



TEACHING NOTE

The Rise and Fall of Nokia

Synopsis

By 2012, Nokia, the one-time world leader in wireless handset manufacturing had ceded that position to Samsung. Why? Nokia had been squeezed from both the top and bottom ends of the handset market. It had faced increased competition from new Asian manufacturers at the low-end of the market in developing nations, while Apple's iPhone and Samsung's Galaxy dominated the high-end of the market in developed nations. The case encourages a discussion of how Nokia rose to become the world's top handset producer in the late 1990s, how it navigated the evolving telecommunications (telecom) landscape in the following decades, and the fateful decisions the firm made as the wireless industry shifted from hardware to software in the late 2000s. The case encourages students to consider what the management team might have done differently to avoid selling its Device and Services business to Microsoft in 2013.

In recounting Nokia's story, the case offers a detailed look at Nokia's handset production and wireless infrastructure strategies in Europe, the U.S., and emerging markets, and how these changed over several decades of operations. This long view is valuable because, while most students have some experience with competition and technology issues relevant to smartphones, operating systems, and other components of the wireless ecosystem, most of them are likely to be less familiar with the industry's history in the early 1990s.

Teaching Objectives

The case can be used in a core strategy class to illustrate the difficulties of sustaining a global strategy across time. Specifically, by the end of the class discussion, students will be able to:

- Understand the drivers of success in a global strategy.
- Realize that many of these drivers of success can turn into liabilities for long term performance.
- Understand that geographic diversity, complexity, and the evolution of locations may cause a global firm to lose its focus.
- Realize that often the most worrisome competitive threats come from firms outside of the traditional players in an industry.

This note was prepared by Professor Juan Alcácer for the sole purpose of aiding classroom instructors in the use of "The Rise and Fall of Nokia," HBS No. 714-428. It provides analysis and questions that are intended to present alternative approaches to deepening students' comprehension of business issues and energizing classroom discussion. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

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Intended Contribution

The case was written to illustrate issues related to strategy sustainability. Some of these issues are associated with the reaction of a successful incumbent to technological changes. In that sense, *Nokia's* aim is similar to that of "*Kodak and The Digital Revolution (A)*".¹ As with Kodak's response to new technologies for digital photography, Nokia was negatively affected by the move from hardware to software in the wireless industry, a change that began with Apple's introduction of the iPhone in 2007. But the *Nokia* case can be used for much more than a window on firms facing technological change; it also reflects many of the complexities that firms face in a global context: the pull from different markets with different demands, problems between subsidiaries and headquarters, changes in the loci of innovation, and the raw complexity of a large multinational firm.

Materials

- Alcácer, Juan, Tarun Khanna, and Christine Snively, "The Rise and Fall of Nokia." HBS No. 714-428.

Assignment Questions

1. Assess the main strategic actions taken by each Nokia CEO. What actions created enduring sources of competing advantage? What actions (or lack of actions) contributed to Nokia's fast decline?
2. Please be sure to cover the following dimensions of strategy: products, vertical scope, horizontal scope, geographic scope, technology, organizational structure.
3. What decisions would you have made differently and when?
4. What were the external factors that enabled Nokia to establish market leadership in the mobile phone business? How did each CEO react to these external factors? Did Nokia have any influence on these external factors?
5. How did Nokia manage its ecosystem (consisting of operators in the early years and app and software developers more recently)? What would you have done differently?
6. How could the firm have better prepared itself for the smartphone era?

Teaching Plan

The general structure of the teaching plan is to identify the sources of Nokia's early success and classify them as "internal" (a result of actions by Nokia) and/or "external" (a result of events in the external environment). When a source is classified as external, instructors need to determine whether it was fully exogenous to Nokia (e.g., Nokia didn't initiate or shape the change in the environment). When sources are classified as internal, instructors should take care to link the identified action to a specific CEO's tenure.

The second part in the teaching plan is to identify the roots of the problems that lead to Nokia's decline. Again it is important to differentiate whether these roots were endogenous (i.e., a result of Nokia's internal decisions that, in hindsight, appear to have been mistakes) or exogenous (i.e., the product of a change in the environment over which Nokia had little or no control).

