

Nokia – The surprising success of textbook wisdom

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Abstract. What is the secret behind Nokia's phenomenal success in mobile phones? More generally, how to succeed in a turbulent high technology market? Historical and comparative studies bring understanding not only about past phenomena, but also insights about current and coming ones. In this paper we compare Ford and General Motors in the 1920s and 1930s with Motorola and Nokia in the 1980s and 1990s. The insight from this comparison is how reinvention of the product, category, relative to the market incumbent's market conceptualization, is a recipe for success. Nokia's success in the 1990s was based on following the guidelines pioneered by General Motors in the 1920s: market segmentation, embracing the latest technological advances, and brand management in the pursuit of consumer repurchases. The article tells how Nokia addresses both GM's legacy and changes in the business environment. At the end of our paper, we discuss the generalizability of our findings.

Key words: Brand, differentiation, General Motors, Nokia, product policy, segmentation.

What makes Nokia so good?

Nokia is now the undisputed market leader in the mobile phone business with a brand value at US \$ 35,035 Million, making it globally the 5th most valued brand across industries. The brand

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values of Motorola (US\$ 3,761 Million) and Ericsson (US\$ 7,069), its main rivals, lag far behind¹. What makes Nokia so good? How on earth did this Finnish company, with its origins in the forest industry, build the most valuable non-American brand in a most competed global market?

In its cover story about Nokia, *Fortune* (2000, 33-34) magazine first asks the questions: «What makes Nokia so good?» It then proposes «three possible explanations»: (1) Nokia was very lucky; (2) Jorma Ollila (Nokia's President and CEO) is really smart; or (3) something about the way Nokia works makes it more pragmatic, more focused, and more flexible than other companies. Finally, *Fortune* concludes: «The Nokia way of working is a mix of the universal premise of corporate finance, of meaningful stock performance and Finnish communication that is very compact.»

The fact is that, we cannot but agree with *Fortune*. There is no simple, single or certain recipe for success. However, what we do in this article is to present a more parsimonial view about the way by which Nokia, a Finnish company with its origins in the forest industry, managed to build the most valuable non-American brand in a most competed global market. From the moment we first set eyes on the *Fortune* article, we were intrigued by a distinct possibility: the Nokia model of management or Finnish communication, in general, could perhaps be less unique than *Fortune* appears to assume. We embarked on a quest to supply a fourth explanation for Nokia's success, one which would generalize beyond Nokia and Finland.

Recent economic research about innovations and product policy argues that there is much to learn from historical examples (Abernathy, 1978; Abernathy & Clark, 1985; Das & Van de Ven, 2000; Schmitt, 1999; Shapiro & Varian, 1999). From this perspective, we systematically read Nokia's published documents, such as Web sites dealing with product releases, future scenarios, advertising concepts, and product launches to inquire into the possibility that Nokia may be but one company in a historical chain of American and global success stories². We had informal interviews with company employees to understand their perspectives. We analyzed internal representations, sketches, and market surveys and product concepts at Nokia.

We thus compiled an extensive database, little known outside Finland or Scandinavia, about Nokia's national and historical background and current dominant market position on the American and global markets³. Then, we started looking through historical parables to find similar cases about companies that had been able to make similar market breakthroughs in the American consumer market.

¹ For more information on the brand valuations of Nokia, Motorola and Ericsson see «The World's Most Valuable Brands 2001: Interbrand's Annual Survey» [<http://www.interbrand.com>], October 2001. According to the same source, the values of the three brands are closely related to total market capitalizations of the three companies. Nokia's total market capitalization is US\$ 104,200, Motorola's US\$ 62,500 Million and Ericsson's US\$ 47,500 Million (July 2001).

² For a more complete set of data, see Ainamo and Pantzar, 2000; Bruun and Wallen, 1999; Lemola and Lovio, 1996; Mäkinen, 1995; Pantzar, 2000.

³ However, there are a number of seminal leads (e.g. Ainamo, 1997; Ainamo & Lindholm, 1996; Ainamo & Pulkkinen, 1997; Ali-Yrkkö et al., 2000; Lovio, 1993; Pulkkinen, 1997).

