

Pamfilie, Rodica; Procopie, Roxana; Bobe, Magdalena; Visan, Smaranda

Article

Design: the answer of contemporary businesses to the requirements of sustainable development

Amfiteatru Economic Journal

Provided in Cooperation with:

The Bucharest University of Economic Studies

Suggested Citation: Pamfilie, Rodica; Procopie, Roxana; Bobe, Magdalena; Visan, Smaranda (2013) : Design: the answer of contemporary businesses to the requirements of sustainable development, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 15, Iss. Special No. 7, pp. 573-582

This Version is available at:

<https://hdl.handle.net/10419/168802>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<http://creativecommons.org/licenses/by/4.0/>

DESIGN: THE ANSWER OF CONTEMPORARY BUSINESSES TO THE REQUIREMENTS OF SUSTAINABLE DEVELOPMENT

Rodica Pamfilie^{1*}, Roxana Procopie², Magdalena Bobe³, Smaranda Vișan⁴ and Robert Bumbac⁵

^{1) 2) 3) 4) 5)} *Academia de Studii Economice din București, România*

Abstract

This paper presents a conceptual model showing the involvement of design in the development of sustainable businesses, based on the analysis and synthesis of scientific research undertaken and the results published by the authors during the last decade. The starting point is the consumer with his needs, hopes and ideals related to the quality of products and services. Customer satisfaction is the priority goal of economic activities carried out to improve the quality of life while guiding modern corporate strategies.

Creators, consumers and managers understand and pursue the same objectives related to conservation of material resources, minimizing energy consumption and improving the environmental impact of waste. Rethinking concepts, developing ecological projects and products, modern companies use "*sustainable design*" to accommodate environmental criteria but also to give ethical, social and environmental meaning to their actions, or in other words, to develop responsible business.

Accepting the major influence that design has on the quality of life and the environment, the study undertaken aims to highlight this concern in the case of manufacturing companies by presenting the consumer's reaction to their products. With the conceptual model as theoretical background, an appropriate questionnaire was developed and applied, with the purpose of demonstrating the significant contribution of design in making businesses meet the needs of sustainable development.

Keywords: consumer, responsible business, innovative design, sustainable design, sustainable development.

JEL Classification: L15, M10, Q01, Q56

Introductory arguments

For more than 150 years the term design meant good business. Used officially since 1913, few companies have capitalized on the meaning and significance of that information. After the 1980s, design became an operational tool, managerial even, in the fierce competitive battle between companies.

*Corresponding author, **Rodica Pamfilie** - rodica.pamfilie@com.ase.ro

Design principles are increasingly being applied by industry specialists in the planning and manufacturing of products. At this level, the aim is to link the technological possibilities with the art elements, so as to obtain products with increased utility, distinguishable through their originality and elegance and which succeed to impress and provoke emotions in the consumer through their artistic value.

As such, being part of the process by which we are provided with goods and services, design is an essential component of material culture, aesthetics, and the environment. Managers have to realize that they can significantly improve their competitive power by including design in the conceptual activity of their firm.

Contemporary economy adopted design as a factor of progress. Beyond its aesthetic significance, design has acquired other meanings as well. The whole society has changed perceptions about what design is and its parameters have changed, in that sense that its ethical, social and ecological roles became at least as important as the aesthetic one.

Designers have a key role in conservation of resources by making environmentally friendly products, simplifying their structure and form, increasing the life of the products, recycling waste objects, all aimed at sustainable development.

Sustainable development seeks long-term reconciliation between industrial production and consumption needs, on the one hand, and the protection of an environment conducive to life, on the other hand. This philosophy also marks the transition from corrective remedies to preventive measures (Pamfilie, Procopie and Bobe, 2010), and durable design incorporates environmental aspects, but also economic, ethical and social ones.

