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“The Telecom Industry as Cultural Industry? The Transposition of Fashion Logics into the Field of Mobile Telephony”

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1 Introduction

In its traditional acceptance, the term “fashion” triggers images of frivolous, quite irrational and relatively inconsequential swings in clothing styles, with a particular impact on women. At first sight, such swings seem quite a world apart from high technology which on the contrary tends to be associated with ideas of science and rationality and suggests a masculine world. It is therefore surprising at first sight that the field of mobile telephony has, for a number of years now, shown signs of being impacted by fashion logics. The pioneer, there, was Nokia. Since 1995, the Finnish company has been using the imagery of fashion in its self-presentations, discourses and communications campaigns. At the beginning, it may be that the encounter between Nokia and fashion was a chance, or at best an emergent, happening. Progressively, however, the company made it a conscious strategy to appropriate elements of the fashion business model and to re-inject them into its actions.

During that same period, Nokia was becoming an iconic company in the field of mobile telephony, turning into a leader of that industry and a key role model. This meant that the moves of the Finnish company were soon closely studied and often imitated. After Nokia, Motorola and Siemens in close succession and now Sony-Ericsson have all jumped upon the bandwagon of fashion. In most recent

developments, the Chinese market has become the latest playground where fashion meets mobile telephony. The Chinese Network Solutions company TCL has been the most active on that market in appropriating fashion logics.

The object of this paper is to try and understand why leading actors in a field of high technology believe that they could benefit from an association with a logic that has traditionally characterized a low-tech and cyclical industry such as that of ladies' clothing. We want to understand what, in the fashion business model, could be a source of value creation for high technology companies.

In order to get at these questions, we do two things. First, we define the fashion business model as it emerged from the woman garment industry and as it evolved during the 20th century. We point to what we see as its most striking features – symbolic production, mass customization, tight orchestration of supplier networks and brand management. Second, we tell the story of Nokia and its connection with fashion. Working on the design of handsets, Nokia encountered fashion by chance, as it were. This emergent strategy met with positive market reaction, media hype and competitors' imitation. Fashion then became a self-conscious strategy and, we argue, contributed to Nokia's recipe for success. We show how the importation of the fashion business model has led to a reinvention of the mobile phones industry and created significant value in the process, particularly for Nokia. The Finnish company created a blueprint for the industry, moving it closer to "cultural industries" (Hirsch 1972). Instead of standard, mass produced and relatively lackluster commodities, Nokia mobile phones have been mass customized and exciting branded goods.

From this perspective, we propose that the fashion business model may be a far-reaching, and sound strategy for those companies that may need or want to evolve and that may hope to shape the standards and rules of the game in their market, industry or organizational field. This model, we suggest, could apply and hence diffuse well beyond the boundaries of the mobile telephony market towards yet new industries.

2 The Fashion Business Model and Setting of Fashion

The origins of the fashion business model can be found in the structuration of the women's high end garment industry in Paris, towards the middle of the 19th century. Ironically, the man who was instrumental in defining the first rules of the game for that emerging industry was an Englishman, Charles Frederick Worth. Throughout the second half of the 19th century and the 20th century, the high end women garment industry has changed somewhat and at the same time its defining principles have extended over to neighbouring fields – adornment and accessories, men and children's clothing. We point to four defining features that emerge from the early history of the high end garment and adornment industry and can be decontextualized to create an ideal type of the fashion business model – symbolic production and management, mass customization, orchestration of supplier networks and control of distribution.

2.1 Symbolic production

Charles Frederick Worth was born in 1825 and from an early age, he worked in London as a shop assistant. Attracted by the glitters of Paris, he crossed the channel in 1845 with nearly no money in his pocket and absolutely no knowledge of French. In 1847, he managed to secure a selling job at Gagelin, a famous Parisian luxury mercer in Paris. Twenty years later, Charles Frederick Worth had created his own boutique. More than that, he had imposed his name, transforming it into a “seal of excellence” (Marly 1990) for his products and his company – what we could call today a brand.

Worth was a man that built upon the intuition that ladies had a social need to conform to contemporary societal standards but also the strong desire to differentiate themselves. Fifty years before Simmel (1904) had identified fashion to be an important mechanism in sociology – at par with other mechanisms such as interaction, play, style, and the metropolis - Charles Frederick Worth had already in practice exploited the power of this mechanism. Charles Frederick Worth became a master at turning symbolic management into commercial profits. He proved instrumental in institutionalizing the close association between the fashion mechanism and the women's clothing and adornment industry.