Looking at the product policy by which General Motors under the leadership of Alfred P. Sloan attained market leadership in the American automobile market of the 1920s⁴, we were simply amazed. The commonalities are astounding, numbering way too many to be explained by any form of coincidence. Both the cases of General Motors and Nokia point towards the conclusion that segmentation of a market at the verge of a breakthrough, the right timing and sequence of introduction of new technological advances, and brand-management skills enable market leadership, reinvention of the product category, and astronomical returns on investment.

Reinvention of the car: The story of General Motors

At the turn of the century, the modern automobile industry was in the early stages of its emergence. In the year 1900, only 4,192 automobiles were sold in the United States (Sachs, 1994). Automobiles represented a new concept of personal mobility and a taste for independent travel. Automobiles were marks of beautiful craftsmanship and hand finish – as well as unreliability. They were so expensive that their use was restricted to recreation and sport for those members of the affluent leisure class with a pronouncedly modern attitude (Drucker, 1964, 156; Pantzar, 1997).

«One Car for Every Family» – The Market Created by Ford

Henry Ford started his industrial manufacture of automobiles in 1903. Ford's basic strategy was to synthesize the manufacturing conception pioneered in steel, oil and electrical machinery and extend it into products for the common people. He believed that combining available infrastructure and technical solutions and options would enable him to produce a car cheap enough to attract first-time buyers (Fligstein, 1990, 130). By devoting his entire production system to the service of a durable concept and by developing innovative manufacturing methods it would be possible to create a mass market for automobiles. Even ordinary workers would be able to buy a car.

Opponents to Henry Ford reproached him for forgetting that producers («workers») and consumers («idle class») were altogether different sorts of people. However, Henry Ford was determined on making his company *the* dominant player in the market. To bridge the evident gap between his vision of a people's car and the available technical options for mass-manufacture, Henry Ford chose black enamel paint as the distinctive color of his automobiles. All other paint took too long to dry for cost-efficient production. Hence came his famous slogan: «You can have color as long as it is black.»

In 1908, Ford Motor Company launched its Model T Ford, «the people's car». With this

⁴ For studies of GM, see, for example, Chandler, 1962; Drucker, 1964; Fligstein, 1990; Piore and Sabel, 1984; Sloan, 1983.

model, Henry Ford succeeded both in creating a mass market and making his company the dominant firm on that market. By 1913, with 485,377 automobiles registered, Americans perceived the automobile a «necessity» (Basalla, 1988). Ford's Model T was the «dominant design» (Abernathy, 1978) – that is, this automobile represented industry – and market-wide agreement about the product concept. Consumers who did not already own an automobile represented a diminishing minority who would perhaps never own one.

«A Car for Every Purse and Purpose» – GM's Product Policy

William Durant founded General Motors in 1908. His idea was that if he could get the major manufacturers to create a monopoly in automobile production by pooling together their resources, the returns on investors' money and his own effort would be astronomical. However, Henry Ford, for one, decided to stay out of Durant's cartel (Fligstein, 1990). Neither was Ford was the only to do so.

Not only Ford Motor Company's growing success as an independent company but also William Durant's own ineffective management brought General Motors to a financial crisis by 1920 (Fligstein, 1990; Sloan, 1983). With Ford's market dominance, General Motors had only a very thin slice of the market. General Motors had only a meager 17 percent of the American car and truck market in 1920, while Ford held 45 percent. The following year, GM's share fell to 12 percent, while Ford's rose to 60 percent (Sloan, 1983, 62).

At the same time, the industry environment was favorable to anybody desiring to challenge Ford, the market leader. Road and service infrastructure was emerging at an extraordinary pace, thanks to both government policy and private initiatives, each mutually reinforcing the other. A lack of infrastructure no longer dictated that the design of the automobile be basic and rugged. Roads were becoming better at a rapid pace.

