

# DESIGN MANAGEMENT: DOES COLLABORATION WITH A DESIGNER BRING BUSINESS PROSPERITY?

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**Abstract:** *Business prosperity is most often mentioned regarding economic results (for instance profit, sales, sales growth, brand value growth, high demand for products). One of the factors that can be used today in rival competitive struggles is design. The very perception of the role of design as an opportunity is an essential prerequisite for increasing business prosperity. It is, therefore, logical to look at who is the creator of quality design in companies. Companies can solve this problem internally or hire a designer. The question is, which of the variants increases businesses prosperity. The aim of the paper is to clarify this relationship, i.e. whether a company's cooperation with the designer brings business prosperity. Secondly, the strong belief among companies in the Czech Republic that the cooperation with the designer is very expensive is considered. For interpreting results basic statistics indicators and tests of hypotheses (p-value) were used. Results from tests confirmed that most companies that collaborate with a designer believe that design helps to achieve business prosperity. The results also indicate that reluctance to cooperate with a designer because it is too expensive is not confirmed.*

**Keywords:** *Designer, Design Management, Business Prosperity, Business Risk, Design Thinking, Collaboration with Designer.*

**JEL Classification:** *M21, O31.*

## Introduction

The fact that a company's success is built on quality people is a well-known truism. In the current hypercompetitive environment many factors affect whether a business will be successful, with the prosperity of a company described most often in terms of economic results (e.g. profits, sales, sales growth, brand value growth, increasing demand for products). One of the key factors operating in today's competitive struggle is design, often described in terms of the shape and appearance of the product and its packaging; the product's functional properties; or the interior of the location in which the products are offered. In addition, design is strongly reflected in the appearance of marketing materials and brands (company logo, web pages, advertising, etc.). The question of whether a company can thrive based in large part on design has been dealt with in studies by Kramolis (2015) and Kramolis and Stankova (2017), the results of which show a clear link between design and prosperity. The connection is even stronger if the company is located in a hypercompetitive environment such as the national market of the Czech Republic. Our current "global" world is not unipolar, but in fact represents thousands of worlds within which each factor varies greatly - from the wider region, to the (spatial or web) site, finally to the community and individuals. In this new, turbulently evolving space, the capacity for innovation and rapid change triumphs. Globalization itself creates enormous pressure on organizations. SMEs must better develop products, understand the risks and opportunities in the market as well as ensure their own sustainability (Kozubíková et al. 2015). The bilateral concept of risk (threat / opportunity) is found not only in standards and guides, but is also increasingly applied in practice by the leading companies within spheres of activity (Hillson, 2009). The

conception of the role of design as an opportunity is an essential prerequisite for increasing efficiency. It is, therefore, logical to consider who is the creator of quality design in companies. Companies can resolve this issue internally or hire an external or freelance designer, with the question remaining as to which of these variants will increase business prosperity. In this context, there is a risk that if a company does not address this issue in the right way, it will lose its current position within the competition. The result may be a loss of market share because of a lack of innovation which results in a reduction in sales, as competitors have incorporated better design to entice new and more customers, and have thus increased turnover. The well-informed buyers of today can also, rightfully or not, quickly begin to evaluate certain products as obsolete. As a result, the demand for these “*old-fashioned*” items will drop as substitute products with enhanced design begin to take over market share. As more of these design-based goods come with greater speed from conception to production to the market, the overall reputation of companies who fall behind can quickly become damaged, thus they begin to lose more customers even in unrelated fields.

The aim of the paper is to clarify this relationship, i.e. whether a company's cooperation with the designer brings business prosperity. Moreover, the strong belief among companies in the Czech Republic that the cooperation with the designer is very expensive is considered.

