Nokia: An ‘Old’ Company in a ‘New Economy’

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Background and Purpose of the Study

At the Strategic Management Society Conference in Orlando in 1998, one company presentation stood out—the presentation by Pekka Ala-Pietilä, then head of the mobile phone division of Nokia[1], the Finnish giant on the cellular telephone market. He started out telling that for Nokia the resource-based view of strategy was too slow and historic, and that the market-based view takes the market for given, although all experience gained at Nokia shows that it has always been impossible to make correct predictions. Instead he emphasized time, both as speed and timing, and the need of considering the ‘whats’ and the ‘hows’ simultaneously. We heard him talk about experimenting and fast decision making, as well as about soft concepts such as learning and culture, and ending up by proposing that “culture is our strategy”. And the impression we got was that this was real – not only those things that high level executives say without really meaning it, or even understanding it to the full extent. Still we wondered, is it really the way it is, or is this only the way it is perceived from the top management horizon? Through the assistance of Pekka Ala-Pietilä, we had the advantage to have his co-writer of the Orlando presentation, Matias Impivaara, visiting our university to present the Nokia approach to strategy for the students in a course in strategic company development. Still amazed by the freshness and vigor of the strategy approach of Nokia in light of the impressive continued market development, we decided to conduct a study of to what extent this inside top management view of Nokia also is shared by other employees in the organization. This article reports from the first phase of this study and is based on interviews with Nokia employees at the Nokia headquarter in Espoo. The employees interviewed represent different areas connected to new product development, new business development, and logistics. We also included non-Finnish Nokia employees working in Finland, e.g. from the U.S. and Malaysia, in order to highlight some of the characteristics that stands out for persons coming from another cultural background. In short, the basis for this article is the inside analysis of the characteristic of the Nokia approach to strategy, originally developed by Pekka Ali-Pietälä and Matias Impivaara for the Strategic

[1] Pekka Ala-Pietilä is Nokia’s current president.

Management Society Conference in Orlando in 1998, supplemented through a series of interviews and discussions with Matias Impivaara during 1999-2000 and Nokia employees in Espoo in September 2000.

Sustained Company Development

In the U.S. it has been found that the set of leading firms is rapidly replaced or strongly modified when new evasive technology and business models are being introduced. In fact, also in a European setting, when business conditions change, the most successful companies are often not able to sustain their market position.[2] It has been pointed out that the paradoxical pattern that winners become losers is a worldwide phenomenon.[3] Still, when looking around at the international business arena, there are companies that have been able to transform and renew themselves over a longer period of time. This includes those firms which successfully have been able to handle discontinuities introduced when technological innovation creates totally new markets or fulfill needs in new ways.

According to Christensen (2000), "Most new technologies [...] improve the performance of established products, along the dimensions of performance that mainstream customers in major markets have historically valued."[4] These 'sustaining technologies' are being contrasted to the 'disruptive technologies', which only emerge occasionally. Disruptive technologies are generally simpler, cheaper and lower performing, and they generally promise lower margins, not higher profits. Also, leading firms' most profitable customers generally can't use them and don't want them, and they are first commercialized in emerging or insignificant markets. In the near-term, disruptive technologies result in worse product performance, but according to Christensen, these technologies are one factor leading to firms' failures. He provides four main reasons for why large 'well managed' companies have an inclination of failing because of disruptive technologies: 1) Companies depend on customers and investors for resources and hence, they tend to develop systems for killing ideas that their customers don't want. 2) Small markets don't solve the growth need of large companies. 3) Markets that do not exist cannot be analyzed. 4) Technology supply may not equal market demand. The leading firms who fail to change in Christensen's study are the ones that are 'well managed' and carefully listens to their customers, and during the 'sustaining technology' period they do very well. They typically also are aware of new technological development

[2] (Sull, 1999)
[3] (Tushman & O'Reilly, 1997, p.13)
[4] (Christensen, 2000, p. xv)

and possible threats but they are unable to act forcefully, because they are ‘well managed’. Leonard-Barton (1995) provides a complementary framework to explain a company’s failure, focusing on a company's core technological capabilities. She defines the core technological capabilities as four interdependent elements: the physical system, the managerial system, the employees’ knowledge and skills, and the values and norms. They have been built over time and are not easily imitated. However, core capabilities typically also end up being the reason for loosing the competitive edge, because what was a strength at one point in time turns into core rigidities, when business conditions are changing. Hence, Leonard-Barton suggests a set of activities managers may use in order to challenge static thinking.[5]

