Anna Dziadkiewicz
Uniwersytet Gdański

Managing design process. Exploring the differences in and the relationship between the analytical, multiplying and visionary design process

Summary

Managing a design process focuses on demonstrating how strategy and design-driven innovation can be made to achieve final product – a project – compatible and coherent with total business strategy.

Management of this process explores how design can be used to identification of the presence and experience of an organization, and in doing so, influence how the organization and its brand are expressed and perceived. This article presents literature review and shows the new conception of design management and reason behind their importance in modern business today. The review article is based on a theoretical background.

Key words: design management, project, design-driven innovation, incremental improvement, radical improvement, total design process.

JEL codes: M3,O01, O03, O04

Introduction

One day, a marketing manager for Apple described his market research as consisting of „Steve is looking in the mirror every morning and asking himself what he wanted" (Young and Simon 2005, p. 7). Perhaps this claim seems to be illogical, but it contradicts popular theory of user-centred innovation.

Managing of design process engages design thinking in the organisational strategy, identifies opportunities for design, interprets the needs of the organisation and its customers to create a modern company, running in the new world, based sometimes on preposterous conditions. The power of design and innovation can actually reshape an entire brand or the marketplace in which it exists. In the past, designers focused on making a new product. Today they are forced to create a much broader business to fulfil customer's needs and wants.

The Idea of Design

There are many definitions of design. In the broadest terms, design is an "activity that gives form and order to life arrangements" (Potter and Roy 1980, pp. 3-4). But before mak-

ing a decision about one authoritative definition, it's worth looking at the etymology of the word "design".

It derives from the Latin "designare", which is translated both as "to designate" and "to draw". In English, the word "design" has a dual meaning. Depending on the context, it means "a plan, project, intention, process" or "a sketch, model, motive, decor, visual composition, style". In the sense of intention, design implies as objective and a process. An etymological analysis of the word leads to the following: DESIGN = INTENTION + DRAWING.

The International Council Societes of Industrial Design (ICSID), the organization which brings together professional associations of designers offers the definition: "Design is a creative activity whose aim is to establish the multifaceted qualities of objects, processes, services and their system in whole life cycles. Therefore, design is the central factor of innovative humanization of technologies and the crucial factor of cultural and economic exchange".

Design is supposed to discover and assess the structural, organizational, functional, expressive and economic relationship with a task of (Borja de Mozota 2003, p. 3):

- enhancing global sustainability and environmental protection (global ethics);
- giving benefits and freedom to the entire human community (social ethics);
- supporting cultural diversity despite the globalization of the world;
- giving products, services and systems, those forms that are expressive semiotics of and coherent with aesthetics, their proper complexity.

The advantage of design is to involve a wide spectrum of professionals in which products, services, graphics, interiors and architecture take part. It avoids the meaning of design only as perspective of the output (aesthetics and appearance).

To that article's needs the best definition, which brings the field of design closer to industry and the market is that "industrial design is a professional service of creating and developing concepts and specifications that optimize the function, value, and appearance of products and systems for the mutual benefit of both user and manufacturer" (ICSID) or a definition, adapted by Gorb (1990, pp. 1-12), that shows the key categories of design:

1. Product category – design can add value to a product beyond the manufacturing process and in the end it can generate gross margin, performance and profitability. The design management depends on the nature of the industry and product in question, but the essential is to use e.g. product innovation, range or development and quality.
2. Environmental category – in this field, design management is mainly concerned with how, and what the company invests in tangible assets. These tangible assets include factories, offices, shops and any equipment within.
3. Information category – it plays a valuable role in how corporation conveys its mission and vision to its key audience. Information design is usually supplied through the marketing function of a business, sometimes it might include the design of advertising, sales promotion and PR materials (design is addressed then for external audience) and design for managers, employees and owners (design is then addressed for internal audience).
4. Corporate identity category – is closely linked to corporate strategy and shapes all aspects of these three categories of design, mentioned above. Similarly to all quantitative methods,

its benefits are difficult to assess, but there are implied measures of success in the increase of share prices of those corporations that have introduced strong identity programmes.