¹ See Giovanni Gavetti, Rebecca Henderson, and Simona Giorgi, "Kodak and The Digital Revolution (A)," HBS No. 705-448 (Boston: Harvard Business School Publishing, 2004).

In the last segment of the teaching plan students have the chance to go back in time and offer alternatives to those decisions that, with the benefit of hindsight, were judged to be mistakes. An important insight comes from this exercise: students realize that, given the information available at that time, the decisions were not as bad as originally perceived.

Following this general structure, the teaching plan is divided into an introduction, three discussion segments, and a wrap-up. Because a lot of material is covered in each discussion segment, and because class time is limited, instructors may decide to shorten the fourth discussion segment.

I.	Introduction	5 min.
II.	What did Nokia do right?	25 min.
III.	What did Nokia do wrong?	25 min.
IV.	What would you have done differently?	20 min.
V.	Wrap-up	5 min.

I. *Introduction (5 minutes)*

I start by asking students how many of them have ever owned a Nokia phone—a question to which undoubtedly most hands, if not all, will be raised. If the number is not high for some reason (students may be mostly American, where Nokia didn't have a strong market share), I ask how many of them had previously heard of Nokia; the show of hands will be large, since most students are at least familiar with the brand. Indeed, the brand consultancy firm Interbrand ranked Nokia as the fifth most valuable brand globally in 2009. Next, the instructor may ask how many students have a Nokia phone at present—a question to which few students, if any, in a typical MBA classroom will raise their hands. (Instructors can make a mental note of these students and come back to them through the class to understand why they still own a Nokia.)

At that juncture a strong point is made: A company that was once a market leader is now a lesser player. The fact begs the question: How did this happen? How could a mighty company like Nokia fall from its global-leader position so fast?

II. *What Did Nokia Do Right? (25 minutes)*

The idea in this segment is to focus on Nokia strengths. Discussion can be triggered by an open-ended question such as: What was Nokia good at?

Since the range of answers is rather wide, instructors must be extra vigilant to keep the conversation focused. As a strategy for this section, instructors may want to probe each comment thoroughly to (1) identify an event that drove success, (2) identify whether that event was associated with an action Nokia took, (3) classify that action in terms of time (e.g., under what CEO it occurred) and type (e.g., product; vertical, horizontal or geographic scope; technology; human resources, etc.). Note that many comments are about facts (for example, 'Nokia had a large market share'), which will need to be transformed into actions using follow-up questions, such as: Yes, Nokia was the market leader

with large market shares... but how did it get that large market share? Was it a specific product? Was it that rivals made mistakes?)

I write students' comments about internal events on **Center Board 1** (see **Exhibit 1** for the suggested board plan), using a matrix whose columns are associated with different major areas of strategic choices (products, firm scope, etc.) and whose rows correspond to the different CEOs. I write the comments associated with external events (events over which Nokia had no control) on **Right Board 2**.

Horizontal scope: Some students mention that getting rid of business units that were not associated with telecommunications was a brilliant action that started with Keiramo and continued with other CEOs. This allows instructors to explore how far away from the core business is "too far and therefore a candidate for divestment. Should the telecom network equipment industry be part of the portfolio? How does it help? The answer is that it was helpful because it allowed Nokia to sell handsets and network equipment as a bundle. In fact, Huawei is trying to follow the same approach these days.

Vertical scope: Some students will argue that Nokia should not have been integrated toward production. Although this is a comment about a potential reason for failure rather than for success (and what Nokia did wrong is discussed in the next section), instructors may frame it as a positive action. What does vertical integration bring to Nokia? Is manufacturing connected to any other activity? What does Nokia gain from owning its own plants? In practice, owning manufacturing brought benefits to Nokia, because its investments in manufacturing allowed it to achieve economies of scale that nobody else was able to achieve, lowering its costs structure. As a consequence, Nokia was able to provide handsets at very low price points, something that other producers (dependent on outsourcing) were not able to do until very recently (when Chinese manufacturers jumped into the industry). Nokia also believed that keeping production and R&D under the same umbrella was helpful for designing new products and bringing them quickly to the market. Nokia was also clever about moving its facilities to low-wage countries gradually, first to Eastern Europe and later to China and India. Additionally, owning production helped Nokia to run a very successful supply chain and manage its logistics well.