## 1 Literature review

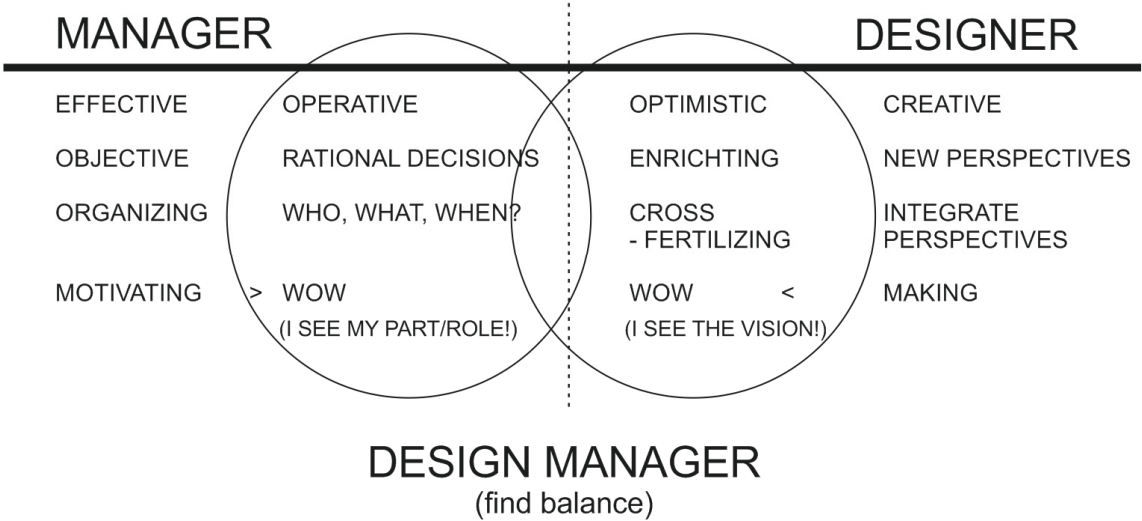
Searching for more effective ways to provide higher values for customers than the competition has become the key issue in today's competitive environment. The traditional view of the value process has lost its potential, as mass markets have split up into countless micro-markets, each of which has its own needs, expectations, and preferences. The new understanding of value provision consists simply in harmonizing the process by selecting, creating and communicating higher value (Šimberová, 2014). According to Šašek (2010), for the customer, value, either tangible or intangible, lies within a specific product. The marketplace creates this value to meet the customer's needs, requirements and expectations, thus fulfilling its essential mission. One of the ways of doing this is to innovate the quality of the product by the designer. A number of our peer-reviewed papers (Kramoliš, 2017; Richtr, 2012, Hanek and Vinšová, 2013) mention the influence and position of a designer in the company and its connection to the prosperity of the company and innovation.

Authors Žáková, *et al.* (2015) showing approaches to design sophistication represents four levels of intensity. It uses a scale which ranges from no consideration of design at all, to a purely aesthetic view (the “*final touch*”) to a compound influence of design on the entire production process (maximizing product quality and reliability while minimizing production and distribution costs, knowledge from market research and customer requirements, marketing some and branding, etc.), and, finally, to an overarching view taking into consideration the whole company and its overall objectives.

Oakley (1990) focuses on human resources, describing the distinctions between manager and designer, which consist primarily of differences regarding personality, habits, behavior, style of work and education. It is these differences that managers should be aware of to be able to work efficiently with designers. At the same time, Gemser and Leenders (2001) also deal with the human factor and point to the connection

between the talents of designers and the design itself. The use of designers with limited effectiveness can have far-reaching negative consequences for a company. Berghs (2011) also examines personnel issues in design management in a discussion which outlines the scheme of the design manager, the figure who has the task of finding a balance between the designer and the manager of the company. The design manager is aware that individuals work and think in entirely different ways, and thus he resolves the challenge of both parties communicating effectively in line with the company's goal.

**Fig. 1: Design manager's scheme**



Source: (Berghs, 2011)

A balance must be found between these two views. Mozota (2010) claims that management and design have a constrained relationship. Designers perceive management input as "constraint by administration and project management," whereas managers perceive the vagaries of design often as the "rising power of perception and emotion in purchasing decisions."

King (2002) defines the ideal structure for design management, which he terms the Basic Performance Unit, a team integrating the various abilities, knowledge and experience of all the individual members. The BPU categorical purpose is to achieve the central goal notwithstanding the individual interests of team members. This aggregation is more flexible than larger workgroups, as it can quickly build and change focus. This team should consist of individuals from various departments who have been assigned to the BPU for the sole purpose of designing a new product or new solution. Two subtypes can emerge: a "core product" team or a "work" team. The author also presents a conceptual design management map.

