
CBS Case Competition 2005

Intelligent House Control®



**Copenhagen
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CASE COMPETITION



Lars Elmvang and Line Fjeldsted Nissen developed this case in association with associate professor Claus Nygaard, Copenhagen Business School. We want to thank Schneider Electric for its cooperation and help.

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Creating new markets for IHC

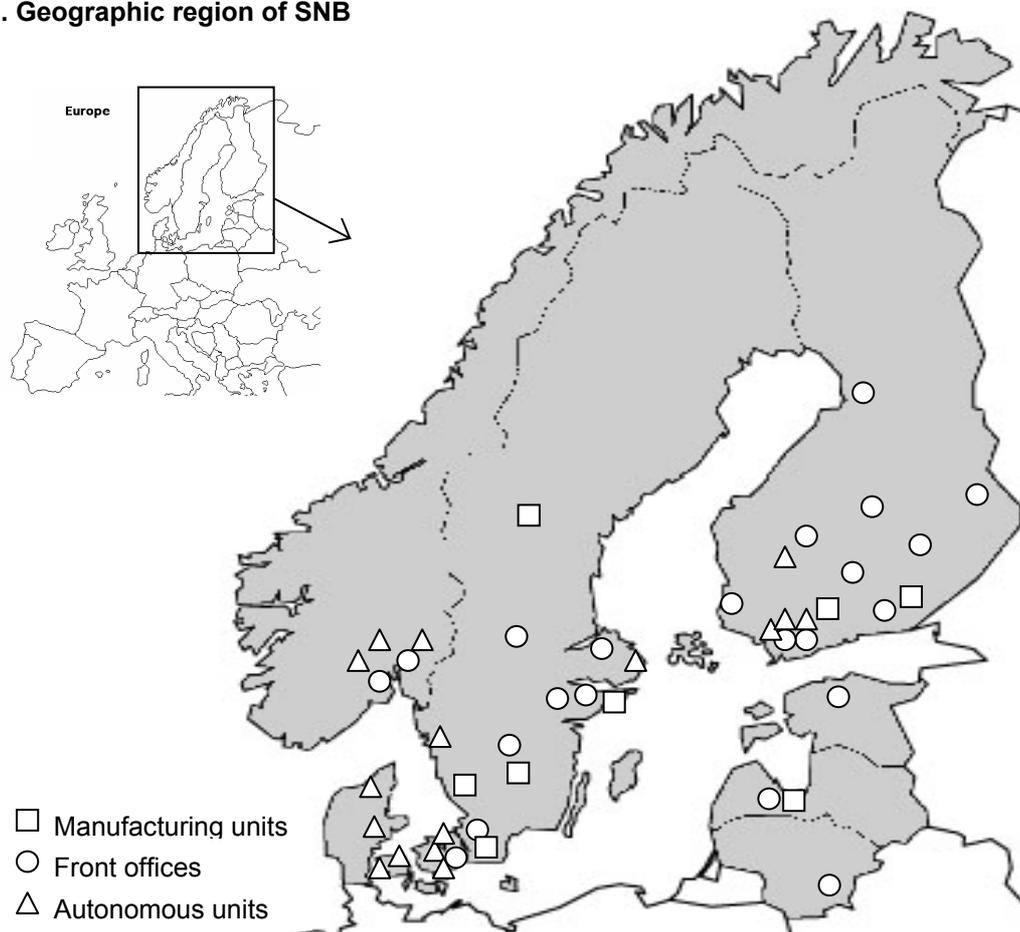
The business development department of Schneider Nordic Baltic zone (SNB) is currently contemplating how to launch its Intelligent House Control (IHC) in Finland, Norway, Sweden, Estonia, Latvia and Lithuania. IHC has shown its potential on the Danish market, and now is the time to move into new markets. However, as the knowledge of products such as the IHC is still limited in these six countries, the business development department knows that entry will be a challenging task. A carefully prepared entry strategy is thus necessary, and it has commissioned your consultancy to work it out. By having your consultancy assist its entry decision, the business development department hopes to get answers to questions such as whether to concentrate its efforts on all six markets or prepare a step-be-step strategy; whether it can apply the same strategy to all selected markets; which segment(s) to target and how to do this; whether it should seek to create demand for IHC or it should wait for such a demand to develop by itself; and finally, how much to invest and what earnings expectations will be.

The following section profiles Schneider Electric and SNB. The next section will explain the IHC system, and this will lead to a description of the current value chain and marketing strategy. Finally, Schneider Electric's competitors in SNB will be profiled and the individual SNB markets will be touched upon.

Schneider Electric and Schneider Nordic Baltic zone

With its complete line of products and services to meet the needs of four major markets: residential; commercial and industrial building; industry; and energy and infrastructure, Schneider Electric is a multinational power and control specialist. Its headquarters is located in Paris and the company is listed on the Paris stock exchange. Schneider Electric currently employs 44,100 people in Europe,

Figure 1. Geographic region of SNB

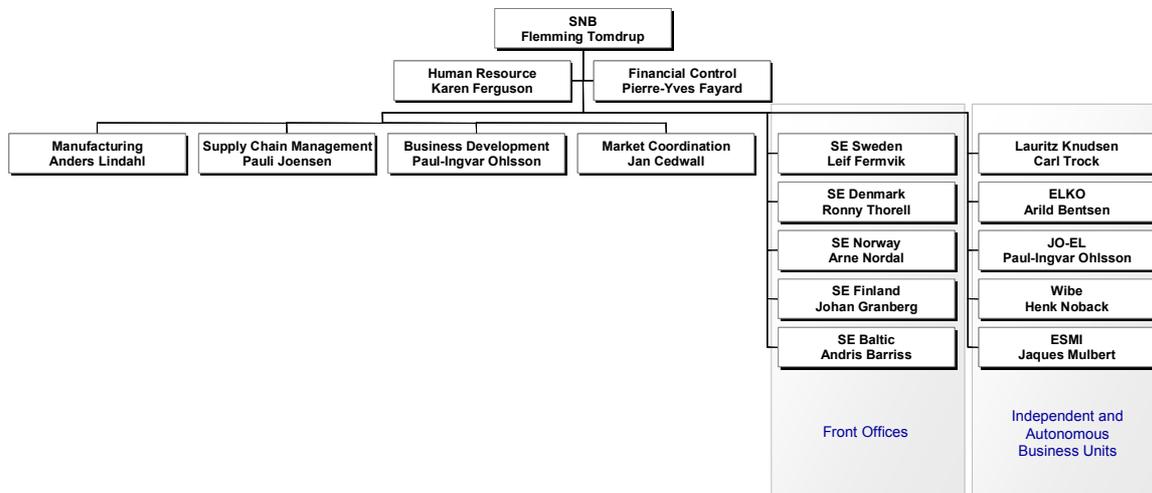


17,600 in North America, and 13,100 in other regions; it has around 7,400 sales outlets, 620 marketing facilities, and 150 manufacturing facilities in a total of 130 countries. In 2003 it had a turnover of EUR 8.8 billion and an operating income of EUR 1 billion, of which EUR 75.4 million was realised in the Nordic Baltic zone (see appendix 1 and 2 for recent financial data).

