Success Factors in the 21st Century

A Guide to Product Development. What do successful products have in common? Just good product design? And what are the hallmarks of good design? Time for a change: The author dispels some traditional myths that stubbornly persist within the industrial sector.

FELIX TIMM

Which really successful products come to mind spontaneously? The i-Phone, i-Pod, Porsche 911, Lego brick, Senseo coffee maker or perhaps the flexible neck toothbrush? What sets these products apart? Is it really the eternal "cheaper – better – different" **(Fig. 1)** that has long been regarded as the secret recipe for product success? And what does that mean in concrete terms for product development?

Ergonomics and aesthetics are not mutually exclusive: SmartCase standard toolbox with prop-up function for customizable changeable tool inserts. Often it is small details that trigger that wow effect for customers and end users (Photo: Hazet Hermann Zerver)

What Makes Products Successful Today?

Cheaper: Are any of the successful products mentioned above really cheaper? Actually, just the opposite! But what is this opposite of "cheaper" that drives success? Quite right, not more expensive, but rather value for money or appropriately priced. All these products manage to communicate that they are worth every penny of their price – via high quality design that clearly highlights the features and functions decisive for their purchase.

At the beginning of every development the following decisions have to be made: Is the new product simply to be bargain basement? In that case it will hardly contain ground breaking innovation or win international design prizes. Or do you want the product to be top of the class in respect of functionality or design? Then you can accept potential additional costs which the customer will be prepared to pay – if the product delivers what it promises. Value engineering is only an option if a guaranteed technical solution exists, not however, within the conceptual development phase of a new product solution.

Better: The heyday of ground breaking inventions was the end of the 19th and beginning of the 20th century. Many of the patents and functional principles of that time are still state of the art today. Unfortunately the laws of physics cannot be suspended – the competition also works with the same parameters and with equally clever people.

Is it therefore really possible to make products that are better? The watch word for the future is "smarter". With its i-Phone, Apple created the progenitor for an entire generation of smarter devices. The i-Phone is not a better telephone – it is bigger, clunkier, has less battery life and is also much more expensive than other cell phones. However, the overall user experience was revolutionized and expanded with functions that solved problems that nobody knew existed yesterday, but without whose solution nobody wants to live today. The focus is thus on added value and user friendliness which are analyzed and defined at the beginning of the development process and must be integrated sensibly into the overall design.

Different: A voyage into the unknown is not a strategy for the longest possible product life cycle in times of merciless competition. The exact positioning of the future product in a highly crowded market needs to be precisely defined and clearly articulated. Design is and will remain the key to uniqueness and differentiation **(Fig. 2)**. The design has to be developed within the framework of the brand philosophy and the product portfolio, provide contrast to the competition as well as a clear user benefit and be consequently implemented during the development.

Individual success criteria can also be seen in low cost or keep it simple solutions – however, such solutions are very

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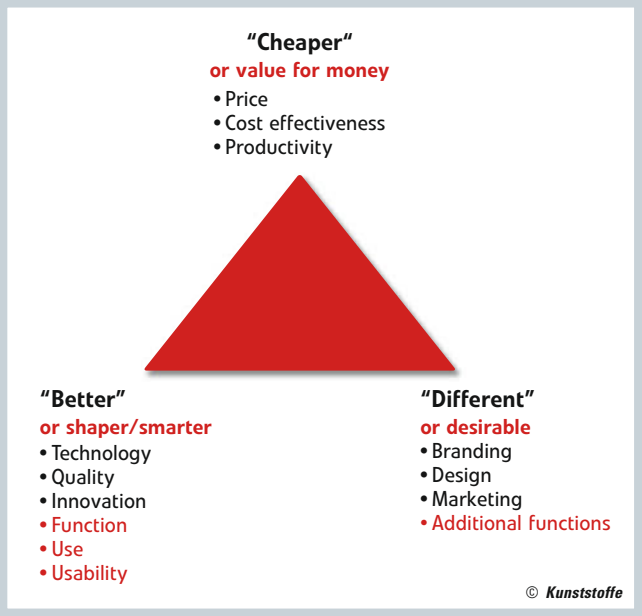

Fig. 1. The mantra "Cheaper, Better, Different" was long held to be the secret recipe for product success. Today other factors are more important (Picture: Busse Design + Engineering)

short-lived and can be easily copied. The aspiration of German companies in the global market can really only be the creation of new archetypal and best in class solutions. This can only be achieved with true added product value, high quality design and consequent brand management.