Charles Frederick Worth defined himself as an artist. He construed himself as applying the standards and principles of fine art to dress design and elevating the subject to a higher plane. He positioned his work as part of aesthetics, reconstructing in the process the dressmaking industry as a cultural industry. One key source of his inspiration for dress designs came from the past, particularly as it was reflected in art. From the moment he arrived in Paris, he spent a lot of time in museums studying paintings; he leafed through albums of drawings, and hunted through collections artworks. From this, he arrived at an aesthetics whereby *la modernité s'inspirait de l'histoire*; that is, “modernity built upon history” (Marly 1990).

While recognized pieces of art and history were bottomless reservoirs for Worth's creativity, he also found inspiration in another fashion, one less traditional than the first. Worth exploited the contemporary world around him, his proximate environment, for creative ideas. In that he was very much a pioneer in the aesthetic and artistic world of the time. Ideas for fashion and for sustaining the fashion could come from anywhere. “It was seeing acrobats in sleeve jackets that inspired him to create jackets; it was Empress Eugénie's interest in the Scottish side of the family together with Victoria's fondness for Balmoral that led him to use tartan sashes and trimmings on dresses. It was the French conquest of Algeria that led to Worth using the burnous as a wrap” (Marly 1990). Ideas even came “from the street”, as when the victory of Garibaldi in Italy meant that red shirts and pill-box hats became all the rage.

In the end, Worth did not sell dresses – for those who could afford it, he marketed a world where life was an exciting chase of aesthetic experiences of changing fashions of dress and style. And, even for those who did not have the means to get access to this dynamic and exciting world, he represented a dream worthy of aspiration and reverence. While his creative talent can explain part of his success, the other part has to do with the characteristics of his base of *clientèle*. The Worth model of business and lifestyle marketing came of age during the Second Empire in France – and this is not at all surprising. The nobility in power then was new nobility, a nobility of *parvenus* who had only recently or suddenly risen to their position of wealth and power and had not yet gained the prestige, dignity, or manner of the earlier nobility. Unlike the old nobility that was gentlefolk or men and women by tradition and identity fully disconnected from working life, his “new nobility” was involved both

with work and with leisure; this new class believed in science and progress, and it had revolutionary visions of industrializing and commercializing nations and nation-states. Since this customer group did not have inherently and deeply “in its blood differentiating principles and characteristics”, it would look for ways to differentiate itself and express its “superiority” in the sphere of appearance (Marly 1990), rather than in the inner sphere of tradition and identity as did the old nobility. The search for meaning in form rather than in structure made the new nobility a right target for the commercialization and spread of symbolic products and the fashion mechanism.

2.2 Mass customization

By any standards of the time, *Maison Worth* was very large. The average Parisian dressmaker employed a maximum of 40 seamstresses. Worth maybe began with 20 in 1858 but, by 1870, and through to his death in 1895, he had 1,200 of them. Worth ran in fact was what “behind the golden façade a factory where 1,200 pairs of hands turned out parts which Worth fitted together. He would have scorned the word factory himself but that in scale and operations was what it amounted to” (Marly 1990).

In the spirit of the dawning industrial age, Worth embraced advances in industrial technology to satisfy the large and increasing demand for his dresses. Contemporary improvements in loom technologies made it possible to produce fabrics, drapes and materials on a wider scale and to significantly increase productivity. The invention and experiment of the sewing machine some thirty years earlier, and three decades of its development and improvement, had amounted to a major revolution without which one cannot understand Worth’s adventure. There were also other fairly recent technological developments playing an important role in the story of *Maison Worth*. The intensification of railways and the coming of steamships also helped explain the “global” dimension of Worth’s impact. Thanks to these kinds of new technologies, he could gather an international *clientèle* and spread his name and influence well beyond French national borders. The glory, the glamour and the artistic pronouncements associated with the name of Worth relied upon industrialization. Both Worth and luxury fashion were the products of an industrializing and industrial age!

At the same time, Worth had to work with or rather around a number of societal constraints, some of which reflected in fact on the size of the potential market. The Second Empire in France was a period of intense social activity and numerous social happenings. Lavish spending and entertaining was the order of the day and the Imperial court in France tried to signify its power and radiance. At the French Imperial court itself, there were four main balls a season – somewhere between 2,000 and 2,500 women attended each of them. One of the new constraints that bore on society women was that they could not wear the same dress twice at social happenings. Even if Worth did only half of the dresses thus demanded by society, this still meant that *Maison Worth* had to produce about four times a thousand dresses each season - just for the Imperial balls. To that, one can add not only the numerous private balls and the day wardrobes and the special service of the Empress and her ladies in waiting but also increasingly the foreign courts and rich customers. This clearly meant a huge market demand - for which craft-like processes were indeed not adapted.