SNB was established in September 2003, and in revenues it is the third largest entity in Schneider Electric. However, as SNB is an organizational entity, and not a subsidiary company, it does not render an annual account. SNB covers Denmark, Finland, Norway, Sweden, Estonia, Latvia and Lithuania (see figure 1). It also has activities in Great Britain, Ireland and India. With its headquarters situated in Denmark, SNB has manufacturing units in 20 locations and front office activities (revenue generating sales forces) from 22 locations.

The main organisation of SNB includes a number of independent and autonomous business units (see figure 2). Independent units (ELKO and JO-EL) are completely separate organizations, and are not housed on Schneider Electric premises. These units never make any reference to Schneider Electric, and within some markets they even compete. Autonomous units (Lauritz Knudsen, Wibe and ESMI) are distinct commercial organizations, run independently of the rest of Schneider Electric. Their sales offices, sales forces, orders, invoices and delivery documents carry the name of an autonomous brand, but when useful these units can mention that they are “a company of Schneider Electric”. To the group of autonomous units belongs the formerly Danish owned company Lauritz Knudsen, which Schneider Electric acquired as a part of the Lexel Group in 1999 (see appendix 5 for the history of SNB). Lauritz Knudsen has developed IHC, and today this product is therefore part of the Schneider Electric product portfolio.

Figure 2. Main organization in SNB



Intelligent House Control – IHC

Traditional electrical installations have not evolved for decades; buildings have been equipped with dated and unchanging technology. IHC is an intelligent electrical installation created to replace traditional wiring in homes, small businesses and institutions. It can be tailored to the customers' specific needs, and then gradually enlarged and adjusted as these needs change. IHC consists of two systems, which can be bought either in combination or individually, IHC Net and IHC Control. The first provides flexible use of the communication network; the second provides control over electrical installations. The IHC system belongs to the home automation industry. Home automation systems can be defined as control systems which, when installed in homes, are capable of providing integrated control over two or more household functions, among them lighting, security, heating, ventilation, air conditioning, audio, and video.

IHC is principally intended for installation in new buildings or in conjunction with extensive remodelling, as the removal of existing wiring to install IHC is required. (For further information on IHC see brochure 1 on the cd-rom).

IHC Net

IHC Net is a flexible network solution for the home or small business/institution. With IHC Net it is possible to use one and the same wall socket for purposes as varied as computers, phones, TV and radio. The user can decide what each socket in each room is to be used for, and as the decision can be changed as often as desired; it gives a high degree of flexibility e.g. when shifting the furniture around. In addition, IHC Net has the advantage of combining all external signals – telephone, ISDN, ADSL, cable TV and antenna – into one. The system functions as an internal data network in the home by e.g. enabling several computers to access the Internet at the same time as well as sharing printers, scanners, hard disks, etc.

Technologically IHC Net works the same way as most data networks used in office buildings. The heart of the system is a central distribution board, which is connected with all wall sockets in the house by cables. The “active” components, i.e. antenna modules, telephone modules and data modules, are situated in the distribution board, and they control the signals in the network. As an example, the telephone signal is connected to the telephone module and the signal is then distributed to all rooms in the house.

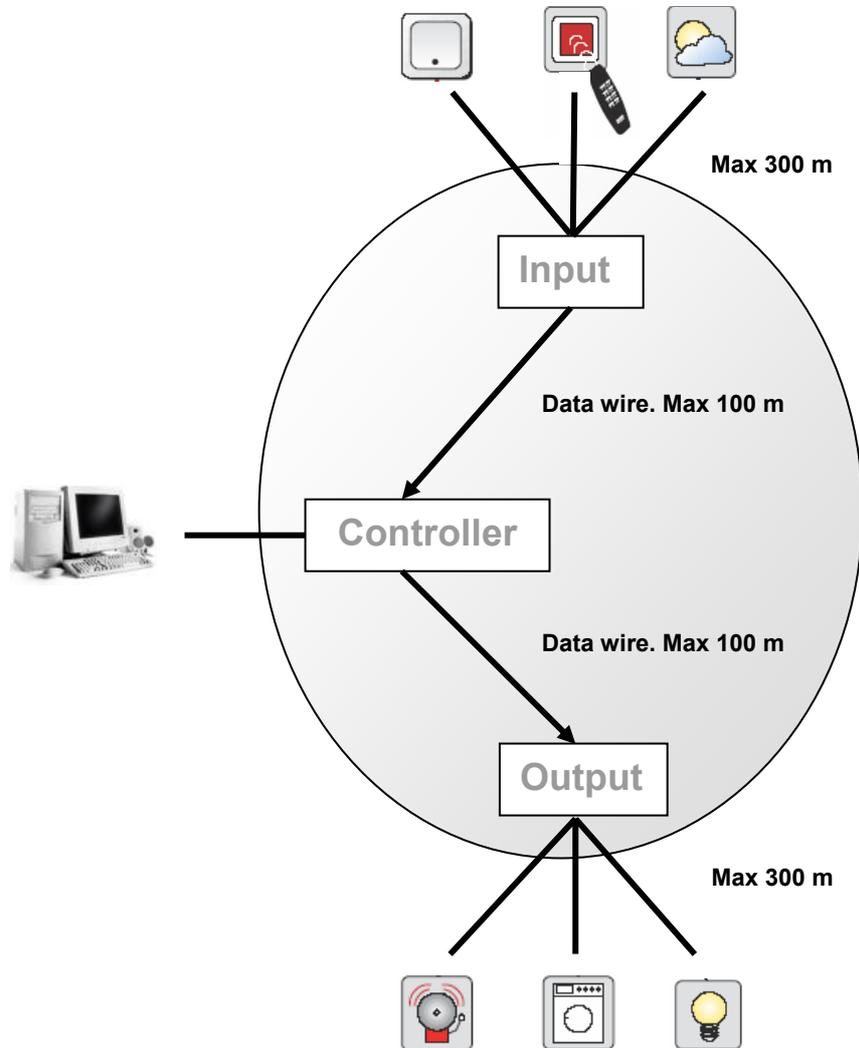
Signal distribution takes place through a number of “passive” components (patch modules), which are connected to the individual wall sockets in the house. It is thus the connection between the active components and the passive components that decides which signal is distributed to which wall socket. If a passive component is connected to the telephone module, the telephone signal will be distributed to the wall socket belonging to the passive component. If, on the other hand, the passive component is connected with the antenna, the radio/TV signal will be distributed to the wall socket. The connection between the active and the passive components is established using a “patch cable”. In order to change the connection one end of the patch cable is simply moved manually; e.g. from the telephone module to the antenna module. (For an illustration of IHC Net see the IHC Net movie on the cd-rom).

