

EXHIBIT 9



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Apple shines and Puma sprints ahead as the two brands capture "the cool factor."

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BODY:

FIRMS THAT POSSESS "the cool factor" have a powerful advantage over their competitors. Their cool products are stylish without being ostentatious, fashionable yet sophisticated, and most importantly, able to command significantly higher margins. Of course, capturing the cool factor is easier said than done, and maintaining that factor -- in the face of aggressive competitors and fickle consumers -- is an even bigger challenge.

Cool is about creating desire. And cool products typically have one thing in common: Not everyone can have them. It is a product's exclusivity that helps establish it as cool. But this exclusivity creates a conundrum, as high sales revenues and profits tend to show up only after a product becomes widely accepted. A product's cool factor is often determined by trendsetters: product innovators (venturesome individuals whose buying decisions are largely self-directed) and early adopters (social leaders quick to pick up on emerging trends set by innovators). Combined, these groups account for only 16% of a target market, on average. Although comparatively small in absolute numbers, these opinion shapers represent a powerful force, largely determining which products will emerge from the product life cycle's introduction stage.

However, at the end of the day, they still constitute only 16% of the market. Lurking out there is another 84%. It is well recognized that profits are maximized in the product life cycle's growth and maturity stages. Thus, to reach these later stages, firms must generate significant numbers of sales from the early and late majority members.

Cross the Chasm

It is a simple but powerful concept: The buying needs and patterns of those eager to adopt innovative product offerings frequently differs from those with a more cautious attitude. Paradoxically, innovators and early adopters are unlikely to have direct communication and interaction with the early majority. Yet, as a firm strives to break out of the product life cycle's introduction stage, it will need to address the buying demands of both groups. Author Geoffrey Moore dubbed this "crossing the chasm."

The challenge is to make this crossing without diminishing the product's cool factor. Although the lure of the substantially larger -- and typically more profitable -- early and late majority is compelling, managers must avoid alienating the smaller segment of innovators and early adopters. Catering to their demands may be viewed as a drag on

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the bottom line, but losing their allegiance means potentially losing the **cool** factor. Together, these trendsetters and opinion leaders act as the legs on the "table of cool." If they are removed, the table collapses.

Marketing and business press literature provides guidelines for keeping a product's coolness once the chasm is crossed. The four interrelated tactics are product exclusivity, peripheral persuasion, buzz, and connectivity.

Product exclusivity. Companies must maintain a product's air of exclusivity. This requires intensively pursuing product innovation. Companies must consistently develop improvements, enhancements, and if possible, variations to meet the needs of innovators and early adopters. In addition, companies must carefully manage their distribution systems. If they are too intensive, these groups can get easily turned off. Obviously, however, broader distribution is needed to sell more and to reach the early and late majority. One way to manage this dilemma is to supply the most innovative versions through channels most used by innovators and early adopters. This lets trendsetters know they have something different -- more exclusive -- than what the rest of the world can get at the mall.

Peripheral persuasion. Advertising should be subtle, and peripheral persuasion routes should be relied on more than central routes. In other words, if the company has to tell consumers that a product is **cool**, then it is not **cool**. Avoid in-your-face advertising. Some refer to this as a "soft sell" approach.

Buzz. To create buzz and word-of-mouth activity, marketing efforts need to be out of the ordinary, highly creative, and unexpected. Stealthy promotions can be most effective.

Connectivity. Wherever possible, companies should connect the brand to environmental elements already perceived as **cool** -- the right spokesperson or a particular activity, something that fits with the product and desired image. To determine the proper spokesperson, Q-scores, which measure the number of people who are aware of someone or who claim that person as one of their favorites, are used. **Cool** activities may not be ones in which the target market is involved. For example, the latest *Global Cool Hunt* research by worldwide public relations agency Hill & Knowlton found that people ages 18-24 perceive skating and surfing as the coolest pastimes -- yet few of them do these activities. Another approach is to pursue a co-branding strategy with other **cool** products. The partner brand doesn't need to have a complimentary product, just one with a similar target market.

Apple and Puma crossed the consumer chasm, without losing their **cool** factor, by following these guidelines.

Polishing the Apple

Twenty years ago, Apple revolutionized personal computers (PCs) by introducing the Macintosh. While Apple failed to become the PC industry standard, it is working hard to establish itself at the forefront of innovation in the music industry.

iPod. Like virtually every Apple product, the iPod is a design marvel. Sleek, stylish, and easy to use, the iPod has taken a commanding early lead in the MP3 player market. Apple designed it to look distinctly different from anything else. And rather than dubbing it something technical (such as Sony's NW-HD1 Walkman), Apple capitalized on its inherently friendly and personalized "i" label, which stood for Internet in products such as iBook and iMac. It went on to make four critical promotional decisions.

* It built the iPod brand rather than focus on the product's Apple affiliation. This was possible because it developed the iPod to work with PCs as well as Macs.

* The advertising campaign had little to do with technology standards and everything to do with music and the target audience's lifestyle. In contrast to Sony's NW-HD1 Walkman promotion, which relied on central persuasion routes (technical features such as long battery life and high disk-storage capacity), Apple made excellent use of peripheral persuasion routes with a series of silhouette ads. These ads received critical acclaim, and are far subtler than Sony's in-your-face ads. They include silhouettes of young people engaged in a **cool** activity: dancing. The colors are

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dark to set off a glowing white iPod and headphone cord moving rhythmically with the music and dancer. One ad incorporated cool music, by U2, and cool spokes-people: Bono and U2 band members. Capitalizing on this relationship, Apple launched its first limited edition iPod, a black and red U2 model for the 2004 holiday season.

* Apple encouraged an industry of add on gadgets. At last count, the number of iPod accessories has surpassed 200. These run from simple arm band sleeves for joggers, to high-tech portable inMotion speakers by Altec Lansing, to the ultimate iPod accessory: a \$ 50,000 BMW. While supporting the work of these firms, Apple created tremendous buzz for the iPod, enhanced its market appeal through its expanded applications, and saved vital product development resources -- which can be applied to building new generations of iPods to maintain a leadership position.

* Apple expanded retail of iPods and related add-ons, to capture larger sales, but only through retailers like Best Buy and Target -- well recognized, with slightly edgy advertising squarely aimed at young people. By limiting distribution to select mass merchandisers, Apple pursues customers who otherwise never would venture into an Apple store, and maintains an aura of exclusivity. Because so many companies are involved in this secondary market, many of these innovative accessories' distribution systems are selective -- which many innovators and early adopters prefer.

Although the iPod has been a huge hit, Apple is not resting on its initial success. It has updated the iPod three times in four years, and top-end models now come with a color screen and can display pictures transferred from Apple's iPhoto program. In addition, the iPod line now has two less expensive models: a colorful mini version and a smaller Shuffle model about the size of a pack of gum. Apple, at least initially, has also turned Hewlett-Packard (HP), a potentially formidable foe, into an ally by agreeing to have HP sell the iPod under its label. This arrangement capitalizes on HP's considerable marketing skills and distribution networks while providing a larger iTunes customer base. Although Apple has steadily lowered the price of iPods, they are still comparatively expensive. Such prices keep margins high while establishing an air of elitism.

iTunes. The iTunes Web site allows customers to transfer music to their iPods in MP3 formats. Although people could download music from CDs to PCs to iPods, they were sharing millions of songs -- giving the music industry severe concerns.