Geographic scope: From its origins, Nokia realized that the Finnish market, even the Scandinavian markets, were not enough to sustain the growth and profitability required for a high tech industry. Do you need to be in many markets in this industry? Why? What is an ideal market for telecom? Where is the innovation happening in the industry across time? Where is manufacturing happening over time? Are there changes in the foci of demand? Their global reach allowed them to aggregate demand and exploit economies of scale. Some students will point out that too much dispersion was harmful in the long run, a very valid point that is discussed in the next section.

Technology: Nokia was a company with a strong engineering and technological culture, but it was weak in the software area. Students may point out both issues at the same time. Instructors may want to ask: Was being good in hardware important at the beginning? Later? How did Nokia manage this transition? Could Nokia managers have foreseen the changes? The answer is yes: for almost 15 years the main concern of phone users was the quality of their calls, which required better equipment at both the handset and network levels. When handsets achieved a minimum of satisfaction, quality, and reliability, the emphasis shifted to adding new features (cameras, GPS, etc.) without adding weight to the handset; engineering skills were again important for staying on the cutting edge of the industry. Next, with the obvious new features exhausted and with the arrival of networks that could sustain data transmission, the focus of differentiation turned to

software and operating systems. Nokia wasn't very strong in software development and, although it tried, its efforts were too little and too late.

Nokia also rode the wave of GSM. As an early adopter, Nokia was able to shape the GSM standard and was a strong advocate for its adoption in other countries. The fact that most countries went with GSM instead of CDMA in the transition to second generation is an external event over which Nokia had little power, but that definitely helped to transform Nokia into a market leader. In fact, some students often say that when 3G came, Nokia failed to capitalize on (and lead) the transformation. Was it a good idea to concentrate on GSM? Why? Did Nokia play a role in GSM becoming the most common standard? Was it a good idea not to pursue CDMA more seriously? What about Symbian? Why not create a new, proprietary OS?

Finally, the design lifecycle of Nokia phones was as short as 18 months. At the time no other manufacturer could replicate that. Nokia was quick to market with new, trendy products. Is speed a strength in this industry? Why? Does it provide a source of competitive advantage?

Marketing: Nokia emphasized product and branding from an early stage. Among Nokia's accomplishments in this area:

- *Emphasis on product design:* Following the emphasis on design in Scandinavian countries, Nokia paid a lot of attention to design. The company always aimed for smaller, lighter cell phones that were easy to use. For example, they were behind the candy bar concept, a format that became the norm in the industry. How good was Nokia at design? Were they good at hardware? Software design? What about user interfaces?
- *Handsets as fashion statement:* Among Nokia's largest achievements was the transformation of handsets from an expensive technical product to a common item that became an extension of its user. Older students will remember handsets as products that (1) were very expensive and (2) were technologically challenging. Nokia led the way to reduce prices and make products more customer-friendly. Exchangeable plates and personalized ringtones were innovations that Nokia introduced to personalize phones. Some students may point out, correctly, that these personalizations were the antecedents of the application in today's handsets. The end result was a product with a dual purpose: communication and fashion statement. How were handsets perceived before Nokia? What did Nokia do to change that perspective? Did Nokia benefit from those actions? How did competitors react?
- *Skills to sell to operators:* For many years, and in most parts of the world, handsets were sold through the operators. Nokia was very good at using this distribution channel. What distribution channel do you think is the easiest to manage? Why? How did Nokia handle operators?
- *Adaptation to local markets:* Nokia's phones were customized to different regions and markets. Phones in emerging markets had long battery life, separate contact lists for family members who shared phones, etc. Nokia was also responsive to consumer trends and sold at a variety of price points. Was it good to have so many models? What were the pros and cons?

