Design Management

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Profile of Nokia

Nokia Corporation is a Finnish multinational communications corporation, focused on wired and wireless telecommunications, with 112,262 employees in 120 countries, sales in more than 150 countries and global annual revenue of 51.058 billion euros as of 2007. It is the world's largest manufacturer of mobile telephones: its global device market share was about 40% in Q4 of 2007.

Nokia produces mobile phones for every major market segment and protocol, including GSM, CDMA, and W-CDMA (UMTS). Nokia's subsidiary Nokia Siemens Networks produces telecommunications network equipments, solutions and services.

Nokia's corporate headquarters are located in Espoo, a city neighbouring Finland's capital Helsinki. It has sites for research and development, manufacturing and sales in many continents throughout the world. Nokia employed 21,453 people in Research and Developement in 2006. Nokia Research Center, founded in 1986, is Nokia's industrial research unit of about 800 researchers, engineers and scientists. It has sites in seven countries: Finland, Denmark, Germany, China, Japan, United Kingdom and United States. Production facilities are located at Espoo, Oulu and Salo, Finland; Manaus, Brazil; Beijing, Dongguan and Suzhou, China; Fleet, England; Bochum (closing planned for mid-2008), Germany; Komárom, Hungary; Chennai, India; Reynosa, Mexico; Cluj-Napoca, Romania and Masan, South Korea. Nokia's Design Department remains in Salo, Finland.

Nokia plays a very large role in the economy of Finland: it is by far the largest Finnish company, accounting for about a third of the market capitalization of the Helsinki Stock Exchange (OMX Helsinki) as of 2007; a unique situation for an industrialized country. It is an important employer in Finland and several small companies have grown into large ones as Nokia's subcontractors. Nokia increased Finland's GDP by more than 1.5% in 1999 alone. In 2004 Nokia's share of the Finland's GDP was 3.5% and accounted for almost a quarter of Finland's exports in 2003. In 2006, Nokia generated revenue that for the first time exceeded the state budget of Finland. Finns have ranked Nokia many times as the best Finnish brand and employer. Nokia is listed as the 5th most valuable global brand in BusinessWeek's Best Global Brands list of 2007 (1st non-US company), the 20th most admirable company worldwide in Fortune's World's Most Admired Companies list of 2007 (1st in network communications, 4th non-US company), and is the world's 119th largest company in Fortune Global 500 list of 2007, up from 131 of the previous year.

Description of its Origin and Business Modus Operandi

Nokia s first century: 1865-1967

The first Nokia century began with Fredrik Idestam's paper mill on the banks of the Nokianvirta river. Between 1865 and 1967, the company would become a major industrial force; but it took a merger with a cable company and a rubber firm to set the new Nokia Corporation on the path to electronics...

1865: The birth of Nokia
Fredrik Idestam establishes a paper mill at the Tammerkoski Rapids in south-western Finland, where the Nokia story begins.

1898: Finnish Rubber Works founded
Arvid Wickström founds Finnish Rubber Works, which will later become Nokia's rubber business.

1912: Finnish Cable Works founded
Eduard Polón starts Finnish Cable Works, the foundation of Nokia's cable and electronics businesses.

1937: Verner Weckman, industry heavyweight
Former Olympic wrestler Verner Weckman becomes President of Finnish Cable Works.

1960: First electronics department
Cable Works establishes its first electronics department, selling and operating computers.

1962: First in-house electrical device
The Cable Works electronics department produces its first in-house electrical device - a pulse analyzer for nuclear power plants.

1967: The merger
Nokia Ab, Finnish Rubber Works and Finnish Cable works formally merge to create Nokia Corporation.

The move to mobile: 1968-1991

The newly formed Nokia Corporation was ideally positioned for a pioneering role in the early evolution of mobile communications. As European telecommunications markets were deregulated and mobile networks became global, Nokia led the way with some iconic products...

1979: Mobira Oy, early phone maker
Radio telephone company Mobira Oy begins life as a joint venture between Nokia and leading Finnish television maker Salora.

1981: The mobile era begins
Nordic Mobile Telephone (NMT), the first international mobile phone network, is built.

1982: Nokia makes its first digital telephone switch
The Nokia DX200, the company s first digital telephone switch, goes into operation.

1984: Mobira Talkman launched
Nokia launches the Mobira Talkman portable phone.

1987: Mobira Cityman   birth of a classic
Nokia launches the Mobira Cityman, the first handheld NMT phone.

1991: GSM   a new mobile standard opens up
Nokia equipment is used to make the world s first GSM call

Mobile revolution: 1992 - 1999

In 1992, Nokia decided to focus on its telecommunications business.
This was probably the most important strategic decision in its history.

As adoption of the GSM standard grew, new CEO Jorma Ollila put Nokia
at the head of the mobile telephone industry s global boom   and made
it the world leader before the end of the decade...