IHC Control

IHC Control is an electrical installation that provides comfort, convenience, safety and security in the home and in the workplace. All electronic functions in a building can be controlled with IHC Control. The system is programmable and provides almost unlimited possibilities to control lighting, heating, ventilation and electric appliances. Moreover IHC Control has several built-in features to protect both people and property. These include a safety and security concept, which comprises fire, gas, water and burglar alarms. IHC Control makes the infrastructure of the house intelligent and makes it possible to control, change, and adapt the electronic functions of the house in response to e.g. changes in living conditions or the seasons of the year.

IHC Control unites the control of domestic electric functions into one easily programmable unit: the IHC Controller. It functions in such a way that all signals from switches, buttons, remote controls, movement sensors, dusk relays and so on are sent to the controller via an input module, see figure 3. In the controller, the user has programmed what he/she wants to occur, when each signal is relayed; that is, which outputs are to be switched on or off; e.g. which lights are to be turned on or off, which dimmers, ventilators or electric appliances are to be started etc. The controller then sends a signal to the applicable output modules, which perform the programmed function. If e.g. a switch is connected to input number one and the controller is programmed so that the input controls outputs number three and eight, the switch will turn on and off whatever is connected to outputs number three and eight. Programming specifying which inputs shall control which outputs is done with the help of a computer and Windows-based software. The electrician performs the initial programming, and subsequent changes can be made by the end-user.

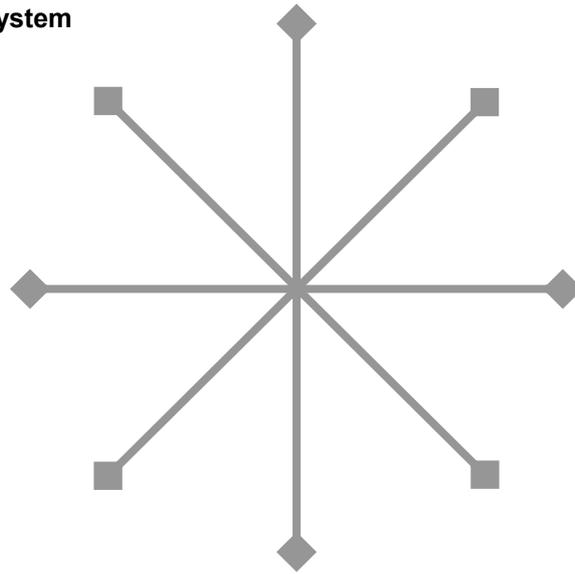
Figure 3. IHC Control



Each control unit can manage 128 inputs and 128 outputs. In case more functions are needed, the capacity can be multiplied by adding more control units. The inputs (switches, remote controls, light sensors etc.) and outputs (alarms, electric appliances, lights etc.) are not required to be a Schneider product, and there are virtually no limits to the sort of appliances that can be utilized as input or output modules. (For an illustration of IHC Control see the IHC Control movie on the cd-rom, and for further information see brochure 2 on the cd-rom).

Given the technology of IHC Control, it is primarily suited for small installations such as homes, business premises and isolated units in large office buildings, e.g. conference rooms. IHC Control is star-based, which means that each component is connected to the distribution board with separate wires. In large buildings the number of cables quickly becomes unmanageable and therefore star-based systems are basically usable in homes and small offices.

Figure 4. A star-based system



For larger buildings a BUS-based system is more appropriate, and Schneider Electric offers its BUS-based NetLON solution to this market segment (see appendix 6).

IHC value chain

Figure 5. Current value chain in Denmark

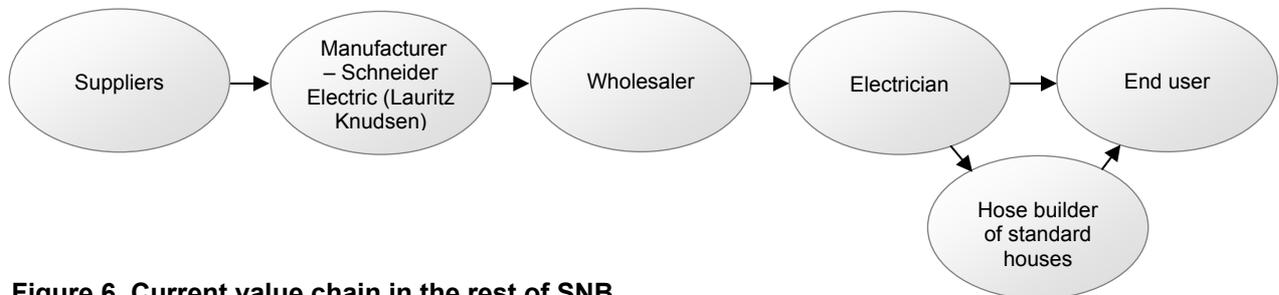
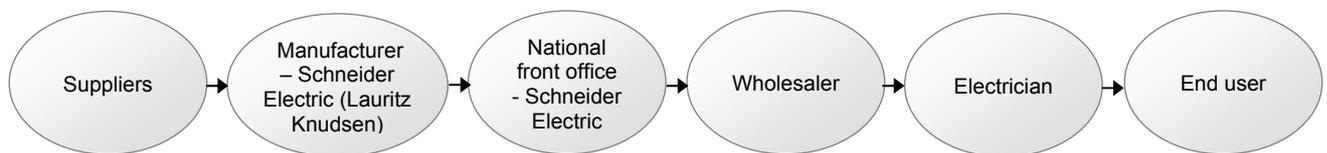


Figure 6. Current value chain in the rest of SNB



The current value chain of IHC varies between Denmark and the rest of SNB. As illustrated in figure 5 and 6 IHC is only sold directly from the manufacturer to wholesalers in Denmark, and likewise it is only in that particular market the house builder of standard houses is part of the value chain.