Although the bulk of attention paid to iTunes focuses on its online music store, the initial highlight provided users a way to easily organize their music. iTunes lets users download and arrange their CDs, and create compilations. With more than one-and-a-half million songs available at 99 cents apiece, and more than 500 million downloads since its inception, iTunes is a hit with customers. It demonstrates that Apple co-founder Steve Jobs was correct in asserting that people would rather pay for songs than risk breaking the law by pirating them. iTunes will likely remain a leader, with the profit margins being so small (about 10%) that price competition probably won't be a factor.

Of course, the iPod and iTunes are only Apple's opening salvo in a digital entertainment and communications revolution. Apple and Motorola have already jointly developed a mobile phone incorporating iPod technology. It doesn't take much imagination to predict that other technologies -- such as cameras, global positioning systems, the Internet, and TVs -- will be incorporated as well. Who knows? Maybe today's cool kids will be wearing iPod pacemakers 50 years from now.

Racing the Puma

The Puma brand dates back to 1924. It had little exposure, however, until the first Olympic athlete wearing Puma shoes won a gold medal in 1952. In the 1970s and early 1980s, Puma emerged strongly in the United States with breakout products and celebrity spokespeople such as basketball great Walt Frazier. In the mid-1980s, Puma was reduced to a minor player as it lost favor with innovators and early adopters, because of miscues including: distributing the brand too widely; failing to provide innovative, exciting, or fashionable designs; and neglecting to sign the right spokespeople. The brand lost its air of exclusivity. From the late 1980s to the mid-1990s, Puma continued to make technical advances and remained a high quality yet comparatively small player. During this time, arch rival Adidas and

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upstarts Nike and Reebok dominated the industry. Although Puma remained a competitor in niche segments such as soccer and track and field, its presence in growth sports such as basketball was all but invisible.

In 1997, Puma formed a long-term corporate plan to reestablish its image. This marked a radical shift in focus; style became as critical to the marketing strategy as function. The plan involved five steps.

1. To create an exclusive aura, Puma centered on innovation and high fashion. In 1998, it entered into the first of a series of contracts with major designers, starting with Jil Sander.

* In 2000, Puma and model Christy Turlington launched the Nuala yoga-inspired women's activewear collection, and crafted -- with designer Marc Jacobs -- a limited-edition yoga mat bag.

* In 2002, it debuted its limited edition Top Winner Thrift line: 510 one-of-a-kind shoes created from second hand clothes.

* In 2004, Puma and world renowned designer / architect Philippe Starck developed a revolutionary collection of "modern minimalist" shoes. And with Dutch designer Alexander van Slobbe, it generated a line of boots inspired by 1950s boxing shoes and a line of black shoes stitched like old-time hockey skates.

* Also in 2004, Puma planned two apparel lines with hip Vexed Generation Clothing of London, which included unisex garments inspired by martial arts robes.

2. Puma greatly reduced the number of shops carrying its products. It dropped the discount sporting goods stores for high-end fashion retailers such as Nordstrom. Puma also opened boutiques in upscale shopping centers, such as Denver's Cherry Creek Mall. Unlike Nike Town, where the emphasis seems more on entertainment than sales, Puma's stores are stylishly spartan -- the spotlight is clearly on product.

3. Rather than employ mass media advertising, Puma relies on inventive and discriminating marketing tactics.

* Puma has utilized product placements in movies and TV shows such as *City of Angels*, *American Wedding*, *Will & Grace*, *Friends*, and *ER*.

* In 2003, Puma launched 96 Hours, a 26-piece modular wardrobe system in an aluminum case including everything a businessman would need for four days of travel.

* Puma introduced its Shudoh football boot by hosting parties at sushi bars worldwide. As part of this campaign, Puma partnered with *Iron Chef* star Masaharu Morimoto to serve special sushi in Japanese restaurants around the world, even providing Puma-branded chop-sticks, sake cups, and napkins.

4. Puma also achieved connectivity in various ways.

* Tapping college standout Vince Carter as a spokesperson, Puma reentered the fast growing basketball segment.

* In 1999, Puma outfitted nine National Basketball Association teams and became an official on-field supplier of the National Football League.

* Puma has chosen eclectic spokes-people, including music sensation Korn and Motocross athlete Travis Pastrana, who won the gold medal after completing seven backflips at the Gravity Games (an extreme sport competition).

* In 2002, Puma made a splash when spokesperson Serena Williams won the U.S. Open -- wearing an attention -- getting black Puma cat suit.

* In 2003, Puma launched its H. Street sports shoe with the Jamaican soccer team, and got Paintura Pitch -- a

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partnership of artisan groups Stoiqne and Scrawl Collective -- to produce one-of-a-kind footballs and jerseys.

5. Puma has engaged in numerous co-branding arrangements.

* Platinum, a partnership with Porsche and Sparco, was Puma's first foray into couture sports gear: fireproof footwear for racecar fans.

* Recently, Puma united with BMW's Mini to develop the Mini Motion, a product collection including a black driving shoe with an inner slipper (for long trips) and footwear-inspired air mesh seats. Although they produced only about 2,000 driving shoes, the sales numbers were insignificant compared with the free publicity.

In 2002, Puma encapsulated the thrust of its brand strategy with "mixing it up." This signaled Puma would be pushing its marketing activities in even more non-traditional ways. The success was quickly demonstrated: Worldwide sales rose from approximately \$ 1.2 billion in 2002 and \$ 1.65 billion in 2003 to \$ 2.10 billion in 2004. (2006 revenue projections are as high as \$ 2.8 billion.) More importantly, profits increased almost fourfold between 2002 and 2004 to \$ 371 million.

Under CEO Jochen Zeitz, Puma has reinvented itself as a fashion leader with an edgy appeal, and reinvigorated a brand on the verge of bankruptcy and extinction. Puma still pursues the serious athlete in traditional sports such as soccer, football, basketball, tennis, baseball, and track and field. But it has also branched out into non-traditional areas such as auto racing and extreme sports. So far, Puma's strategy is still paying off. The latest *Global Cool Hunt* found that Puma is the coolest brand on the planet among those ages 18-24, one sign it's establishing a cachet and translating it into greater sales and profit margins.

Keep Your Cool

Making it across the chasm to a wider market segment does not guarantee a firm will maintain its cool with opinion-shaping consumers. Indeed, firms such as Levi's and Honda crossed the chasm only to have their legs removed. While edgier brands such as Lucky and Diesel have taken over the premium jeans market, Levi's is becoming a discount brand by selling jeans at Wal-Mart for as little as \$ 16. Honda's Civic has been replaced by Subaru, Mitsubishi, Scion, and even Dodge products as the choices of young car enthusiasts or "tuners." Why? Honda redesigned the model with less horse-power and a more conservative, family oriented appearance.

The lure of the mass market is strong for managers focused on growth and the bottom line, but leaping the chasm requires an adaptive perspective. Apple and Puma have figured this out. Now it's your turn.

