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Strategic Design: How the New Eclipses the Old
Fundamental Principles of Product Design at Apple

Products from Apple are a phenomenon: they garner more attention from the media than the competition, their users often have an emotional attachment to them, and Apple sets ever new sales records. Where does this great interest in Apple come from? Where does this success come from? What makes Apple products special?

The answers to these questions can be found above all in the product design: the design concept is of central strategic importance to the company. It is caught between aesthetic and corporate requirements and can be traced back to three central principles, which lie in the visual, the organizational, and in marketing.
The Principle of Simplicity

Apple products are distinguished by the simplicity of their surface: the iPhone has only one physical button, the so-called home button, while the remainder of the front side is occupied by the display. The same applies to the iPod, with a clear separation between input and output. Even the iMac, with its mainboard integrated into its screen, features an extreme reduction, which is also apparent in the limited number of cables, for example, to the mouse and keyboard, which have largely been replaced by Bluetooth connections.

This simplification of product design has its antecedents in the design of the German company Braun, which starting in the fifties was chiefly developed by Dieter Rams. Rams wrote: “The design of an industrial product is aesthetic if it is honest, balanced, simple, unobtrusively neutral, and careful.” According to this conception, good design is consistent down to the last detail and as little design as possible. His maxim “less design is more” gave the electrical appliances an aesthetic that was novel at that time.

It is hardly remarkable that Jonathan Ive, who has been responsible for the design of Apple since 1997, expressed something quite similar when he said that design is not limited to the look but rather also requires technical concentration: “There’s an applied style of being minimal and simple, and then there’s real simplicity…. This looks simple, because it really is.”

For this reason, the first generation iPod, quite like the Braun Transistor Radio T 3, is kept in a simple white, and has the same rounded corners and edges. Simple geometric forms—circle and rectangle—alone share the surface of the device. No other elements distract the attention of the user. The reduced, black and white design of the Braun television, the Atelier TV 3, which seems to consist exclusively of the screen, also strikingly resembles the current iMac from Apple.

The principle of simplicity applies both to the external form as well as to the design of the graphical user interface. There are thus only a limited number of symbols and controls to be seen on the screen at the same time in the case of the iPhone. The iPhone’s home screen displays nothing but the orthogonally arranged icons of the mini-programs, the apps that have been installed.

Reduction is, however, not an aesthetic end in itself but is instead of functional importance in order to satisfy the requirements of the user. Clarity leads to simple understandability and intuitive usability, which is of decisive importance specifically for private users and for computer novices, an important target group for Apple.
In the case of both Braun and Apple, the design department is central to the decisions the company makes: the simplicity and intuitiveness of use can only be achieved when design does not represent merely an addition but is instead fundamentally integrated within the company. This means intensive collaboration with other departments.

The Principle of Integration

Dieter Rams made clear that product design is neither fine art nor a promotional add-on but instead has to have a bearing on entrepreneurial questions: "We designers do not operate in a vacuum. We need businesspeople as well. We are not the fine artists we are often confused with." Design at Apple is also connected not only with the design of the product's external shell. The design concept at Apple goes further: technical research and development and classic product design interact with one another.

After Steve Jobs, the head of Apple, returned in 1997 to the company that he had helped found, he appointed the designer Jonathan Ive as "Senior Vice President of Industrial Design." This declaration of design as a "management issue" made clear what great importance it had for the company: design was not supposed to be merely styling in order to sell products better.

Design was instead intended to stand on one level with other departments such as development or marketing. The designer is thus no longer the designer of the surface of a product developed by the engineers or demanded by the strategic decision makers but rather works hand in hand with them on innovative solutions.

Among the principles of integration is first the close interweaving of design and technology. Much has been written about the semi-transparent plastic shell of the iMac. The true challenge, however, was accommodating the necessary hardware (monitor, mainboard, hard drive, and so on) in this rounded plastic shell. Since the hardware had been housed as a result of functional requirements exclusively in rectangular cases until that point, the impetus for a new form now came from the design department. Fitting the hardware in a rounded form would not have been possible without close collaboration between the corresponding departments: design is thus the driving force of the company.