1992: Jorma Ollila becomes President and CEO
Jorma Ollila becomes President and CEO of Nokia, focusing the company
on telecommunications.

1992: Nokia s first GSM handset
Nokia launches its first GSM handset, the Nokia 1011.

1994: Nokia Tune is launched
Nokia launches the 2100, the first phone to feature the Nokia Tune.

1994: World s first satellite call
The world s first satellite call is made, using a Nokia GSM handset.

1997: Snake   a classic mobile game
The Nokia 6110 is the first phone to feature Nokia s Snake game

1998: Nokia leads the world
Nokia becomes the world leader in mobile phones.

1999: The Internet goes mobile
Nokia launches the world's first WAP handset, the Nokia 7110.

Nokia now: 2000 - today

Nokia s story continues with 3G, mobile multiplayer gaming, multimedia devices and a look to the future...

2002: First 3G phone
Nokia launches its first 3G phone, the Nokia 6650.

2003: Nokia launches the N‑Gage
Mobile gaming goes multiplayer with the N‑Gage.

2005: The Nokia Nseries is born
Nokia introduces the next generation of multimedia devices, the Nokia Nseries.

2005: The billionth Nokia phone is sold
Nokia sells its billionth phone a Nokia 1100 in Nigeria. Global mobile phone subscriptions pass 2 billion.

2006: A new President and CEO Nokia Today
Olli‑Pekka Kallasvuo becomes Nokia s President and CEO; Jorma Ollila becomes Chairman of Nokia s board. Nokia and Siemens announce plans for Nokia Siemens Networks.

Historical logos

Nokia Company logo. Founded in *Tampere* in 1865, logo 1966.

Nokia ‑ Finnish Rubber Works Ltd, founded in *Helsinki* in 1898. Logo 1965‑1966.

The Nokia "arrows" logo before its Connecting People logo.

Nokia introduced its "Connecting People" advertising slogan, coined by Ove Strandberg.

The current logo's slogan uses Nokia's proprietary Nokia font. This earlier font shown here was Times Roman SC (Small Caps).

As of January 2004, Nokia streamlined its global organizational structure to strengthen its focus on convergence, new mobility markets and growth. To address emerging new business areas in the Mobility era while continuing to grow its leadership in mobile voice communications, Nokia has four business groups to best meet the unique dynamics of each business.

Mobile Phones offers a global range of highly competitive mobile phones for large consumer segments, and develops mobile phones for all major standards and customer segments in over 130 countries. It is responsible for Nokia's core mobile phones business, based mainly on WCDMA, GSM, CDMA and TDMA technologies. Mobile Phones focus on bringing feature-rich, segmented mobile phones to the global market.

Multimedia brings mobile multimedia to consumers in the form of advanced mobile devices and applications. Its products have features and functionality such as imaging, games, music, media and a range of other attractive content, as well as innovative mobile enhancements and solutions.

Networks continue to offer leading-edge network infrastructure, technology and related services, based on major wireless standards to mobile operators and service providers. Focusing on the GSM family of technologies, the group aims at leadership in GSM, EDGE and WCDMA radio networks. Our networks have been installed in all major global markets that have adopted these standards. Networks are also a leading provider of broadband access and TETRA networks for professional users in the public safety and security sector.

Enterprise Solutions provides a range of terminals and seamless mobile connectivity solutions based on end-to-end mobility architecture, dedicated to helping businesses and institutions worldwide improve their performance through extended mobility. Its end-to-end solution offerings range from business optimized mobile devices on the front end, to a robust portfolio of mobile business optimized gateways in the back end including: wireless email and internet, application mobility, message protection, virtual private networks, firewalls, and intrusion protection.

Nokia sees the efforts to build universal access as more than just a goal.

Shaping corporate culture, minimizing risk, enhancing efficiency, and building reputation are all aspects of CR which give it a significant position when setting agendas to increase their business value. Nokia has long understood that this added value is the result of taking

responsible corporate actions. Their goal is to establish proactive, integrated programs within their core business which always keep sustainability in mind.

Transparency

Consistent communication with respect to their CR efforts, both internally and externally, builds trust and helps to develop Nokia's reputation. They understand how important it is to communicate clearly and accurately to the outside world the ways in which their business affects society. There is an increasing demand from their stakeholders for this information which they accommodate through their reporting, corporate website, and other external information sources.

Driving internal efficiency

What works externally also has benefits within the company. While it is sometimes challenging to quantify cause and effect, Nokia has seen that:

- waste management programs reduce manufacturing costs
- diversity training enhances project management
- eco-efficiency measures reduce costs
- volunteering increases employee satisfaction

Thinking ahead enables them to be less reactionary and more forward thinking.

New growth markets

They have been working closely with the UNICT task force and a range of industry, government, and non-governmental organizations on the theme of universal access. The number of new mobile phone users in high-growth markets is growing dramatically and Nokia aims to play a leading role in boosting this growth. As a market leader, they estimate that there will be available and affordable mobile communications for half the world's population by 2015.