Suppliers and manufacturer

IHC Net and IHC Control are produced at the Danish production facilities of Lauritz Knudsen, one of Schneider Electric's autonomous units. Lauritz Knudsen purchases some components from sister companies in Schneider Electric, as synergies can be achieved by purchasing components from other, more efficient group members. Some components are bought from companies outside of the Schneider Electric group. These are standard components that do not add much value to the system, e.g. cables are purchased from the Danish cable manufacturer NKT Cables.

National front offices in SNB

The major difference between the Danish value chain and the one in the six other SNB countries is that IHC is not sold through a Schneider Electric front office in Denmark (Lauritz Knudsen sells IHC directly to the wholesalers). In Finland, Norway, Sweden, Estonia, Latvia and Lithuania this is the case, as IHC goes through a national front office before being sold to the wholesalers. When IHC is sold from Denmark to the national front office, Lauritz Knudsen has to allow the front office to cover their costs and earn a minimum profit of 6%.

Certain parts of the IHC system e.g. the switches, differ from country to country, so the national Schneider Electric subsidiaries produce these parts themselves. However, this is not a barrier for launching IHC on these markets, as the functioning of the system is unaffected - only the design is affected. Moreover, IHC has been designed to take into account different legal requirements as well as different standards for e.g. the power supply, and consequently, no adaptation of the system is necessary.

The wholesaler

The wholesalers are the only distributors of IHC to the electricians, as the strategy of Schneider Electric is to let all sales go through this part of the value chain. It is not considered an option to bypass wholesalers and sell IHC directly to the national electricians, as this would expose the wholesalers to direct competition, and thus jeopardize Schneider Electric's good relations to this link in the value chain.

Schneider Electric has not chosen any specific wholesalers to distribute IHC; instead it sells the product to all interested wholesalers. Table 1 shows the different wholesalers selling IHC in SNB, and as can be seen, Solar is the only wholesaler that covers all Scandinavian countries (Denmark, Finland, Norway and Sweden), whereas Electro Scandia has activities in three Scandinavian countries. In the Baltic countries, the wholesaler market is very fragmented.

Table 1. IHC wholesalers, listed after market share

Country/ market position	1.	2.	3.	4.
Denmark	Solar	Louis Poulsen,	A.O. Johansen	Otra
Finland	SLO	Electro Scandia	Onninen	Solar
Norway	Onninen	Electro Scandia	Solar	Nexans
Sweden	Electro Scandia	Ahlsell	Selga	Solar
The Baltic States	30-40 minor wholesalers			

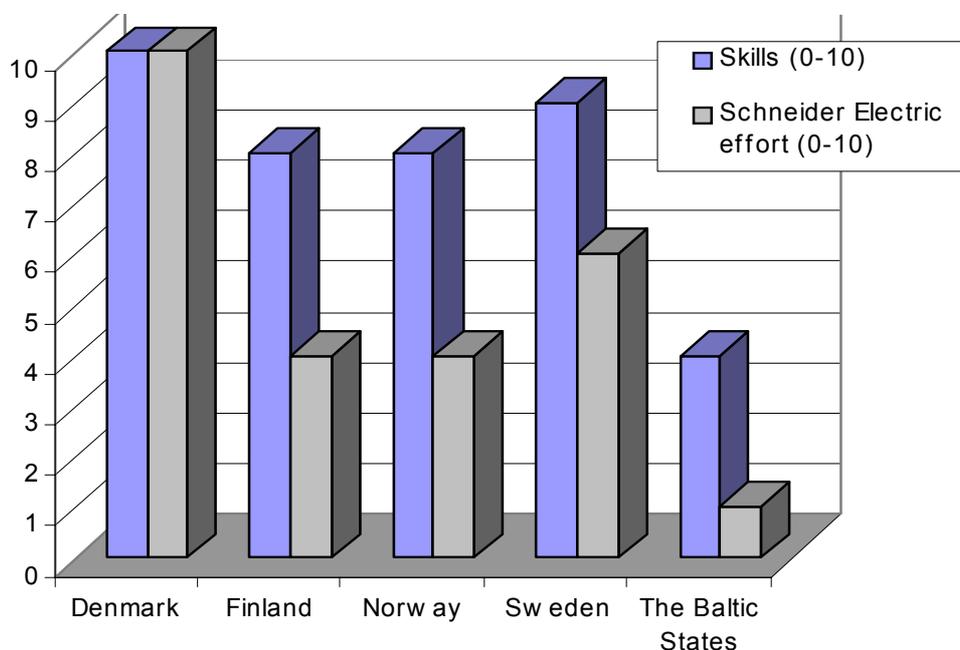
The electricians

The electricians purchase IHC components from the wholesalers, and their main function is to install the system. Thus, electricians are selling both a product and a service. All electricians are able to buy IHC through a wholesaler; however, it requires a certain level of competence to be able to install the system. For an electrician familiar with IT and who has been trained to work with it, it will take approximately 2 days to learn to install the system properly. However, if the electrician is not familiar with computers and has a lower level of knowledge, the time required will be much longer.

The average electrician's level of education and skills regarding home automation varies considerably in the seven SNB countries; figure 7 shows how Schneider Electric estimates the level of competency

within the different countries. In addition, the grey column shows approximately how much effort Schneider Electric has put into training the electricians in the respective countries.

Figure 7. Level of education and skills regarding home automation (0= lowest, 10= highest)



Danish electricians

In Denmark the autonomous unit Lauritz Knudsen has worked closely with electricians for several decades, in that Lauritz Knudsen has invited electricians to participate in courses in how to install and use new products. These courses have increased the already high skill level of Danish electricians. The cost of an IHC course is approximately EUR 70 per day per electrician; Schneider Electric pays this amount, as participation in such courses has traditionally been free for electricians.