Consequently, the first product that resulted from this connection immediately made clear the new positioning that the company was striving for. The iMac was clearly oriented toward a private public that wanted a device to access the Internet. It was not technical aspects that were emphasized as a selling point, but rather its rounded, colorful design addressed aesthetic perception and promised easy operation. This thus established the framework
that the principles of the new corporate strategy specified, which were ultimately successfully continued with the iPod, the iPhone, and on to the iPad.

“Some people think design means how it looks. But of course, if you dig deeper, it’s really how it works,” according to Steve Jobs. This understanding of design-driven product development is also demonstrated in the developers' self-image: as a series of statements makes clear, they perceive themselves, along with the designers, as artists who jointly create a work. Thus Andy Hertzfeld, one of the developers of the Macintosh, remembers that, already in 1982, all those involved in the development of the device signed the inner side of the plastic housing that finally went into production: “Since the Macintosh team were artists, it was only appropriate that we sign our work. . . . Steve gave a little speech about artists signing their work, and then cake and champagne were served as he called each team member to step forward and sign their name for posterity.” And Steve Jobs summed up: “I think part of what made the Macintosh great was that the people working on it were musicians and poets and artists and zoologists and historians who also happened to be the best computer scientists in the world.”

At the same time, this self-concept has limits. Although Apple's innovation may come from the creativity of its employees, it is not a company that is committed to an ideal of art. To the contrary: the incorporated company is dependent on sales and profit, on entrepreneurial success. No one knows this better than Steve Jobs himself, who had to save the ailing company from bankruptcy when he took it over again in 1997. But design is, nonetheless, of central importance to the corporate strategy.

The Principle of Obsolescence

Simplicity, intuitiveness, and integration within the company do not explain the design of Apple completely. Principles from marketing that influence the product design also supervene. Marketing does not only mean boosting sales through advertising; the marketing mix has also always included the policy of product, price, communication, and distribution. A design that plays a role in all of these areas solves a fundamental entrepreneurial problem that is connected with consumer goods.

Although quality is a positive product characteristic for consumers, for the manufacturer durable goods can, however, lead to the fact that they result in a saturation of the market. After a certain period of time, the demand is satisfied and there is no further need since every customer already owns a product. Or in other words: if every MP3 player functioned for ten years, the market would quickly become saturated since no one would have to own a second one, and Apple would not report record sales. The more durable the
product, the longer the period of time until the purchase of a replacement. But how does a company make consumers want a replacement as quickly as possible for a functioning product that they have just recently purchased?

Specifically in an economic crisis, the long operating time is a problem for the national economy. The New York real estate broker Bernard London already recognized this in 1932. When products are used for a long time and often repaired, newly produced goods cannot be sold. London saw limiting the lifespan of products as the way out of the crisis. He, therefore, proposed a kind of scrappage program for all goods when they had reached the end of an operating period that is specified by the state. When they then had to be replaced, the economy would be stimulated and companies would generate more revenue. He called this "planned obsolescence," the built-in replacement of products.12

Although London's plan was not implemented, businessmen nevertheless understood that limiting the lifespan of a product shortens the time until it is replaced, and thus increases sales. They arrived at the idea of purposely designing products in such a way that certain components would stop functioning after being used for a particular period of time and would thus make the product unusable—whereupon it would have to be purchased again. What should be produced was not high quality but rather sufficient quality—and the disposable product was invented.

Now, one can hardly accuse Apple of producing bad quality. The first generation iPods of 2001 are often still functional today. Admittedly, it is difficult to open the housing for repair purposes without destroying the device, and the integration of a non-replaceable rechargeable battery also indicates that the lifespan of the device is supposed to be limited to the charging cycles. But Apple's product replacement strategy is not related to function but instead focuses on design: aesthetic obsolescence.