III. Where Did Nokia Go Wrong? (25 minutes)

After discussing Nokia's strengths and achievements, the instructor can shift the conversation to where the firm went wrong. I write students' comments on **Center Board 2** (see TN Exhibit 1 for a suggested board plan) in a matrix similar to the one used in the previous segment.

Horizontal scope: Students almost unanimously agree that reducing horizontal scope was a good move by Nokia. There is some potential for discussion about whether Nokia should be in the network equipment business. Some students mention that Nokia should have been more aggressive at buying software firms such as the mapping company Navteq. Why wasn't Nokia more aggressive at acquisitions in the last 15 years? The answer is, in part, that Nokia's acquisition spree in the 70s and 80s had led the company to develop a culture opposed to mergers and acquisitions.

Vertical scope: Some students say that Nokia should abandon production, arguing that it would lower costs and that there is no value in production. Interestingly, all firms that were market leaders at some point in the history of the industry were also producers. In fact, companies like Motorola and Siemens saw their competitive position undermined at the same time that they started to outsource.² If manufacturing is so bad, how do we explain that Samsung is doing so well? Aren't they also producing all their handsets? Some students will bring up the example of Apple, who outsources handset to Foxconn. In reality, the link between Apple and Foxconn is very strong, so although Apple doesn't own the assets, it controls production very tightly. In the end, there is not a clear reason why manufacturing your own phone is bad, and there are actually benefits associated with it (see the previous section for the discussion of benefits).

Geographic scope: Some students will argue that Nokia tried to do too much in too many markets: it wanted to be the high-tech producer in developed markets and the ultra-low cost producers for emerging markets. What would you say if a local firm was selling in the same country to the high-income and low-income markets at the same time? Most students would recognize that such an approach is not ideal since it dilutes a company's focus. So if that is not right, why is it right to do it when the two extremes are in different markets? Can multinationals effectively target high-end consumers and low-end consumers when they are in different markets?

Technology: This is likely the area that will attract the most discussion. The challenge for instructors is to manage comments that are based on hindsight or that are not accurate. For instance, there is a strong belief that Apple started the smartphone revolution and that apps were important from the beginning. Instructors may use the examples of other industry leaders, like Samsung, to show that an individual comment may not explain Nokia's decline. For instance, students often focus on a few actions that seem in retrospect to be pivotal to Nokia downfall:

- Nokia spent money on incremental improvements instead of larger innovations. What type of innovations did Nokia miss? Who introduced these innovations instead?
- Nokia did not react quickly enough to the rise of specialist providers and popular operating systems (iOS, Android). Various players started to specialize more: Google with its OS, Chinese producers in manufacturing, apps developers, others with hardware that is added to a cell phone (for example, medical equipment of ECG created by AliveCor).

² See Alcácer, Lecuona, and Oxley (2014) for an empirical analysis of the effect of offshoring on firms' long term performance in the wireless telecommunication industry.

Handset manufacturers were used to dealing with a few large players; now they had to deal with many firms and organizations with different objectives.

- Nokia seems not to have realized, or acknowledged, that its position in the ecosystem would change. Is it that its position changed or that a totally new ecosystem emerged? Nokia was good at managing the first generation of complementors in the industry but not the second generation, the app developers. Why? The answer is that operators are few and their behavior is predictable; app developers are many and their motivations are mixed.
- They didn't see the apps revolution coming. (In fact, Nokia actually started providing apps very early in the process, and OVI was not doing so badly in its initial stages). Did Apple see it coming? Did anyone else? The truth is that nobody saw the change coming. Even Steve Jobs jumped onto the bandwagon of apps after a year. It is also important to ask: How important are apps in the decision of what phone you buy? Apps are an example of a long tail product: very few applications represent a very high share of total sales. Those "big hit" apps tend to be available in most platforms.
- Nokia never realized it was in a dual platform business, with the smartphone, located in the center of the ecosystem, linking consumers to applications (apps).
- Nokia missed the smartphone bandwagon. This comment is not totally accurate. In fact, Nokia was leader of the smartphone market in the period 2006–2008.
- Nokia should have not embraced the Microsoft OS; it should have adopted Android or at least diversified its risk. Why? What about Elop's comment that it is better to control your own destiny even if that destiny is not that promising? Who makes money from using Android?