Another curious constraint was that all women at Court evening events had to dress in white. This made it indeed all the more impressive to achieve the feat of creating 1,000 dresses four times a season, all in whites and without any single one of them being exactly the same as the other. In practice, this was achieved by designing variations around central themes or core elements – Worth called them “declinations” – in a creative process quite in line with what, today, we would call “modularity.” For each category of dress piece (body, sleeves, skirt, etc.) there were a small number of standardized variants. Worth also evolved standardized patterns of assembly. The variants were mass produced and the interchangeable parts assembled differently each single time to create unique dresses under the personal supervision of Worth, the *artist*. “Thus it was possible for a dress to consist of standard bodice A with sleeves pattern B and skirt pattern C.” (Marly 1990). The long seams and the trimmings of these pieces were put together on the sewing machine. The finishing and the embroideries were done by hand. What added to the singularity of each dress was the unique combination in each case of ribbons, feathers, flowers and decorations.

The scale of the market in the making – sheer numbers and the quantities of dresses being produced – is in itself quite impressive. Beyond that, however, the speed and reactivity that the market required were also quite stunning. It happened quite often

that Worth would have to make a dress in the morning for the evening or even sometimes in a couple of hours. This could particularly be the case for dresses that went to the Imperial court.

2.3 Orchestration of supplier networks

This process of mass customization, high speed and reactivity was made possible by a precise articulation of a dynamic set of requirements expressed to a dense network of trusted suppliers. Charles Frederick Worth relied upon a number of well structured industrial districts of high quality craftsmen and small producers of ornaments. This collaboration could sometimes go quite far, as when Worth allowed a bonnet maker to operate on the ground floor of his establishment. He would refer customers directly to this bonnet maker for creations that would match the dresses he had created.

As a legacy from his early days as a salesman at Gagelin, Worth nurtured tight and privileged relationships with fabric manufacturers and producers, in particular with those in Lyon. Meanwhile, the other dressmakers found it nearly impossible to encounter the sales representatives of the original rare-fabric producers, having to approach the rare-fabric producers through the mediation of drapers and mercers. The mutual trust and respect as well as the long lasting nature of collaborations between the Lyonese fabric mills and Worth meant that he would get the best fabrics, while his competitors did not. The competitive advantage of direct links to the fabric mills in Lyon meant Worth could demand great reactivity on the part of his suppliers. He was able to intervene ahead of time in the fabric production process – asking for particular colors, patterns or even materials instead of buying passively what the mills were producing. This tight interaction, upstream, between the client (Worth) and the suppliers (the mills) was quite unique and undeniably ahead of its time.

2.4 Brand management and communication

Worth first began to get an inkling of the power of his visions while he still was selling drapes and material at Gagelin. A few “live models” were being used in the store to propose to clients in real life setting the few shawls and mantels that Gagelin

sold along with the drapes. Worth worked with one of the models, Marie-Augustine Vernet, who would soon become his wife. With the idea of creating a neutral background for shawls and mantels, Worth had made a few white dresses for Marie. This did not have, however, the expected effect on the client. In contrast to asking for the the shaw and mantel being displayed with the dress, it turned out that the client by a curious logic would notice only the dress, and ask for a similar kind of a dress to be created for her [who wass “client”? A “him”, “her”, “a married couple”, or a “man and misstress”?]. This episode made Charles Frederick Worth realize the power of live modeling and was to be critical in helping to catapult his career from an ordinary salesman of drapes and material into a dressmaker guru of his time.

Throughout her life, Marie would play a symbolic and iconic role in relation to her husband’s business – today we would call her a “fashion setter”. The world was watching Marie and a “change in her attire could produce a change overnight in the whole French Imperial court” and, by extension, in time, in Europe’s noble classes, on one hand, and in America’s new bourgeoisie or upper middle classes, on the other hand (Marly 1990).