Thus, despite apparent overcapacity in the industry and despite GM being at the brink of a bankruptcy, some investors doggedly hung on to believing that the automobile was «a machine that would change the world». GM, like many other automobile manufacturers, continued to attract risk investments. Du Pont, a giant from the chemicals industry that had been one of Henry Ford's sources of inspiration, invested a part of its financial surplus in GM stock.

In 1921 General Motors at the verge of financial crisis set up a special advisory group to look into «corporate product policy». Alfred P. Sloan, a member of both the Executive Committee and the group, described (Sloan, 1983, 62-64):

«The prevailing concept in the Executive Committee was to meet Ford more or less head on with a revolutionary design. Certainly Ford looked unbeatable by any ordinary means... It was clear that we needed an idea for penetrating the low price field, and for the deployment of the cars through the line as a whole; and we needed a research-and-development policy, a sales policy and the like, to support whatever we did.»

The «product policy» suggested to the Executive Committee that General Motors should

revolutionize the product concept of the automobile. GM would challenge Ford with a series of different models, ranged across the price spectrum, from a basic car to the most extravagant. It would chip away at Model T Ford's dominant market position with luxurious models. With higher product prices, dealers could afford to offer installment terms of purchase, speeding up the rate of repurchase. The market for used cars would also emerge, further speeding up the repurchase rate. In sum, General Motors, in contrast to Ford's preoccupation with production, would focus on marketing and design (Bird, 1999).

GM's Executive Committee approved the new policy. Sloan became GM's President and CEO in 1922. With an earlier work experience in selling disparate car accessories he knew that – given alternatives – consumers would not prefer a uniform product.

Dupont had a new quick-drying lacquer paint called Duco that made it possible for any manufacturer to more than match Ford's formerly superior black-color competence with any color in the rainbow. Duco both radically reduced the time and cost of color finishing and satisfied consumers' desire for style, variety and fashion (Sloan, 1983, 221-226, 236-237).

GM at the frontier of progress

Model K Chevrolet, the first automobile to sport a closed steel body⁵, established GM's in a first-mover position in the channeling of new technology to consumers. General Motors's Du Pont link permitted it to be the first firm to benefit from Duco, the new paint. Thus, GM managed to drive improvements in infrastructure and in available new component and material technologies, rather than only to adapt to them.

General Motors rode not only favorable technological advances but also market trends. Most families already had a car. Ford still delivered «one car for every family». In contrast, GM delivered many cars to many families, differentiating its offering according to needs and wants of each family.

GM offered an automobile for «every purse and purpose». The overlapping hierarchy of «models», «makes» or brands ascended from Chevrolet through Pontiac, Oldsmobile and Buick, to Cadillac at the top.

General Motors' product policy thus evolved into a very compact set of technological, marketing and design principles. «Economic progress» was one of GM's «most important products». A bigger and better automobile every year was synonymous with progress (Bird, 1999). The range of its models represented consumers with an ideology that consumption was a medium for each

⁵ Rival automobile maker Hudson had in 1921 pioneered the closed steel body, which revolutionized the premises for automobile design. The closed steel body offered improvements in passenger comfort such as more legroom, improved heating, and proper ventilation. Thus, it offered a platform to make the mass-produced automobile, for the first time, truly convenient, enjoyable and usable (Abernathy & Clark, 1985, 8-9).

family to keep up or lead progress (Corn & Horrigan, 1984). Its outlays for advertising emphasized «unique» style and design features that provided content and meaning to the affluence and lifestyle of consumers.

By the mid-1920s, the mass market for automobiles had undisputedly arrived. General Motors was famous for its superior way of being the first to hone on new customer demands (Drucker, 1964; Marchand, 1998). The more workers upgraded their cars into more expensive ones, the more GM's volume and economies of scale increased, eventually matching Ford's (Sloan, 1983, 163):

«Mr Ford failed to realize that it was not necessary for new cars to meet the need for basic transportation... When the first-car buyers returned to the market for the second round, ... they [Ford] were selling basic transportation and demanding something more than that in the new car... Middle-income buyers, assisted by the trade-in and installment financing, created the demand, not for basic transportation, but for progress in new cars, for comfort, convenience, power and style.»