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The iPod phenomenon: identifying a market leader's secrets through qualitative marketing research

Purpose – The aim of this paper is to explore the potential for learning from customers of a market leader through qualitative marketing research. **Design/methodology/approach** – The paper presents findings from a study that applies a combination of quantitative and qualitative research methods. An online variation of an existing qualitative research method is proposed. **Findings** – The results suggest that the proposed method can be transferred successfully to an online environment and combines the effectiveness of qualitative research with the efficiency of quantitative research. **Research limitations/implications** – A general problem with online research is that it excludes all individuals who are not online. Moreover, the results are limited by the nature of the sample, which only includes German-speaking respondents. Finally, further research should investigate the differences in depth between responses of online- and offline-conducted interviews. **Practical implications** – Offers a relatively inexpensive yet effective solution for product and brand managers to uncover the reasons that drive customers to a market-leading competitor. **Originality/value** – Compared with many other approaches available to product and brand managers, this paper proposes a more realistic and practical method of understanding a market leader through the eyes of its customers.

An executive summary for managers and executive readers can be found at the end of this article.

In under two years, the stock price of Apple Computer, Inc. has risen nearly 600 per cent (CNN Money, 2005); by the end of 2005 it was valued at twice as much as at the start of 2000. The rise in Apple's stock price is closely linked to the success of a product first introduced four years ago – the iPod digital music player. According to a recent Forrester report (Collingwood, 2005), the iPod accounts for around three quarters of the digital music player market in the USA and has helped Apple increase its third-quarter sales to increase by 75 per cent within a single year (Malester, 2005). For a 30-year old company, this development is not only impressive but also surprising considering that the original iPod, introduced in a difficult market environment at the end of 2001, was neither the first digital music player, nor initially compatible with the majority of personal computers. The first iPod could only be used with Apple's own Macintosh computers, a platform accounting for less than 4 per cent of US computer sales (Belk and Tumbat, 2005). Nevertheless, since this inauspicious beginning the iPod has developed into a whole family of products ranging from \$99-399 and has triggered the creation of an accessories industry, such as protection cases and speaker systems, which itself is estimated to be valued \$300 million (Mello, 2005).

Introduction: the iPod phenomenon

Relevance for product and brand managers

For product and brand managers, the most important aspect of this success story is that Apple was able to extend the iPod market from the group of early adopters to the early majority “without diminishing the product’s cool factor” (Olson et al., 2005, p. 14), those aspects of a product that are considered to be of particular importance to the small but influential segment of innovators and early adopters. Olson et al. (2005) apply the metaphor of a table with the early adopters and opinion leaders acting as the table’s legs without whose support the table itself would collapse.

There has been much discussion of Apple’s recent achievements, particularly those which help explain the company’s recent success and that could provide other firms with insights applicable to their own businesses. Besides the obvious “cool factor” (Olson et al., 2005, p. 14) encapsulated by the brand, several other aspects are frequently mentioned, such as the company’s leadership (e.g. Deschamps, 2005; US News & World Report, 2005), the ease with which its products can be used (e.g. Norman, 2005a; Weiss, 2005), and the visual design of its products (e.g. Dwek, 2002; Garrett, 2003; Quittner, 2005; Quittner and Winters, 2002). While these discussions provide some practical advice, their approach is nevertheless predominantly from an organisational perspective rather than focusing on customer preference for the iPod.

The attention given to the organisational perspective gives limited insight to those taking a marketing perspective. First, some of the capabilities mentioned are deeply rooted within the company’s organisational culture and have developed over a considerable time period. Second, each of the aforementioned aspects can only be evaluated indirectly, such as by analysing public statements from key employees. However, like many other companies, Apple is famous for its secrecy and any attempt to investigate the company’s capabilities is seriously constrained. Finally, the various qualities most frequently mentioned are so interlinked that it is invidious to separate them out as independent success factors. In fact, according to Jonathan Ive, Apple’s head of design, the company follows a holistic approach in its product design that tries to “figure out [the customer’s] connection to the product” (Garrett, 2003, p. 56). Ive’s statement refers to design not in a narrow visual sense, but in a broader way which takes into account manifold aspects of product design. This, in turn can be related to the three different dimensions of design as identified by Norman (2005b). According to this conceptualisation, design consists of a visceral, behavioural and a reflective component, each three interwoven in any product design. While visceral design is concerned with appearance, behavioural design is related to the effectiveness of use and the pleasure related to the product. Finally, reflective design “considers the rationalization and intellectualization of a product” (Norman, 2005b, p. 5). This last aspect is of considerable importance as it emphasises the personal component of an object attached to it by the owner rather than the designer or manufacturer, although the manufacturer or designer can try to influence this form of attachment. These three dimensions of design, cognition and emotion are integral to any product, in varying degrees. Such thinking moves one away from the purely organisational perspective in investigating Apple’s current success and offers hope to other firms wanting to learn from Apple’s successes. As indicated by Ive, it is the company’s ability to understand the way customers relate to its products that is of salient importance in an investigation of its success. For competitors, this is relevant mainly for two reasons. First, if Apple’s holistic approach is successful, it is unlikely to be replicated by copying selected organisational aspects of the company, such as its style of leadership or the look of its products; here, the whole is clearly more than the sum of its parts. Second, Ive clearly puts the customer as the central figure in

the company's product development efforts. This does not necessarily mean that Apple is asking its customers for their product requirements and opinions. But it does imply that the customer's connection to the end result of the development process was identified to be central to that process.

To conclude, with regard to new product development, the much-publicised organisational perspective seems to be of limited value for competitors to understand and potentially replicate Apple's successes. What is required instead is a deeper understanding of how customers connect with products from the market leader. Here, marketing research can support firms to gain a better understanding of customers' motivations to buy from the market leader. Thus, instead of trying to identify the company's "secret", competitors can look directly at the customers of market leaders for insights applicable to their own product development efforts.

New product development and marketing research

Generally speaking, product development can be separated into new product innovation and enhancements of existing products (Norman, 2005b). What makes competing with a market leader particularly difficult is the fact that they often apply a combination of enhancements and innovations to secure their position. In the case of the iPod for instance, Apple is regularly updating existing models and introducing new ones distinct from existing models. For example, the "iPod shuffle" introduced in January 2005 was the first digital music player in years that did not have a display, something which is now generally considered essential; from a purely technological perspective, this "innovation" might be perceived as a step backwards.

Apple is also changing successful models with different variations, such as the "iPod mini" that was replaced in September 2005 with a much smaller model called the "iPod nano". This move is interesting for two different reasons. First, the new model has a lower storage capacity than its predecessor, even though a higher storage capacity is again commonly considered to be a crucial attribute for newly introduced digital music player. More importantly, however, the replaced model was not just Apple's best selling iPod, but also the best-selling digital music player model worldwide. Many considered replacing such a successful model without noticeable pressure from competitors or other apparent reasons a bold move. Moreover, for product managers, both examples illustrate the fact that there exists a promising additional option beside the traditional view of product enhancements as offering "the same, but more of it". Thus, as product enhancements and new product innovations often come hand-in-hand, it is necessary to look at the way product development takes place.