Some of these points are important enough that they deserve to be revisited in the next section, so instructors may choose to park them for a while.

Marketing: Some comments students are likely to make, and the follow-up questions they trigger, include:

- Nokia lost her design mojo. How? What actions led to this outcome?
- Design is not important anymore in this industry. When did design become obsolete? Why? Was it the results of firms' decisions or an external trend?
- Nokia had too many products. Why is that a problem? Isn't Samsung doing the same these days?

Organization: Some common comments students make are:

- Nokia became too big and bureaucratic.
- They never embraced foreign managers and talent.
- The company was too centered in Helsinki.

After most comments have been aired, instructors may probe students to look for any common themes across the pitfalls they identified. Most of the pitfalls are related to a firm that wanted to do too many things at the same. If strategy is about making choices, one could argue that Nokia was failing to make any choices.

IV. What Would You Have Done Differently?

The idea of this segment is to take a few decisions that were qualified as mistakes and ask students to propose alternative lines of action. I tend to pick: (1) the decision to abandon American markets, (2) the decision to focus on emerging markets, (3) the reaction to the iPhone's introduction in 2007, and (4) the adoption of Windows mobile. In each case, instructors may divide the class into two groups and ask students to break into small groups to quickly prepare (in five minutes) arguments for (1) making the same decision that Nokia made, and (2) doing the opposite of what Nokia did. Instructors can use **Center Board 3** to write down the comments students make (see **TN Exhibit 1** for a suggested board plan).

Abandoning the American market: The options are (1) leaving the American market and (2) staying in the American market and launching a strategy to regain market shares.

- *Arguments for leaving the American market:*
 - To stay, Nokia had to boost its technology skills in CDMA, since roughly 50% of the market was subscribed to a CDMA network (Verizon). That would be a big investment for just half of the country market, which would be shared with many other producers of CDMA handsets (like Motorola and Samsung). It is better to invest the amount in protecting GSM technology.
 - The U.S. is not a very innovative market, so why bother?
 - The carriers are too powerful; Nokia would have to give deep discounts to get market share.
- *Arguments for staying:*
 - It is still a large market.
 - The U.S. is not great in telecom, but it is excellent in software innovation. Did anyone know at that time that software would be needed in the future? The answer is no.

Students realize that, from a cost-benefit perspective, Nokia's decision was very robust. Most of the arguments against leaving the country are based on hypothetical scenarios that would have been hard to assess at that time.

Targeting emerging markets: The options are (1) shift Nokia's focus from developed markets to emerging markets, and (2) stay focused on developed markets.

- *Arguments for shifting the focus to emerging markets:*
 - Most of the growth was coming from emerging markets; developed markets were in a mature state.
 - Emerging markets are very large. (Large in units, but what about large in revenues? How low did prices need to be to reach those many users? Can they afford handsets?)
 - There are no fixed lines in many of these countries, so the need for telecom products is huge.
 - Most people in these countries will never have computers, so handsets will be used to access the Internet. (Yes, but are the networks ready for data transmission of this magnitude? Can consumers pay for data?)
 - The carriers are not powerful, so there's no need to offer subsidies. (Without subsidies, aren't phones too expensive? Without carriers, how do you sell?)

- Arguments for keeping a focus on developed markets:
 - They are saturated markets, but you can charge more per handset (But prices keep going down? Prices may not stay high for a long time.)
 - People replace their phones very often, so even if the market is saturated, there is always a demand.
 - Carriers help to sell phones, so there is no need for stores, multiple channels, or other marketing complications: just convince a carrier and your phones will be sold.