Worth set up his own house with a Swedish associate – *Worth et Boberg*, later *Maison Worth* – in 1858 and began to build upon his flair at symbolic management. He was convinced from the start that to do that he needed to get a close association with an opinion leader in his clientele. This woman would be a woman of society, but also a woman who would be a risk taker and would not be afraid of regularly breaking off conventions. He found that opinion leader, a maker of opinions for others, in the person of Princess von Metternich, the wife of the Austrian Ambassador to Paris. This woman was very interested in dress and she had absolutely no inhibitions about wearing anything that might be considered too daring by others. In fact, she took a positive delight in being reckless and sensational. Worth approached her by offering her two evening dresses at a ridiculously low price. She liked the dresses, wore them at Court, and soon all the women at Court would only talk about that.

For many years after that, Princess von Metternich played together with Marie Worth the role of the *avant garde* in the fashion cycle that was run and managed by Worth. That cycle was self-perpetuating. Fashion setters in the model of Marie Worth and

opinion leaders in the model of Princess von Metternich set the trends and created a craving for particular designs or innovations. Royal and noble clients followed suit. The patronage of those clients in turn was the surest way to trigger interest and desire in rich upper middle classes who were trying to “buy” their way into a mythical experience of nobility and admiration on the part of the less noble. Once a particular fashion and particular kind of design had diffused widely – no longer the sign of the *avant garde* or the exceptionally fashion conscious - time was ripe for launching a new fashion and its delineations.

The value of Worth’s name and of the brand associated with it made it quickly possible for him and *Maison Worth* to charge extremely high prices. In 1869, a *bourgeois* professional man would earn around £500 a year when an evening gown at Worth would cost about £100. The average yearly dress allowance of the *bourgeois* woman, supposed to cover all her dress needs for a year, would be at the most about £200, or enough to buy two dresses from Worth. In this way, by the end of the 1860s, Charles Frederick Worth was making more than £40,000 a year in profits. Financially, he belonged to the same class as the choice set of his royal and imperial customers.

To some extent, it could be argued that Worth invented and pioneered “brand management”. He created an industry where there had been a few small, independent and relatively anonymous *couturières* and tailors working for a market serving a very narrow fringe of the population. Charles Frederick Worth helped reinvent the meaning of ladies’ dresses within this market. When dresses had been made at home and had generally been kept for many years if not handed over from one generation to the next, they now became fashion items. Charles Frederick Worth built up his name, turning it in time into a brand that would be associated with quality, creativity, and fashion.

3 The Digital Revolution and Bumping into Fashion

Since the 1980s, Nokia's strategic intent had been to create an information society by brokering citizens with new technologies, infotainment and transactions (Nokia, 2000b; cf. e.g. Kairamo 1983). Nokia had sought to create technological and social infrastructure before consumers ever saw the first generation mobile phone as directly useful, fun or meaningful. Yet, it was only in 1995 that the penetration of first generation analogue and second-generation digital phones in Finland, its domestic market, grew to 15 per cent of the country's population. Lead GSM users in the Nordic countries were beginning to have several terminals: one for voice services, another for data transmission. Penetration accelerated also outside Finland.

With Nokia's increasing sales, large amounts of sales data became available to it. Nokia used data mining of consumer purchases and feedback in its chase of the information society. The data mining revealed that users considered Nokia a surprisingly feminine in comparison to rival brands. The data mining also revealed that most consumers treated technologies as unreliable and unnecessary extras. Or, they only used them for entertainment. The more there were users of these two kinds, the more society was moving away from Nokia's goal of an information society.

Rather than worry about the apparent tension between reality and its goal, Nokia's marketing management reacted to the call from the market. Nokia introduced styling and fashion in its handsets. The 2110 phone, introduced in 1995, enabled consumers to "personalize" their mobile phones with accessories, such as removable and exchangeable colour "skins". This phone began to appear in newspapers and magazines and on TV in a new light. The media coverage reified it as a cultural artefact and added a unique aura to the interaction of Nokia with the users of its products. In 1996 or 1997, Nokia phones became to represent the ultimate in contemporary fashion. Nokia gained a critical lead over Ericsson and Motorola. As the Industrial Revolution had created a *bourgeoisie* with its particular fashion in ladies' dresses, so the Communications Revolution of the 1990s also created a "new class". An individualistic desire to display taste and social mobility combined with a desire to gain approval from social arbiters of taste and from the social circles to which the class wished to belong. Particularly interesting in Nokia's case was that the emergence of fashion in mobile phones in the mid-1990s took Nokia by surprise.

3.1 A personal legacy in art and design

The background to the events of the mid-1990s was that Kari Kairamo was born in 1932 and from an early age, attracted attention as a born leader in industry. He came from an affluent and prominent Finnish family. His father had been President of Nokia Group, a major forestry and rubber works, his grandfather was the founder of a major bank, and his wife was a pianist. He had the financial, social and intellectual capital to make a mark in Finnish industry (Saari 2001).