An effective tool for managing risk

Responsible business practices improve risk management and ease the task of establishing legal compliance. Through engagement with governments and authorities they can avoid legislation that is counter-productive for society or anti-competitive.

Nokia's supply-chain management reduces risks to the categories of quality and productivity. Their quick and effective management of conflicts of interest encourages employee satisfaction and protect their brand image.

CR enriches Nokia's brand reputation

Nokia's behavior towards and relationship with society is part of their brand personality. CR (Corporate Responsibilty) has a significant impact on their brand reputation and the value which the corporation's stakeholders place on it.

Their brand responsibility means building positive value into every stage of the customers' experience, developing more sustainable products and services, and effectively communicating such developments to their customers. Consumers increasingly demand 'higher order' image attributes from a brand and in doing so look towards a company's CR track record. The public increasingly expects more transparency about the way a business operates within society, seeking a demonstration of its good corporate citizenship. Expectations go beyond simply meeting legal requirements, but to creating a more caring business order.

Nokia's innovative use of technology, with a focus on improving people's lives, raises the brand promise of "very human technology" to a new level. Their various community activities help people feel close to each other and to their communities.

Roles and Responsibilities of Designers in the Organization

"If we took all the engineers into a room and turned all the lights off, and I opened up a Zippo lighter, everybody in that room would know I opened a Zippo lighter. You want it to be an iconic sound." - Nokia's chief designer, Alistair Curtis.

One of the many challenges faced by the designers of Nokia is how they are able to maintain Nokia's reputation for ease of use and reliability while also conveying enough style appeal to avoid losing market share to the likes of Motorola (MOT), Samsung, or Korea's LG Electronics.

Below is an abstract of a Business Week article of an interview with Nokia's chief designer Alistair Curtis, which we feel very much defines the design culture in Nokia:

How do you approach your new job?

It's more about providing signposts and guidance. When you're working with designers, you're there to guide them toward solutions that are appropriate for the brand and appropriate for pushing the envelope. Sometimes designers want to go too far, sometimes they don't want to go far enough. You have to drive them in the right direction so it's the right step for Nokia.

What do you mean by going too far?

It's about too radical colors, too radical materials, too radical application of key shapes. Sometimes it's about the complexity as far as manufacturability. You've got to balance.

Is there a Nokia look, and if so how do you define it?

We call it the Nokia DNA. It's not one specific feature, not one specific detail. It's a design language that is built from many different elements. Those elements are used in different ways from product to product to make them unique in their own right, but still when you look at them as a lineup you can see familiar attributes. It's a little bit like the new BMW. Even though the new BMW is very radical at one level, you can still look at it and see very traditional attributes that go back to the 1940s, like the kidney shape of the grill. You have to keep evolving but you also have to introduce revolutionary aspects as well.

What are some of those elements?

We talk about this looping element here [at the bottom end of the phone] which goes all the way back to the 2120. You've got a sort of curved smile…it's not literal, "here's one detail, there's another detail," it's about

clever use of those from product to product. But design is much more than just style. Design is everything from the look and the identity of the product to the usability, the packaging, the way you use the interface, the retail experience. That commonality and usability is what has made Nokia so strong as a company, so strong as a brand.

What are the attributes of the Nokia brand?

There's a real sense that I know how to use it, I feel comfortable using it. You know it's reliable, it'll always be there, it will always work for you, it will always be very simple to use. That's something that was critical in the old days, but today and in the future [it's even more critical to] maintain that level of simplicity. Products are becoming more and more complicated. You have to make them simpler so the consumer doesn't feel challenged by the product but feels familiar with it. When you pick it up you say, "This is a Nokia product, I know how to use it." When you start to explore it you suddenly realize, wow, this can do so much more than I thought it could do, but in a way that is recognizable and intuitive.

How important is appearance?

You have to have that initial attraction, the lust for that product. The lust can't be superficial: You have to realize this is not just a great-looking product, it's great to use. And it's not just great to use once, it gets better and better. Ultimately the goal is to create product love. But it doesn't stop there. In many respects the real game is about creating that love so you want to share it with others. You're proud of the product and you want to share it, "Look at this!" That's when you've got a great solution.

Has Nokia management always recognized the importance of design?

Yes, design has always been at the heart of management, going all the way back. They're ambassadors for design as much as we're the leaders of design. That's a critical part of Nokia's success.

Do you have fights about design?

If there weren't battles we would have a problem. A little bit of grit creates the oyster. **You need that conflict, that friction to create greatness.** Our responsibility as a design organization is to bring technology alive in order to capture the imagination. It's the technology's

job to make sure the product delivers.

Going back to what you said about Nokia phones looking friendly, how important is that?