Here, two basic routes can be distinguished, which are often referred to as "technology-push" vs "market-pull" (Valentin, 1994). The technology-push route follows capabilities that exist within firms or even the intuition of its top management (Flores Letelier et al., 2000). Innovation is often associated with the technology-push approach and indeed several organisational aspects have been linked in this regard to Apple. In contrast, the market-pull route is based on the marketing concept emphasising the requirements of the targeted market. These product development approaches assign very different roles to marketing research, playing a dominant role in the market-pull approach but possibly not even being considered in the technology-push approach. Whatever the case, to be successful new products and services have to be accurately responsive to consumer demands (von Hippel, 2001). Thus, the two basic approaches identified by Valentin (1994) should not be seen as mutually exclusive, but rather as extreme ends of a continuum with varying degrees of marketing research contributing to the identification of consumer demands. In fact, Apple's approach to new product development tends more to-

wards the technology-push route but without neglecting what the market actually demands. Again, a combined approach is probably most appropriate for meeting customer needs because it takes into account what customers demand but builds upon this by providing innovative solutions that go beyond stated requirements towards meeting real needs.

Research certainly indicates that for a number of industry sectors consumers do contribute meaningfully to the new product development process and that understanding their contribution to the development of goods and services is a goal worth pursuing (Lüthje, 2004). Marketing research can contribute to this task but has to overcome several limitations associated with it.

Difficulties associated with traditional marketing research

A common critique of traditional marketing research methods is the frequently noted inability of customers to either recognise or articulate many of their desires (Flores Letelier et al., 2000; Hayes and Abernathy, 1980; Pitta and Fowler, 2005). In consumer markets the process of acquiring knowledge from a large number of individuals is particularly problematic, with the journey to a deeper understanding of customer needs being expensive and not one that traditional quantitative research methods is well equipped for (von Hippel, 2001). A comprehensive understanding of customer demands can be costly and still remains inexact (Thomke and von Hippel, 2002). Lüthje (2004) maintains that qualitative research methods should complement traditional approaches. Similarly Bryman (1998, 2004) points to the growing trend to carry out multi-strategy research combining quantitative and qualitative methods in research projects and this is further supported by Creswell (2003, p. 4) who believes that the idea of applying only quantitative or qualitative methods "falls short of the major approaches being used today in the social and human sciences". In this connection, qualitative research, however, has suffered from a range of criticisms including issues regarding the reliability, validity and replicability of the research (Silverman, 2000). Findings are considered to have limited applicability when they cannot be generalised to other settings or deemed to be representative of a population (Bryman, 2004). Social situations are rarely similar and due to the unique characteristics of both researchers and participants and their influence on each other, different researchers at different settings and at different times will probably get different results and may draw different conclusions (Blaikie, 2000).

Standardising qualitative research through laddering

A practical solution is to aim as far as possible for standardisation in both data collection and analysis so that other researchers can continue or replicate a study. Thus, this paper presents a qualitative research method known as laddering that standardises the data collection procedure as much as possible and uses the software tool LADDERMAP (Gengler and Reynolds, 1993) to ensure transparency. Reynolds et al. (2001) point out that the laddering method is different to typical qualitative research methods in that it has a definite structure with interviewers using standard probing questions, following an explicit agenda, and questions flow in a similar way for each interview. Reynolds et al. (2001, p. 99) contrast the typical qualitative structure as being shallow and broad with the results from laddering that are deep and focused. Thus, the laddering method can be described as a structured qualitative method that leads to deep and focused results particularly useful for solving product-or brand positioning problems. Laddering allows researchers to reach deeper levels of reality and to reveal the "reasons behind the reasons" (Gengler et al., 1999, p. 175). Thus, laddering is a suitable technique for firms to identify the reasons why customers have chosen a product from the market leader, instead of their own offer-

ings.

Aim of the study: understanding customer benefits for competitive advantage

The aim of this study is twofold. First, by combining quantitative and qualitative research methods, it aims to reveal consumers' preferred attributes for the iconic brand and market leader, iPod. The research uses the laddering technique (Reynolds and Gutman, 1988) to identify the attributes of the iPod that users value, and to uncover the constructs that underlie these, so as to reveal customers' desired benefits. As will be discussed further the research uses online rather than traditional personal interviews for which the customers of Apple products are well suited being particularly highly involved with the brand. They are distinguished by their "fierce loyalty to the brand" (Belk and Tumbat, 2005, p. 205) and can be considered as a subculture of consumption (Schouten and McAlexander, 1995).

We believe that this research study also contributes more widely to marketing research in that we are investigating a brand that dominates its market. Apple has redefined the portable music market effectively creating an entirely new market segment. An increased knowledge about desired attributes and the underlying benefits could help understand this consumer phenomenon and more generally the understanding of sought after lifestyle products. The study should help to identify whether the laddering technique is a suitable research tool in the quest to learn about what consumers value in innovative products. This could in turn prove useful to those companies wishing to gain consumer insights to develop new products that are of value to these consumers.

We aim to provide a more realistic but practical method of understanding a market leader through the eyes of the consumer. This should be particularly helpful for firms that have difficulties competing with the market leader. While following the market leader may not bring success, focusing on gaining knowledge from its customers will help to understand the nature of their success. In contrast to the organisational perspective that was previously discussed, we are primarily concerned with customer input and with a high-involvement product such as the iPod, customers should be happy to discuss their experiences with the product. Such a customer-oriented perspective can contribute to the discussion of a product phenomenon by looking more closely at why consumers have made that product so successful. In particular the investigation will examine the reasons which lead customers to choose products from the market leader instead of other competitors. Such reasons relate to the benefits that products can offer in the eyes of the customer and how these benefits relate to customers' deeply held personal values.

To enable this depth of understanding the study uses a semi-standardised qualitative technique called laddering, which to date has not been used for the investigation of the desired attributes of innovative products such as the Apple iPod. As the laddering technique is predominately used to reveal so called means-end chains, the following section describes the principles of the means-end approach in more detail.

The means-end approach

Originally used for product or brand positioning issues (Gutman, 1982; Olson and Reynolds, 1983), the means-end approach has since been extensively used in the areas of consumer behaviour (Bagozzi and Dabholkar, 1994; Deeter-Schmelz et al., 2002; Pieters et al., 1995, 1998), sales management (Botschen et al., 1999; Reyn-

olds et al., 2001), and strategic marketing (Norton and Reynolds, 2001; Reynolds and Rochon, 2001). It aims to discover the salient meanings that consumers associate with products or services with the focus being on the associations in the consumer's mind between the attributes of products, which are the "means", the consequences of these attributes for the consumer, and the personal values or beliefs, the "ends", which are satisfied by the consequences. Importantly, aspects of the consumer are studied in depth but quantifiable results are achieved.

The links between attributes, consequences and values produce the means-end chain (Peter et al., 1999). Attributes are the characteristics of a product or service and consequences are the psychological or physiological aspects of why an attribute is important (Gutman, 1982). Values are overarching, reflecting the life goals a person may be striving for (Rokeach, 1973). It is assumed that knowledge is hierarchically organised over levels of abstraction in the memory (Reynolds et al., 1995), with the higher the levels of abstraction having a stronger connection to the self. Thus attributes would be a lower level of abstraction, less relevant than consequences (mid level of abstraction), while the highest level of abstraction are values having most personal relevance (Olson and Reynolds, 1983). The following section describes how the means-end approach can be adapted to an innovative product such as Apple's iPod.