Attracted by the modernity of the Americas, he crossed the Atlantic in 1964 to market Finnish paper machines. At first, he lived in Brazil. A year later, he moved to the United States. After experiencing Finland and Brazil, Kairamo became fascinated by the capacity of the United States to create wealth. The U.S. model where technology and multiple points of view were subordinated to private-wealth creation was in exciting contrast to the Finnish model where societal consensus and uniformity were rules of the game. When he came back to Finland, his unique combination of financial and social capital and intellectual drive made him easy to pick from the crowd. In 1977, he was named the President and CEO of Nokia Group, then a conglomerate operating across industries such as forestry, rubber, electric cables, and public-radio networks.

Kairamo developed a vision and for Nokia that would transform both Nokia and Finnish industry. Whereas the infrastructure of the industrial society was “transportation” (railroads, highways etc) the infrastructure of the new information society was to be “communication”, the cable, broadband, digital TV, optical fibre technologies that combined data, text, voice, sound and image (Nokia, 2000a). The new technologies would diffuse science-based benefits of computers and telephony in terms of “progress and flexibility”, earlier been reserved for “high-tech” and large businesses, into small businesses and to citizens. Citizens would store, transmit and make extensive use of knowledge in a digital form. Unlike the scarce goods and commodities of the industrial age, the good of the communication age was “information” in digital form that would never be “used up”.

3.2 Communication and brand management

“Progress and flexibility” was Kairamo’s most favourite phrase. When talk of Nordic deregulation in telephony began at the dawn of the 1980s, he noticed that Nokia had since 1960 supported an electronics unit that also made mobile phones for the military, police, and other such users that limited access to their networks. He shifted attention to enlarging access to these cellular networks.

Timo H.A. Koski, one of his subordinates, shifted some of the emphasis in “progress and flexibility” into an emphasis on the “user perspective” and the benefits of convergence of technologies for Nokia and citizens like. The belief was that new technology ought to be used in a rich, meaningful, and enlightened way, or put into productive use, and never passively accepted. The ideal Nokia employee and the ideal citizen would “live like a Frenchman and work like a German”. Koski was particularly keen on making telephony and data networks user-friendly and accessible also to the citizen who was a novice with high technology.

In the visions of Kairamo and Koski, most citizens had little with which to build the initial link between their needs or wants and the technology’s potential. Many would look into the past for established models of use for guidance on how to experience and interpret new applications. Others would expect from the producer a tightly configured “stage”, script and audience. They would prefer a fixed no-nonsense script, clear choices of the central actors, and narrow range of meanings that can be deciphered from the performance of each given new technology (Ainamo and Pantzar 2000). Kari Kairamo had visions; Koski developed these into plans and actions.

There were no courses on product architecture in the education of engineers. Nokia’s engineers turned to a professional product designer in industry. The designer was given the stack of components that were the essence of the technology and a simple brief: to devise a product concept by creating physical linkages between them. The designer used his wide experience of product architectures in diverse industries to come up with a satisfactory configuration of hardware components so that the project could proceed (Pulkkinen 1997).

When Nokia's and Ericsson’s phone handsets were introduced to the marketplace in 1981 for the the Nordic Mobile Telephone (NMT) network, Nokia’s phone was no

major technological breakthrough. Because of the newness of the technology, the phone was also prohibitively expensive. If somebody had a mobile telephone, he or she was differentiated from the others by virtue of that phone. In the first stage, it was top managers in Finland, Sweden and Norway that became the lead users.

For Kairamo, citizens across the Western World had a social need to conform to contemporary societal standards that was stronger than the desire to differentiate. Mobile telephony was not the most imminent point of convergence of technology and society. In the late 1980s, he orchestrated a string of acquisitions of television and computer factories for Nokia. He became a master at turning symbolic management into an instrument to institutionalizing the close association between Nokia's transformation from a forest industry firm growth into an information technology and communications firm and the transformation of Finnish industry. Nokia developed its corporate brand with an advertising campaign in Sweden in the expectation that there would soon be convergence between information and communication technologies, on one hand, and between these technologies and society, on the other hand.