The arguments here mirror each other. The main question is: To what extent will the underlying demand in emerging markets materialize? The answer is based on beliefs, which make the decision little more than an educated bet. The bet didn't pay off for Nokia, in part because fierce competition from China entered the low-income segment and in part because low-income customers have a very low reservation price, a price at which profits weren't feasible.

Introduction of the iPhone: The options here are (1) do nothing to react to the iPhone, and (2) introduce new products that compete directly with the iPhone.

- Arguments for not reacting:
 - Nokia had a lot of the functions that iPhones contained, such as an operating system (Symbian), phones with web browsing, etc. The iPhone was possibly viewed as a new way to offer the services Nokia already provided.
 - iPhones, when first released, were very expensive. It would have been difficult for Nokia to pull that off without offending customers.
 - Apple had an exclusive deal with AT&T. For Nokia to have partnered with one carrier would have been crazy. That is not how Nokia did business. Nokia was not used to the carrier subsidy model.
 - Nokia should have doubled down on device manufacturing to play to its strengths. Besides, Apple is a computer company. Nokia is a handset company.
 - This is a niche product, so there is not a large demand.
 - This is not a product for emerging markets.
 - Nokia misread the iPhone; it thought it was just a PC going into phone.
 - Nokia wasn't good at software.
- Arguments for reacting:
 - Nokia should have recognized that Apple was bringing the computer to the phone. That means that software is important. Nokia needs to boost software skills (At what cost?)
 - Nokia could have partnered with Microsoft several years ago.
 - It could have purchased Red Hat, the open source software company. It could have built up an ecosystem, a computer company. (The ecosystem idea came a few years later; at the time it wasn't clear that apps was the way to go.)
 - Phones were becoming commoditized, so Nokia should have left the commodity part of the business (But Apple is also selling phones! And at a very high price!) Smartphones are purchased for the operating system/software, not just for the hardware.
 - Smartphones will be huge in developed and emerging markets.
 - Apple's App Store was not available right away. Nokia had a large customer base, so they could have benefited from network economies if they had introduced their own apps store right away.
 - Nokia owned Navteq and its mapping capabilities. This could have been advantageous.

- The music player, phone, Internet device—none of these things are new. The newness is in the way they came together in one device. Nokia should pack them in a radically different way.

As in the other choices, students realize that with the information that Nokia had at that point in time, their course of action made perfect sense. The value of an app store was not clear until a couple of years later (even Steve Jobs didn't want to have an app store).

Adopting Windows Mobile as Nokia's unique OS:

- *Arguments for adopting Windows Mobile*
 - No development costs.
 - May help to differentiate products.
 - Customers may get locked into a specific OS.
- *Arguments for adopting Android*
 - No development costs.
 - Strong network economies, many apps available.
 - On the negative side, hard to differentiate product when so many handset producers use the same OS.