1. Theoretic basis of the conceptual model

The extent of the contribution that design can offer to a responsible business is the main objective of a deep theoretical insight based on the analysis and synthesis of research conducted and published by the authors in recent years. This contribution is strongly motivated by the following key points identified as basic units of the model (as seen in Figure 1):

a) The socio-economic environment and the vision of design

Early 21st century is a well-chosen moment to take overview of the current status of design and to reflect on its future role. Design, in the current modern sense, is a specialty born out of the problems posed by industrial production, considering the signals coming from consumers, in a highly competitive, innovative and, as such, risk bearing environment. Thus, design increasingly meets the current conditions imposed by the socio-economic development and is connected to present and future economic practice. This causes the development of the process of looking for new solutions by the manufacturing companies in order to generate viable answers to questions about the implications of:

- consumer evolution;
- consumer-product-environment relationship,
- social responsibility of the designer,
- responsible use of resources.

Structural changes in the socio-economic environment imply a simultaneous detailed view of each component and an overall vision of the whole. An organization with its internal and external environment is a complex system, and the essential role of the manager is to know how to steer it. The number of parameters, the magnitude and consequences of their changes involve finding ways to identify significant trends, opportunities and risks.

The conceptual model has four variables as input: consumer, business, resources and design, each specifically identified in the given socio-economic context:

- consumer: needs, values, aspirations and lifestyle levels;
- business: policies, strategies, objectives, actions;
- resources: human, material, financial and natural.
- design: operational hypostases (democratic design, Design for All, universal design, dominant design, ecodesign)(Pamfilie and Procopie, 2013).

b) Innovative design generating responsible business

The next unit of the model has at the center the creative process in all its stages, from idea, concept, and technology to finished product. Innovative design is one of the main keys to business growth; the real challenge is to conceive not only the best products but also new business models. Innovation is about introducing invention to economic and social practice, involving not only technological success, but also economic, industrial, commercial, social and cultural.

The organization must have a clear vision of the product to be made, and this can be achieved by means of marketing, innovative design, manufacturing and engineering. This vision must be based on a clear understanding of the market, its segments and the opportunities it offers. Creative ideas and innovative solutions prove to be crucial for any responsible business. Although science and technology are seen as crucial for development and are essential components of a strategy for innovation, innovation is a new technological approach, fundamentally based on design.

Also, this view mustn't be found only in the product conception stage, but throughout the production to the final stage. At organization level, design teams should focus on performance and functionality, as tangible attributes of the product, but also on the intangible attributes, related to symbol and meaning.

Every day, new technologies are more and more present making design processes easier and smoother. Rethinking and modernization of technologies provide a new form for the world we live in and support the ability of design to protect the interests of globally interconnected communities.

One of the most important ingredients of success is customer involvement in the design process. Consumers can generate ideas and valuable information on future needs and the ways of meeting them. Because there are many risks regarding the aesthetics of products, as their success is not guaranteed, companies should test potential customer reaction to the new product with prototypes.

c) Rethinking the business in the view of sustainable development

The third unit of the conceptual model involves taking into consideration the environmental issues - practically applying the concept of sustainable design - as a philosophy of designing and manufacturing products in accordance with the principles of economic,

social and environmental sustainability. Sustainable design involves the use of renewable materials with minimal impact on the environment and human harmony with nature.

Applying the principles of sustainable design to new products, accepted on the market, can generate new ideas of environmentally friendly products that will be passed through the stages of the creative process, generating competitive advantage and profitability through customer satisfaction, in the context of sustainable development.