While Kairamo's vision about the convergence would prove out to be a road to market success, the roadmap of how to get to that point in the future included major discrepancies in terms of distance to be covered and time to market. In particular, Nokia's enlargement into televisions proved a drastic failure. It put Nokia in double jeopardy. Nokia had planned to finance the increasing research and development costs in mobile phones with profits from televisions. Now it had both used all of its funds in foolhardy venture and lacked future cash flow. Overworking himself in this situation, Timo H.A. Koski died of a stroke in 1988. Depressed, Kari Kairamo committed suicide eight months later.

In part by design and in part by chance, Kairamo and Koski had grown Nokia ten-fold in size and transformed the business-to-business firm into a strong consumer brand in the Nordic countries. Yet, now, Nokia fought for its survival. Nokia began to sell off its business: first rubber, forest industries, and cable industries, then computers and television. Under leadership of a new CEO, Jorma Ollila, Nokia created a turnaround strategy in 1992. Brand management and industrial design of mobile phones remained the cornerstones of its new strategy: "focus, telecom, customer benefit". With financing from foreign investors, Nokia barely survived.

It was in 1991 that the Global System for Mobile telephones (GSM), the world's first digital network for cellular phones opened in Finland. The digital GSM platform was technologically superior to the analog NMT network. The new network also quickly gathered critical market mass in the Nordic countries in terms of, first, building a network, second, in terms of phones to the business sector and, third, in terms of phones to consumers. Consumption patterns of mobile phones were only in their early stages of emergence. In preparation for increasing returns its market penetration, Nokia's top management team put new emphasis on making Nokia a global brand (Vanjoki 2002).

3.3 Orchestration of design, development and supplier networks

Nokia had from the 1960s organized the development of its most radically new technologies and concepts on the basis of *ad hoc* teams. Technologies in mobile telephony had suffered from a lack of universal technological standards. There were still significant differences across countries. In some countries the end-customer was the king, whereas in other countries network operators were key intermediaries. In the U.S. textbook model of cross-subsidization, Nokia's began to treat mature technologies and markets as cash cows that funded operations in new and emerging ones. Nokia sought to "black-box" or standardize what was "old and everyday" to grow volume and develop economies of scale and growing profits. Nokia exploited old applications to move faster and more flexibly into exploration of new exciting technological possibilities and their applications. It made new product launches fit the "irreversibilities" of earlier design choices and technological progress.

The basic advantage of the new "cellular" or mobile digital phones was that software was easier to adapt to suit particular markets than fully hardware-based analogue technology. Nokia began to offer its various business customers and individual consumers a diversity of phones concepts to cater for old and new generations of phones, as well as for the various standards of different markets.

Nokia's now classic 2100 series GSM phones, launched in 1994, that took its inspiration from automobile design proved a phenomenal success. To cope with phenomenally growing demand, Nokia adopted state-of-the-art enterprise-wide resource planning and perfected its product platforms in the model of the automobile industry (Vanjoki 2002), managing to implement these practices virtually overnight

across its businesses and geographic locations (Koivukoski 2002, Kulkki & Kosonen 2002). Thanks to the superior monitoring made possible by the ERP system, in 1996, when there was a serious fire at a Philips's plant in the Netherlands, Nokia was faster than its customers to negotiate new delivery time tables for components that had been ordered, thus gaining a critical lead over Ericsson, its Swedish rival.

In 1998, Nokia organized its newest and most radical technologies in a totally new division called New Ventures. Digital home platforms based on IP technologies, WAP-related products, visually rich display devices, and new start-up businesses and technologies were not yet in the traditional scope of Nokia business. Nokia developed a roadmap with "time slots" for the introduction of new technologies and products. In 1999, pre-programmed for years in advance. With the European national auctions of licenses for licences for 3rd generation "universal mobile telephone system" (UMTS), Nokia lobbied the European Commission for a Pan European "information society", marking a return to its 1980s intent of building an information society for citizens.

3.4 Appropriating the fashion logic: from mass customization to "personalization"

In an interesting twist to its information-society intent, Nokia for a number of years in late 1990s openly proclaimed that there were critical differences in the capacities of consumers to appreciate new technology. During those years, it believed that when there was no pre-determined script for interaction, lead users were superior to other customers in understanding a complicated technology or way of use, persisting with the use of new applications despite initial difficulties, and providing a model for the others in terms of how to incorporate the new into everyday life. These consumers possessed high initial levels of capacity to "read" and interpret new technologies. They had intimate knowledge of a multitude of earlier models or scripts from their use of older technologies. They improvised with these old models to experiment with a new technology, mixing and matching to come up with their critical interpretations and to possess their unique versions of the application. Interaction stimulated the active consumers' open responses and grows their capacity to "read" and interpret new technologies to ever-higher levels. In this frame, the process of channeling the new into the everyday was a three-way relationship between Nokia, consumers that

actively shaped demand with their responses, and consumers who brought in the sales volume.