Finnish, Norwegian and Swedish electricians

The skills of electricians are high in these three countries; however, the Swedish electricians are believed to marginally outperform the others. Schneider Electric has not put as much effort into training the electricians in these countries, as the company has not established courses teaching electricians how to install new products as has been the case in Denmark.

The Baltic electricians

There is a major difference between a Scandinavian electrician and a Baltic one. Some electricians in the Baltic States have not had any formal training, and their skills in using technological tools such as computers lag well behind the rest of SNB. As a consequence, in some cases foreign electricians have been used to install IHC systems. Schneider Electric has yet to start offering the electricians IHC courses in the Baltic States.

The house builder of standard houses

A house builder of standard houses initiates and manages the construction of a large number of almost identical houses, sometimes an entire residential neighbourhood. In Denmark Schneider Electric sells around 70% of its IHC systems to builders of standard houses. This means they are a very important part of the value chain. In the rest of SNB Schneider Electric still does not have any sales to builders of standard houses; in these countries all sales take place on a project base. That is when a Schneider Electric sales representative finds out about a contractor planning to build several houses, apartments, shops, office buildings etc., the sales force of Schneider Electric will address the builder in order to sell an IHC solution to these buildings.

The builder of standard houses either installs IHC Control as well as IHC Net in all houses in a project, or it chooses only to install IHC Control (alternatively IHC Net) and let IHC Net (alternatively IHC Control) be optional for the buyers. Even though the house builder might be a large company, it will always buy IHC through an electrician, who will install the system.

The end user

The last part of the sales channel is the end user who either purchases IHC through an electrician or through a house builder of standard houses. The end user is the person/company who will finally benefit from having IHC installed; e.g. a family living in house or apartment with IHC, a shopkeeper having a shop with IHC, a company having offices with IHC etc. In Finland, Norway, Sweden, Estonia, Latvia and Lithuania no clear trend exists as to who the typical end user is; in Denmark the typical end user is a family living in a newly built single-family house. For more information on the end user in Denmark, see next paragraph.

IHC marketing strategy

The business development department of SNB had long recognised that the design of the IHC marketing strategy was extremely important for success. However, despite this it had so far left the design of the marketing strategy to the individual country front offices. As a result, a comprehensive marketing strategy had not yet been developed for the Finnish, Norwegian, Swedish, Estonian, Latvian and Lithuanian markets; as mentioned IHC was only promoted on a project base in these markets. In Denmark, on the other hand, Schneider Electric's autonomous business unit Lauritz Knudsen, which sold the system in this market, was heavily engaged in marketing IHC. In fact Lauritz Knudsen had managed to create a market for intelligent solutions such as the IHC that have not previously existed.

The Danish marketing strategy

The IHC was introduced to the Danish market in 1992, and since then the marketing strategy has developed considerably.

The segments

IHC is primarily suited for constructions such as homes and small offices; however, as the system addresses a wide range of customer needs it allows Schneider Electric to choose from many different market segments. In Denmark Schneider Electric (Lauritz Knudsen) has chosen to market IHC to newly built single-family houses, and in the near future it will move on to also focusing its sales effort on apartments. Moreover, IHC is appropriate in connection with extensive renovations of residential buildings, and therefore this segment has also been targeted.

The product

When IHC was first introduced in Denmark, its many functions were not organized in any way to make the purchasing decision easier for the customer. The customer had to decide his or her attitude to each individual function of the IHC in order to decide which parts of the system to buy. As the functions and possible combinations were almost unlimited, the system appeared very complex to the customers, and consequently the purchasing decision was made unnecessarily difficult. In order to change this it was decided to focus on those functionalities that surveys had shown were most important to existing as well as potential Danish customers of IHC. These functionalities were bundled into a standard package for the home; IHC Home package, and six optional packages; multimedia network (IHC Net), automatic light (IHC Control), dimming (IHC Control), outside power (IHC Control), safety (IHC Control) and the remote control/visualisation package (IHC Control). If the safety package is chosen, it is possible to add three additional packages. See figure 8 and "IHC packages" on the CD-rom.

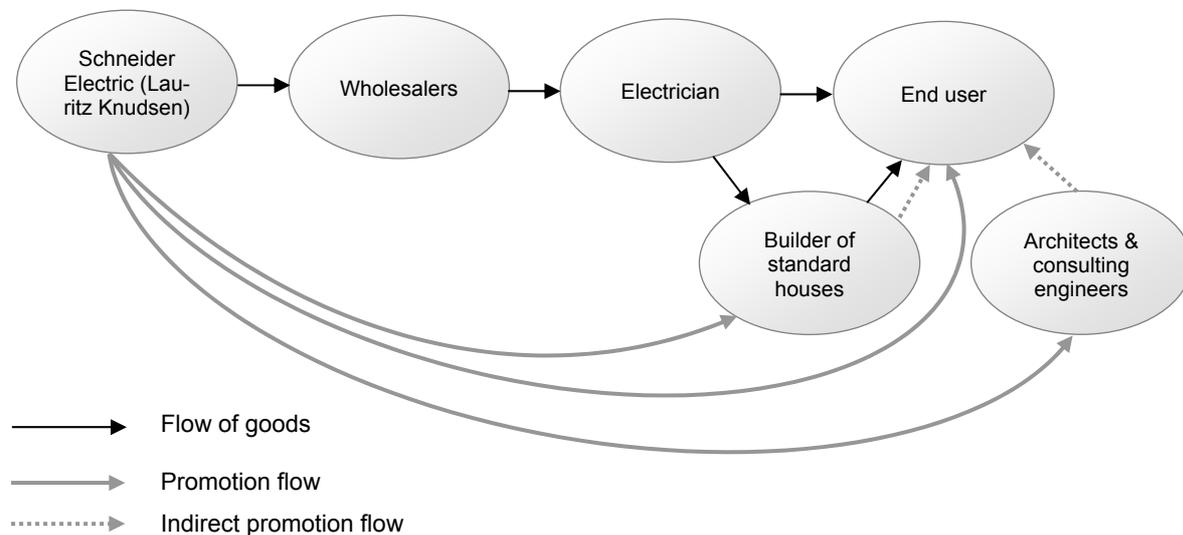
Figure 8. Standard and optional IHC packages in Denmark



These packages are appropriate for newly built single-family houses and apartments, as these are the segments Schneider Electric (Lauritz Knudsen) has decided to focus on in Denmark. So far the functions of IHC have not been bundled into packages in the rest of SNB. However, if Schneider Electric decides on a bundling strategy in the future, it will be possible to design the packages differently depending on the segment(s) chosen in the specific market. In theory, IHC is as intelligent as you wish it to be, thus the possibilities are almost unlimited.