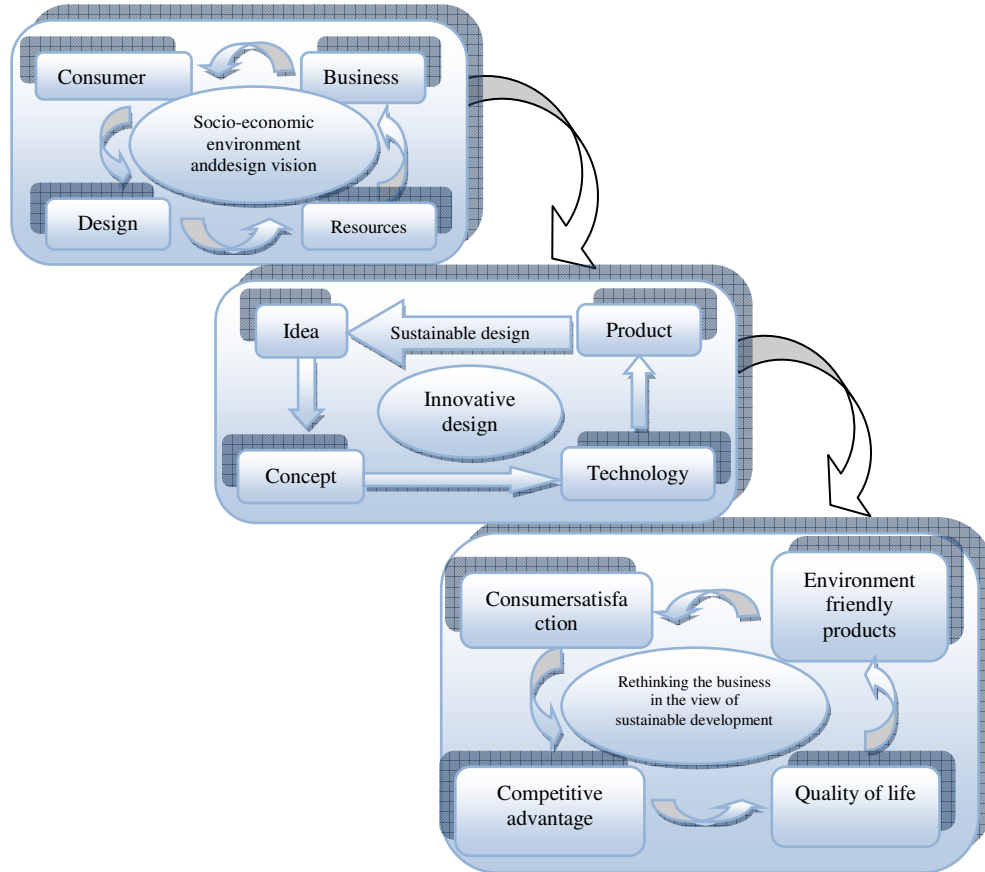


Figure no. 1. Conceptual model regarding the contribution of sustainable design in promoting responsible business

Source: authors

Under these conditions, reconfiguring the business, with design as the driving factor, will include the requirements of aesthetic design in addition to the economic, social, environmental, ethical and aesthetic aspects in order to confer its products a sustainable character (Zafarmand, Sugiyama and Watanabe, 2003):

- aesthetic durability, the possibility of continuous aesthetic;
- modularity, simplicity and minimalism of shapes, their logic and functionality;
- natural, non-polluting materials;
- promoting elements of local cultural and aesthetic identity;

- individuality / diversity of style.

The sustainable character of products also leads to an increase in their quality, but also to changes in the perception, habits and mentality of consumers therefore causing socially responsible manufacturers and an increased quality of life.

2. Research regarding the contribution of sustainable design to the company development and customer satisfaction

2.1 Research methodology

In order to demonstrate the significant contribution of design on the business attempt to meet the sustainable development requirements, the current paper aims to answer the following questions: *How does a product design influence the purchasing decision of a consumer? What is the consumers' perception about the link between innovation and design? How can product design specifically contribute to the sustainable development of a business? How much importance do Romanian companies give to design?* and last but not least, *What are the main limitations of the design process?*

Based on the questions this research aims to answer, there have been made a number of assumptions to be validated through the analysis of data collected. Thus, these assumptions are:

I1: Design can significantly influence consumers' preferences, making it one of the main drivers of a company's sustainable development.

I2: Design has a major contribution to the formation of consumer perceptions about the degree of innovation that a product includes.

I3: Product design has an important contribution to the sustainable development of a business by reducing costs and simplifying production and maintenance processes, by quality improving and value adding, by improving the image and the integration of specific eco-design elements.