The benefit of the design is not just for companies; it also improves the lives of people. The executive summary *The Design Economy* (2015) lists specific design-related figures and their impact on the UK economy:

- Design as part of the creative industry in the economy accounts for approximately 7.2% of gross added value.
- Between 2009 and 2013, this added value by the creative industry grew faster than usual.

- Employees using work equipment (which were innovated in design) achieved a 41% higher labor productivity.

Research also shows that companies that invest in design and use it strategically (although not necessarily having personnel employed full time as designers) achieve a better performance indicator per employee.

Hanek and Vinšová (2013) also deal with the opposite perspective, i.e. by defining "*what is not design in marketing*": art; luxury; waste of money; mere appearance; amateurism. At the same time, they add that "A good designer is a partner for a client, who helps him to find a solution to the problem or situation." The authors deal with the idea of design costs, in which central aspects of pricing (sketch fees, copyright licenses, royalties) are listed, with the highest value based on the creative contribution of the author (designer). Hanek and Vinšová (2013) also describe how for a company to achieve prosperity it needs a whole range of resources (designer, effective advice, maintaining consistency, determining a systematic approach, patience and time). The authors also mention the relationship between emotion and design with prosperity of the company: "When a customer chooses from similar services or products, he/she chooses the one who attracts his/her attention by its appearance or by a novel solution to a problem."

One critical theory is NIH (Not Invented Here), a model through which a prejudice is delineated against ideas and innovations that originate from outside a particular organization. NIH syndrome is based on four aspects of social dynamics (Lidwell, 2010): the belief that skills inside the company are better than external skills; fear of loss of control; the desire for recognition and status; and significant emotional and financial investments in internal initiatives. NIH syndrome is based on the perception of superiority, with this bias often omnipresent in companies that routinely build on its successful innovations. Thus past successes efficiently sabotage a company's willingness to even consider using external resources (such as hiring an external designer). As a rule, a redress of this situation requires significant organizational changes or a complete change in leadership. The best way to deal with NIH is prevention. It is advisable to alternate team members within projects. When outsiders are involved in the strategic and evaluation phases of the design process, fresh ideas and new perspectives often emerge.

### **1.1 The innovation of utility value**

The innovation of utility value (or technological innovation) includes the degree to which the product is modified in terms of use, or new different features are added compared to products already sold on the market. Technological innovation also refers to the user's relationship to the product. This capacity of gauging the product's potential relationship to the user is the major difference between the objectives of the engineer and the designer. The engineer looks for a solution to a particular function (for example, he determines the force of a bolt in a certain design) but does not consider what the user thinks about the product. Calculations are the mode within which the engineer works. (Krippendorff, 2008). The role of the designer is to invent industrial objects for mass reproduction: cars, furniture, clothing, etc. The designer is located at the intersection of the technical, commercial and cultural spheres. Depending on the specific activity, roles include graphic designer (who works on graphic presentations of products and

documents, including multimedia and web design), product designer, packaging designer, industrial designer and fashion designer. Design activities are typically carried out either by design agencies or by other related companies. (Žáková, *et al.*, 2015)

Sedmerová and Žiškova (2010) have also revealed findings related to the direct relationship between design and business prosperity: Designers, managers and policymakers should confer on the notion of design support as an important tool in the innovation process; Designers should also be trained in the fields of management and marketing, i.e. understanding design management in the context of company structure, using surveys and market analyzes, heeding the customer's wishes and making clear arguments; The efficacy of design investment should be carefully measured in terms of results.