Even though IHC Net and IHC Control represent two different technologies, it has been decided to market them as one integrated product in Denmark. The customer will not notice the existence of two different subsystems and for that reason the system is marketed using one brand: IHC. However, outside Denmark this is not the case; here the two technologies are marketed using two different brands. IHC Control is branded as IHC and IHC Net as Lexcom Home.

Figure 9. The Danish promotion flow



Promotion

Schneider Electric (Lauritz Knudsen) initially focused its IHC promotion effort on wholesalers and electricians, however, the company soon realised that the decision to buy IHC did not primarily lie with these actors, but with the builder of standard houses and end users. The company thus changed its strategy to market the system to builders of standard houses, end users as well as architects and consulting engineers as these have a great influence on the decision whether or not to buy IHC.

Schneider Electric (Lauritz Knudsen) not only wanted to reach the end user by making the buying decision easier for them and by printing different promotional material, but also by letting the end users experience the advantages of the system themselves. IHC was installed in a number of demo houses in order to convince potential customers of the virtues of the system. By promoting IHC directly towards the end users, the intention was moreover to connect the builders of standard houses and the end users. It was hoped that the latter would demand the installation of IHC in the houses. The existence of the different IHC packages meant that such a request could easily be complied with by the builder of standard houses, and for that reason it was hoped that the house builder would also promote IHC to the end user.

However, the creation of the standard and optional packages made it possible for the builder of standard houses and end users to put price pressure on electricians. In order to sustain the attractiveness of selling and installing the IHC systems for the electricians Schneider Electric (Lauritz Knudsen) offered the necessary installation software and courses for free.

Using this marketing strategy, Schneider Electric (Lauritz Knudsen) has managed to not only capture almost the entire Danish market (80%) but also to drive the demand for intelligent house solutions

from a basically non-existent market to a mature one. However, as marketing costs in Denmark correspond to approximately of 8% of IHC sales, this has demanded considerable resources. So far this has mostly benefited Schneider Electric (Lauritz Knudsen), but in the long run the company fears having paved the way for its foreign competitors.

IHC price

The price of an IHC system is decided by the electrician, which means that no catalogue price exists for the end user. However, in Scandinavia the end user will normally have to pay 25-30% more for a standard IHC home package than for an ordinary (non-intelligent) electric installation. To this, the price of the optional packages must be added. The electrician's average cost price and the end-user price including markup (charged by the electrician) are shown in appendix 7. These prices only apply in Scandinavia; however, the component price is approximately equal in Scandinavia and in the Baltic States. Schneider Electric has a contribution margin of around 30% for IHC.

Installation costs vary between Scandinavia and the Baltic States. To install an IHC system (IHC Net and IHC Control) in a house of 150 m² will take an electrician around 150 hours. In Scandinavia an average electrician charges approximately 40 EUR/hour. This adds up to installation costs of approximately EUR 6,000 excluding components. Due to lower wages the installation price is lower in the Baltic States, for what reason the price for IHC Control including components is around EUR 6,000.

The competition

The market for intelligent house solutions is young and still small in Finland, Norway, Sweden, Estonia, Latvia and Lithuania. Whereas about 25% of all newly built houses in Denmark have an intelligent house solution installed, the situation is markedly different in these markets. In Finland, Norway and Sweden approximately 10% and in Baltic States only approximately 1% of all newly built houses are built with an intelligent house solution. In these markets, the installation of intelligent house solutions in small offices and in connection with extensive renovations also still plays an insignificant role.

With a market share of approximately 80% Schneider Electric is currently market leader in Denmark; however it aims to obtain this position in the rest of SNB as well. This necessitates an increase of its current market share of 25% in Sweden, Norway and Finland and of 5-10% in the Baltic States. However, the business development department at Schneider Electric knows that its competitors will challenge its efforts to obtain this position.

Competitors to IHC Net

Currently, Schneider Electric has no direct competitors to IHC Net. To obtain the same flexibility as provided by IHC Net, the only alternative is a traditional installation of three separate networks, i.e. a data network, a communication (telephone) network and a television/radio network, and thus three times as many wall sockets. This places Schneider Electric in a very advantageous position. However, there are no barriers for competitors to develop a similar system (it is not possible to take out a patent for the technology), for what reason it can be expected that competitors will enter the market, if demand is created.

Competitors to IHC Control

Contrary to the market for flexible network solutions, the market for intelligent control systems is competitive. This is especially true for the Scandinavian markets as the demand for intelligent solutions are considerably higher in these countries than in the Baltic States. Most competing products are, however, not entirely comparable to IHC Control; i.e. around 80% of the functionalities of the different competing systems are identical, whereas 20% are specific to the individual systems.

Competitors to IHC Control can be divided into two segments: competitors offering intelligent solutions based on star-systems and competitors offering BUS-based systems. As mentioned, BUS-based systems are usually installed in large buildings, whereas star-based systems are normally to be preferred in small buildings such as homes and small offices.

Competitors selling star-based intelligent solutions

The only competitor within this segment is the Danish owned company Servodan. Servodan is agent for the German company Peha, which as a former Lauritz Knudsen agency has obtained the necessary knowledge to develop an almost exact copy of IHC Control, Comlux. As a consequence, Servodan and Schneider Electric market almost identical intelligent control solutions. Currently, Comlux is primarily sold in the Danish market, whereas many other Servodan products are sold internationally – primarily to the European market, which includes Finland, Norway and Sweden; it has no activities in the Baltic States.

Competitors selling BUS-based intelligent solutions

A main competitor to IHC Control is the Smart House concept developed by the Italian company Carlo Gavazzi. Carlo Gavazzi is present in industrial automation markets all over the world, and one of its core groups of products is its Dublin Fieldbus system for industrial applications and building automation (Smart House). In order to reach beyond the industry segment, Carlo Gavazzi has developed a BUS-based Smart House solution suitable for private homes. Within SNB this solution is still only on the Danish and Norwegian market, and ironically, in Norway the independent Schneider Electric unit ELKO has the agency.