Product benefits and consumer requirements

By describing the iPod as "an elegant method of promoting individual choice, Anderson (2005, p. 29) identifies a particular benefit ("individual choice") that results from using their iPod. Two key aspects of researching the consumer perspective should provide important insights. First, understanding how the product is actually used by the consumer and secondly how attributes are evaluated by them. For example, while some competitors have added additional product features, such as a radio tuner, to their products, Apple has been cautious in adding features. This may be because they had a clear understanding of what product attributes customers would value, while their competitors have tried to "out-feature" the market leader. Thus, if it is possible to relate product benefits to product attributes, the result could provide companies with valuable insights into Apple's success from a market perspective. Figure 1 illustrates how the means-end approach can be applied to the iPod.

Personal values and consumer requirements

We may distinguish customer needs into those existing already and those newly emerging needs, that materialise outside existing buyer-seller value exchanges (Bakken, 2001). Innovative products often fulfil these emerging customer needs as they can persuade customers away from established procedures and even question deeply-rooted values (Tauber, 1974; Valentin, 1994). The value of innovative products is particularly high if these changes are related to actual changes in customer circumstances, which are the origin of emerging needs (Bakken, 2001).

An identification of personal values underlying consumers' product preferences, can therefore provide further insights into the identification of customer requirements as well as the communication of product benefits to meet those needs. For instance, Flores Letelier et al. (2000, p. 6) distinguish between personal values and oriental values, which are defined as values that orient a consumers' "general sense of a worthwhile life". Furthermore, Jolibert and Baumgartner (1997) have identified four motivational domains on which persons orientate their desire for success. These domains are rooted in a person's:

professional life; social life; personal life; and a certain form of humanism.

Understanding the relationship between product choices and personal values helps to understand how customers “connect” with products. The next section describes two laddering techniques that researchers can use to reveal linkages between product attributes, consequences, and values – the means-end chains.

The laddering interview

Laddering is normally done in person and involves semi-standardised in-depth interviews. The interviewer uses probe questions to reveal attribute-consequence-value chains by taking the subject up a ladder of abstraction. All laddering interviews consist of an elicitation and laddering stage (Grunert and Grunert, 1995). Initially an elicitation stage that may use techniques such as triadic sorting, direct elicitation or free sorting to derive preference based distinction criteria is undertaken. Criteria thus derived act as the starting point for the laddering probes, which should eventually uncover the means-end structure. This is achieved through repeatedly asking questions as to why an attribute/consequence/value is important to the respondent with the answer serving as the starting point for the next question. This process aims to identify cognitive relationships of personal relevance to the respondent and the cognitive concepts gathered during the laddering interviews can be summarised in a hierarchical value map (HVM), a graphical representation of a set of means-end chains (Gengler et al., 1995). An HVM is made up of nodes, which stand for the most important attributes/consequences/values (conceptual meanings) and lines, which represent the linkages between the concepts. The two to three ladders, which the laddering process normally produces for each respondent, uncover elements of the respondent's cognitive structure. While not sufficient to evaluate the respondent's complete cognitive structure, the ladders from a group of homogeneous respondents appropriately analysed can produce an estimate of this group's cognitive structure (Grunert et al., 2001).

Conducting online laddering interviews

Increasingly qualitative research is using online data collection methods. To date the focus in the qualitative research literature has been principally on focus groups (e.g. Boddy, 2005; Herington et al., 2005; Stokes and Bergin, 2006). Pincott and Branthwaite (2000, p. 151), however, maintain that the advantages of conducting qualitative research on the web are “more apparent in online individual interviews (one-to-one) than in online group discussions”. It is, for example, easier for interviewers to create rapport during individual interviews than during group discussions. In one-to-one interviews, both interviewers and interviewees have equal status while in online groups interviewers play a dominant role. Laddering interviews can be conducted online in the form of online chats. Online laddering “chats” are a new technique that to the best of our knowledge has not been applied to the context of laddering interviews. These one-on-one electronic in-depth interviews may be carried-out in the form of text-, audio- or video-chats.

Text-based online laddering chats are conducted in rounds. After some introductory words (thanking the respondent for taking part in the interview, introducing oneself and the aim of the research project, and assuring confidentiality) the interviewer can start the actual online interview by typing the first question in a small text box of the chat software. By clicking a “send button”, the question is immediately sent to the interviewee who can read the question in a larger text box. The interviewee can then send an answer to the interviewer the same

way. As the flow of conversation is broken into text "chunks" with a time-lag between questions and answers, online interviews are more ordered and structured than traditional face-to-face interviews (Chen and Hinton, 1999).

We chose to conduct text-based online laddering chats rather than traditional face-to-face laddering for the following reasons: online laddering chats are cheaper to conduct and researchers do not have to tape and transcribe interviews as online chat programmes automatically generate interview transcripts, which allow a quicker analysis of data. Further, the whole interviewing process may be less stressful and more convenient for respondents as they can chat at home or at work in a familiar and non-threatening environment. Because of the anonymous interviewing situation, respondents cannot be influenced by the interviewers' appearance, tone of voice and body language. Thus, social desirability bias and especially interviewer/interviewee bias will be reduced (Duffy et al., 2005; Miller and Dickson, 2001).

Online interviews may also be the only way to interview certain groups of respondents. Individuals, for example, who spend most of their free time online may not be willing to have personal face-to-face interviews with researchers but may be willing to take part in online interviews. In this connection, Miller and Dickson (2001, p. 146) maintain that qualitative online research is suitable "when the target population is small, very specialised in its skills, and difficult to find and recruit, and when the issue relates to high-tech products and services". Similarly, Pincott and Branthwaite (2000) suggest that the internet allows researchers to sample minority and professional groups that would otherwise be difficult to contact. Early adopters and young people may actually prefer to be contacted over the web. Web-based research is particularly appropriate for researching the iPod for a variety of reasons; music can only be downloaded onto the iPod through a computer and the iTunes software and in order to purchase music through "iTunes", the iPod user requires a connection to the Internet. It was therefore assumed that the target population would best be identified through online research.

Methodology

The sample

Important to a study of how product benefits relate to personal values, is the identification of a group of appropriate consumers. Because opinion leaders exercise informal influence on other peoples' behaviors and attitudes through product-related conversations (Goldsmith and De Witt, 2003), they are considered attractive targets for marketing communication (Stern and Gould, 1988), as well as for the adoption and diffusion of newly developed products (Chan and Misra, 1990). Providing information or advice perceived as more credible than mass advertising opinion leaders can informally influence others' attitudes and behaviours (Stern and Gould, 1988). Opinion leaders are particularly important for the success of new products, as when they are among the early adopters themselves, they pass on important information to opinion seekers (Flynn et al., 1996). Specific opinion leader scales have been developed by Flynn et al. (1996) and Weimann (1991), among others.

Following Lüthje's (2004) finding that innovative individuals can be characterised by a high degree of expertise and product involvement, it was decided to select respondents from a homogenous group of innovators. In order to identify opinion leaders who are also early adaptors of new products as innovative leaders (Eckhoff, 2001) an opinion leadership scale was included in the initial questionnaire. The opinion leadership scale we applied was

originally constructed by Flynn et al. (1996) and consists of six items. This was adjusted to include a "no answer" option so as to exclude those participants that mark extreme ends of each item with little consideration. The Cronbach's alpha reliability coefficient for the opinion leadership scale consisting of six items was 0.73. The initial questionnaire was carried out during May 2005 amongst German users of the Apple iPod music player; 2,472 people participated of which 2,109 said that they own at least one iPod. From the domain specific opinion leader scale it was possible to identify opinion leaders in the specific product field of digital mobile music players.

