by design.
Table 1. Research file characteristics (source: created by authors)

<table>
<thead>
<tr>
<th>Characteristics indicator</th>
<th>Sample proportion percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business size</strong>&lt;br&gt;(number of employees)</td>
<td>1–10 (5.7%)&lt;br&gt;11–50 (63.2%)&lt;br&gt;51–250 (31.1%)</td>
</tr>
<tr>
<td><strong>Major business orientation</strong></td>
<td>B2B 87 (43.7%)&lt;br&gt;B2C 93 (46.7%)&lt;br&gt;B2G 19 (9.6%)</td>
</tr>
<tr>
<td><strong>Business target</strong></td>
<td>Only foreign market (0.6%)&lt;br&gt;Mainly foreign market (12.1%)&lt;br&gt;Mainly domestic market (36.2%)&lt;br&gt;Only domestic market (51.1%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>( n = 174 )</td>
</tr>
</tbody>
</table>

Table 1 shows the sample of companies that participated in the research. This sample is defined by four variables. First of them is the size of company that is defined by the number of employees in three areas SME (1–10 employees is a micro-sized company and it represents 5.7% of the examined sample, 11–50 employees are a small company and it represents 63.2% and 51–250 employees are a medium-sized company and it represents 31.1% of the examined sample). The second variable defines where the main part of the company’s production goes. Less than half of the sample concentrates on B2C. 43.7% of companies concentrate on B2B and only 9.6% concentrates on B2G. The third variable, that defines the sample, was the business target of the company in terms of the domestic/foreign market. Roughly half of the companies stated that they focus only on the domestic market. The other half exports production abroad.

5. Statistical tests

To test the hypothesis that for one classification table all classification levels have the same frequency, only one discrete variable must be identified in the dialogue box, with the null hypothesis being that all classification levels have the same frequency. The chi-squared statistic is the sum of the squares of the differences between the observed and expected frequency divided by the expected frequency for every cell (Campbell, 2007):

\[
x^2 = \sum \frac{(observed\ count - expected\ count)^2}{expected\ count}.
\]

A single classification factor for testing the hypothesis that for one single classification table, all classification levels have the same frequency, at which point only one discrete variable is identified in the dialogue form. In this case, the null hypothesis is that all classification levels have the same frequency. If the calculated p-value is low (\( P < 0.05 \)), then the null hypothesis is rejected. In a single classification table, the mode of the observations is the most common observation or category (the observation with the highest frequency). A unimodal distribution has one mode; a bimodal distribution, two modes. Computational notes of the
p-value defined the significance level, with the p-value calculated using a general Z-test (Altman, 1990; Fleiss, Levin, & Cho Paik, 2003):

\[ z = \frac{p - p_{exp}}{se(p)}, \]  

(2)

where \( p \) is the observed proportion; \( p_{exp} \) is the null hypothesis (or expected) proportion; and \( se(p) \) is the standard error of the expected proportion:

\[ se(p) = \sqrt{\frac{p_{exp}(1-p_{exp})}{n}}. \]  

(3)

As a “majority” the threshold value was set at the percentage 61.79%. This value was set according \( \varphi \) (sectio aurea) often mentioned as “golden mean” (Bejan, 2009; Lidwell, Holden, & Butler, 2010):

\[ \varphi = \frac{1 + \sqrt{5}}{2}. \]  

(4)

Other statistical indicators used to compile an overall outlook included the arithmetic mean, median value, variance \( (s^2) \) and standard deviation (SD).

6. Hypotheses

With regard to the objectives of Article, two simple hypotheses (with null and alternative version) were defined. The hypotheses were tested in a standard way on the significance level p-value 0.05. The term majority is quantified as sectio aurea (\( \varphi \)) (Bejan, 2009; Lidwell et al., 2010):

- \( H_{10} \): The majority of companies (\( \varphi \)) is not confident that design (as a creative component of their business and maintaining profit potential) will play a more important part in the future;
- \( H_{1a} \): The majority of companies (\( \varphi \)) is confident that design (as a creative component of their business and maintaining profit potential) will play a more important part in the future;
- \( H_{20} \): The majority of companies (\( \varphi \)) is not confident that design as a creative component will increase competitiveness in the future;
- \( H_{2a} \): The majority of companies (\( \varphi \)) is confident that design as a creative component will increase competitiveness in the future.

7. Results

7.1. Design as a creative component of business and maintaining profit potential will play a more important part in the future summary

The second examined issue deals with the belief of companies that design (as a creative component of their business and maintaining profit potential) will play a more important part in the future. The alternative hypothesis (H1) below is based on the proposition that the sectio aurea of the addressed companies believes that design as a creative component of their
business and maintaining profit potential will play a more important part in the future. The calculated proportions for each answer were: Yes = 0.78; No = 0.22. The \( p\)-value = 0.992 was calculated along with confidence intervals 0.95: ME = 0.111; Lower = 0.667; Upper = 0.889. The test for one proportion was calculated: Z-statistics: 5.029; significance level \( P < 0.0001\); 95% CI of observed proportion = 12.27 to 39.77.