Regarding sustained company development and the need for firms to be able to continuously renew themselves, some scholars have focused on the specific needs of the high tech firms in rapidly changing markets. These firms need to cope with a complex business setting, with demands on timing and flexibility and on a continuous creation and exploitation of new business opportunities in order to grow. In this fluid and complex market, companies are looking for ways of creating some kind of stability or platforms, in order to simultaneously be able to deal with fluctuations/change and temporary windows of opportunity. Brown & Eisenhardt (1998) empirically demonstrate different approaches that high-tech companies have used in the 1990s to create stability and efficiency, including time pacing and patching. In a recent article, Eisenhardt & Sull (2001) takes one step further and claims that “…the new economy's most profound strategic implication is that companies must capture unanticipated, fleeting opportunities in order to succeed.” They conceptualize strategy as a set of ‘simples rules’, where the focus on key strategic processes (rather than position or competence) and a limited number of rules (rather than elaborated strategies) which provide “just enough structure” and direction for employees to operate in a chaotic environment, while leaving them enough freedom to quickly enough capture the best business opportunities[6].

Also, sustainable development is about managing paradoxes. A main paradox for most firms is to balance efficiency and innovation. As expressed by Magnusson (2000), “the understanding that the processes of knowledge creation and exploitation are mutually constitutive and closely interdependent leads us to consider the tension between innovation and efficiency as a duality that needs to be kept alive and continuously managed, rather than

[5] For example, shared problem solving, new technical processes and tools, experimenting and prototyping, importing and absorbing technological knowledge from outside the firm, and learning from the market. (Leonard-Barton, 1995, pp.59-212)
[6] (Eisenhardt & Sull, 2001, p.108).

being eliminated and resolved."[7] This is further emphasized by Tushman & O'Reilly (1997), who claim that the success of organizations depends on their managers' ability to "juggle" with different organizational 'architectures' – i.e. simultaneously managing both efficiency and innovation. However, a successful organization may become dynamically conservative, i.e. a system-wide resistance to change, structural and cultural, preventing an organization from renewing itself.

Culture (i.e. Nokia's perspective on strategy) is in itself a paradox. It is a key to competitive advantage, but it is also very difficult to change. The question is then to understand how a culture can support both efficiency and innovation? Management literature does not say much about how culture can support or hinder a company's renewal and action in fluid markets. In an organization, culture is best understood as a normative control system (Kunda, 1992). In complex work situations, when the outcome of the work is hard to measure, culture can be a most efficient mean of control. Innovation involves risk-taking and non-standard solutions, which is difficult to manage through formal control systems. Tushman & O'Reilly (1997) propose that a shared vision providing a sense of psychological attachment together with a cultural/social control system appears to be essential in rapidly changing environments. In Tushman & O'Reilly, culture is understood as the informal organization, i.e. informal communication patterns and informal power distribution in combination with norms and values. This informal organization is an emergent social construct, and emergent norms and values define the organization culture.

To be sustainable, literature proposes that leading organizations must be able to cope with disruptive changes, must understand the nature of their core capability and nurture them (and the rigidity they can create when business conditions are changing) and to "juggle" between different organizational architecture to simultaneously manage efficiency and innovation. Fluid environments put particular pressure on firms to renew themselves and to question traditional approaches to strategy, since high degrees of unpredictability and uncertainty put particular demands on firms to be able to quickly react to unexpected opportunities. Culture is proposed by some management scholars as a potential key to manage in fast changing environment, and is also emphasized in Nokia's approach to strategy. Against this frame of reference, the next section briefly discusses the ways Nokia has been able to be successful until now and raises a number of issues for its future sustainability.

[7] (Magnusson, 2000, p.49).