Even though it's a serious product, you still have to make it approachable. That approachability can be as subtle as instead of a straight line you have a curved line. The consumer doesn't see it. You're not trying to say to people, "Look there's a smiley happy product." But it softens the product. It's about how you apply human-ness to products.

Tell us about some of the battles.

Every product we do is a battle. It's not a battle, it's more of everybody striving for ultimate quality. You want the best in class. That sometimes creates conflict of opinion. ***You've got to understand when to say "no, this is something we have to fight for."*** That's always the challenge.

Give us an example of how your approach to design works in practice.

With all products, it's about the experience, not just what it looks like. This is the 8800. We looked at every element. The ring tones aren't traditional ring tones. The ring tones were done by [musician] Ryuichi Sakamoto. This is a premium product, we wanted to give it that extra element of premium-ness by having sounds different from the traditional. We took the sound experience to another level by saying, when you open the product it should have a very distinct sound. Like certain car doors, when you open and close them, some feel good, some feel bad. We spent a huge amount of time trying to get the sound right. You can't put it into a technical term, it just feels good. If we took all the engineers into a room and turned all the lights off, and I opened up a Zippo lighter, everybody in that room would know I opened a Zippo lighter. You want it to be an iconic sound.

How did you arrive at that?

The engineers worked on different settings as far as the spring loading inside, also the way the dampening ball bearings worked. We wanted it to open with a bit of a thud, a sense [that] this is not just another piece of electronic equipment. This is something that is made out of stainless steel and has been engineered in a premium way.

Why was Nokia design originally centered in Los Angeles?

It was partly due to where Frank Nuovo [Curtis′ predecessor as design head] was based. L.A . has always had a strong pool of design and creativity. Most if not all auto manufacturers in the world have an L.A. design studio. The speed of product development was slower in those days. You could afford to be farther away from the machine. As things have speeded up, we have more designers in Europe.

Where do you spend most of your time?

I spend as much time in London as I do here. The predominance of design is centered in Helsinki and London. But all over world: L.A., Beijing, Copenhagen. Our core is the U.K. and Finland; L.A. and Beijing are like extended family. We′ve also been establishing what we call design oases. At the moment we have two, one in Bangalore, one in Rio. They′re not exclusive Nokia design centers. They′re an open environment. A local creative university sponsors, it′s an area where we can interact with local creatives in order to sort of look at the culture of that country. We can look at specific design issues we want to develop with them. We are a global organization and there is diversity in the marketplace. It′s about being able to tap that better. What are those differences? Are the drivers the same? In many cases they are, but you may need to tweak products to make them more appealing from a Rio perspective or a Russian perspective.

Can you give us an example of localizing a product?

One of the things we observed [with the 8800] was the huge uptake in Russia. So we saw an opportunity to say, okay, why don′t we look at refreshing the product and making something very exclusive to Russia, understanding there is a desire in certain parts of Russia to express their newfound wealth. [As a result, Nokia created an all-black version of the 8800.] It′s been hugely successful.

What is the process of designing a phone?

The approach is somewhat different from product to product. It′s difficult to create a process that fits all. The drivers and the needs are quite different. If you look at the E61 [a handset aimed at mobile e-mail users], it′s a work tool. Your driver is to look at the users and try to get insights into how they work and what they want from work. People can′t articulate it sometimes. By observing people you see the way that they interact, the

way they do things, the strange rituals they have. It's understanding those things and being able to draw insights out of them in order to develop meaningful products. It might be about having two chargers, it might be about having one key [that leads] straight to e-mail. [Clark holds up an example of the N Series multimedia handset.] If you look at the N Series, it's very much there to push the consumer envelope of technology. There is an element of putting a lot of technology in because you can. What we feel is important looking ahead is that media is moving into a social zone. How do you make it very quick and easy to share photos, sounds, videos? [One Nokia solution is to equip the phones with software allowing photos and videos to be uploaded to Yahoo!'s Flickr photo-sharing site.] These sorts of products are critical to our portfolio. It allows us to stretch ourselves technologically. How do you introduce the consumer to the capability of what mobile computers can do? You're paving the way for the future. This is the front end of the wedge of what people will be wanting two years from now. [Clark shows how the N93's screen folds out and pivots for shooting videos, viewing videos, or sharing images with another person.] We do extensive work looking at form factor. How do you make a form factor that's a meaningful part of the experience and not just for the fun of doing a weird form factor? Form factor should be driven by true benefit and need. If you look at the 3250 [handset], it has the twisting bottom. One of the things we talked about was how do we make it such that someone can go very quickly from voice to camera to music? It's not always about making more keys, in some cases it's making something quite analog. So you twist it half a turn, and it's instantly in camera mode. You twist it another 90 degrees, and the alpha numeric keys have disappeared and the music keys are there.

How do you stay on top of style trends?