Understanding the context, in which design operates helps all design managers to identify opportunities for innovative projects and enterprises. It also helps other decision-makers understand how their projects support their goals.

Design is a type of process that has four basic characteristics. In the field of marketing there are Kotler's 4Ps, in design there are the 4Cs (Walsh et al. 1992, p. 28):
- creativity - design means the creation of something that has not existed before;
- complexity - design involves decisions on large number of parameters;
- compromise - design requires a balance between different, sometimes conflicting requirements;
- choice - design requires making choices between many possible solutions to a problem at all levels – from basic concept to the smallest detail.

Undoubtedly, designers are futurists, who suggest how the world might be. So, it means the design process is experimental. Holt (1990, pp. 195-198) identifies three types of design processes:
- the analytical design process – there are little uncertainty about the alternatives and the outcome is only a modification of something existing;
- the multiplying design process, which occurs in medium-risk projects such a radical improvements and adopted innovations (mentioned below);
- the visionary design process, in which the problem can't be defined precisely and is vague the best.

The Strategy of Design-Driven Innovation

Nowadays, market trends have been changed. As Ernesto Gismondi, the chairman of Artemide (one of the biggest co-society, based on design-thinking process) said: "We do not look at market needs. We make proposals for people".

P. Best (2010, pp. 146-147) added, innovation is:
- opportunity identification for sustained brand/business leadership;
- an idea that delivers positive, discontinuous business results;
- an idea that causes your target to think and interact differently with your business proposition.

These three major types of innovation, mentioned above, identify opportunities to keep and increase brand leadership by business results (Table 1).

As we can see in Table 1, it's worth considering also three major types of innovation as following:
- core innovation, which is the invention on new business or a new definition of future state of business;
- product innovation – that creates new product features and benefits;

- commercial innovation – nonproduct, noncore offerings (framing and reframing an opportunity through positioning, packaging, promotion, exploring competitive white spaces, breaking down barriers and trial and usage.

Table 1

The Brand-building Process

The Brand-building Process		
Innovation	Strategy	Design
Brand vision: − Inspire the future consumer and marketplace − Core innovation − Product innovation − Commercial innovation	Brand meaning: − Understand consumer, shopper, market and brand − Establish brand positioning − Establish brand architecture	Brand expression: − Create identity interface − Establish individual equity assets − Integrate through holistic execution across franchise − Create guidelines for allegiant implementation

Source: Best (2010, p. 147).

In the past decades, there were two major findings in management literature. The first was radical innovation, the second, a discovery, that people do not buy products but meanings. For many authors, radical innovation means radical technological innovation, what was used by investigators to focus mainly on the disruptive effect of technologies on industries. The second finding shows that people use things for emotional, psychological and sociocultural reasons as well as utilitarian ones. Analysts have shown that every product or service both in consumer or industrial markets has a meaning. So therefore, companies should look beyond features, functions, performance and notice the real meanings users give to things. However, the common assumption is, meanings are not a subject for innovation. We must understand, but we can't innovate them. The role of meanings has indeed broadly populated the literature on marketing and branding. But in studies on radical innovation, the research of meanings has been largely absent. So, we can say that are not considered a subject of R&D.