True Added Value Through Well Constructed User Scenarios

Nothing new, you might say. So: With what can a manufacturer offer true added value against a background of today's often complex product functions and crowded competition? In many projects we experience the full spectrum between chaos and aimlessness. Sometimes a strong minded product manager specifies additional functions – often out of the blue, right in the middle of an already well advanced state of development – without considering their effect on product size and costs. Sometimes the development is behind the existing competition in terms of its range of functions and the product that is then brought to market has long since been overtaken.

It is therefore important for the definition of a product's true added value to have a clear classification of its various users and their requirements. Brainstorming with colleagues from customer service, software, development and marketing allows the users to be quickly reduced to two or three groups with various demands in respect of information content and ease of use. The usage scenarios can also be reduced to three or four standard cases that often cover 90 % of applications. It is also important to note that the end user is not necessarily the same as the purchaser; however, both parties need to be convinced.

In the course of this reflection and categorizing, time and again new creative impulses and additional or smarter functions can be found. Often it is small details that trigger a wow effect for customers and end users. A good example of this is the prop-up function of the new Hazet SmartCase 1/4" tool box which automatically positions the tools for optimal user access on opening **(Fig. 3)**.

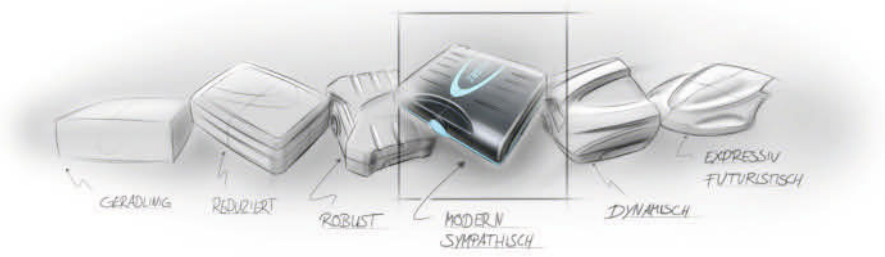

Fig. 2. Design is and will remain the key to uniqueness and differentiation and can awaken various associations (Picture: Busse Design + Engineering)

Fig. 3. Hazet 1/4" clamshell tool box with a user-friendly swivel holder for the fine tooth socket wrench and screw driver. In the 2K plastic housing the soft components which secure the sockets and extension bars in the internal space are directly injection molded alongside the external soft components (Photo: Hazet Hermann Zerver)

Only through reflection is it possible to create operating procedures and additional functions that are adapted to user requirements and so generate honest sales arguments and added value that customers come to appreciate in their daily user experience – the biggest factor for long term product success. All of this does not require a large scale survey of hundreds of potential users, but rather a targeted interdisciplinary dialog of all those participating in the development.

Product Requirement Documentation Should Not Become Extinct

What should the product be able to do? How should it be positioned in the market place later on? How much may it cost? Designers and developers always hear the same answer to these elemental questions: →

The product should be able to do everything, but the development, manufacture and tools should cost nothing. On top of that all the development steps and loops should be precisely scheduled and budgeted before the project even starts. However, this is the wrong approach and one where the product and its developers never have any real chance of survival.

Following the bursting of the financial bubble the fact that consequent product development is the only way to secure long term corporate success in times of global competition must once again be clear to every entrepreneur. At the same time it is obvious that product development is an investment that bears risks, but without investment there can be no profit. Despite all this, classic product requirement documentation is facing extinction. Hardly any development projects today start with a concrete description of the actual requirements, even though product success without a concrete description of the product vision is not possible.

It is essential in the preparation of a project to lay a solid foundation in the form of a product development document: What are the really important requirements for the new product? Which of these requirements compete with each other and how should they be weighted? What do the customers really want? And absolutely vital: What is the motivation behind this development project? At the end of the day it does make a difference whether the new development should replace an existing product, whether it should diversify a new market, if it is a pull product as a benchmark in terms of innovation and design or a bread and butter product to deliver a good profit margin with security.