We start off by looking three years out at weak trends. They're not weak as in 'bad' trends, they're weak in that you can see them on the horizon. They're trends we see by working with textile designers, fashion designers, paint specialists, material specialists. When we started work [on the fashion-oriented L'Amour collection] we knew that art deco and that style of clothing was going to be very influential in the fashion world and the furniture world. We took that and sort of twisted it in a way we could apply to products. We looked at this sort of decadence, this shabby chic, and how that was coming into the fashion world, and now you're seeing it all over the place. We said, how could we acquire that in a way that's contemporary for the phones? At the top end of the range we actually put leather on the products. We looked at ceramics and Japanese bowls, and we worked with plastics engineers to get this almost ceramic feel to the plastic. It's a critical element as we move forward, clever use of materials and colors. And how you apply materials and colors to create a different and emotional relationship to products.

Tell us more about how you identify trends.

We have a consumer insights team. They're constantly out there looking at new trends in architecture, design, color, social trends. They collect those in what we call our annual trends. We'll look at our annual trends and say, which trends are meaningful to us? And then we'll look at stretching those trends in a way that we can apply to products. It's a critical part of long-range process planning. The team is out there touching. They'll go to exhibitions. They're embedded into a network of trend specialists around the world. They'll observe certain people. Rather than talking to people sometimes, it's about observing them, the way that young people may be applying things in ways which you didn't expect.

It sounds like you also get very involved in the technology.

You have to. The design organization has the responsibility to bring technology to life. You can't bring technology to life unless you're engaged in what's happening, talking to the specialists in our technology organization, talking with the research group. Helping to understand what's out there in the way, way future.

Do you get out yourself?

I travel pretty extensively. Wherever I go, I'll try to take a day out or a half-day out just to go wandering, on the Tube, or just wander through the park. Rather than just the airport-taxi-office route that you do. Just go out and observe. That's always been my way of designing. Even in my days in college, being on the Tube was fascinating.

Nokia is the type of job where you can do that?

At the end of the day you've got to get out there. Nokia's a very progressive company. ***Design is a key part of its future.*** If the design organization, including me, can't be touching its consumer base, touching the people you're designing for, then that's a huge opportunity lost.

A Selection Criteria for Employing Designer.

These procedures are to apply to the selection of designers. For those projects without an associated estimated construction cost, including but not limited to feasibility studies, projects are exempt from these procedures if the cost of the design service is less than ten thousand dollars.

1. The agency or department that will award and administer the design contract will determine the nature and extent of the design services required for the project and will develop the project criteria required.

2. For each proposed design contract, a committee will be appointed by Nokia to evaluate proposals and select the finalists. The committee should include one or more public members; and preferably, professional members (architects and engineers who may be in-house staff or members of the general public.

3. A request for proposals (RFP) for each contract for designer services for a project subject to the jurisdiction of the committee shall be publicly advertised by the committee in a newspaper of local circulation, and in the Central Register, and in such other places as the committee requires, at least two weeks before the deadline for filing applications. Projects of less than $100,000 estimated construction cost or for a design fee of less than $10,000 do not require advertising under these procedures.

4. The RFP will provide the following detailed information:

a) a description of the project, the specific designer services sought, the estimated construction cost and the time allotted for completion, if known;

b) when and where the program prepared for the project will be available for inspection by applicants, or a statement that there is no program beyond the information in (a) above;

c) the qualifications required of applicants for the project;

d) the categories of designer's consultants, if any, for which applicants must list consultants they intend to use;

e) whether the fee has been set or will be negotiated. If the fee has been set, its amount must be stated in the RFP as a total dollar amount, not a percentage. If the fee is to be negotiated, Nokia shall establish a not-to-exceed amount prior to negotiations, but need not publish it in the RFPs.

f) the deadline for the submission of proposals;

g) the person and address to which proposals should be sent;

h) any other pertinent information.

5.   The selection of finalists will be based on the following criteria:

a) prior similar experience;

b) past performance on public and private projects;

c) financial stability;

d) identity and qualifications of the consultants who will work with the applicant on the project, including professional registration when required; and

e) any other criteria that the committee considers relevant for the project.

6. Applicants may be required to:

a) appear for an interview before the committee;

b) present a written proposal to the committee; or

c) participate in a design competition held by the committee.

7. When the committee has required that the applicants list consultants

which they intend to use, any changes in, or addition to, consultants named in the application must be approved by Nokia and reported to the committee with a written statement by the designer or construction manager of the reasons for the change. No person or firm debarred pursuant to Chapter 149, section 44C or disqualified pursuant to Chapter 7, section 38F c) or 38H(g) shall be so included as finalist.

8. The committee will select at least three finalists from among all applicants and transmit the list to the City Manager. The list will rank the finalists in order of qualification, provide a record of the final vote of the committee on the selection, and include a written statement explaining the committee's reasons for its choice and its ranking of the finalists. The list will be a public record. The committee shall transmit to Nokia Manager all material made or received relating to such recommendation.