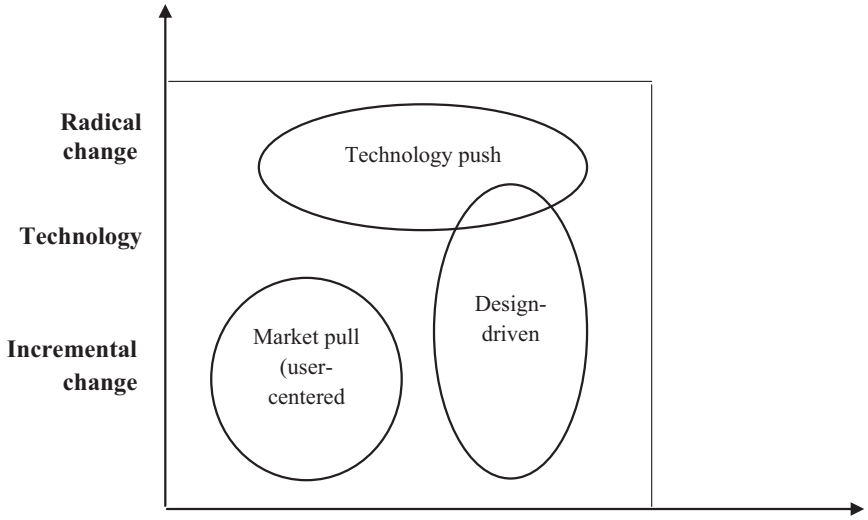
There are two different strategies of innovation: quantum leaps in product performance enabled by breakthrough technologies and improved product solutions enabled by better analysis of users' needs. First is a domain of radical innovation pushed by technology, the second one incremental innovation pulled by the market (Diagram 1).

In XXI century, we can observe a third strategy: design-driven innovation, which means radical innovation of meaning. The new perception is the meaning what people are actually waiting for.

Every company has its own environment - firms that target the same users, suppliers of new technologies, designers, researchers, project managers. Those, who produce design-driven innovations, tighten their interactions with other stakeholders. Thanks to that contact the can exchange information on scenarios, test and discuss their own visions.

Diagram 1

The strategy of design-driven innovation as the radical change of meanings



Source: Verganti (2009, p. 55).

Design can't be seen as the output of design-form, but as a creative and management process, that can be integrated into other organisation processes as idea management, innovation management and R&D management. It means that it modifies the traditional structure of process management. Design relates to key innovation management issues and new product development success (Cooper, Kleinschmidt 1986, pp. 71-85):

- a product differential advantage – a unique, superior product in the eyes of the customer, a high performance-cost ratio, and economic advantages to the customer;
- an understanding of user needs, wants and preferences and a strong market orientation with marketing inputs playing an important role in shaping the concept and design of the product;
- a strong launch effort selling promotion and distribution;
- technological strengths and synergy – a good fit between the product technology and the technical resources and skills of the company;
- marketing synergy − a good fit between the marketing, sales force, and distribution needs of the products and the company's marketing resources and skills;
- an attractive market for a new product;
- top management support and commitment.

Companies that improve design-driven strategy step back from users and take a broader perspective. They examine how the context in which people live is evolving, why they change their reasons of buying and how technologies, products and services are shaping that context. These companies aren't following by existing trends. They try to make proposals with which the can modify the context.

The process of design-driven innovation

This process can highlight the ability to understand and influence how people give meaning to things. It consists of three actions.

The first one is listening. It is the action of gaining a knowledge about possible new product meanings by interacting with interpreters e.g. people, cultural organizations, the media, sociologists, marketers, retail and delivery markets, designers, technology suppliers, artists, research and educational institutions, developers of pioneering institutions etc. Companies that can listen better develop privileged relations with a distinguished group of key members. These key interpreters are forward-looking researchers who are developing unique visions about how meaning could evolve in the life context. Those companies that realize design-driven innovations are better than their competitors at attracting and interacting with their environment.