Apple does not produce "made to break." Instead, the company tries to get consumers to voluntarily want to own the new product as a result of the design, in the broader sense, because they themselves perceive the previous product to be outmoded. The strategy is to motivate customers to voluntarily replace products without having a technical reason to do so.

At first, this affects the surface characteristics. In the choice of materials, the procurement costs hardly play a role. Their function can rather be assumed within the obsolescence strategy. The glossy surface made of glass, plastic, or chromed metal calls to mind a valuable, fragile handicraft. This means that the products are often used gently, stored carefully, and cleaned cautiously (iPods are quite often put into covers, and the secondary market
offers corresponding accessories). This leads to the feeling that the object is valuable, that a perceived value is added to the value of its function, which justifies a price that is often higher than that of competitors' products.

In the presentation of new models, photos of products are no longer used today. Computer-generated images in which the product looks perfect have long been used instead. This perfection is, however, lost when the real product is used for the first time. **In reality, the devices are immediately covered with fingerprints, and the sensitive surfaces quickly get scratched.** The scheduled obsolescence of the object begins practically directly after it is acquired. Although, for example, in the case of the iPod, the function of playing back music is retained, the value of the product drops. In order to limit offers on the secondhand market further, Apple also offers free engraving, which makes the device of no interest for resale.

By limiting the secondhand market, the sale of a new device is even more likely. A scratched surface alone will hardly bring a customer to replace the device with a new one. The psychological obsolescence goes much further. It is substantial changes in the design that arouse customers' desire to want to own a newer product. Despite continuing to fulfill its purpose as an MP3 player or computer, the presentation of the next-generation product creates a desire for the new: new features and a new design make the existing one seem dated. Customers have the feeling that the one that they own is not modern. This strategy could already be observed in the automobile industry nearly one hundred years ago. With the Model T, Henry Ford already offered a car for the broad masses in 1914. Thanks to assembly line production, he was able to offer it at a relatively reasonable price and sell it in large quantities. As a result of this success, the model, in principle, remained unchanged over years. Yet around 1920, the market was nonetheless saturated. Practically everyone who could afford a car owned this model and was satisfied with it. Almost no one had a reason to purchase a new one since the car held up for some eight years and thus longer than cars from the competition. Ford's business rival General Motors (GM) first tried to make the model technically obsolete—in other words, to give its own models technically improved features. In the end, GM was, however, above all successful in making it seem outdated aesthetically: the redesign of the Chevrolet in 1923 made the "Tin Lizzie" appear as outmoded as a tractor. For a comparable price, a design was offered that, with its lower body lines and elongated rear end, was oriented toward the luxury cars from Hispano-Suiza. Alfred P. Sloan, the head of GM, also understood how to make his own models look out of fashion through yearly changes in style to the models of the previous year, and how to create desire for the new models. The year of production could be seen in the design. Thus, cars became a fashion and General Motors the market leader.
Technical quality and durability was not an important criterion for car buyers. The illusion of progress alone made the previous year's model obsolete: style became the most important selling point. Fueled by this success, product design began to gain in importance. Companies now began to put together design departments. In 1929, the designer Raymond Loewy received his first important commission, designing the Gestetner 66E stencil duplicator, and Christine McGaffey Frederick wrote the book Selling Mrs. Consumer on the subject of consumer behavior. As a result, in order to address women, for whom car driving had become easier since the development of the electric starter, finally not only technical data about cars was emphasized but their design features were also advertised and cars were offered in a variety of different colors of paint.

This approach to generating demand helped increase market share by means of reaching new target groups—exactly the right strategy for achieving growth in the computer industry as well. This was thus also the strategy that Steve Jobs drafted upon his return to the company, which faced imminent bankruptcy: positioning it in the consumer market through applying the GM strategy to the computer industry.

Apple, therefore, utilized the General Motor’s approach against the established computer world. The standard computer model had up to then been rectangular, and beige or gray. The iMac in 1998 with its rounded form and bright colors, in contrast, seemed novel and made the competition appear antiquated. Form and color were, however, more important in the private sector than technical capabilities. As in the American car market of the twenties, novelty was the most important selling point—and still is today.