## 1.2 Design thinking

In terms of intentions regarding the results of production within company strategies, the result of design thinking represents both value for the customer as well as a competitive advantage for the company. According to Dunne and Martin (2006), design thinking combines the generation of novel ideas with their subsequent analysis and assessment. The designer generates an idea or a number of ideas, deductively analyzes these ideas up to their logical consequences, forecasts results, and tests ideas in practice. Mozota (2002) presents three different ways of design thinking that add value to a business: Integration: The use of design capabilities as a resource that improves the production process along with the range of products and brands, as well as enhances internal corporate culture; Differentiation: The designer or company can bring a competitive advantage to its investors through branding and building existing customer loyalty as well as by targeting a new audiences; Transformation: The use of design thinking in terms of the current market. Being able to generate new business opportunities by creating changes through novel products designed for the company's existing target groups. Therefore, design thinking can play a key role in the development of novel products, and thus an essential market share can be gained. Beverland, *et al.* (2015) highlight two basic rules for marketing managers. The first is to use design thinking, while the second is to organize the management systematically in such a way as to encourage brand ambidexterity. Telling managers to think in the same creative ways as designers do can be dangerous, and care should be taken not to cross the line between the manager and the designer. Many companies have their own systems and structures within which the exact position of the designer and brand manager is ensured, along with where the functions might overlap. This clarity of roles creates a very strong relationship. Delivering added value (design) to an organization's customer can itself be perceived as a project. There are many risks from different sources during the life cycle of a project that may be perceived as a threat. According to Taraba, Hart, and Pitrová (2016), project risks may be categorized as Managerial (for instance internal communication, project management, project development, personnel issues), Environmental (competition, market, company environment), Financial (market, price, currency, inflation and credit risk), Technical (suppliers, product complexity, failure, malfunction, quality), Business-oriented (knowledge of customer environment, contract quality, customer relations). In addition, Lazáni, *et al.* (2017) deal with the issue of the business environment specifically in the Czech Republic. These authors reveal findings

in particular areas regarding risk perception, risk elimination as well as the courage to invest in risky ventures.

## 2 Problem formulation

The aim of this article is to clarify the relationship between the firm and the designer, and to determine whether the company's cooperation with the designer (internal or external) brings business prosperity. This issue is based on the thesis by Richtr (2012), who claims that a company's prosperity and cooperation with the designer are inseparable from one another. Based on this theory a certain business risk can be determined, i.e. that the company will not prosper if it does not cooperate (well) with the designer. Sedmerová (2010) states that there is a strong belief among companies in the Czech Republic that the cooperation with the designer is quite expensive, even prohibitively so. This attitude is the reason why companies are reluctant to cooperate with designers. Thus the secondary aim of the article is to confirm or refute this thesis.

### 2.1 Methods

Data to address the issue came from primary research conducted in 2016 in the Czech Republic. The main tool for data acquisition was a smart electronic questionnaire built using Google Form technology. The resulting data file was then cleared of all invalid and incomplete records, with the final data set used in the compilation containing 121 valid records. A research questionnaire was administered to 600 companies. The addressed companies were chosen after meeting these parameters: 1) each firm is a producer of products who are able modify the design or packaging of the products; 2) each firm has the potential to employ design marketing communications materials (CID); 3) each firm offers services (banking, insurance) in which design can be used; 4) each firm recognizes that they are in a competitive environment and are searching ways toward prosperity by differentiating products by design. Data from the questionnaires were processed in Microsoft Excel using pivot tables. The obtained values were converted into a yes/no binary structure, coded respectively as 1 or 0. These data adjustment was necessary to help determine completion rates and conversion rates. Subsequently, statistical tests were performed using the tools XLstatistics and MedCalc Software (one variable - one-way classification).

#### 2.1.1 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 dialog 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 of the observed and expected frequency divided by the expected frequency for every cell (Campbell, 2007):

$$\chi^2 = \sum \frac{(\text{observed count} - \text{expected count})^2}{\text{expected count}} \quad (1)$$

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 dialog 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 et al, 2004):

$$z = \frac{p-p_{exp}}{se(p)} \quad (2)$$

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:

$$se(p) = \sqrt{\frac{p_{exp}(1-p_{exp})}{n}} \quad (3)$$

As a “majority” the threshold value was set at the percentage 61.79% calculated from  $\phi$  (sectio aurea) or often referred to as “golden mean”. (Bejan, 2009; Lidwell, 2010)

$$\phi = \frac{1+\sqrt{5}}{2} \quad (4)$$

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

### 2.1.2 Hypotheses

To fulfil goals of paper, two basic hypotheses were defined (with each hypothesis having a null and alternative version). These hypotheses were tested at significance level p-value 0.05 by statistical tools XL statistics ( $X^2$ ) and MedCalc Software (z-test).