I4: Companies in Romania still do not give the requested importance to product design, being an area with plenty room for improvement. In this regard, there are a number of limitations of the design process, which must first be identified in order to find solutions for them.

For the validation of these hypotheses, a survey was conducted in April-June 2013, which involved applying a questionnaire among young people aged between 19-25 years, forming a 147-respondents sample. Selecting the target audience for this research took into account the subjects' business training as previous knowledge on design and business sustainable development are essential to trustworthy research results. At the same time, the age segment is one of the most active in the new goods and services acquisition as it has a high level of the purchasing potential.

This questionnaire evaluates the design contribution on the sustainable development measures that a business needs and the extent to which this tool is valued by Romanian companies. A link between design, innovation and sustainable development can be established to assist companies toward sustainable results.

2.2 Results and Discussion

The recorded data were statistically processed and analyzed. It has been proved that the majority of respondents consider that the product design determined a product purchase up to a large and very large extent (78.9% according to Figure 2), leading to the conclusion that design can significantly influence consumers' preferences and thus **I1** is confirmed. Taking this into account, it can be argued that there is a strong need to pay special attention to aesthetic and functional characteristics of a product in order to meet consumers' needs in the highest possible level.

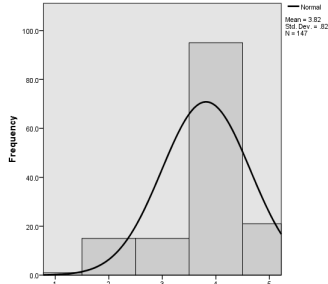


Figure no.2. Design influence on consumers' preferences
Source: Data analysis using SPSS

The survey results show a strong link between the perception of a product innovation and its design, as demonstrated by the large share of respondents who see this connection as a strong one (72.1%) or very strong (17%) as indicated in Figure 3. It is important to notice the respondents' unanimity in perceiving a link between innovation and design since no respondent has chosen a very weak link between the two. This proves the theory according to which a company that innovates must use design to highlight the innovative elements of the product. Otherwise, if consumers cannot easily detect the improvements, it may just turn into useless consumption of resources. In this way the second hypothesis of the article, **I2** is also validated.

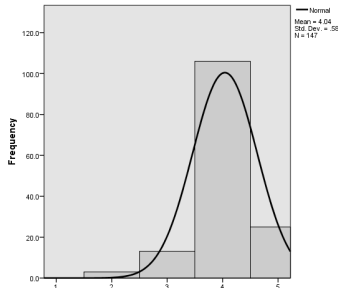


Figure no.3. Design contribution on the perception of the innovation degree
Source: Data analysis using SPSS

For a proper evaluation of the design contribution on sustainable development, the design main benefits on a company's activity were taken into account. Thus, it was observed that design can significantly contribute to image and brand improvement (88.4% consider that

the contribution of design to this phenomenon is high and very high), to the development procedures improvement (76.2% perceive it high and very high), to the product quality improvement (75.5% high and very high). An important contribution that design brings is by adding value to product (66% medium to high), by including eco-design elements (63.9% average to high), by simplifying the production and maintenance processes (71.4% in the proportion of medium to high) and not the least, by reducing production costs (with a dominant share of 66%, but in the weak to moderate). This way **I3** was successfully validated with different intensity degrees for each component, as shown in a synthetic version in Figure 4.