The depression of 1929 hit Ford's clientele and sales hard, while GM was hardly affected. GM catered for the affluent, who were least affected by the depression. Ford was still trying to sell a first car to families who now could no longer afford one.

The Legacy of GM's product policy

Indeed, GM's product policy and branding, i.e. creating names and identities for multiple products, became the standard also in other industries. It spread from automobiles to such diverse industries as food, household detergents, and consumer durable. When one firm in an industry pursued product diversification and succeeded, others followed (Fligstein, 1990, 27-28). Managers in all industries began to think and talk in terms of repeat purchases, «planned obsolescence» and the need to have a mix of products, some new and some mature. Alfred P. Sloan's intent to differentiate and diversify products became a standard feature of the large modern diversified corporation (Chandler, 1962).

Look at almost any textbook on marketing and General Motors is recognized as the pioneer of the product-market matrix organization. To consumers, product brands are «presented as different – often with little more than the cosmetic touches that the industry today calls nameplate engineering – so as to maximize the size of the market» (Piore & Sabel, 1984). On the other hand, the brands share key components to match or surpass competitors' economies of scale. Sloan not without warrant considered product policy more important than luck in making GM the market leader (Sloan, 1983, 152):

«It was that plan, policy or strategy of 1921 – whatever it should be called – which, I believe, more than any other single factor enabled us to move into the rapidly changing market of the twenties with the confidence that we knew what we were doing commercially and were not merely chasing around in search of a lucky star.»

Reinvention of the mobile phone: The story of Nokia

Few people in the early 1990s could imagine what would happen in the global mobile phone market. Yet, once again, simple and straightforward design and marketing principles proved superior in their efficiency. Even if as much through learning by doing as with foresight, Nokia has evidently taken up a great deal from the conventional business wisdom created by GM in the 1920s.

Motorola – «Technology Makes Our Vision Reality»

On the pivotal American market for its mobile phones, Motorola was long the undisputed market leader. Historically, this company's roots were in manufacture and technological know-how, which were clearly its cornerstones until World War II. After the war, Motorola, like American firms in all industries, began to diversify on the basis of financial diversification. The family-owned firm started to move freely in and out of related and unrelated business.

With a high degree of diversification, Motorola built itself an image as a high tech firm. It began its drive for royalty income by having its patented technologies incorporated into formal standards for mobile telephones and, even before that, for modems. In public safety radio equipment and modems, Motorola promoted its products as being based on compatible networks, only for consumers to find out later that they had been «hijacked» or locked into a proprietary network which was incompatible with competing products (Shapiro & Varian, 1999, 231).

In the 1980s, with meager sales, the main focus of Motorola shifted to the development of economies of scale, and one standard⁶. By focusing on the one dominant standard that it would control, little did Motorola see Nokia coming.

Nokia – «connecting people»

It was in 1988 in an international management journal that Kari Kairamo, then CEO of Nokia, announced that Nokia's philosophy was «continuous change» and that one of its key businesses in the coming decade was to be mobile phones. Kairamo projected that by the year 2000 there would be 40 to 50 Million mobile phone users around the world (in reality the figure turned out to be 10 times greater). A member of his management team predicted: «Prices are falling and volumes are going up. You need volume to make profit, and the small manufacturers will drop out» (Lewald, 1988).

From the very beginning, Nokia was an ambitious challenger to the American mobile phone

⁶ In 1989, Motorola, together with AT&T, strongly advocated the Frequency Division Multiple Access (FDMA) standard for mobile phones in the American market. Motorola was shocked when the FDMA standard failed to receive wider support (Shapiro & Varian, 1999, 266).

pioneer, Motorola. However, Nokia failed in the 1980s to build sufficient volume to allow its costs to go down. With its resources spent across unrelated businesses, Nokia failed to sustain a high a level of innovation that would have enabled it to charge higher prices.

The problem was most dire on the American market. Motorola had been manufacturing mobile phones for the U.S. police force since the 1920s. The openness of the American system for public procurement was biased on price. The price competition had carried on to the consumer market.