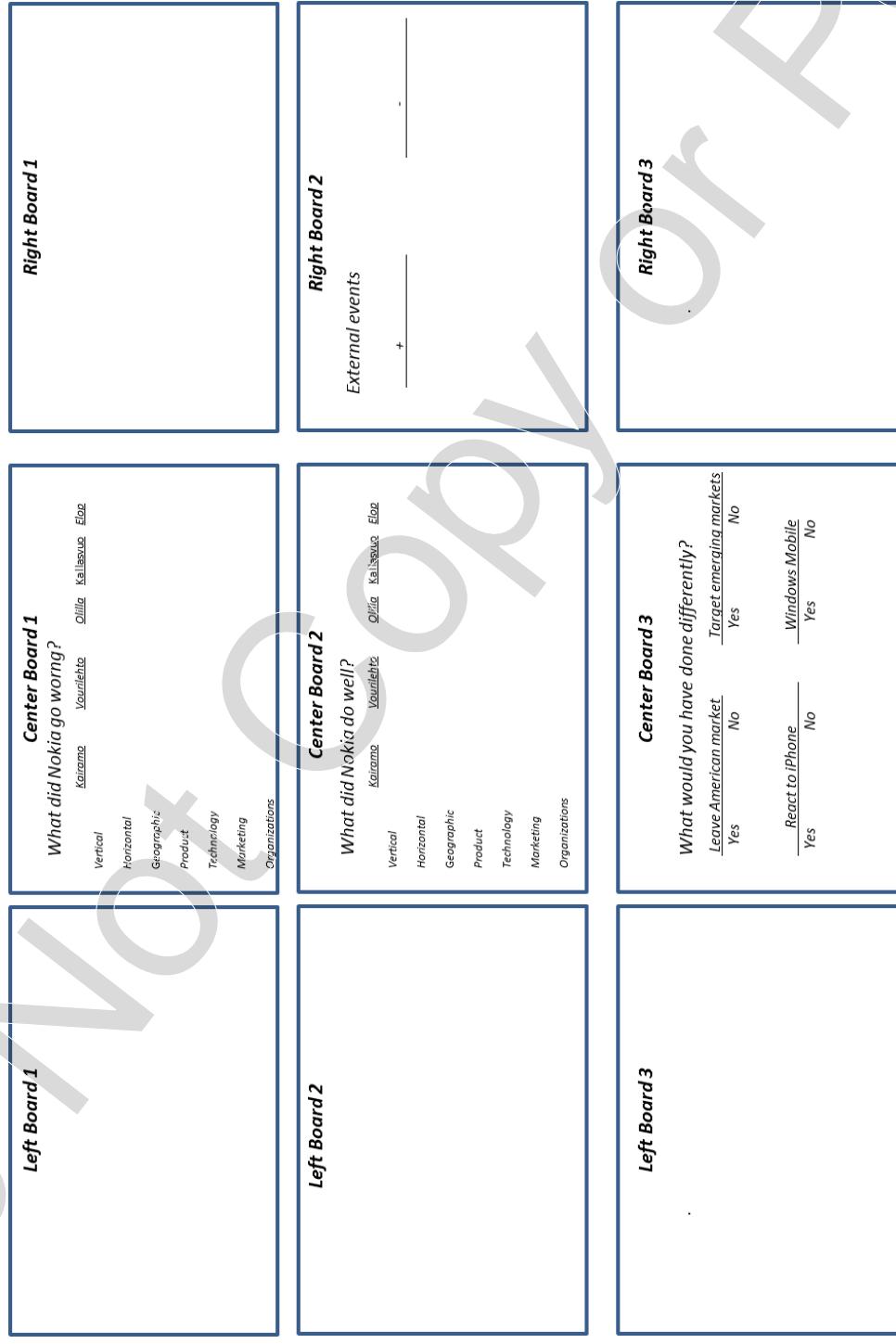
Among the four decisions chosen, this is likely the one where most students don't side with Nokia. In the other three, Nokia's decisions made sense given the information it possessed when they were made. In hindsight, it is easy to say that the decisions were not good, but in most cases the reason was associated with an external event. Would it have been possible to guess that Apple would enter the market? That Google would launch a mobile OS? That the low-end market would be flooded with Chinese producers?

V: Wrap-up

The final remarks should be oriented toward the topics that were more relevant during the discussion, but some general insights are as follow:

- Strategy is about tradeoffs and Nokia had a natural tendency to do too many things. The need that global firms have to adapt to each market to increase WTP, while also standardizing to keep costs low, complicated the analysis of these tradeoffs.
- One key tradeoff that created tension in the case of Nokia is high-end vs. low-end products. They require different technology, different channels, different marketing tools, etc. The continuous tension can be debilitating in the long term.
- Large organizations tend to show inertia. In the case of global firms, organizational inertia is also tied to a specific market, imposing a lens that may distort the perception of the environment as well as filtering events that occur in distant locations.
- Exogenous events to the firm and industry play a large role in how sustainable a strategy is. New players coming from different industries, such as Apple and Google, may be hard to predict. Nonetheless, firms must redouble their efforts to identify what can happen to the industry in which they operate.

TN Exhibit 1 Suggested Board Plan



Source: Casewriter.