Figure 2 shows that 2,178 (88 per cent out of 2,472) respondents provided complete answers to the opinion leadership scale. From the 317 respondents that scored highest on the opinion leader scale, 273 agreed to be contacted for a further study and 253 of them were not only opinion leaders but also owners of an iPod. From this group we randomly chose 85 respondents for the in-depth laddering chats. Sampling continued until theoretical saturation was achieved, i.e. no new or relevant data concerning categories was emerging and the categories and linkages between categories were well established (Strauss and Corbin, 1998). A problem for qualitative researchers is not knowing what an appropriate minimum sample size might be at the beginning of a study (Bryman, 2004). We originally planned to conduct as many interviews as possible with the 85 potential respondents and to analyse the results after every ten interviews. After 20 interviews, it was evident that our categories had reached theoretical saturation, and at this point we decided that no additional interviews were necessary, so the laddering process was completed with 22 interviews. We asked all 22 interviewees to tell us three or four attributes of the iPod that they value the most. This simple technique of direct questioning was sufficient to elicit salient attributes of the iPod and that distinguish it from its competitors. The derived criteria were then the starting point for the laddering probes to uncover the complete means-end structure. For this, we began with one attribute and asked: "Why is attribute xyz important to you?". The answer to this question served as the starting point for further questioning. The laddering process continued until respondents gave either circular answers, were incapable or reluctant to answer further or reached the value level.

Analysis and discussion

Analysis of the laddering data was in three stages (Reynolds and Gutman, 1988). First, coding of sequences of attributes, consequences and values (the ladders) took place in order to make comparisons across respondents. LADDERMAP was used which allowed entry of up to ten chunks of meaning per ladder and the categorisation of each phrase as an attribute, consequence or value. The second phase involved the development of meaningful categories. Coding was an iterative exercise of recoding data, splitting, combining categories, generating new or dropping existing categories. Gengler and Reynolds (1995) suggest that researchers should develop a number of specific codes for the first analysis and then combine codes until a manageable number, estimated at about 50 is reached.

The codes for individual means-end chains must be aggregated across subjects and illustrated in a matrix to express the number of associations between the conceptual meanings (attributes, consequences, values). This so-called implication matrix details the associations between the constructs and acts as a bridge between the qualitative and quantitative elements of the technique by showing the number of times one code leads to another (Deeter-Schmelz et al., 2002). An implication matrix generally displays two different types of implications: in a direct implication one attribute/consequence is stated directly after another attribute/consequence in the same ladder, without any intervening attributes/consequences. In an indirect implication two attributes/consequences

are stated in the same ladder but separated by at least one intervening attribute/consequence.

The results from all 22 online laddering chats highlight two important aspects. First, the quality of the results suggests that the traditional laddering technique can be transferred successfully to an online environment. Hence, the first goal of this study, which was to test the applicability of an online laddering technique, was met. Second, the fact that a relatively small number of interviews yielded a theoretically saturated picture of customers' means-end structures with regards to the iPod, further indicates that online laddering can combine the effectiveness of qualitative research with the efficiency of quantitative research. This benefited the overall goal of our study that was to provide a more realistic but practical method of understanding a market leader through the eyes of its customers.

Another goal of the study was the identification of iPod desired by users. A total of 71 ladders were collected from the chats and the 22 respondents provided between two and five ladders each, with an average of 3.25 ladders per respondent. The longest ladder consisted of six steps and the shortest, two. The HVM generated from the data is shown in Figure 3.

The size of the circles in Figure 3 stand for the frequency respondents brought up a certain concept. The most important attribute is labelled "control elements (n=20)", this includes aspects such as the menu navigation. The thickness of lines represents relative frequency of association between the concepts of meaning, so for example, the attribute "control elements (n=20)", the consequence "ease of use (n=18)" and the value "feeling good (n=10)" are strongly linked. Of the 11 attributes mentioned by respondents, the two most frequent were "control elements (n=20)" and "design (n=16)". This result is not surprising for as mentioned earlier, both attributes of the iPod are frequently discussed as being responsible to a large extent for distinguishing it from competitor's products. Second, both attributes represent a variety of aspects. For example, "control elements" subsumes hardware aspects, such as the "click wheel" control, software aspects, such as the menu navigation, as well as the ease with which an iPod can be connected to additional accessories through a standard connection "dock connector". This highlights one of the benefits of the laddering technique for understanding the product benefits, namely the combination of concepts under an overarching theme. The practical outcome of this procedure is twofold. On the one hand the HVM provides an easy to read summary of the findings, and on the other hand it is possible to differentiate combinations of concepts into their original components for additional in-depth analysis.

The research makes clear that a key attribute of importance for the iPod user is its design. The iPod is not only easy to use, but it also makes its users feel proud, which, in turn, helps them to feel good. The iPod's design satisfies users' desire for beauty and helps them to feel individual. This is in line with the three dimensions of product design outlined by Norman (2005b) previously discussed. The direct linkages between the attributes "design" and "image" and the values "beauty" and "individuality" support findings by Mort and Rose (2004), who discovered that for hedonistic products (products that consumers purchase for pleasure only) direct attribute-value connections are more common than indirect attribute-consequence-value linkages.

Managerial implications and application

The results from all 22 online laddering chats highlight two important aspects. First, the quality of the results

suggests that the traditional laddering technique can be transferred successfully to an online environment. Hence, the first goal of this study, which was to test the applicability of an online laddering technique, was met. Second, the fact that a relatively small number of interviews yielded a theoretically saturated picture of customer's means-end structures with regard to the iPod, further indicates that online laddering can combine the effectiveness of qualitative research with the efficiency of quantitative research. This benefited the overall goal of our study that was to provide a more realistic and practical method of understanding a market leader through the eyes of its customers.

This study showed how researchers can combine quantitative and qualitative studies successfully. By including an opinion leadership scale in an initial questionnaire, we were able to sample a homogeneous group of respondents for the following online laddering interviews. These online chats allowed an inexpensive and fast collection of qualitative data. There was also no need to tape and transcribe interviews as the online chat software automatically generated interview transcripts, which allowed a quick data analysis. Further, the online chats enabled interviewers to capture all provided information and to follow each elicited attribute even if respondents mentioned several aspects at the same time as information were available in text form and interviewers had sufficient time to look at what respondents had written. Moreover, by conducting online interviews we were able to gather information from an interesting group of respondents that would have been difficult to contact otherwise. The whole online interviewing process was convenient for respondents who did not have to leave their homes and offices for the interviews. In addition, neither the appearance of the interviewers nor their tone of voice or body language influenced respondents' answers due to the faceless interviewing situation.