Under Jorma Ollila, hired from Citibank to Nokia in 1984 and made President of Nokia in 1992, Nokia began shredding its television and computer divisions to evade almost imminent bankruptcy. Ollila voiced two slogans for a new business policy: «benefit-orientation» and «telecom-oriented, focused, global, value-added».

Motorola and Ericsson had no similar financial crises to Nokia. Through the backdoor of its crisis, Nokia emerged as the most focused of the three main rivals.

With its newfound focus and family line branding, Nokia purposefully began to distance itself from the dominance of technical issues and the image of high technology.

In 1991, Nokia hired a young 3M marketing executive, Anssi Vanjoki, to figure out the marketing principles in «rapidly growing industries», and to make Nokia a household name. With his work experience at 3M, Vanjoki had learned the art and science of continuous innovation: «It's better to seek forgiveness than to ask for permission» (Thomke & Nimgade, 1998). In addition, Vanjoki studied the histories of companies that had developed successful brands: not only 3M, but also Daimler-Benz, Philip Morris, and Nike. He synthesized his first key principle (Fortune 2000):

«A 'holistic' approach: thinking about the brand in every aspect of design, production, and distribution – and getting around to advertising only when all the other elements were in place. This wasn't rocket science; it's how many consumer products are conceived. But nobody had applied such thinking to mobile phones.»

Management team realized that the time needed to create a «megabrand» was to be measured in decades rather than days, weeks, months, or years (c.f. Aaker, 1996; Trout, 2000). To speed up the process, Nokia's policy of multiple brands was transformed into a monolithic brand policy. These insights remained unchanged, even though the market evolved much faster than anticipated. The products sold much in excess of expectations.

In 1993, Nokia introduced its 2100 series, where the sales target had been set at 400,000 – it sold 20 million (Fortune 2000). One reason why the sales forecast failed was the fact that (especially with its now classic 2110 model) Nokia stumbled upon a new segment. It realized that mobile phones were diffusing extremely fast into the use of the «ordinary people». Consumers used the phones for different ends than business users, but could not or did not want to make the purposes of their use explicit. The market was thus segmented but difficult to analyze or forecast.

Technological advances and new product images

The success and the insights gained with the 2100 series made this series «the blueprint for how to get things done» (Fortune 2000) for Nokia. In 1994, Nokia's designers gained a critical lead over Ericsson and Motorola by introducing styling and fashion in its products. Nokia allowed its customers to «customize» their mobile phones with accessories such as removable and exchangeable color «skins». Rather than only price and function, Nokia's designers experimented with ways to insert new meanings into Nokia's existing products. Jorma Ollila introduced a new slogan: «leadership in the most attractive business segments.»

At that point, it was clear to most industry insiders that mobile telephony, like personal computing before it, would benefit from a new global, mutually compatible technological standard⁷. However, Nokia, unlike some of its competitors, assumed that there was to be both «sliding» and «parallel» standards.

On the supply side, standards would slide because of lags in penetration of the various geographical markets and the overall global market. Different generations of mobile telephony, as well as mobile telephony and computing, would be compatible only at their interfaces, not across the board. On the demand side, users had different use purposes or attached different meanings to the forms of products they used. Probably in the future there would be several kinds of third-generation product categories that would enter consumer lifestyles.

A Mobile Phone for Every Purse and Purpose – toward world's leading design house for mobile communication

Just like GM's product range extends from the Chevrolet to the Cadillac on the basis of price and purpose, Nokia has customized a variety of alternative kinds of phone handsets to appeal to different kinds of consumer lifestyles. In 1999, for example, Nokia launched the 7710 «smart phone» which channeled the Wireless Application Protocol (WAP), an Internet protocol for mobile handheld devices, into mobile phones. However, it did not adopt WAP and the image of instrumental use in all of its new phones.