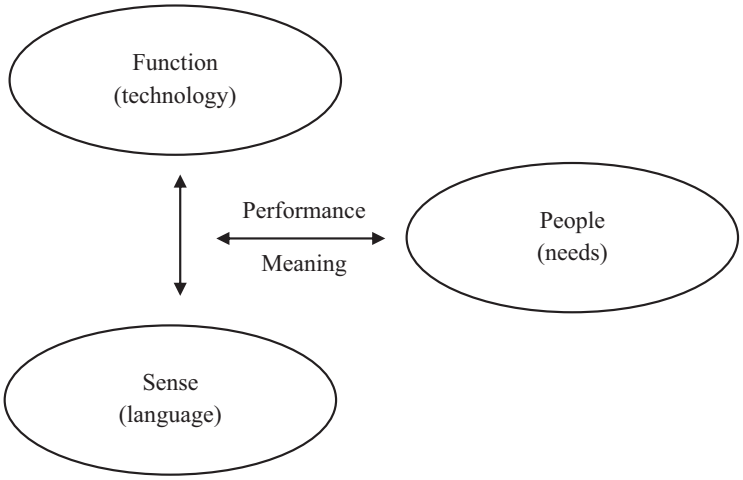
The second action is interpreting. The aim of this step is to allow a company to develop its unique proposal. This process is driven inside the company and means that company assesses knowledge it gains by interacting with interpreters and then redesigns this knowledge with its own insights, technologies and assets. Its outcome is the development of a breakthrough meaning for a product basket.

The third action is addressing. Radical innovations of meaning, confusing people being unexpected are the steps to prepare the ground for ground-breaking proposals.

All products appeal to people and their needs along two dimensions (Diagram 2). The first one is familiar to anyone managing innovation. It is an utilitarian function, provided by product performance and based on technological development. It means functionality and technology.

Diagram 2

Innovation and people's needs

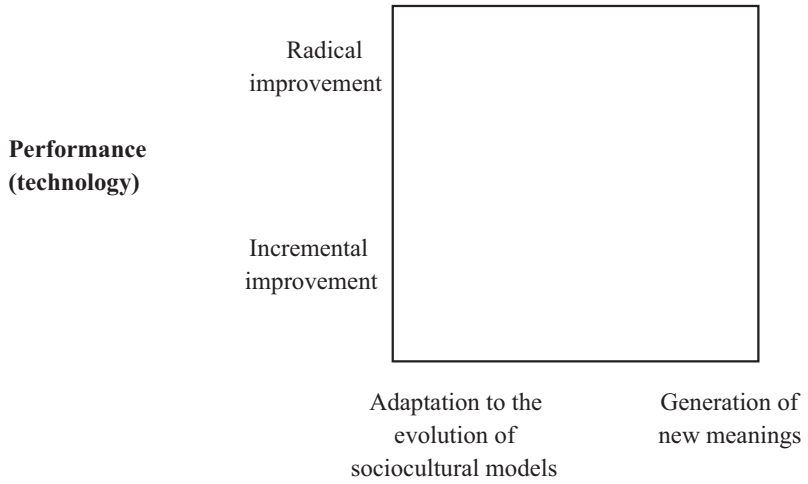


Source: Verganti (2003, pp. 34-42).

The second dimension concerns sense and meaning. It focuses on psychological and cultural reasons of purchasing and using products. In this dimension, we can observe an individual and social motivation. The individual one is linked to psychological and emotional meaning. Then social is linked to symbolic and cultural meaning – what the products says about me and others.

The important thing is to recognize also a product language: its material, texture, smell, name and form. We can say also about style, but this element is only one aspect of a product's language (Dell'Era, Verganti 2007, pp. 580-599). This theory of product language was provided both within design and semiotics (Karjalainen 2003, p. 8). Companies can innovate in both dimensions, so its strategy is better conceived as two dimensional. The most important is innovation can be either incremental or radical in both dimensions (Diagram 3).

Diagram 3
Framework for innovation strategy



Source: Verganti (2009, p. 45).

Companies in their whole life adapt and update the language of their products and service to match gradual changes in taste e.g. in fashion, companies adapt the style, colour, shape, length often without questioning of basic meaning of skirt or pair of boots. So, incremental innovation in meanings seems to be much more often than breakthroughs.