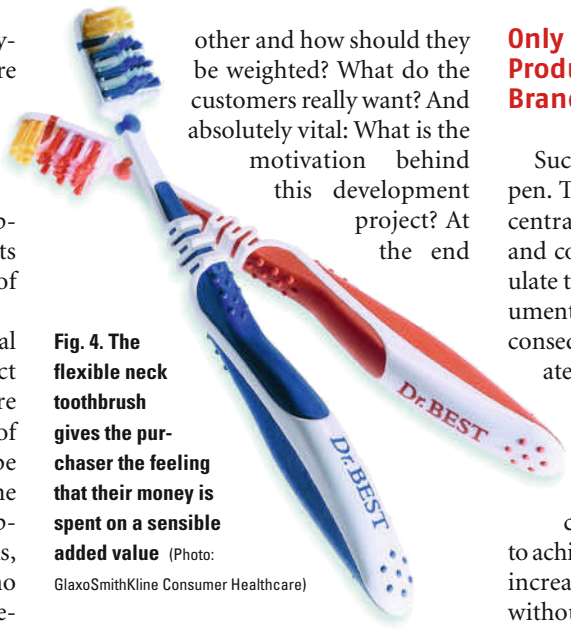

Fig. 4. The flexible neck toothbrush gives the purchaser the feeling that their money is spent on a sensible added value (Photo: GlaxoSmithKline Consumer Healthcare)

Only on this basis is it possible to develop the simple and smart details that generate a true wow effect and added product value **(Fig. 4)**. Do you get less tooth decay if you use a flexible neck toothbrush? No! However, the additional functionality gives a feeling of safety and people are prepared to pay more money for the added value of protecting their gums. Thus a benchmark in terms of usability and design could be achieved that is worth protecting and has been rewarded with a significant market share. And this claim of innovation was defined from the very beginning.

Only Consequent Product Design Can Secure Brand Value

Such product visions don't just happen. They are the result of holistic, concentrated, practically scientific research and conceptional work. To clearly articulate this in a product development document takes time and money. However, consequently implemented this also creates a great deal of time and money. Time in the sense of a competitive advantage and intellectual property protection from all the alternative suppliers and copy cats. Money in terms of the ability to achieve higher prices, growing sales and increased brand value. And all of that without an image campaign, but rather right there where product and brand quality are burnt into the mind – in plain honest product experience.

A description of the geometric properties is not adequate in order to create a basis for successful development. Without the sustenance of product vision for the developers, designers and marketeers the long term product success is in danger of falling by the wayside, since the influence of innumerable factors creates →

! Best Practice

Road Map of a Design Development

- Workshops to capture the current design features and positioning as well as the technical possibilities – for own brands and the competition
- Definition of the desired future brand and product statements on the basis of multiple associations and polarity profiles
- Design conception of appropriate design elements and strategies for placement based on selected key products or on the basis of the development currently in progress – orientated on the additional functionality, manufacturing and user based success criteria
- Tailoring the design concepts to the technology and manufacturing facilities with respect to feasibility and detailing of a chosen draft
- Definition of the common design elements in a product style guide manual for future developments. Transfer of the style guide to the entire product portfolio through face lifts or evolutionary changes with all new developments

i More on this Topic

VDI-Spritzgießtagung

This article is a shortened version of the plenary talk that the author gave on February 14 at the VDI annual conference "Spritzgießen 2012" (Injection Molding 2012).
→ **www.vdi.de/spritzgiessen**
The full version in German is available on request from timm@busse-design.com

Fig. 5. Consequently developed and established over decades: the product design of the Stihl brand (Photo: Andreas Stihl)

fractured products that can do everything, but nothing well, and are doomed to sink in the global market.

Only when all the products are harmonized with each other can a strong holistic picture be generated in the positioning of the brand and products that locks in customers whilst also communicating the added value of the products and their price. This is vital for the knowledge centers that the western industrial countries have become, since their products are often manufactured entirely in low wage countries and only afterwards labeled with the established national brand. The core brand concept and its tailored product design together generate the overall image of the brand and products in the marketplace. But how is your brand concept defined? Do your colleagues and superiors see this exactly the same way?