In the mid 1990s Nokia's mobile phones began increasingly to appear in newspapers and

⁷ The contemporary mobile-phone system was reaching the limits of its capacity to integrate the wide array of services that new technologies enabled. Mobile phones (voice), «smart phones» (voice, e-mail), «communicators» (voice, e-mail, computing and multimedia) and «handheld computing devices» (computing and multimedia) evolved rapidly on four parallel tracks. The industry insiders debated as to which of these product categories was the driver of the overall evolution toward convergence and the new global standard (Sakakibara, Lindholm & Ainamo, 1995). With the limits of capacity in sight, Nokia launched an integrated second-generation digital phone, with e-mail, Web access, fax, diary, address book, notepad, and short-message terminal called the «Communicator 9000» in 1996. Many saw the Nokia communicator as a big bet on how computing, the Web, and third-generation mobile telephony would converge. In fact, the Communicator 9000 series was a niche product that was designed to attract market and media attention, rather than to set a path for industry evolution. It was a purposeful hybrid or compromise, a second-generation GSM with limited computing functions (Ainamo & Pulkkinen, 1997).

magazines, as well as on TV and the Web, in a new light. The media coverage reified Nokia's phones as cultural artefacts and icons. Ever since its surprise hit with its 2100 series, Nokia has sought to «medialize» (Kotro & Pantzar, 2001; Ainamo & Pantzar, 2000; Salovaara, 2000) its products by using forceful media exposure to build its brand value. Nokia purposefully promoted its mobile phones and its future visions to build symbolic value and to win the hearts of both consumers and investors.

From 1999 Nokia had presented itself as the «world's leading design house for mobile communication» (e.g. Nokia 1999). In accordance with this message, Nokia launched its model 8210 during the 1999 Paris fashion week at the 30th anniversary celebration of Kenzo design. Nokia's head designer Frank Nuovo tells that new models «are personal accessories... We at Nokia do not follow trends. We try to set them. Being at forefront means that you really have to be in tune with what's happening in fashion, architecture, etc.» (Nuovo, 2000).

It is no secret that the members of Nokia management team have contact with world-class experts in the art of time pacing (e.g. Eisenhardt & Brown, 1998). In the fashion of «expectations management» (c.f. Farrell, 1998; Guice, 1999; Shapiro & Varian, 1999; Tepper, 1996), Nokia introduced new slogan «mobile information society» at the end of the 90s'.

The company slogan «Nokia – connecting people» is now reality, with Nokia's market share at 30,6 percent (Gartner Dataquest, estimated for 2000). There are 500 million mobile-phone users globally. This is ten times the amount predicted by Kari Kairamo in 1988.

Discussion

Paraphrasing Sloan, Nokia's strategy of focusing the company's portfolio of technologies and businesses (1992) and to segment markets (1996) «more than any other single factor», enabled Nokia to move into the quickly changing market of the 1990s with the confidence that it knew what it was doing commercially. Of these two decisions neither represented «merely chasing around in search of a lucky star», but genuine policy choices.

We would not be surprised to learn that Ollila in his memoirs would quote Sloan: «Just as Sloan noted for cars that 'Middle-income buyers... created the demand, not for basic transportation...', we noticed for mobile phones, too, it was middle-income buyers that created the demand, not for basic communication, but for progress, comfort, convenience, power and style» (compare Sloan, 1983, 163).

Neither General Motors nor Nokia broke through into a non-existing market, but an already existing one. Alfred P. Sloan was truly innovative only within the constraints of a market created by Henry Ford, an organization structure created by William Durant, and his own experience in disparate products in the car-accessory business. Similarly, Nokia was innovative in the context of a market created by other companies, Motorola in the United States, and management team's work experience in other sectors.

The breakthroughs of GM and Nokia, «culturally reinventing» (Pantzar, 2000; c.f. Schmitt,

1999) their respective product categories, share three common dimensions: segmenting a market at the verge of a breakthrough, well-time introduction of new technological advances, and brand-management skills in sensing, interpreting and representing changes in market circumstances and the broader business environment.

Prior to their success, both GM and Nokia were at the brink of bankruptcy, due to visionary Presidents who had been over-optimistic about the speed by which new major technologies lead to market breakthroughs. Bad timing had led to deep financial crises for both companies.