Design as a process

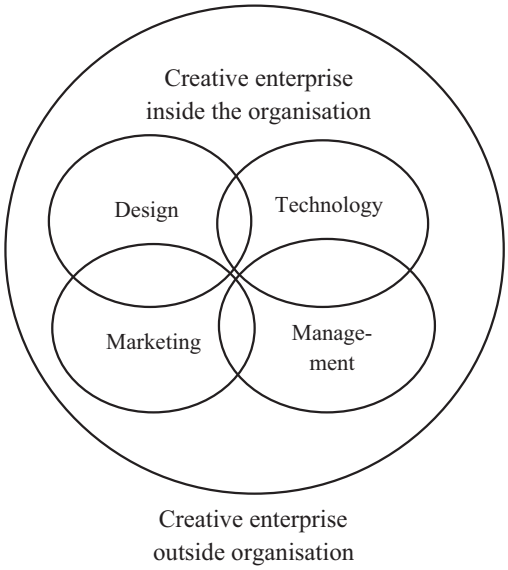
The design process can be also called an identity process. It defines a profile of the company and its environment – customers, suppliers, investors etc. It helps company differenti-

ate from competitors and gain a market advantage over similar companies. Design is like a "key identifier for the company to the public, hence the great necessity for design managers to take proactive positions in design process management" (Anders 2000, pp. 29-37).

It follows different phases. They can be reduced in number if the design brief is only a modification of existing products. These phases are identical, no matter what the design project is. They are also similar to the creative process existing in different cultures. But the design process is unique, because of final, visual output.

Creating, for designers, means a problem difficult to solve. If the problem is identified, designers follow a logical process that they apply to every phase of project. This process is learned skill, which corresponds to techniques not to creativity. It's worth saying, the process is the same, when company uses from external agency works or chooses its own design service department (Diagram 4).

Diagram 4
Design management context



Source: Best (2006, pp. 14-15).

There are three main phases of that creative process (Best 2006, p. 14):
- an analytic stage of widening the observation field;
- a synthetic stage of idea and concept generation;
- selecting the optimal solution.

Each process corresponds to five phases (Table 2), which have their own objective and correspond further to different visual outputs.

Table 2

The Design Process

PHASES	OBJECTIVE	VISUAL OUTPUTS
1. Investigating	IDEA	Brief
2. Research	CONCEPT	Visual concept
3. Exploration	CHOICE OF STYLE	Roughs of ideas, sketches, Roughs of presentation Reduced-scale model
4. Development	PROTOTYPE DETAIL	Technical drawings Functional model 3-D mock-up for visual correctness and working capabilities
5. Realization	TEST	Documents of execution Prototype
6. Evaluation	PRODUCTION	Illustration of the product

Source: Best (2006, s. 15).

As we can see on the Table 2, the first, preliminary phase is investigation. This prospective phase shows an opportunity or potential need, that must be identified and ideas, which must be generated to highlight, if the goal is to turn need into a design concept. It is obvious to widen the field of investigation in order to identify a problem, which can be solved by design and requires creating client brief (Table 3).

Table 3

The client brief

Element	Contains
Introduction	Information about the project background and opportunity identified
Company	Information about the organisation, its brand values, methods of operation and its existing customers
Customers	Information about the organisation's target customers
Competition	A review of the organisation's competitors and their unique selling points
Positioning	Information about the proposed strategy and plan for action
Design challenge	Information about project objectives, scope of work, expected outcomes and specifications
Metrics for success	An outline of how the project's success will be measured
Programme plan	An outline of the project's stages, phases and milestones
Costs	A list of fees, expenses and production costs

Source: Best (2006, p. 92).

It should describe what the organization wants to achieve, the market opportunity identified, an estimate of the budget and time allocated and any key deadlines. It also defines

a nature of the problem to solve. The client representative, who is responsible for writing that draw should also clarify needs and project parameters. Then this brief is given to design managers (the creative director or project manager) for feedback. A whole dialogue is based on establishing how design can help to achieve client's objectives and expectations.