The mid-1990s was a time, when new subscribers swarmed into the second generation networks. In Finland, the penetration rate of mobile phones was 38 per cent in December 1997. Even the possession and display of a normal second generation digital phone began to approach the limits as a signal of differentiation from the masses. The prices of many phones were falling. It was precisely at this time that mobile phone became “fashion items” with consumers competing who had the most recent and the most expensive phone. Penetration climbed to 60 per cent by December 1998. At that time, with penetration exceeding 20 per cent, and accelerating just as in Finland a year before, mobile phones became fashionable in Italy, Portugal and the U.K. The 3rd generation “universal mobile phone system” was a technological vision still too distant to excite the average consumer.

Within this context, Nokia commissioned studies on how to turn its slightly feminine brand image, in contrast to its rivals, to its advantage (Rantala 1996). Nokia began to encourage its designers to propose new concepts that complied with the new orientation and to keep proposing them again and again until the concepts were dealt with adequately in one or the other of the producer’s divisions. The new Nokia way was now increasingly based on designers having tacitly internalized a norm of “interaction”, rather than artistry or direct supervision, direct control or directly measurable results (Nuovo, 2000).

Nokia began to employ designers complied with two contradictory demands: architectural austerity and frivolous fashion (Ainamo & Pantzar 2000). It put more and more emphasis on winning the hearts of consumers by “medializing” (Salovaara, 2000) its products. Nokia's design statement, including head designer Frank Nuovo's interviews and the producer’s creative ways of launching new products, made it a pioneer in electronic industry.

Even though the interest in its phones as fashion had taken Nokia by surprise, Nokia did not take long to appropriate the fashion logic. Exploiting the possibilities of the new technologies, Nokia launched a diverse range of mobile phones that has excited some consumers but challenged others. Nokia interacted with consumers to trigger market-pull for third generation phones. Nokia provided special *ad hoc* teams of

designers with resources to interact with innovative consumers and other customers and users worldwide. These teams used radical new design methods.

For example, Nokia launched its Nokia 8210 in 1999 during the Paris fashion week at the thirtieth anniversary celebration of Kenzo design: 'Nokia enters the Kenzo world of fashion...Nokia as the world's leading design house for mobile communication. (Nokia, 2000b). Rather than stopping analysis at the level of sales statistics, Nokia used "contextual design"; that is, its design teams placed Nokia's prototypes, products, consumers, and themselves in unique laboratory settings. There was friction-free user-producer interaction with end-users to collect, analyze, and interpret their experiences and stories. Like musicians in a jazz quartet, Nokia's management let special teams improvise within given limits. These limits included Nokia trying to fund these teams at least in part with direct sales revenue. This contact with the market mechanism promoted a culture that encouraged the teams to stay sensitive to consumer feedback.

In 2000, Nokia spun off a firm called Vertú, a venture specializing in fully customized mobile phones for the *nouveaux riches*. Frank Nuovo, Nokia's chief designer, remained Vertú's chief designer, but the venture was spun off, because Nokia was "dedicated to the mass market" (Nokia 2001). Nokia's marketing analysis and enterprise resource planning showed that it was time for "personalization" in terms of an "open-source" combination of Nokia's technology with streams of data and accessories controlled by the mass market autonomously of Nokia, rather than Nokia pushing a proprietary set of modular solutions to the market (Vanjoki 2001)

4. Differences and commonalities in the two cases

The cases of fashion in ladies' clothing and fashion in mobile clearly involve differences. The two cases took place about a hundred years apart. In the case of Worth, fashion was a case by design and individual fiat. In the case of Nokia, fashion was a case of chance and more than one than person. In the traditional fashion business model in the area of ladies' clothing, interacting, local traditions and legacies differentiated local firms from their global rivals (Djelic and Ainamo, 1999). In the business model of mobile telephony, users "roamed" from one region to another

which is why there are clear benefits to explicit technological platforms that work across different localities in a friction-free manner. Rather than fashion being part of the sociology of a local community as in the traditional model by Worth, fashion was a truly global phenomenon in the mobile phones of the late 1990s.