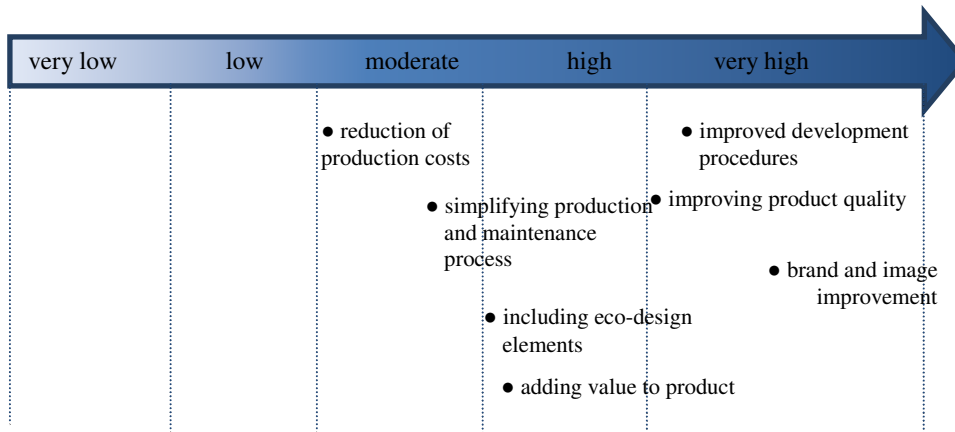


Figure no. 4. Design contribution to the sustainable development of a business
Source: Data analysis using SPSS

Correlating the results obtained so far with the fact that a percentage of 72.8% of respondents identified a neutral to weak importance that Romanian companies grant to the design process (variable whose evolution is shown in Figure5) requires an analysis of potential design limitations. It turned out that design is one of the endogenous drivers of stimulating the sustainable development of a business, a component that companies in Romania should pay more importance.

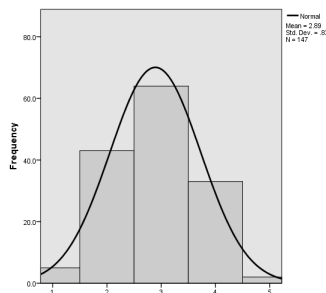


Figure no. 5. The importance granted by Romanian companies to product design
Source: Data analysis using SPSS

This confirms the hypothesis **I4** and goes further by identifying potential sources of limitations in the design process. The responses analysis of the last question showed that by far the most important is the issue of the insufficient funds with a share of 27.9% of all cases, followed by the lack of value for money (18.9%), lack of qualified personnel (18.6%) and other causes such as design/innovation potential of a company, resistance to new or the lack of customer responses to new products and processes (Figure 6).

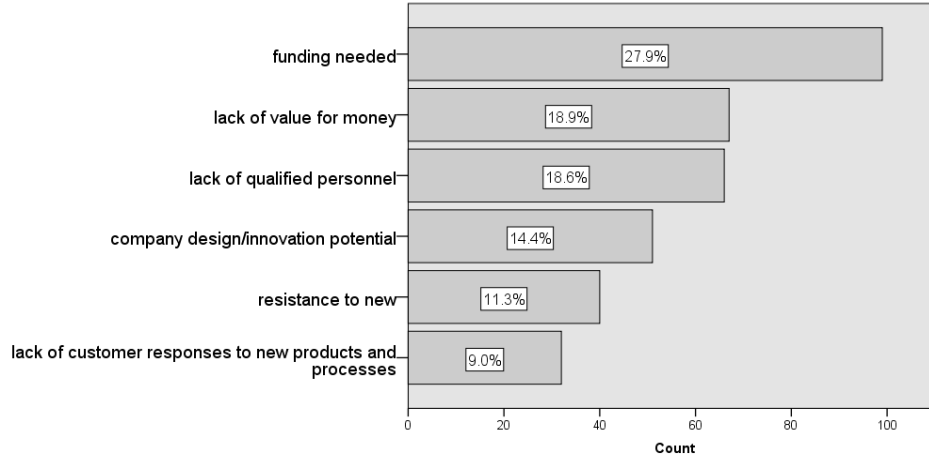


Figure no.6. The main limitations of the design process
 Source: Data analysis using SPSS

As it can be seen from the distribution of the responses in Figure no. 6, the need for design and innovation of consumers is higher than the ability of companies to responded to this need, shown by the fact that the lack of customer response to new products and processes is on the last position in the hierarchy limits of the design process. Identifying the causes is the premise of creating a starting path in making the necessary steps that should be taken in order to support a framework creation to encourage the use of product design techniques inside companies for their business development in a responsible way.