Both the 1920s and 1990s were decades of transformation and expansion of financial markets. Shareholders were willing to invest more in a promising industry, given a reorientation. Both Alfred P. Sloan, the President of GM, and Jorma Ollila, the President of Nokia, and their teams saved their companies at the brink of bankruptcy by making their companies first-movers in consumer orientation and conforming and new rules of the game, which market incumbents Ford and Motorola learned only slowly and not without pain⁸.

The relevance of textbook wisdom

Alfred P. Sloan identified in his memoirs three periods of evolution in the market for automobiles until the 1920s. First, a period of a leisure-class market with expensive cars. This was followed by a period of a mass market dominated by a concept of basic and low-cost transportation. And finally, first-car buyers began to return to the market for the second round. At the entry point to this third period, products that had thus far been considered high tech were at the verge of a breakthrough into the mass market. General Motors initiated the period of the «mass-class market», a new kind of mass market characterized by better and better cars and ever increasing diversity (Sloan, 1983, 150).

The story of mobile phones and Nokia is very similar to that of automobiles and General Motors. In the 1980s few companies would bet on the «almost limitless possibilities» of the mobile phone business as did Nokia (Lewald, 1988). It would turn out that Nokia underestimated growth «only» by a factor of ten, which was among the best of the market forecasts. When, in the mid-1990s, first-phone buyers returned to the market, Ollila and his management team recognized that the growing industry and market wide agreement about the product concept did not mean there had already been a market breakthrough but that, instead, there was one in process.

Thus, Nokia, like General Motors before it, recognized that the first and second periods of market evolution were over. During those early periods, companies would succeed by breaking all the rules. However, in the third period, one was no longer wise if one forgot about the benefits of economies of scale. Nokia recognized, like GM in the 1920s, that the market breakthrough was in

⁸ It is told that Ollila, still as a Citibank officer, urged Nokia CEO Kari Kairamo to revolutionize Nokia's organization (Bruun & Wallen, 1999, 115).

process, rather than had already arrived, like the market incumbent assumed. In both the cases of automobiles and mobiles, had rivals been wise – aware of history – they would have instead used common sense or followed textbook wisdom and succeeded similarly to Nokia in the 1990s, and to GM in the 1920s.

One might even suggest that it was the consistency in following textbook wisdom (that is, branding and segmentation), that explains Nokia's success in reaching astronomical levels of growth and profits. Being lucky enough to be the only one using common sense was the way luck had a role to play in Nokia's success.

Alfred P. Sloan, Jorma Ollila and their management teams recognized that a coming market breakthrough necessitates a shift from purely technical issues to design and marketing. Both companies identified customer segments or groups in the marketplace and exploited new technical options to serve each consumer group separately with a feasible product-price combination.

Prior to its rise to market dominance, GM took decisive steps to segment the market into high and low ends of the market. It launched product introductions in a carefully orchestrated rhythm for each target segment. GM introduced the first color bodies in cars.

Similarly, Nokia was the first to introduce «exchangeable color skins» to mobile phones in the American market. Like GM, it was rewarded with superior closeness to the customers, superior economies of scale, as well as superior brand and shareholder values. Both GM and Nokia were pioneers in their industry of periodic model changes.

In sum, according to our evidence, General Motors and Nokia behaved in a way different from their competitors, but similar to one another. Beyond doubt, similar transformations of consumer motives behind buying and using products are found both in the history of cars and in the history of mobile phones. Reinventing and redefining a product category restores the excitement and the snob effect that was present in it its early days of emergence. In buying cars in the 1920s and mobile phones in the 1990s, the technical details and price level moved to the background.

Conclusion

Competitors and the media have been stupefied by what makes Nokia so successful. Nokia's «secret code», however, is seemingly simple. Nokia's breakthrough in the American and global market is nearly a clone of the product policy and annual model changes of General Motors in the 1920s. Both the 1920s and 1990s were decades of transformation of finance, commerce and consumption. GM was a pioneer of a «new» economy in the 1920s, as was Nokia in the 1990s.