The paper's second aim was to examine in depth the attributes that consumers prefer about the iPod. As this study was the first to use the online version of the traditional laddering interviewing technique to uncover the secrets of a brand which dominates its market, the nature of this study has to be regarded as explorative and the results as tentative. The relationships between product attributes, consequences and values presented in Figure 3 indicate the value that such a form of consumer integration can have for the new product development process. The online laddering technique presented in this study is capable of providing competitors with practical yet relatively inexpensive tools for understanding what attracts customers to the current market leader. This kind of in-depth knowledge would otherwise be difficult to obtain and can provide the basis for revising offerings in order to better compete with the market leader. While being accurately responsive to consumer demands is particularly important for the development process for new products and services (von Hippel, 2001) not all firms have successfully identified the appropriate research process to uncover and understand such demands. Those firms that are yet to employ ways of discovering why consumers are attracted to competing products should find this method both useful and cost effective.

Limitations and suggestions for further research

While this study resulted in a number of practical outcomes for product and brand managers, there are a number of limitations. A general problem with online research is that it excludes all those individuals who are not online and it is known that these individuals differ from their offline counterparts; the demographic profile of online users does not represent the population at large (Duffy et al., 2005; Lockett and Blackman, 2004). Our results are limited by the nature of our sample; the study was conducted in Germany, where the iPod has a lower market share than in the USA. In Germany, the market share of the iPod is estimated to be around 50 per cent (Kaufmann, 2005). Furthermore, the study applies an online laddering technique and is therefore limited to iPod

users that have access to the internet. However, both limitations are not considered to be serious as Apple is still the market leader in Germany, albeit by a lower margin compared to some other countries. Similarly, limiting the study to an online context is acceptable as it was a central aim of the study to identify opinion leaders, rather than a representational group of iPod users. However, it is important to note that the results should not be directly compared to those achieved through an offline study, which might result in a different type of opinion leader. In order to answer this question, a similar study would have to be conducted offline, based on the same opinion-leader selection.

As respondents need more time to type than to talk, written messages are normally shorter and more concise than vocal information (Comley, 2002; Reid and Reid, 2005). Folkman Curasi (2001), however, who compared the transcripts of 24 interviews conducted face-to-face with the same number of interviews conducted electronically, discovered that while some respondents provided very short and precise answers, others described "at length their feelings and experiences, sometimes in more depth than in some of the face-to-face interviews". Concerning the depth of insights gained from online research, Sweet (2001, p. 134) believes that "real-time online groups may not always provide the depth of response necessary". By contrast, Reid and Reid (2005), who compared the contributions of face-to-face focus groups with focus groups conducted via computer-mediated communication, found that both approaches generated the same number of answers/new ideas. Thus, further research should investigate this issue and explore whether online laddering chats provide more or less insights than traditional face-to-face laddering interviews.

After having shown that the qualitative laddering technique can be combined successfully with a quantitative survey to reveal the preferred attributes of an iconic brand and market leader we hope that fellow researchers take up our call and develop further studies to test the application of the laddering technique in their investigations of new product development.

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Executive summary and implications for managers and executive readers

This executive summary has been provided to allow managers and executives a rapid appreciation of the content of this article. Those with a particular interest in the topic covered may then read the article in toto to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefits of the material present.

iPod's rise and rise: why customers prefer Apple's market leader

Apple's aptitude for reinvention has been a feature of the business throughout its 30-year history. Yet even for such a master of adaptation the rise and rise of the iPod digital music player is nothing short of a phenomenon. It was not the first of its kind, and it was not even compatible initially with PCs, but it is now by far the global market leader. In the USA, for example, it claims a market share of around 75 per cent. And the situation is not static – sales are rising massively still.

Hot property, cool product

The fortune of Apple is inextricably linked with its star performer. The rewards for the successful introduction of the iPod, and subsequent market development, have been huge. Apple's share price has increased by nearly 600 per cent in two years. Their success has been to manage a process whereby the iPod has remained "cool", in a fashion conscious consumer market while sales have moved from the "innovator" segment to the larger segment of "early adopters".

And iPod is not just a product. It is a whole family of offers. Product innovation has built a product range that has iPods ranging in price from \$99-399. There is also the "stuff you need to go with your iPod" market, the accessories that people otherwise did not know were essential purchases, the protection cases, speaker systems and the like. The value of the accessories market is a cool \$300 per annum.

Of course "coolness" is a hard factor to define. Many products have had it, some lost it, and some tried to regain it. Australian skateboard shoes Vans, for example, lost the cool factor when kids discovered that their dads liked them. For Vans the distribution strategy had to change radically to actually make them less available and only from the cooler stores. The message from Vans was "no wrinklies". For iPod, coolness remains intact.

As may be imagined, there is a little more to it too. From an organisational perspective the brand is also associated with the company's leadership, the ease of use of the product, and its distinctive product design. Research by Reppel, Szmigin and Gruber of the UK's University of Birmingham sought to seek out the views of iPod's customers. Their study focuses on the German market, and uses the software tool LADDERMAP to sift through the data and get to the heart of the matter.

Organisational perspectives are fine, but brands exist in the minds of their customers first and foremost, together with secondary audiences.

Playing with product development rules

The iPod has been described as “an elegant method of promoting individual choice”. American icons, such as the Marlboro man, have long stressed individual freedom. While Apple are an organisation who like to keep their secrets, but it is known that their approach to the product design process is holistic, and their strength is in determining the customer's connection to the product. There are two important factors for competitors, or those looking to learn from Apple's success to consider:

The whole is more than the sum of the parts – Apple's holistic approach cannot be replicated by borrowing from aspects of the company, such as its leadership style or look of its products; Apple has the customer at the centre of its product development processes – the customer's connection with the end result of the development is key.

Apple is often seen as a technology-based company. The “technology push” route, which relies on corporate capabilities and management intuition about the market, does indeed form part of how they view the product development process. Innovation is vital to the success of the firm. But interestingly, in developing enhancements within the product range, technological advancement is not the deciding factor.

The iPod nano model is a case in point. Its storage capacity is less than preceding models, in a sector where increasing storage is a natural assumption in building a new product. What is even more interesting is that it went on to become the best-selling model. Apple clearly have the capability among its software engineers, but are being more successful for being astute about the value of being led by technology versus the absolute need to understand customers. It has worked for them, and keeps on working.

Customers' perspectives

From the survey conducted, the two most important aspects of the iPod were the control elements (which include aspects such as the menu for navigation – essentially to find the songs and so on) and design. From the control elements, connections can be made with ease of use of the product and customers feeling good about using it. This, together with the design, is what differentiates the product from its competitors.

Research findings reveal just how important design is in how customers feel about their iPods. It is easy to use, but also generates feelings of pride and even makes them feel good. The beauty of the product is appreciated and from this a sense of individuality. In products bought merely for pleasure, the connection between design, image and beauty is a vital one.

The findings are useful to all who wish to learn from this outstanding success and market leader. However, the process by which the research was generated has potential too. The online laddering technique used to collect and sift both qualitative and quantitative research has been used to generate these insights. It also represents a low cost process for the analysis of what attracts customers to any product or brand currently out there in the marketplace. (A précis of the article “The iPod phenomenon: identifying a market leader's secrets through qualitative marketing research”. Supplied by Marketing Consultants for Emerald.)