9. If the fee for design services has been set by Nokia prior to the selection process, Nokia manager will select the designer to be awarded the contract from the list submitted by the committee. If a designer other than the one ranked first is selected, Nokia Manager shall file a written justification with the committee. If the fee is to be negotiated, Nokia Manager shall review the list transmitted by the committee, and may exclude any designer from the list with a written explanation of the exclusion. Nokia Manager shall then appoint a designer based on successful fee negotiation among the remaining finalists in order of rank. In no event may a fee be negotiated which is higher than a maximum fee set by Nokia prior to selection of finalists. Should Nokia be unable to negotiate a satisfactory fee with any designer initially selected as a finalists by the committee, the committee shall recommend additional finalists in accordance with the statutes.

10. The design contract shall state the fee as a total dollar amount. The contract may provide for equitable adjustments in the event of changes in scope of services.

11. A designer or programmer appointed to do a feasibility study, master plan or program for a project shall be ineligible for appointment to perform the design services for that project, except as provided below. This paragraph shall not apply to designers performing studies for repair work; provided, first, that such work is limited to identifying and correcting existing deficiencies in a portion of a building or its equipment; and second, that the designer's fee for the combined study and design of repairs is less than one hundred thousand dollars. A designer who conducted a feasibility study may be allowed to continue with the design of a project, if Nokia commissions an independent review, by a knowledgeable and competent individual or business doing such work, of the feasibility designer's work to insure its reasonableness

and its adequacy prior to allowing the designer to continue on said project. The review of a state agency with oversight or approval of a project may be sufficient for the purposes of this paragraph.

12. Every contract awarded for design services shall include:

(a) certification that the designer or construction manager has not given, offered or agreed to give any gift, contribution or offer of employment as an inducement for, or in connection with, the award of a contract for design services;

(b) certification that no consultant to, or subcontractor for the designer or construction manager has given, offered or agreed to give any gift, contribution or offer of employment to the designer or construction manager, or to any other person, corporation, or entity as an inducement for, or in connection with the award to the consultant or subcontractor of a contract by the designer or construction manager;

(c) certification that no person, corporation or other entity, other than a bona fide, full-time employee of the designer or construction manager, has been retained or hired to solicit for or in any way assist the designer or construction manager in obtaining the contract for design services upon an agreement or understanding that such person, corporation or other entity be paid a fee or other consideration contingent upon the award of the contract to the designer; and

(d) certification with respect to contracts which exceed ten thousand dollars or which are for the design of a building for which the budgeted or estimated construction costs exceed one hundred thousand dollars, that the designer has internal accounting controls as required by Chapter 30, section 39R, and that the designer will: (1) maintain accurate and detailed accounts for a six year period after the final payment; (2) file regular statements of management concerning internal auditing controls; (3) file an annual audited financial statement; and (4) submit a statement from an independent certified public accountant that such CPA (or public accountant) has examined management's internal auditing controls and expresses an opinion as to their consistency with management's statements in (2) above and whether such statements are reasonable with respect to transactions and assets that are substantial in relation to designer's financial statements, as provided by Chapter 7, section 38H(e).

(e) a requirement that the designer at his/her own expense obtain and maintain a professional liability insurance policy covering negligent

errors, omission and acts of the designer or of any person or business entity for whose performance the designer is legally liable arising out of the performance of such contracts for design services. Nokia may require a consultant employed by a designer subject to this subparagraph to obtain and maintain a similar liability insurance policy. The total amount of such insurance shall at a minimum equal the lesser of one million dollars or ten percent of the project's estimated cost of construction, or such larger amounts as the public agency may require, and shall cover the applicable period of limitations. A designer required by Nokia to obtain all or a portion of such insurance coverage at his own expense shall furnish a certificate or certificates of insurance coverage to Nokia prior to the award of the contract.

(f) contracts for design services shall include a provision that the designer or his consultants shall not be compensated for any services involved in preparing changes that are required for additional work that should have been anticipated by the designer in the preparation of the bid documents, as reasonably determined by the executive head of the public agency responsible for the design contract. For the purpose of this paragraph, "public agency" shall have the meaning as set forth in Chapter 7, section thirty-nine A.

(g) any person contracting with Nokia must certify in writing that he or she has complied with State tax laws (G.L. c. 62C, s.49A), and the name of the designer awarded the contract must be published in the Central Register.

13. In the selection of applicants to perform design services, the following records will be kept by Nokia:

(a) all information supplied by or obtained about each applicant;

(b) all actions taken by the committee relating to any project;

(c) all actions taken by Nokia relating to any project.   These records will be available for inspection by the State Designer Selection Board and other authorized agencies.