Nokia – a Brief History

One spectacular example of an old firm succeeding to transform itself in the 'new economy' is the Finnish telecom giant Nokia, which is one of the highest valued European firms on the stock market and a global leader in the mobile terminal sales. The origin of Nokia is from 1869,[8] when the first paper mill was built in the little village of Nokia, and this company together with two other old firms, a rubber boots firm and cable manufacturer, merged in 1967 to form the conglomerate Nokia. The cable firm had started a small electronics development unit, which was kept protected by the Nokia CEOs, i.e. from the top management perspective an example of "juggling"[9]. The entry into the product application area, radio telephones, was supported by Finland's favorable trade position on the nearby Soviet market. This market provided a ground for learning, initially with a product design not fully competitive on the world market. However, due to the risk of becoming dependent on the Soviet trade, Nokia made a strategic decision to focus on the global market. In 1977, Kari Kairamo took over as the CEO and his contribution to initiate Nokia's transformation was important. He initiated ambitious internationalization and education programs for Nokia employees. One long-term employee comments: "Everything we did was new. Organizations and work models were developed through improvising. There were no old networks or old traditions that hampered the development."[10] During Kairamo's time as the top leader, Nokia diversified and invested heavily into the consumer electronics industry. However, the acquisitions of major European TV-manufacturers brought Nokia very close to bankruptcy in early 1990s. Under Kairamo a new group of leaders grew, including the present CEO and chairman, Jorma Ollila, who joined Nokia in 1985 and became CEO in December 1992. In the present top executive group of Nokia, five out of nine worked under Kairamo.

Under Jorma Ollila, Nokia made a decision in 1992 to focus on the digital cellular market and to divest from other traditional areas. The direct implication of this decision was also that in two years, 60% of Nokia's personnel was replaced, a lot of young engineers were hired, and in 2000 the average age of Nokia employees was 30 years. This decision to focus on a specific growth market provides a basis, from which the further development of Nokia can be understood. This means that in the perspective of Christensen (2000), Nokia made a complete shift into a new pervasive and disruptive technology, and has since then been riding on the

[8] (Bruun & Wallén, 1999, p.14)
[9] In the terminology of (Tushman & O'Reilly, 1997)
[10] Quotation in (Bruun & Wallén, 1999, p.44)

tremendous and unanticipated growth of the markets opened up by this new technology.[11] The focus of this article is on the dynamics that Nokia has created in order to continue its growth on this digital platform.

Since this disruptive change, Nokia's success has put Helsinki on the world-map. Its success story is pretty much linked to the one of the GSM digital standard, in which Nokia massively poured resources in 1988, while competitors such as Motorola were slower to take the full step. But can really Nokia's success be explained by 'big bets' and its company culture? From the technology side, Kari Kairamo, Nokia's former CEO, believed in 1988 that Nokia could become a global player in the consumer electronic business (which represented in 1987 20% of Nokia's net sales). The scope was later narrowed in 1989 to telecom[12], but Kairamo was not far from the truth. Since 1989, Nokia has been able to be early involved in the development of concurrent technologies for various markets, such as the first analog standards (AMPS), second generation digital standards (GSM, CDMA or TDMA), and is also presently one of the leaders in the development of third generation standards (3G). This is what Pekka Ala-Pietilä—Nokia's current president—calls "selecting the right horses"[13].

Also, a remarkable aspect of Nokia's strategy is its ability to create and nurture technology and market-based alliances. Already in 1989, Nokia got the first GSM network running by forming an alliance with two Finnish telecom operators. During the last three years Nokia has strengthen its cooperation with global players—such as AT&T, Ericsson, IBM, Intel, Toshiba or Motorola—for the development of the third generation (3G) hard-and software technology and standards[14]. Technology leadership, early market presence, and proactive behavior in shaping technological standards seem complemented by Nokia's very strong brand image and its user friendly design (including both physical design and user interface), instead of a pure focus on technical features and size that exists in many of its competitors.