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COMPANY: ROSE AND CO INVESTMENT BROKERS INC; OXFORD UNIVERSITY PRESS; MARKETING AND MEDIA SERVICES INC; ANDERSON AND HOWARD ELECTRIC INC; JOURNAL; VISHAY INTERTECHNOLOGY INC; ANDERSON AND WOOD CONSTRUCTION CO INC; ROSE LABORATORIES; ANDERSON AND MURISON INC; ROSE; ANDERSON AND STRUDWICK INC; CONSUMER; ELECTRONIC DATA SYSTEM CORP; APPLE COMPUTER INC; APPLE INC; ANDERSON AND VREELAND INC; ONLINE; MBA SOFTWARE AND CONSULTING INC; WILLIAMS COMPANIES INC (THE); ROSE AND KIERNAN INC; EDS; MARY KAY INC

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EXHIBIT 11

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Apple's iPod has its charms

Henry Norr

Monday, October 29, 2001



The big news in consumer electronics last week was the iPod, the portable MP3 player Apple plans to start shipping in a couple of weeks.

Like everyone else who attended the product's debut in Cupertino, I came away with an evaluation unit to play with, plus CD copies of all the songs loaded on it -- a gesture intended to show that Apple's endorsement of the MP3 format doesn't mean it condones stealing copyrighted music.

(Steve Jobs grouched that the CDs had cost his company \$50,000, but as usual you can't fault his skill at press manipulation -- Apple got its money's worth and more in news coverage and reviews.)

The product itself is quintessentially Jobsian: Striking design, cutting-edge technology and remarkable ease of use, for which you have to pay a pretty stiff price (\$399) and use a Mac.

And not just any Mac, but one with FireWire ports built in, which means a recent one. My wife's iBook and my daughter's iMac don't qualify -- at two and three years old, respectively, they're too old. Apple says it has sold about 7 million iPod-compatible Macs.

With a polished faux-silver shell -- like the cigarette cases rich people flash in old movies -- and a white-plastic facade, the deck-of-cards-sized device is certainly gorgeous to look at.

On the other hand, after using my unit for a few days, I've got some gripes about the design. First, both back and front are extremely susceptible to fingerprints. There's no clip to hold it to your belt or keep it securely in your pocket. (Mine already fell out of my shirt pocket once, when I bent over to pick something up).

You don't even get a protective case or carry bag with it. (What do you want for \$400?)

The FireWire port, through which you load music and charge the built-in battery, is on the top and has no cover. Maybe I'm paranoid, but I worry about dirt, sweat or even rain getting in among the pins.

And while Apple boasts that the earbuds accompanying the iPod have something called Neodymium transducers -- a kind of rare-earth magnet that's supposed to improve sound quality -- they're not much use to me because they're too big to stay in my ears. Steve's must be bigger than

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mine. .

By the numbers

Looks aside, the iPod is remarkable for its combination of small size and high capacity and the unique download speeds FireWire provides.

It's by no means the smallest or lightest portable music player -- many popular MP3 players weigh only 3 or 4 ounces (one called the Dynamic Naked Audio Player weighs just 1 ounce), while the iPod tips the scales at 6.5 ounces.

But these petite players, which use flash memory for storage, hold only an hour or two of music, while the iPod, with a 5-GB hard drive for storage, accommodates 65 hours of CD-quality audio -- more than enough to play from 5 p. m. Friday to 9 a.m. Monday, without repeating a single cut. (You would have to keep recharging the built-in battery, which lasts about 10 or 12 hours per charge.)

At the other end of the spectrum, you can find competing players that have hard drives, including some that hold even more than the iPod. Creative Labs' Nomad Jukebox line, for example, includes a 6-GB model that now sells for only \$220 and a 20-GB version for \$400. The latter holds 10 days' worth of uninterrupted CD-quality music, or much more if you use the Windows Media format, which Apple doesn't support. The Nomads also have some useful features the iPod lacks, such as a line-in jack so you can record music on it without going through a PC.

Those devices, however, weigh more than twice as much as the iPod, and they're too big to fit in a pocket unless you're wearing cargo pants.

That's because they use conventional-sized hard drives, while Apple has adopted a new ultra-slim, 1.8-inch-diameter format. (Toshiba sells what appears to be the same drive on a PC Card for \$399 - a price that makes Apple's look downright reasonable, because the iPod can also be used as a normal hard drive but the Toshiba card won't double as a portable music player.)

In short, you can beat the iPod on size or on capacity, but not on both. .

Light my fire

The other unique attribute of the iPod is the speed at which you can fill it. FireWire is more than 30 times faster than the USB 1.1 connectors competing devices rely on. The iPod can copy an entire CD in five to 10 seconds. USB-based devices need three to five minutes for the same job. Loading 1,000 songs takes less than 10 minutes. Doing the same via USB would require five hours.

Here, as with its iMovie video-editing software, Apple is leveraging its smart decision a couple of

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years ago to make FireWire standard on all new Macs.

Apple invented the technology, but it's now a standard available to anyone, and some new PCs -- from Compaq, Hewlett-Packard, Sony and others -- have it built in (sometimes with the FireWire name, sometimes as IEEE-1394 or i.Link)

Unfortunately, however, FireWire is still not included on most PCs, and some models that have it -- notably those from Sony -- have a more limited implementation. (Apple's six-wire version carries power, so the same cable that carries the music can charge the iPod's battery; Sony's four-wire version doesn't provide power.)

Jobs said last week that Apple will consider making the iPod available for Windows. But that won't be easy as long as FireWire isn't part of the standard PC platform. Sure, FireWire cards are fairly cheap and not hard to add to PCs, but the extra cost and complexity are sure to kill the deal for most potential buyers.

In a year or two, all new PCs are likely to have USB 2.0 ports, which are as fast as the current version of FireWire -- technically even a shade faster. That will enable Apple or other companies to make iPod-like devices for the Windows world. For now, though, USB 2.0 is even less common on PCs than FireWire.

Apple will also face a diplomatic dilemma if it tries to bring the iPod to the PC. The device is beautifully integrated with iTunes, Apple's music-player program for the Mac.

But bringing iTunes to the PC would be a challenge to Microsoft, which has made no secret of its determination to make its Windows Media Player the dominant standard on the PC. And Apple at this point is highly dependent on Microsoft, which produces both the standard Web browser (Internet Explorer) and the market-leading productivity applications (Office) for the Mac platform.

Perhaps Apple will try to produce software that adds support for a PC version of the iPod to Microsoft's Windows Media Player, but that brings up another complication: The iPod is designed mainly for MP3 music. (It also supports a couple of other audio formats, but not Microsoft's Windows Media format.)

Microsoft, on the other hand, is trying to keep its distance from MP3, apparently to ingratiate itself with the music industry and to promote its own "digital rights management" (read: copy-protection) technologies. The Windows Media Player, for example, can play MP3 files, but it doesn't have built-in support for "ripping," or converting, CD tracks into MP3 format -- a process that's central to the way the iPod works. .

Bottom line

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If you've got a Mac with FireWire and \$400 to spend on a pocket music player, the iPod is a pretty cool contraption, though you might want to wait for the iPod II.

For Windows users there's nothing quite comparable, and there won't be for some time. Of course, there are plenty of PC-compatible MP3 players with virtues of their own, including much lower prices.

One lesson from all this, whatever you think about the iPod: the era of digital entertainment demands better than USB 1.1. If you're planning on investing in a new PC soon, hold out for one with FireWire, USB 2.0 or -- best of all -- both.

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