«Product policy» – that is, the textbook wisdom about market segmentation, product innovation and being content with market leadership in a diversified product market with a number of firms – is equally valid across «old» economy challengers like GM and more recent challengers like Nokia. Rather than strive to be the dominant firm with a cost advantage by virtue of absolute size and absolute scale economies, it makes sense to pay attention to market segments and

economies relative to consumer value. Of course, one should always remember the caveat that the evolution of an industrial branch is seemingly simple only in hindsight (Sloan, 1983, 65):

«In the perspective of so many years gone by, the idea of this [product] policy seems pretty simple, like a shoe manufacturer proposing to sell shoes in more than one size. But it certainly did not seem simple at that time when Ford had more than half the market... If the industry had thought it would work, the others would have adopted it at the time. The same policy was available to all, but for a number of years General Motors alone was to pursue it and prove its worthiness.»

In considering the comparison Nokia with General Motors with the caveat of post-rationalization in mind, worth noting is that concepts like segmentation or annual models were not known when GM originated these practices⁹, but were known to Nokia when it entered mobile phone business.

While both producers and consumers perceived the 1920s as a highly predictable decade of progress, the 1990s were a decade of uncertainty and unpredictability. The automobile, airplane, telephone, radio, television, mobile phones and the Internet have compressed time and space. The pace of change is fast and its direction uncertain. New models at predictable one-year intervals will no longer do in the essentially restless postmodern society.

Now, rapid pace and the excitement of unpredictability are norms. This had had a radical effect on product launches. Gone are the days of «annual models». Whereas GM presented its products to consumers as a range synonymous with historical progress and material wealth, Nokia has presented itself as the «world's leading design house for mobile communication». Nokia has, in fact, been the first firm in its industry – and the most successful firm across industries – to reinvent its product as a branded good at the high end of cultural industries¹⁰. Much like fashion houses, also other leading mobile phone makers now try to listen to consumers and communicate with them about future possibilities (e.g. Philips, 1999).

In the 21st century, at the verge of 3rd generation mobile phone revolution, Motorola and Sony-Ericsson are no doubt following the path set by Nokia in this respect, just as Chrysler and Ford followed General Motors's product policy from the 1930s and 1950s, respectively. More than likely, Nokia will be known in future marketing and management textbooks for launching the rhetorics of design and fashion in its industry. Perhaps it will set the model for other industries – a scenario worth considering.

⁹ For the historical roots, see Haley, 1968; Marchand, 1998; Smith, 1956.

¹⁰ Perhaps worth underlining is that Nokia was not the first firm outside the traditional fashion industry to adopt the rhetorics of the fashion industry. For example Ravasi and Phillips (2000) have proposed a generic model for managing the symbolic dimension across industries on the basis of their study of B&O, the audio equipment manufacturer, from the 1980s to the present.

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Resumo. Qual o segredo por detrás do sucesso fenomenal da Nokia nos telefones móveis? De forma mais genérica, como ter sucesso num mercado altamente turbulento? Os estudos históricos e comparativos existentes sobre o assunto revelam conhecimento não apenas sobre fenómenos passados, mas também ideias sobre fenómenos correntes e futuros. Neste artigo comparamos a Ford e a General Motors dos anos 1920 e 1930 com a Motorola e a Nokia dos anos 1980 e 1990. Com base nesta comparação, procura-se saber em que medida constitui receita de sucesso a reinvenção de uma categoria de produto em relação à conceptualização de mercado por parte do incumbente do mercado. O sucesso da Nokia dos anos 90 foi baseado nas linhas orientadoras da General Motors dos anos 20: segmentação do mercado, adopção das últimas novidades tecnológicas, e gestão de marcas de forma a facilitar a retenção de clientes. Este artigo explora a forma usada pela Nokia para incorporar o legado da GM assim como as mudanças no ambiente de negócio.

Palavras-chave: Marca, diferenciação, General Motors, Nokia, política de produtos, segmentação.