The phase, called 1, by B. Borja de Mozota (2003, pp. 14-15) is research. The project manager tries to inquire about the opportunities and the importance of the project and uses the different audience responsible to decision-making to launch the project. He takes care about positioning of the product in competitive market and explores technical and functional parameters of the project. This phase often leads the project manager to accumulate documentation on the "environment" or context of the project. There are bidirectional objectives: to draw a diagnosis of the project and to define a visual concept.

Next phase is exploration. After understanding an issue, project managers must use all available resources to concretize the concept by making written examples of the different shapes the project can take. This phase ends with the selection by an audience that includes the client of one or two directions. This selection is possible thanks to diagnosis of the wide range of solutions in relation to the priority of desired functions, defined in the client brief.

Presentation allows gaining a constructive feedback to establish all details and visual elements of the project. It also helps to improve chosen directions, taking into consideration aesthetic, functional and technical limits. The established result of this phase should be developed in the following phase.

The phase of development focuses on presenting the chosen solutions in three dimensions. A functional life-size model is made, so the project manager makes a technical plan of the prototype. This model is also used to generate marketing tests. After them, the final model is adopted and this creative phase of the process is finished.

The fourth phase is realization that means designers work on the realization of prototype for the project. The plan identifies materials used and characteristics of elements of the product. Comparing with previous phases, this one is time-consuming, because it requires connection of different factors – internal and external resources.

In the last evaluation phase, according to Borja de Mozota (2003, p. 16), the tests are launched in three different directions: technical control – norms of use, security, durability etc., calculation test – preparation of production programs, marketing evaluation: brand values, target market, market share objectives - market evaluation is conducted earlier, but it is commonly known the consumer preferences and behaviour can be changed during prototype testing.

It should be emphasized; the creative design process fits into a "total design" process. It integrates market research, marketing strategy, branding, engineering, new product development, production planning, distribution and corporate communication policies. So we can say after B. Hollins and G. Hollins (1991, p. 2) design is a creative internal process, an external process of production, a management process or/and a planning process.

Additionally, the design process is a knowledge process; instead of presenting the design process as a vertical and sequential model, it might be wiser to represent it as a wheel, illustrating the cyclical nature of any organization. Internally, it must apply technologies, concepts, and methods, externally satisfy the needs of a large market environment.

Conclusions

Design provides evidence of a correlation between company performance and design management. It plays a unique role in our society. Designers teach consumers taste through various complex channels. The good design infusion process explains why design is a key member in the broader economy and the world of consumer trends, not simply in the designer-client project relationship. We can surely admit, using design in project management can be a profitable investment, because return on investment is short. When the company works with a designer for the first time, it is more likely that the design projects will be launched with success. Design also allows for the penetration of a new market or the increase of a present market share.

Bibliography

Anders R. (2000), *Defining, Mapping, and Designing the Design Process*, "Design Management Journal", Summer.

Best K. (2006), *Design Management. Managing Strategy, Process and Implementation*, AVA Academia, The Environment of Learning, New York.

Best P. (2010), *Branding and Design Innovation Leadership: What's next?*, (in:) Lockwood T. (Ed.), *Design Thinking. Integrating Innovation, Customer Experience and Brand Value*, Design Management Institute, Allworth Press, New York.

Borja de Mozota B. (2003), *Design Management. Using Design to Build Brand Value and Corporate Innovation*, Allworth Press, New York.

Cooper R., Kleinschmidt E. (1986), *An investigation into the New Product Process: Steps, Deficiences and Impact*, "Journal of Product Innovation management", Vol. 3.

Dell'Era C., Verganti R. (2007), *Strategies of Innovation and Imitation of Product Languages*, "Journal of Product Innovation Management ", Vol. 24.

Gorb P. (1990), *Design Management: Papers from the London Business School Architecture*, Design and Technology Press.