Psychological obsolescence, the feeling of wanting to own the new, functions both technically and aesthetically: the first generation of a model is initially offered with very few features in order to advertise it in the next generation with more and better characteristics. The first generation iPhone may have solved the problems of the user interface for a mobile device by means of the paradigm of the touchscreen. What was, however, lacking was a fast UMTS connection and the possibility to install third-party software. It also had a very limited main memory and came onto the market without GPS. The “early adopters,” the buyers of first generation products, thus finance the research and development that make possible the additional features that are added each year and generate desire for the next model.

In addition, however, an aesthetic obsolescence also takes effect: continuous design modifications make the new model seem new and the former outdated, unattractive, and old-fashioned. Apple creates and satisfies the desire for the new by regularly updating the product with additional features and in a fresh design.
Changing design creates the incentive to buy, and the goods become fashionable and ephemeral products.

But a purchase only makes sense if it is visible. Consumers have to show their acquisitions. This becomes clear in the case of the iPod, which in 2001 was supplied with what were at that time unusual white earphones. The rationale behind this choice not only consisted of matching the color with the device itself. The color was instead chosen for its visibility. If other people could not see the device because it was in a pocket, the white earphones, nevertheless, indicated its possession to the outside world. For the same reason, Apple propagated carrying the products visibly on armbands and the like to show the users’ pride in their purchase. This is what the economist Roger Mason already described as “social visibility” in 1985: “For the conspicuous consumer, the influence and effect of other people on his purchasing behavior is overwhelming. It is the symbolism rather than the utility of products which is his prime consideration.” The electronic product thus becomes a fashion accessory, a status symbol. Steve Jobs, therefore, declared: “And if you always want the latest and greatest, then you have to buy a new iPod at least once a year.”

In this way, consumers can feel that they are part of the trendy, young lifestyle movement that is publicized in promotional clips. This, however, turns into a disadvantage for consumers as soon as the next new model is introduced. With the change in design, one can see the age of each model. In order to be able to carry the new one around with pride again, a purchase has to be made. Thus, each new series of iPods appears punctually before the Christmas season, the period in which the most revenue is generated with this product. In order to prevent frustration and provide information about whether a new model will come on the market within a short time or whether buying the current model makes sense, the Buyer’s Guide from MacRumors occasionally warns: “Don’t Buy—Updates soon.”

The technical and aesthetic aging of products, therefore, results from a recurring product cycle. Companies such as Swatch long ago recognized that quality watches handed down over generations led to a crisis in the watchmaking industry. An electronic product can instead be an inexpensive fashion item that is collected, that can be purchased more than once, and that is ultimately discarded, since it can hardly be repaired. Part of the strategy is also the fact that only an artificially small quantity is delivered to retailers on the first day of sale so that it is possible to quickly announce that the product is already sold out. The deliberate limiting of the quantity of the product on offer is supposed to create the impression that there is a great demand. In advertising psychology this is called “reactance”: scarcity makes goods seem more desirable. This became clear once again in connection with the iPad. The product launch follows the typical product cycle within the company with phases of growth, maturity, saturation, and downturn, before the new model replaces the old...
one the next year. This cycle not only deliberately generates artificial revenue but the company also cannibalizes its own products of the previous year before the competition does. The utilization of "planned obsolescence" not only helps shorten the replacement time in order to crank up sales as a result of market saturation but also helps preempt competitors that employ the same strategy for making their own products seem obsolete.

Based on this strategy, an increasing number of customers are apparently switching to products from Apple and often become repeat customers, since hardly any other company dominates the business of obsolescence as well as Apple. In addition, there is the compulsory proprietary connection to iTunes, without which it is not possible to use either the iPod or the iPhone or the iPad. This leads to a lock-in effect that makes it difficult for customers to change to other manufacturers. Apple, furthermore, collects extensive data about its customers: the Apple account, with which every transaction on the devices is connected, delivers extensive, highly relevant information about the behaviors of its consumers and the company is in turn able to adapt their future developments and marketing strategies.