Performed tests confirms: \( H_1_0 \) is rejected and \( H_1_A \) is confirmed. As a result, it can be claimed that: “The \textit{sectio aurea} of companies is confident that design (as a creative component of their business and maintaining profit potential) will play a more important part in the future”.

Table 2. Pivot table: alternative hypothesis (\( H_1 \)) from the perspective of business size (source: created by authors)

<table>
<thead>
<tr>
<th>Business size (number of employees)</th>
<th>Observed proportion (yes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–10</td>
<td>1.00</td>
</tr>
<tr>
<td>11–50</td>
<td>0.74</td>
</tr>
<tr>
<td>51–250</td>
<td>0.82</td>
</tr>
</tbody>
</table>

The second column in Table 2 (simple proportion) indicates that majority of firms are micro-sized (1.0 proportion of sample), then small sized (0.742 proportion of sample) and medium business (0.823 proportion of sample).

\( H_1 \) regarding the characteristic of data's position and variability brings another insight of issue. From the researched data file where calculated the possible statistical indexes: characteristics of the data's position (median value and arithmetic mean) and characteristics of the data's variability (standard deviation and variance). Another simple statistical indexes were calculated: arithmetic mean = 0.78, variance (\( s^2 \)) = 0.17 and standard deviation (SD) = 0.42, median value = 1. The statistical indexes clearly suggest that firms certainly feel that design (as a creative component of their business and maintaining profit potential) will play a more important part in the future.

8. The majority of companies is confident that design as a creative component will increase competitiveness in the future

This issue examined deals with the hypothesis that design as a creative component will increase competitiveness in the future. The hypothesis (\( H_2 \)) is also based on the proposition that the majority of the research file is based on the \textit{sectio aurea}. The proportions for each answer were: Yes = 0.92; No = 0.08. The \( p\)-value = 1 was calculated along with confidence intervals for \( p\)-value on level = 0.95: ME = 0.040; Lower = 0.879; Upper = 0.960. The test for one proportion was calculated as follows: Z-statistics: 7.862; significance level \( P < 0.0001\); 95% confidence intervals of observed proportion = 86.66 to 95.70.

Therefore, based on above-performed tests, \( H_2_0 \) is rejected and \( H_2_A \) is confirmed. As a result, it can be stated that: The majority of companies is confident that design as a creative component will increase competitiveness in the future.
Table 3. Pivot table: the hypothesis (H2) according to business size (source: created by authors)

<table>
<thead>
<tr>
<th>Business size (number of employees)</th>
<th>Observed proportion (yes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1–10)</td>
<td>1.00</td>
</tr>
<tr>
<td>(11–50)</td>
<td>0.90</td>
</tr>
<tr>
<td>(51–200)</td>
<td>0.94</td>
</tr>
</tbody>
</table>

The second column in pivot Table 3 (simple proportion) indicates that majority of firms are micro-sized (1.0 proportion of sample), then medium sized (0.94 proportion of sample) and small sized (0.90 proportion of sample).

From the data file, the following statistical indexes (characteristic of data's position and variability) were calculated: characteristics of the data's position (median and mean) and characteristics of the data's variability (variance and standard deviation). Another simple statistical indexes: arithmetic mean = 0.92, variance ($s^2$) = 0.07 and standard deviation (SD) = 0.27, median value = 1. The results suggest that the sectio aurea of companies strongly feel that design as a creative component will increase competitiveness in the future.

9. Discussion

The design is a tangible outcome and is a creative activity. The author also emphasises the fact that design is the process by which information is transformed into a tangible outcome (Stamm, 2008). The companies truly realize this fact and the research outcome is a statement that majority of companies are confident that design (as a creative component of business and maintaining profit potential) will play a more important part in the future. The companies are rather uninterested in the short-term aspect because they are aware of the fact that the impact of this discipline is long-term (Kramoliš, 2015; Kramoliš & Kotásková, 2018) within a period of three to five years.

In the time of economic growth (Ministry of Finance of the Czech Republic, 2019), companies are facing rising competition and realize that one of the weapons how to keep a good place on the market is quality design that comes from creative base, together with carefulness, responsibility and design thinking (Design Council, 2015). Specifically, in the current research examined in the Czech Republic is this belief shared mostly by micro-sized businesses up to 10 employees and also medium-sized companies with 51–200 employees.