H1<sub>0</sub>: The majority of companies which collaborate with a designer is not convinced that design helps to achieve business prosperity.

H1<sub>A</sub>: The majority of companies which collaborate with a designer is convinced (believes) that design helps to achieve business prosperity.

H2<sub>0</sub>: Companies do not collaborate with a designer because of other reasons except the high cost.

H2<sub>A</sub>: Companies do not collaborate with a designer because that the high cost is not worth it.

When compiling hypotheses, it was not taken into account whether the company has an internal designer or collaborate with an external designer.

## 3 Results

### 3.1 Collaboration with a designer and business prosperity

The first issue examined deals with the relationship between company prosperity and designer collaboration. The hypothesis (H1) below is based on the proposition that majority of the addressed companies (based on the “sectio aurea” definition of majority) which are collaborating with designer have achieved resultant business prosperity. The proportions for each answer were calculated (Yes=0.76; No=0.24). Using XL statistics

software, the p-value=0.011563 was calculated along with Confidence Intervals for p-value (Level=0.95): ME=0.108757; Lower=0.649308; Upper=0.866821. In MedCalc Software the test for one proportion was calculated as follows: Z-statistics: 75.55; significance level  $P < 0.0001$ ; 95% Confidence Intervals of observed proportion = 63.26 to 85.78.

Therefore, based on above performed tests,  $H_{10}$  is rejected and  $H_{1A}$  is confirmed. As a result, it can be stated that: “The majority of companies which collaborate with a designer are convinced that design helps to achieve business prosperity.” Considering the variable of business size could provide more detailed insights. Tab. 1 shows the business structure of the file (business size according to number of employees).

**Tab. 1: Pivot table: Number of firms which collaborate with a designer according to business size**

Business size (number of employees)	Business prosperity achieved?		Observed proportion (yes)
	Yes	No	
Micro (1-10)	10	0	1.00
Small (11-50)	11	1	0.91
Medium (51-200)	10	1	0.90
Large (201 and more)	16	2	0.875
TOTAL	47	4	-

*Source: present authors.*

The last column in Tab 1. (observed proportion) indicates that the majority of firms collaborate with designer, and, further, they judge prosperity most often in micro companies (1.0), then in medium sized (0.91) and small businesses (0.90). Large businesses also evidently perceive this connection very strongly (0.879).

$H_1$ , which takes into account the data position and variability, could bring another insight into the examined issue. From the data collected in research, the following statistical indexes were calculated: characteristics of the data position (arithmetic mean and median value) and characteristics of the data variability (variance and standard deviation). Other basic calculated statistical indexes included the number of values ( $n$ )=62, arithmetic mean = 0.76, variance ( $S^2$ ) = 0.18 and standard deviation ( $SD$ )= 0.43, along with median value = 1 (according to the binary data type). The data clearly suggests that companies which work with a designer genuinely perceive prosperity because of this collaboration.



### 3.2 Collaboration with designer is too expensive?

The second area examines the question of why companies are generally afraid to collaborate with a designer. The hypothesis below is based on the fact that most (*sectio aurea*) of the companies do not want to collaborate with a designer because of the widely accepted view that "collaboration with designer is too expensive." The question in the questionnaire examining this issue was constructed as a multiple choice one. The results are represented as the overall finding of the answers checked "too expensive." The proportions for each answer were calculated (Yes=0.20; No=0.80). Using XL statistics software, the p-value=1 was calculated along with confidence intervals for the p-value (Level=0.95): ME=0.113679; Lower=0.086321; Upper=0.313679. Using the software tool MedCalc, statistical tests were performed for one proportion as follows: Z-statistics: 0.377; significance level P = 0.7061; 95% confidence interval of observed proportion = 0.00 to 7.50.