Yet, there are also commonalities. Both ladies' dresses during the Second Empire and mobile phones in the early 1990s were at first almost prohibitively expensive. At the same time, rules of the game both enabled and required the manufacturer to take many features of the product as 'givens'. In the end, the rules of the game institutionalized. In the case of ladies' clothing, this took the form of *Chambre Syndicale de la Haute Couture*; in mobile phones, the global agreement about 2nd generation GSM and 3rd generation UMTS network protocols. In both cases, wide agreement across the market began to determine the actions of also the producers, instead of only consumers. Production prices began to come down at a faster pace than did the prestige of donning the product.

In both cases, standardization destroyed the source of fashion; that is, the lack of the capacity of consumers to fully comprehend the new technologies. Worth developed followers and the firm is no longer active in ladies' clothing. In the case of Nokia, "followers" such as Motorola and Ericsson already pre-dated Nokia in the telephony market. Yet, the fact that technologies in third generation mobile phones continued to grow in terms of layers of the technological platform and number increased the need for codification and standardization – and maintained a need for fashion logic. Within this context, Nokia curbed the fashion logic of its designers but did not totally forbid it.

As the case of Charles Frederick Worth shows, while technology is not a deterministic instrument of change, it is an initiator that poses material for cultural and societal change by changing standards of instrumental reasons, symbolic reason, or both. Mobile phones did not suddenly become an essential part of the information society as terminal devices that extended the functions and other benefits of cellular telecommunications systems for citizens. At first, they were non-essential parts of the lives of lead customers. In neither the case of ladies' clothing or mobile phones, the new business model did not emerge full-blown, like Minerva out of the head of Jove. Instead, a different facet emerged in interaction with older models of the time.

While the 19th century was one of talented individual tinkerers, by the late 20th century, the interactions of technological and business models had become so complex that only systematic research and development typically would act as the handmaidens of invention and innovation. Whereas the Industrial Revolution had people move from the country-side into cities and metropolis, the Communications Revolution brought about television, computers and mobile telephony that also broke people away from their traditional community and made them part of the “global village” or “information society”. In fact, the very end of the 20th century popularized visions of sharing intellectual capital to an extent that there would be an end to scarcity of bandwidth used in information and telecommunications technologies. The dot.com boom, the American Iridium satellites, and the European race for the 3rd generation mobile telephony promised an end to the slowness of Internet access speed and to the scarcity of radio bandwidth in mobile telephony, offering a promised of unlimited communication. The old distinctions in communication among telephone (voice), television (image), computer (data), and text (fascimile) appeared to break down all at once.

While technological progress and Industrial Revolution created a new *bourgeoisie* with its particular fashion so did the Communications Revolution of the early 1990s create a new fashion and a “new class” with its particular version of social mobility and a desire to display its taste and gain approval of the social arbiters of the different circles to which it sought belong. In the society in which this new class was embedded, some products could be mass-distributed at low cost, while others would remain inherently scarce. Only a limited number of people could enjoy the latter kind of product. Within the increasingly mass-communicated world, social class became a set of shadows, consumerism a way of life.

5. Conclusions

Human beings have always communicated with one another so that some sort of “transmission capacity” has been scarce. Every communication infrastructure involves a social order and its own particular “gatekeepers”, the ones who determine

or shape the tastes of those within a like-minded circle, who are the opinion leaders to influence the acceptance of new styles, products, entertainment, and so on.

Within this view of sociology, the two cases point to the view that consumers or another social category may use new technologies in more than one way. When their ways of use diverge rather than converge they feed back into the process of change, nourishing fashion and an open-ended continuation of the process. In contrast, “correct use” is fixed when consumers’ ways of use converge into a single way of use.

In channelling new technologies to consumers, a producer’s sensitivity to differences in consumers’ capacity to comprehend new technologies matters. By grouping consumers according to groups with intra-group commonalities and inter-group differences in the capacity to comprehend and experience new technologies serves several purposes, a producer learns to organize its interaction and experiences with consumers.

We propose that within this kind of grouping of consumers according to their capacity and desire to pioneer the products of new technologies, also consumers learn to organize their interaction and experiences with producers. We propose that the capacity of producers and consumers to comprehend and experience new technologies links directly to both fashion and the emergence of the information society, both of which has been topics of much recent research. In times of divergence and competing technologies, fashion is a sociological mechanism similar to “design competition” as a technological mechanism. It is a temporary form of organization of experience. When a particular source of uncertainty that has produced a particular fashion among producers or consumers gives way to organized experience and a “dominant design”, the uncertainty and fashion become outdated and are replaced by something more progressive and flexible.