Nokia has also developed internal mechanisms for continuous growth and renewal. As presented by Matias Impivaara[15], one of Nokia's three business areas (together with Nokia Mobile Phone and Nokia Networks) is the Nokia New Venture Organization. This unit

[11] Motorola the then market leader, on the other hand, stayed longer with the analog technology because of their US market domination and close customer contacts in combination with the perceived inferiority of the products (e.g. in terms of bulkyness of the first and second generation digital terminals) created an inertia to change.
[12] By the end of 1987, mobile phones represent 7% (respectively 60% in 1998) and telecommunications 8% (respectively 33% in 1998) of Nokia's net sales.
[13] See Silberman, Steve (1999): "Just say Nokia"; Wired, September 1999.
[14] For more information, see http://www.nokia.com/press/nps_int_alliances.html. (last consulted: January 29th 2001)
[15] Presentation at Chalmers University of Technology (Göteborg, Sweden), May 5th 2000.

supports business ideas outside of Nokia's core business, which can have their origin both within and outside Nokia, and facilitates internal and external venturing activities, e.g. through knowledge transfer from Nokia's competence base or by injecting venture capital. According to our interviews, Nokia management seems to believe in venturing activities, which exist in parallel to regular acquisitions. The purpose of the venture activity is to make profit, but also to increase Nokia's awareness of disruptive technology and business models, including to 'challenge the Nokia way', i.e. to prevent the organization to become rigid. Finally, Nokia seems also good at managing the innovation-efficiency paradox raised in the technology management literature[16]. After a logistic crisis in 1995 that cut the Nokia value stock by half, Nokia made major efforts to streamline global business processes, and Nokia mobile phone (Europe and Africa) won the European Quality Award 2000 (category large business), which rewards excellence in execution of business processes[17]. To sum up, the portfolio of strategic action taken by Nokia is wide and combines and integrates recommendations from various strategic management schools. It also seems that the company is able to 'juggle' with different organizational architectures to combine both efficiency and innovation. Should we then believe (or not) Pekka Ala-Pietilä when he explains that "culture is our strategy"?

According to our interviews and Nokia's presentations at the 1998 SMS conference and at Chalmers 1999-2000, it seems that Nokia's management has a very good understanding of the limitations and the potential use of various strategy perspectives depending on the business conditions it faces. More important however, it also seems that Nokia's management has a way of making their strategy process work, which suits the complex and highly uncertain environment in which it operates, and that this way does not seem yet to be fully understood in strategic management literature.[18] When explaining that "culture is our strategy", what Nokia's president points out is that, when Nokia faces a high degree of uncertainty and when prediction is not possible, then adaptability, proactivity, responsiveness, speed and timing become key competitive factors. For Nokia, "strategy beyond uncertainty" becomes the capability of the company and its employees to quickly react to new opportunities. In such context, as evoked in the '98 SMS presentation, Nokia's culture; the values and norms supplemented by an efficient decision-making system, are at

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[16] See for example the concept of 'ambidextrous organizations' introduced by (Tushman and O'Reilly, 1996; 1997)
[17] See the homepage of the European Foundation for Quality Management (EFQM) at http://www.efqm.org. Since 1992, this award has been received by Xerox, Texas Instruments, TNT, BT Yellow Pages and SGS-Thomson. The assessment model used corresponds to the U.S. Malcolm Baldrige National Quality Award.

the core of the company's ability to seize unpredictable opportunities. This is confirmed by our interviews, but again, there is more than meet the eyes, and Nokia has consistently put in place a number of organizational mechanisms to support flexibility and adaptability, creating what we name a 'stability for change'. For example, what is probably most striking to outside observers is Nokia's flat hierarchy. Generally, Finns seems to distrust authority, which has been explained by earlier Swedish and Russian domination. Nokia's management style emphasizes individual initiative, controlled improvisation, achievement, pragmatism, and decisions are taken "where the knowledge is". This has also an impact on Nokia's strategy processes: Given the uncertainty in consumer needs, markets or technologies, Nokia needs to continuously monitor its environment. The ones that contribute to the company strategy are the ones who have the most insights, i.e. often employees from lower levels who notice small but meaningful changes, which are fed back to top management through a bottom-up strategy process. This type of strategy process is what Nokia management calls "building guessing mechanism". The decision-making process is also characterized by a preference for integrated and continuous small decisions with no possibility to go backwards, since "as in football game, everyone in the field is continuously moving, which continuously influence the strategy you choose". This incremental decision-making philosophy is supported by a lot of testing internally. The lack of hierarchy also means that leaders at every level are very accessible and willing to listen, and that there are no "barriers or gatekeepers" to filter information and initiatives. The lack of hierarchy and the proactive behavior of employees is reinforced by the non-existence of a company organization chart. New employees have to create their own picture of the company, and their first task is to build a personal contact network, without which any initiative is impossible, "since you have to find the person that can give you the 'go', which differs in every case". The building up of one's personal network is also a main responsibility for every manager introducing a new employee, who have to make sure that the person has the right contacts to be able to do his/her job. In general, "information is not so much written, which mean that new employees learn to ask". Another characteristic of the employee's socialization process is that new employees are "thrown into the fire", which mean that new comers are directly involved in projects with just enough guidance for them to perform their job, which again ensures that they must adopt a proactive behaviour in learning about their job and fulfilling their tasks. In addition, there is a strong pressure from top management for systematic job-rotation at all leadership levels