With its headquarters in Finland, ENSTO competes with Schneider Electric for market share. Besides Finland, ENSTO has activities in Norway, Sweden, Estonia, Latvia and Lithuania, however, for the moment it still does not have a product as suitable for homes and small offices as Schneider Electric. ENSTO is currently trying to change this, by working on adapting its NetLON-like intelligent solution to the needs of smaller buildings.

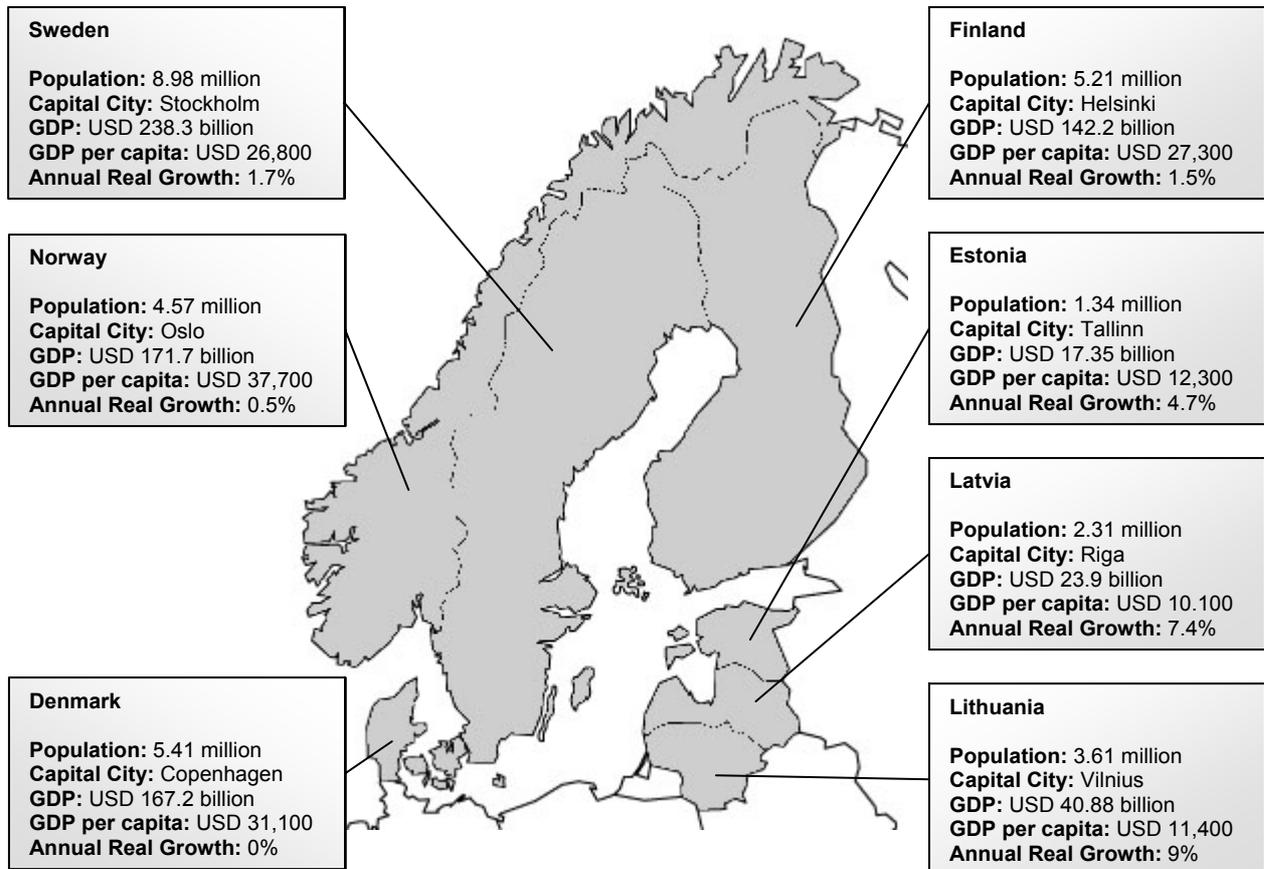
Finally, Schneider Electric is competing against a range of global players such as ABB, Siemens, and Hager. Until recently these companies have neglected the market segment of homes and small offices in favour of large industrial buildings. However, they are now trying to adapt their BUS-based systems to these potential customers, and if they succeed in doing so the competitive situation will change dramatically for the producers of star-based intelligent solutions such as Schneider Electric.

For that reason Schneider Electric news following the competitive situation closely, and in order to remain competitive, it is continually working on further developing IHC Net as well as IHC Control.

SNB markets

As already mentioned SNB consists of Denmark, Finland, Norway, Sweden, Estonia, Latvia and Lithuania; the geo-economic conditions of these countries are shown in figure 10.

Figure 10. Geo-economic conditions of the Nordic and Baltic countries, Source: CIA Factbook



Concerning the level of technology adoption in SNB, Scandinavia is regarded the most technologically advanced region in Europe, and because of this price competition within the home automation market is slightly lower in these countries compared to the rest of Europe. The Baltic States, on the other hand, rank as some of the least developed countries in Europe concerning technology, and therefore the conditions of companies operating within the home automation market in these countries is considerably different from the conditions in Scandinavia. For further information on the level of technology adoption see appendix 9, and for information on number of households, new dwellings completed and penetration rates for intelligent house solutions and IHC see appendix 10-13.

Creating new markets for IHC

These are the facts that SNB is currently facing. The business development department is now counting on your advice in order to design a comprehensive business strategy for the launch of the Intelligent House Control in SNB.