Conclusions

Innovation and the knowledge economy, the shift to a creative economy, education for creativity and innovation, cultural diversity as a support for creativity and innovation, the challenges of sustainable development, the potential of cultural and creative industries are problems that are intensely discussed in current scientific approaches.

Design, as an innovative process, can be a positive force for change and reconfiguration of a business, but one must consider the consequences of its involvement. Designing a product derives from the road intersection between technological innovations, economic conditions, changes in consumer needs and the evolution of society.

As such, by managing the socio-economic elements of the business - as a data source, the development of the present conceptual model intended to provide a suggestive image of the business in the given context, its exact status. Also, by applying the principles of

sustainable design, one has the opportunity to observe the changes to the status of the business and their implications, in order to reconfigure it in the view of sustainable development.

The development of the modern consumer, the social responsibility of manufacturers and the moral values of the young generation are parameters by which the quality of life is improved. Designers have a new mission: to create products that meet consumers' needs without compromising the environment. In this context, there is no alternative but a fundamental restructuring of the current product culture. The results of the research confirm the conceptual model proposed by the authors and show that:

- design can significantly influence the buying preferences of the population
- there is a strong link between the perception of innovation and the design of a product;
- any company that innovates must use design to highlight the innovative elements of the product;
- design can significantly contribute to improving the image and the brand, improving development procedures, improving the product quality, increasing product added value by including elements of eco-design, by simplifying the manufacturing and maintenance process and not finally, reducing production costs;
- sustainable design is one of the endogenous drivers for stimulating the sustainable development of businesses, an element to which companies in Romania should pay more importance.

Therefore, thinking of the future evolution of design, its trajectory involves:

- extending the concept of design to developing new models that encourage consumers to not only consider the product's shape, but also the human, cultural and environmental impact of products;
- reevaluation of initiatives and projects, thus the designer's work will create value for both human and natural economies;
- rethinking and upgrading technologies so as to protect the interests of globally interconnected communities;
- promoting an increased awareness of the importance of the sustainable design phenomenon.

The designers are trying to adapt as well as possible to technical economic, social and environmental restrictions and realities, and all participants in the socio-economic system must continue to produce, build and innovate, in a word to contribute to the sustainable development of society, of which they are equally responsible.

References

- Knošková, E. and Mlákay, J., 2011. New Trends in Design Innovations, *Forum Ware International Special ISSUE - Excellence in Business, Commodity Science and Tourism*, Special Issue 1, pp.81-86.
- Pamfilie, R., Procopie, R. and Bobe, M., 2010. Managing Eco-Design of Industrial Goods and Consumers' Protection Nexus, *Amfiteatru Economic*, XII(28), pp.454-465.

- Pamfilie, R., Procopie, R. and Voinea, L., 2007. The aesthetics of commodity as perceived by the user interested in value, *Amfiteatru Economic*, Special issue 1/2007, pp.76-80.
- Pamfilie, R., Procopie, R. and Voinea, L., 2008. Managing design and aesthetics for consumer's satisfaction. *International Journal of Management Cases*, vol.10.3/2008, pp. 309-315.
- Pamfilie, R. and Procopie, R., 2013. *Design și estetica în business*, Bucharest: Editura ASE.
- Procopie, R. and Pamfilie, R., 2006. Design and aesthetics of goods applied within the consumer's world, *Amfiteatru Economic*, no. 20, pp. 118-125.
- Sherwin, C., 2004. Design and sustainability - A discussion paper based on personal experience and observations, *The Journal of Sustainable Product Design*, no.4, pp.21-31.
- Voinea, L. and Filip, A., 2011. Analyzing the Main Changes in New Consumer Buying Behavior during Economic Crisis, *International Journal of Economic Practices and Theories*, vol. 1, no. 1, pp.14-19.
- Zafarmand, S.J., Sugiyama, K. and Watanabe, M., 2003. Aesthetic and sustainability: The aesthetic attributes promoting product sustainability. *The Journal of Sustainable Product Design*, nr. 3, pp.173-186.