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[18] Matias Impivaara

(every 2-3 years). This rotation appears to be a powerful way to increase employee's competence and knowledge of the company, and it also prepares employees for change and prevents the emergence of hidden agendas and political inertia.

Regarding Nokia's culture, Nokia's strength may not be in its company values—customer satisfaction, respect for individual, achievement and continuous learning, but more in the attitudes promoted by management and reinforced by the leaders visible behaviors. Among the important attitudes is the concept of 'Nöyryys', which can be interpreted as not being 'arrogant', knowing that "you should never take things for granted, that nothing is given, and that even when you are successful, you have to remember it". In Nöyryys is also the notion of focus, of "doing one thing at a time". Nöyryys seems to be deeply rooted in Finnish small farm conditions, where people had to really "work hard to take away stones and cultivate", and where weather conditions made the quality of the harvest very uncertain. It is a deep Finnish value, which has been reinforced by Finland's recession in the 1990s, and it seems strong among Nokia's 'older employees', while an attitude change is being noticed for younger employees, partly explained by the well-publicized success of some Finish IT based start-up companies in Finnish newspapers. Respect for the individual is also an attitude that Nokia's employees mention as important, also noticing that this attitude is balancing with other attitudes and values. Status in Nokia is competence-based and employees seem free to openly criticize decision and test each other, which is "not easy to do" in a respectful way. In general—and what was also our 'aha' experience at Nokia's presentation and during our interviews—Nokia's culture is strongly reinforced by management behavior, "who live the values".

To conclude, to the question if we can believe Nokia's president when he says that "culture is our strategy", the answer is definitely YES. It is obvious that Nokia's promoted values, attitudes and behaviors are an essential component of Nokia's strategy to quickly and smoothly react to unexpected threats and opportunities. At the same time, Nokia has aligned a number of organizational mechanisms to support its culture. The Nokia internal organization fosters innovative, adaptive behavior, and improvisation under certain rules, which fits the "organization as jazz-band" metaphor presented at the 1998 SMS conference. In a broader picture, Nokia's strategic edge for sustainability seems to be the company capacity to combine and integrate known forms of strategic thinking (e.g. technology leadership, alliances, venturing activities etc.),with new intraorganizational strategic solution, which seems essential for its survival in the complex and highly uncertain environment in which it operates.

Conclusions

History shows that becoming No.1 often has been the starting point to decline, and Nokia is not immune to this virus, even if the company earlier has shown an impressive ability to transform itself. What could be potential threats to Nokia? First, when Nokia more and more is becoming a global corporation, with international alliances and acquisitions and with employees from all over the world, the base for the values is no longer homogenous, and this may go counter to Nokia's corporate culture, which seems deeply grounded in Finnish culture. Second, the only thing we know for sure is that there will continuously be disruptive changes at irregular intervals, driven by technological innovation or other major changes. In order to stay a top, Nokia has established many mechanisms for renewal, including intelligence and the new businesses organization. However, being a large corporation with a continued need for growth, there is a risk that these new potentially disruptive technologies will not be acted upon. The main reason being that when you are a large well managed firm, you are only interested in those new business opportunities which according to a market estimation result in a large revenues – i.e. in line with Christensen's observation, the new and possibly initially inferior disruptive technologies may be left to someone who is more keen on starting small.

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