Once a model has become established on the market as a brand, not only is its design varied but it is also subjected to product diversification in order to satisfy various demands, desires, and levels of willingness to pay. The iPod becomes the nano, mini, classic, and so on. Just as General Motors offered its car in different colors in the past, the color spectrum of the individual iPod models soon increased.

In the fourth quarter of 2010, Apple had a sales volume of 20.34 billion US dollars and made 4.31 billion US dollars in net profit (gross profit margin: 36.9 percent). Thirteen years after the introduction of the iMac line, this success cannot be attributed to technical innovation alone but rather to the intuitive usability that results from the reduced design, to the close interweaving of hardware and software, design and technology, as well as to a marketing strategy that is based on the obsolescence of the design. The product and/or fashion cycles create a power of attraction that is otherwise rarely found in the electronics industry, but is increasingly finding imitators. The cycles do, however, present a challenge for the design department, the challenge of continually developing new, fresh style variations, which are then also carried over to other devices in a model family. It is a challenge that every fashion designer eventually faces: making one's own collection continuously seem new and eclipsing the old one.

Where does this transferring of the strategy of fashion to the electronics industry come from? When the company was established in 1976, Steve Jobs understood that the invention of the microchip could make the computer accessible for everyone. After the introduction of the personal computer, which like the Apple II and the Macintosh was no longer used only by business
customers, the Internet brought a new wave of private users to computer technology. This necessitated a new marketing strategy, which was tried and tested with the iMac and perfected with the iPod as the first mobile lifestyle product. This thus did not take place according to one single ingenious master plan. It was surely Jobs, who with his return to the company, seized the moment and gave the company, which was facing bankruptcy, this new positioning. The marketing strategy, however, was developed iteratively in the course of product development and as a result of feedback from the market. The genius of Steve Jobs relates not so much to management, but rather to the consistent implementation of business management know-how and to bringing talented individuals into the company—in research and development, in marketing, and in design.

4 See Dieter Rams, Weniger, aber besser = Less but better (Hamburg, 1995).
8 See Klinke 2010 (see note 2), pp. 5–6.
12 Bernard London, Ending the Depression Through Planned Obsolescence (New York, 1932). The concept of "planned obsolescence" has since then been part of the standard repertoire of corporate strategies. It is under


15 See Slade 2006 (see note 13), p. 49.

16 The lacquers were supplied by GM's main investor, the chemical manufacturer DuPont, which also offered the same product for nail polish; see ibid., p. 40.

17 As studies show, a long lifespan plays a subordinate role in the decision to purchase electronic products, see Guitianan 2009 (see note 14), p. 23.

18 See Rachel Cooper, "Ethics and Altruism: What Constitutes Socially Responsible Design?" *Design Management Review* 16 (2005), pp. 10–18. In 1966 Pierre Cardin transferred this principle to men's fashion, which had been considered static up to that point.


20 The appointment of the cosmetics expert Andrea Jung to Apple's board of directors might also speak for this, see Apple Corporation website, http://www.apple.com/pr/library/2008/01/07/jung.html (accessed July 22, 2011)

21 See Jobs in the interview with Brian Williams, *Steve Jobs: Iconoclast and Salesman*, NBC (May 25, 2006), http://www.msnbc.msn.com/id/12974884/ns/nightly_news (accessed July 22, 2011). In the meantime, he has gained for himself the marketing know-how that he once wanted to acquire with John Sculley from Pepsi.


29 Insofar, Strausz's appraisal hardly applies, "planned obsolescence" serves customers since they can switch to the products of competitors if they are dissatisfied. See Roland Strausz, "Planned Obsolescence As an Incentive Device for Unobservable Quality," *The Economic Journal* 119 (October 2009), pp. 1405–21.

30 See Becker 2010 (see note 22).

31 See Packard 1960 (see note 12), p. 72.