Hollins G., Hollins B. (1991), *Total Design: Managing the Design Process in the Service Sector*, Pitman, London.

Holt K. (1990), *The Nature of the Design Process in handbook of Design Management*, edited by Mark Oakley, Basil Blackwell, Cambridge.

ICSID (2016), Industrial Designers Society of America IDSA, http://www.idsa.org/summer-2012-innovation-full-issue [access: 14.04.2016].

Karjalainen T.-M. (2003), *Strategic Design Language: Transforming Brand Identity into Product Design Elements*, 10th EIASM International Product Development Management Conference Brussels, June 10-11.

Potter S., Roy R. (1980), *The Benefits and Costs of Investment in Design*, The Open University UMIST report DIGG-o3, Design Innovation Group, September.

Verganti R. (2003), *Design as Brokering of Languages. The role of Designers in the Innovation Strategy of Italian Firms*, "Design Management Journal", Vol. 3/14.

Verganti R. (2009), *Design-driven innovation. Changing the Rules of Competition by Radically Innovating what Things mean*, Harvard Business Press, Boston-Massachusetts.

Walsh V., Roy R., Bruce M., Potter S. (1992), *Winning by Design: Technology, Product Design and International Competitiveness*, Blackwell Press, Cambridge.

Young J.S., Simon W.L. (2005), *Icon: Steve Jobs – The Greatest Second Act in the History of Business*, Wiley, Hoboken.

Zarządzanie procesem wzornictwa. Badanie różnic i związków między procesami wzornictwa analitycznego, powielanego i wizjonerskiego

Streszczenie

Zarządzanie procesem wzornictwa koncentruje się na zademonstrowaniu, w jaki sposób strategia i oparte na wzorach innowacje mogą osiągnąć produkt końcowy – projekt – kompatybilny i spójny z ogólną strategią biznesu.

Zarządzanie tym procesem bada, jak można wykorzystać wzornictwo do ustalenia występowania i doświadczenia organizacji, natomiast czyniąc to wpływa na to, jak jest wyrażana i postrzegana organizacja i jej marka. Artykuł przedstawia przegląd literatury i ukazuje nową koncepcję zarządzania wzornictwem oraz racje leżące dziś u podstaw jego znaczenia w nowoczesnym biznesie. Artykuł przeglądowy opiera się na podstawach teoretycznych.

Słowa kluczowe: zarządzanie wzornictwem, projekt, innowacje oparte na wzornictwie, ulepszanie inkrementalne, ulepszanie radykalne, ogólny proces wzornictwa.

Kody JEL: M3,O01, O03, O04

Управление процессом создания дизайна. Выявление отличий и связей между процессом создания аналитического, мультипликативного и визионерского дизайна

Резюме

Управление процессом создания дизайна сосредоточивается на представлении, как можно осуществить стратегию и основанные на дизайне инновации для достижения конечного продукта – проекта – связного и совместимого с общей стратегией бизнеса.

Управление этим процессом изучает, как можно использовать дизайн для выявления существования и опыта организации, поступая же таким образом, повлиять на то, как себя представляют и как воспринимаются организация

и ее бренд. Статья представляет обзор литературы и указывает новую концепцию управления дизайном и причину, лежащую в основе его значения для современного бизнеса в настоящее время. Обзорная статья основана на теоретических предпосылках.

Ключевые слова: управление дизайном, проект, основанные на дизайне инновации, нарастающее усовершенствование, коренное усовершенствование, общий процесс создания дизайна.

Коды JEL: M3,O01, O03, O04

Artykuł nadesłany do redakcji w październiku 2016 roku

Afiliacja:
dr Anna Dziadkiewicz
Uniwersytet Gdański
Wydział Zarządzania
Katedra Marketingu
ul. Armii Krajowej 101
81-824 Sopot
e-mail: anna.dziadkiewicz@ug.edu.pl