14. No member of the committee shall participate in the selection of a designer as a finalist for any project if the member or his or her immediate family:

(a) has a direct or indirect financial interest in the award of the design contract to any applicant;

(b) is currently employed by, or is a consultant to or under contract to an applicant;

c) is negotiating or has an arrangement concerning future employment or contracting with any applicant; or

(d) has ownership interest in, or is an officer or director of, any applicant.

15. When an emergency situation exists, Nokia may utilize "Regulation 811 CMR 3.00, Expedited Procedure for Selection of Designers When an Emergency Situation Exists," as adapted to local requirements including the substitution of the terms "Designer Selection Board" and "Deputy Commissioner of DCAM" with "City or Town Selection Committee" and "Local Awarding Authority" respectively.

16. In the case of work to be done by a private developer on a public building, Nokia has a legitimate interest in the quality of design and construction, and the full designer selection process is to be followed as part of developer selection.

Design and its Benefits

Design and Mobile Innovation

Remember when the sight of a person walking down the street talking on a telephone was a novelty, something you noticed, the way babies look up when they hear an airplane passing overhead but an adult never does? How quickly we forget. In this article, consultant Dan Steinbock traces the history of this amazing device, from Motorola's 1973 "brick"-a no-nonsense, analog accessory for dispatch employees, corporate professionals, and high-end customers-all the way to its current manifestation as a symbol of lifestyle and fashion sense.

As with many products, the first cell phones were all about function. Within a fairly short time, technical features no longer differentiated mobile vendors, and currently, consumers purchase phones that suit their lifestyles. Steinbock spends a great deal of time detailing the advent of segmentation in this market-a process Nokia began in the 1990s. Designers at Nokia argued that it was possible to appeal to a variety of segments with the same product, just by making colors available. By 1998, Nokia was coming up with new models every 35 days, says Steinbock.

Steinbock now sees further segmentation into categories he describes as technology, lifestyle, functionality, and experience.

–   In the technology category, the low-end segment comprises cheap, entry-level phones targeted to new users, the pre-paid market, and customers with limited disposable income, while the high-end segment (which includes smart phones-cell phones with PDA functionality) targets wealthy consumers and business professionals.

–   The lifestyle category ranges from the generic (and thus most competitive) to the high-end fashions made popular in Vogue magazine. It also includes a business segment, for which the phone is a productivity tool (think Palm, Blackberry, and the Nokia Communicator).

–   The functionality category concentrates on single-purpose phones with one dominant function, such as games, data, messaging, music, and so on.

–   The experience category is the most recent of Steinbock's segments. Differentiation is less about the device than about the experience of using that device. Motorola's RAZR, with its celebrated "thinness," is one example.

Steinbock hastens to point out that these layers of segmentation are "not disruptive or mutually exclusive, but evolutionary and parallel." He also notes that, as with any other product, new features and functionalities are vulnerable to imitation and competition: "Yesterday's high-end devices turn into today's low-end products." Branded technology, writes Steinbock, is not enough. His conclusion: "As technology, lifestyle, and functionality have become generic elements of the game, experiences differentiate. In this task, however, **design is vital**."

Design Strategies for Global Products

It's a truism: If our products are to survive in different environments, we need to develop strategies and technologies that bridge cultures, languages, standards, and living environments. It's also true that communication lowers the barriers between cultures, but variations in local environments and laws still exist. The major challenge, then, is to balance these variables within a general design--to cultivate products that can work in several cultures and adapt themselves to local living conditions and regulations.

Yang Cai, a senior scientist at Biovision Lab and a research fellow at the Studio for Creative Inquiry at Carnegie Mellon University, has given a lot of thought to the design of such products. In this article, he describes three design strategies he feels are helpful in doing so: adaptive design, configurable design, and interface design.

Adaptive design can be defined as design that takes an existing product

and modifies it to suit other cultures. Interface design for Chinese cellular phones, for instance, differs quite markedly from designs meant for other countries. Phones that offer text display and input function tailored for the Chinese language, as well as for Chinese communication circuits, are of course, preferable in that market. Nokia, though, went even farther, marketing its phones with features that appealed to local tastes and offering e-greeting cards sporting popular Chinese astrological symbols. Adaptive design can go too far, however, as Cai points out: "Over-adapted products may lose their unique identities and become less competitive in the local market."

Configurable design attempts to design a product so that its components can be rearranged and added to suit other cultures. One advantage of this type of design is that it can empower consumers by giving them a choice--by packaging products with customizable components, for instance, so that the consumer can change the product's color or shape. The drawbacks are that self-configuration can be complicated and frustrating, and it can be expensive for the manufacturer.

Interface design for global products can most easily be seen in software and interface agents that facilitate the exchange of information across global boundaries: tasks such as translating languages, checking network security, brokering information, and the like. Interface agents, says Cai, "can be envisioned as soft robots, or as personal software assistants with authority delegated by their users." As such, these interfaces are in their infancy, but rest assured, they will become more familiar in the decades to come. They bear, even now, the drawback of making some users uncomfortable with automation that causes them to feel out of control. Moreover, the actual performance of the types of agents available currently can be disappointing. As Cai says, these will have to start with "narrowly defined tasks, such as language translation for travelers."