Therefore, based on the tests above,  $H_{20}$  is confirmed and  $H_{2A}$  rejected. As a result of these calculations the null hypothesis is confirmed and therefore it cannot be stated that: "Firms do not collaborate with a designer because they believe it is too expensive." The result clearly shows that the claim "Most companies do not want to collaborate with designers." is unreasonable.  $H_2$  regarding characteristic of data position and variability could better explain the data file from the statistical point of view. From the data collected in research, the following statistical indexes were calculated: characteristics of the data position (arithmetic mean and median value) and characteristics of the data variability (variance and standard deviation). In more detail of calculation of selected statistical indexes of file (from which it was made hypothesis verification test) is: Number of values of tested issue  $n=50$ . Where arithmetic mean = 0.2; variance ( $s^2$ ) = 0.16 and standard deviation ( $SD$ ) = 0.4. median value = 0 (according to the binary data type). Additional statistical indicators are skewness value 1.5 and kurtosis value 3.25.

## 4 Discussion

The main objective of this part of our project was to determine if companies in the Czech Republic in 2016 saw a positive connection between cooperation with a designer and business prosperity. From the test data that was obtained in the research, the following hypothesis was confirmed: "Most companies that collaborate with the designer believe that design helps to achieve business prosperity." It should be mentioned, that was not taken into account whether it concerns an internal or an external designer.

Authors are aware of the limitation that the research did not detail specific economic data (number of orders, sales, profit, increase of brand value). Nevertheless, this basic information regarding design and the economic prosperity of a company is significant for managers. The strongest findings regarding this relationship was located in micro and small businesses (more than 90%). It should be noted that most companies are defined as *sectio aurea* out of the number of companies in the surveyed file. At the same time, these results are supported by claims by Richtr (2012), Vinšová and Hanek (2013), who also claim that a company's prosperity and collaboration with the designer are inseparable from one another.

The second area to be investigated in this regard is to verify the general assertion that occurs in companies. This is an issue that has not yet been empirically investigated to our knowledge. The problem is that most companies believe that cooperation with a designer is too expensive. Sedmerová (2010) states that among the companies in the Czech Republic there is a strong belief that the cooperation with a designer is very expensive, thus companies do not want to cooperate with designers. Another aim of this paper was to confirm or refuse this thesis. Of course, for the company cooperation with a designer is an extra cost from the economic point of view and thus creates a certain risk, i.e. leading toward a decisive shift in the company's break point. If the cooperation with the designer has not increased the sales of the products or has not allowed it to increase the price, i.e. achieving the same sales figures, then this risk becomes much higher. The reason may be a low quality designer or ineffective cooperation. Gemser and Leenders (2001) also deal with this issue. These authors point out that ineffective designers can have far-reaching negative consequences for a business. Another risk is the excessive costs associated with high corporate debt and unrealistic expectations of products sales. This issue of profit and return has been mentioned by Oakley (1990). Nevertheless, the results of the statistical testing of the research clearly indicate that expense is not the deciding factor which causes the reluctance of businesses to cooperate with a designer. Therefore, this hypothesis is not confirmed.

The majority of companies that do not currently cooperate with a designer did not indicate that cost was the reason why. These include firms that in the past collaborated with a designer as well as those who have never done so. Only one-fifth of companies stated that in general cooperation with a designer is too expensive. It is quite understandable that the work of a quality designer will be costly. This issue has been pointed out by Best (2016) in her model of quality, time and cost. The author states that it is not possible to get quality design in both a short time as well as at a low price. A similar theory was published by Ambrose and Harris (2010), who, however, put forth a simpler paradigm. In their model there are only two variables: cost and result. At the same time, these researchers do envision an ideal situation in which the design outcome comes at low cost but at high quality, but they concede that this goal is a practically unreachable. To sum up, it cannot be said that most companies are afraid of collaborating with a designer because it is too expensive.

## **Conclusion**

The results of statistical hypothesis testing clearly confirm the existing relationship between design and business prosperity. Specifically, companies that cooperate with a designer see real benefits from this collaboration, i.e. increased prosperity, which is such a valuable asset in today's highly competitive market.

As for the general assertion that cooperation with a designer is too expensive, therefore companies are afraid to embark on it, the results of 2016 research show that such trepidation in the Czech market exists only to a limited extent. Most companies in Czech Republic do not consider designer collaboration too costly, but firms have other reasons for being reluctant to partake in the process. These rationalizations for the lack of need for a designer are manifold and as such cannot be elucidated on here. This issue may become a theme for future research by our team.

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