The existence of a connection between creativity and competitiveness was already published by Eva Römerová (2010). Her thesis is that creative industries are a sector that has a great future. People's creativity is the most powerful economic source if its output has a functional and utility value. Also Pink (2006) states that creativity gives people a competitive advantage by adding value to your service or product and differentiating your business from the competition. Zuzana Sedmerová (2015) also mentions that in the coming years the number of companies that take the design development as their goal to support key strategies with an emphasis on increasing competitiveness through innovations will grow. The results of the examined research that were put to a statistical test clearly support this thesis also in
the Czech Republic. After all, Sedmerová (2015) also claims that without quality design it will not be possible to make use of the potential of perfect business ideas. Companies are aware of this fact too and are convinced that design will increase the competitiveness of their company. The strongest support of this fact can be seen in micro-sized businesses up to ten employees and in medium-sized businesses with 51–200 employees.

10. Limitations

This researched area has possible problems that may indicate certain inaccuracies in findings, as follows: 1) limited sample that does not have to precisely represent the majority of companies operating in the Czech Republic with regard to chosen parameters of addressed companies; 2) GDP is an aggregate macroeconomic indicator, not all companies in examined set experience these changes in GDP in their profit (i.e. some areas grow faster, some slower and other are on the decline); 3) it is necessary to realize the dependence of automotive and engineering industry as a main export commodity of the Czech Republic oriented to Germany and Slovakia; 4) possible data distortion due to the lack of time that managers had to complete the questionnaire (this was solved to a certain extent by a control mechanism).

Conclusions

The first issue from the research based on statistical testing confirmed that companies in the Czech Republic are nowadays convinced that design (as a creative component of business and maintaining profit potential) will gain greater importance. The reason why companies realize this issue so strongly is an interplay of more factors. In theoretical microeconomics, the fundamental goal of any firm is to make a profit. However, to make a profit in today’s hypercompetitive time is quite challenging. Companies seek various ways to secure the desired profit, from innovations, marketing to costs saving and other solutions.

The second issue that complicates the whole situation is the time factor. Every company would like to achieve a profit as soon as possible (Kramoliš & Staňková, 2017). The companies with many years of experience in the market (unlike start-ups) are well aware of the fact that quality design costs high investment and it is not possible to expect return investment already in the first year. In other words, these expectations would be naive and unreal. There are particular products and lines of business though, where the payback period is significantly shorter (for instance information technology business and digital business).

It is still valid that design and its connection with the growth of a number of sold products, higher demand and a possibility to offer products for a higher price are applicable. And not only in terms of authors’ publication Life-Net Designing (2013), or Margaret Bruce and John Bessant (2002, pp. 3–17). What is more, these authors also mention other positive effects of design from the point of view of a company: increase profit by increasing sales or by decreasing manufacturing costs, increase market share or gain a competitive advantage, or even provide a strategy for growth.

The second area this article deals with is the thesis validation that companies in the Czech Republic are convinced that design in the future will increase their competitiveness
that closely corresponds with the above mentioned facts. It is the very interconnectedness of competitiveness that is a crucial essence of future success for a company. There is a great opportunity for companies to consider investing in design in the time of economic growth. It is necessary for companies to innovate their products during a time when they have funds at their disposal. It is the macroeconomic theory of economic growth that points out the fact that after every expansion must sooner or later come recession. Every successful and experienced company knows that to invest during a recession is extremely demanding and stressful in terms of a company’s financial health, the debts depth and being exposed to the risk of failure. Creativity transformed into design represents a certain substance for innovative companies in the Czech Republic that is a prerequisite for success. Needless to say, this applies to companies that realize the power of innovation and want to ensure the competitiveness in the market in the future. This substance is one of the components of the “devil touch” package tools (Kramoliš, 2013) of the modern marketing mix that can be characterized by compliance with the 1P marketing concept. This theory is built on high utility value of the product for a user (even though the user does not need to know this value until the product is used), even in the case of higher price. The utility value of the product may be significantly increased by design management.

**Funding**

This work was supported by the Technology Agency of the Czech Republic under Grant number TL02000255.

**References**


Kramoliš, J. (2013). The “Devil Touch” element definition, identification and usage options in present day marketing and management. Tomas Bata University in Zlín, Zlín, Czech Republic [unpublished manuscript].


**DIZAINO VADYBA KAIP ESMINIS KŪRYBINIS SĖKMINGO VERSLO PAGRINDAS MAŽOSIOSE IR VIDUTINĖSE ĮMONĖSE**

Jan KRAMOLIŠ, Eva ŠVIRÁKOVÁ, David KRÁL

Santrauka

Pagrindinis šio straipsnio tikslas – įrodyti, kad mažosiose ir vidutinėse įmonėse yra suprantama dizaino reikšmė, taip pat jam priskiriamas svarbus vaidmuo konkurencijos atžvilgiu ateityje. Ar iš tikrųjų dizainas sudaro bendrovės potencialą ir ar auga jo reikšmė bendrovėse? Traktuotė grindžiama teoriniais šaltiniais ir atliktais tyri-
J. Kramoliš et al. Design management as crucial creative essence for business success in small...


**Reikšminiai žodžiai:** sėkmingas verslas, kūrybiškumas, dizainas ir bendrovės gerovė, dizaino vadyba, inovacijos.