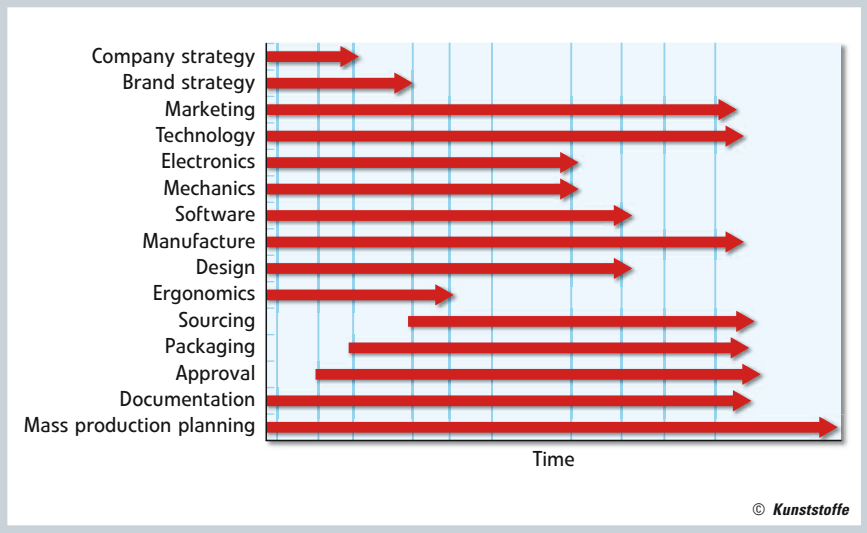

Fig. 6. Integrated development process. The early integration of all relevant departments and stakeholders in the clear definition of the project as well as all relevant project milestones reduces the number of development loops (Source: Busse Design + Engineering)

Associative Design – the Methodology of Clear Statements

Due to the large product range within one's own company **(Fig. 5)** and in international markets it is today more important than ever to define which associations the new product should awaken in the various consumer groups. Typical briefing statements are often: "timeless and modern" – or: "it should embody the future product generation, but be linked as closely as possible to the existing products." This is no basis for successful design.

First of all the significance of the desired associations and their transformation into product form has to be agreed within the entire project team. Often one project participant associates an entirely different design style with the term "timeless" than other members of the team. Mood boards and benchmarking, where competitive products and current products from other sectors are assigned to various categories, are helpful here. In this way the forward looking design intention can be unambiguously defined. Otherwise the choice of the design would be a spontaneous and subjective decision that would depend on how much coffee was drunk during the presentation of the various concepts.

Integrated Design Processes – Holistic Process Networking

A design development can only be successful if right from the start all the relevant departments are involved (see **box** "Best Practice"). It is not without reason that knowledge management is currently one of the largest challenges for the modern, globally networked and information overloaded world. For example the technical aspects of regulatory approval, particularly where the products are to be marketed internationally, should be clearly defined at the start of the project – and equally the existing production and assembly capabilities considered. In this way it is possible to take account of all the influences on the project, often associated with wide ranging consequences, in a timely fashion and productively integrate the various departments. The early consideration of country specific acceptability problems of individual concept variations can amongst other things save embarrassment due to the choice of name or packaging that in recent times has plagued even leading brand manufacturers.

You should therefore start your projects with a phase of thorough preparation drawing on internal experts, exter-

Fig. 7. The articulation of concrete objectives is the entry level requirement for the start of every product development and design project (Photo: Busse Design + Engineering)

! Company Profile

As one of the largest and oldest European design and development companies **Busse Design + Engineering GmbH**, formerly busse design ulm, Germany, has been developing successful products since 1959 from ideas to mass production, target group designs as well as engineering from prototypes and tooling capable 3-D data sets. Products developed by the company have to date received more than 400 awards including the iF Hannover Awards, Red Dot Awards and many other design prizes. Some objects are on display at the Museum of Modern Art in New York as well as in the Neue Sammlung in Munich.
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nal designers and developers or experts from related sectors and representative customers so that through a question and answer process the single promising product concept can be located and further refined in the initial concept study. This makes the product vision tangible. Only on this basis can the follow-on concrete development steps be planned and with any degree of certainty the unit volumes, market potential and acceptable costs for the development and tooling be defined **(Fig. 6)**.

It is important that the original targets should be highlighted time and again and any changes in objectives in the course of the project reflected upon with all stakeholders **(Fig. 7)**. Changes must be recorded in the updated product development documentation. Be sure to make enough time and space for review workshops as well as decision making and consideration of concept variations.

Conclusions

Only successful products can secure our future. This demands a holistic design process with clearer reflection and the articulation of objectives in respect of added product value and positioning of the design. ■

THE AUTHOR

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