The Internet may bring cultures closer together, but there will always be cultural differences to challenge us. **Innovative design, Cai concludes, "is a key to understanding and bridging those differences.**

Analyze the Market Receptiveness of Design.

"Design, usually considered in the context of applied arts, engineering, architecture, and other creative endeavors, is used both as a noun and a verb. As a verb, "to design" refers to the process of originating and developing a plan for a product, structure, system, or component. As a noun, "a design" is used for either the final (solution) plan (e.g. proposal, drawing, model, description) or the result of implementing that plan (e.g. object produced, result of the process). More recently, processes (in general) have also been treated as products of design, giving new meaning to the term "process design". Designing normally requires a designer to consider the aesthetic, functional, and many other aspects of an object or a process, which usually requires considerable research,

thought, modeling, interactive adjustment, and re-design." - Design as defined by Wikipedia

Design has never been a more important component than it is now in the market. If we're talking about perhaps 10 years back or so, that might have been a totally different scenario. People are beginning to realize the importance of having good design incorporated with functionailty. "Form and function". But as with everything else, there will be an "opposition" and in this case, they are the people who thinks that design is just not a top priority. For example, a company may simply have much more pressing operational problems than design. For design to be effective, quality and cost must be under control, engineering, inventory and supply chain must be efficient and marketing and sales must be in working order. Design may also be considered fundamental to a company's functioning but it may simply not be the priority yet.

But on the other hand, design is a powerful tool for not only increasing shareholder value for corporations but also benefiting their customers by providing elegant yet effective products, services and business models. It has evolved away from traditional form giving to becoming an integral part of corporate strategy. It creates value and enhances the user experience; it gives meaning to lifeless objects and can touch human emotions on a fundamental level.

Whatever the case, we can see that the market right now is definitely receptive on the idea of having design incorporated into their everyday life, be it an electronic gadget, the clothings they wear, a piece of furniture, kitchen appliances, the mode of transportation, you get the picture. We guess that society right now realize that without design, things can be quite boring. Imagine having no form of design in your life, no aesthetic value to things, where everything and everyone just looks the same and there is nothing to differentiate one from the other, that would be seriously, seriously, boring.

In Conclusion , Describe the Benefit of Design Use as a Differentiatior, Coordinator and Transformer.

Design Differentiation for Global Companies: Value Exporters and Value Collectors

If you've traveled internationally, you know that despite a recognizable name, some products and services look very different in different parts of the world. A Nokia phone in the US, for instance, does not look the same, or indeed have the same functions, as a European or an Asian

Nokia. Yahoo's Internet sites differ not only in language, but in content, from country to country.

The brands of some other companies, in contrast, make the most of their national characteristics. Harley-Davidson motorcycles wouldn't sell nearly as well overseas without their "American outlaw" mystique, and many automobiles (think Jaguar, or BMW) trade on their national or cultural values and do very well outside their home countries.

Clive Grinyer, director of design at the UK Design Council in London and one of Britain's foremost product designers, thinks of these companies as "value collectors" and "value exporters." Value exporters have especially strong values that are often linked to national characteristics. They use design, says Grinyer, "as a tool to emphasize either their national origin or the set of values that differentiates them from other products." Many car manufacturers fall into this category. Audis and Volvos look the same whether they are in the US or in Europe; their message is the same from culture to culture. And Volvo's identity is strongly Swedish at the same time that it is associated with safety and protection. Grinyer believes that this interest in safety systems is at the heart of Swedish national culture, and that in the Volvo brand, a local value has been translated into a global virtue.

Value collectors, which are often Asian companies, may have a very strong internal culture, but their outward style is less identifiable. They have decided that design is the best way to forge connections with the values of their customers. Sony and Hitachi are good examples of value collectors, and so is the American company Black & Decker. All three have set up studios outside of their home countries in order to connect with the values and tastes of their customers abroad. One advantage of this approach is that it leaves the door open for cross-cultural teamwork--for a sharing of perspectives. This phenomenon may be best seen in international design consultancies, which benefit from the "flavor" added by their local branches.

The relationship between nationality and globalization is "tangled and tenuous," admits Grinyer. In the end, he identifies three broad strategies used by global firms:

1. Speak your own language relentlessly and never waver (e.g., Jaguar, Bang and Olufsen)

2. Turn local values into global virtues (e.g., Volvo)

3. Speak your own language with a local accent (e.g., Sony, Hitachi, most successful international design consultancies)

No matter which strategy a company chooses, concludes Grinyer, it is supremely important that it avoid the blandness of the generic product. Let us hope, he says, that "the design world will continue to connect local differences with global opportunities, and make the recipe more interesting."

Thank You For Reading