Appendices

Appendix 1: Financial statements - Schneider Electric

Consolidated Statement of Income (in millions of EUR except for earnings per share)

	2000	2001	2002	2003
Sales	9,695.50	9,828.20	9,060.50	8,780.30
Cost of sales	-5,612.20	-5,878.60	-5,305.20	-5,063.10
Research and development expenses	-474.4	-512.7	-472.7	-494
Selling, general and administrative expenses	-2,310.70	-2,320.60	-2,242.90	-2,215.80
Operating income	1,298.20	1,116.30	1,039.60	1,007.40
Financial expense, net	-16.2	-120.9	-157.8	-53.1
Income from continuing operations before tax	1,282.00	995.4	881.9	954.3
Exceptional items	-118.4	-1,563.90	-509.2	-163.9
Income tax	-369.9	-206.9	295	-127.3
Net income/(loss) of fully consolidated companies before amortization of goodwill	793.7	-775.4	667.7	663.1
Amortization of goodwill	-143.4	-169.3	-192.6	-190.7
Group's share of income/(loss) of equity investments	-3.6	-19.3	-28.2	-18.1
Net income/(loss) before minority interests	646.7	-964	446.9	454.3
Minority interests	-21.7	-22.4	-24.9	-21.5
Net income/(loss) (attributable to Schneider Electric SA)	625	-986.4	422	432.8
Earnings/(loss) per share (in euros)	4.18	-5.37	1.85	1.94
Diluted earnings/(loss) per share (in euros)	4.13	-5.37	1.84	1.94

Consolidated Balance Sheet (in millions of EUR, at December 31)

ASSETS	2000	2001	2002	2003
Goodwill, net	3,620.0	3,840.7	3,371.9	3,512.8
Other intangible assets	192.0	210.4	259.9	270.7
Property, plant and equipment - at cost	1,698.9	1,751.0	1,573.3	1,439.1
Investments accounted for by the equity method	58.0	124.4	76.2	60.5
Investments in companies at cost	342.7	4,181.8	380.9	369.6
Other investments	137.1	92.3	244.5	585.4
Total investments	537.8	4,398.5	701.6	1,015.5
Other long-term assets	-	212.8	274.4	315.6
Total non-current assets	6,048.7	10,413.4	6,181.1	6,553.7
Inventories and work in process	1,411.9	2,034.6	1,146.5	1,124.1
Trade accounts receivable	2,225.0	2,034.6	1,812.3	1,781.3
Other accounts receivable and prepaid expenses	946.4	729.4	697.1	627.0
Deferred taxes	248.3	225.5	718.5	747.2
Cash and cash equivalents	653.5	579.5	3,214.0	3,087.5
Total current assets	5,485.1	4,836.9	7,588.4	7,367.1
Total assets	11,533.8	15,250.3	13,769.5	13,920.8
LIABILITIES AND SHAREHOLDERS' EQUITY	2000	2001	2002	2003
Customer prepayments	86.7	55.5	39.8	56.2
Trade accounts payable	1,613.1	1,305.0	1,167.2	1,176.7
Accrued taxes and payroll costs	838.8	645.2	567.0	663.1
Differed tax liabilities	-	202.2	54.5	92.2
Other payables and accrued liabilities	807.6	879.3	725.0	641.0
Short-term debt	698.1	1,095.7	646.2	1,253.0
Total current liabilities	4,044.3	4,182.9	3,199.7	3,882.2
Provisions for pensions and similar liabilities	586.7	628.7	810.8	672.5
Provisions for contingencies and charges	218.0	202.6	174.3	156.7
Total provisions for contingencies and charges	804.7	831.3	985.1	829.2
Ordinary and convertible bonds	1,460.0	1,458.7	1,450.0	1,200.0
Perpetual bonds	175.7	179.7	148.3	113.6
Other long-term debt	262.2	137.9	125.5	121.7
Total long-term debt	1,897.9	1,776.30	1,723.80	1,435.3
Other long-term liabilities	175.7	-	-	40.5
Total long-term liabilities	2,073.60	1,776.30	1,723.80	1,475.80
Capital stock	1,246.30	1,922.10	1,926.50	1,854.70
Additional paid-in capital		5,467.00	4,895.20	4,290.80
Retained earnings	3,299.00	447.5	875.3	1,724.60
Cumulative translation adjustment	-	543.9	87.7	-211.4
Shareholders' equity (excluding minority interests)	4,545.30	8,380.50	7,784.70	7,658.70
Minority interests	65.9	79.3	76.2	74.9
Total liabilities and shareholders' equity	11,533.80	15,250.30	13,769.50	13,920.80

Appendix 2: SNB key figures

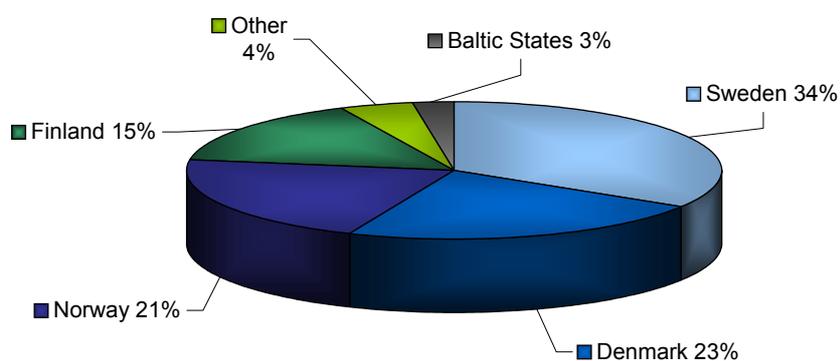
In millions of EUR

	2002	2003
Sales	694.1	655.9
Gross Margin	246.1 35.5%	245.6 37.4%
Support Function Cost	169.3 24.4%	164.3 25.0%
Operating Income (before OIE)	76.8	81.3
Other Income & - expenses	3.2	- 5.9
Operating Income	80.0 11.5%	75.4 11.5%

Note: IHC production costs are a part of Lauritz Knudsen's financial statement

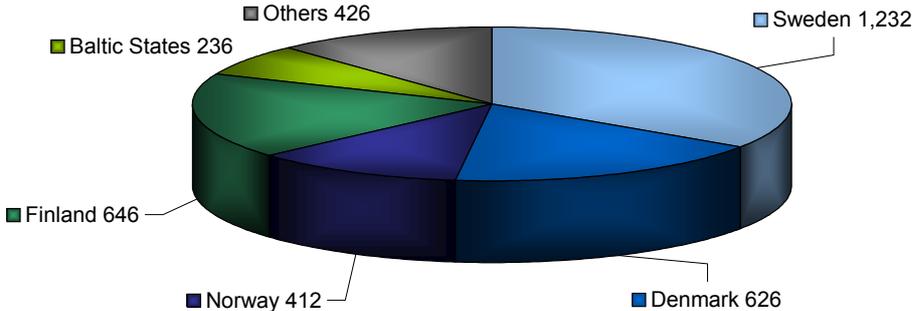
Appendix 3: SNB sales 2003

Sales 2003 - 655.9 M EUR

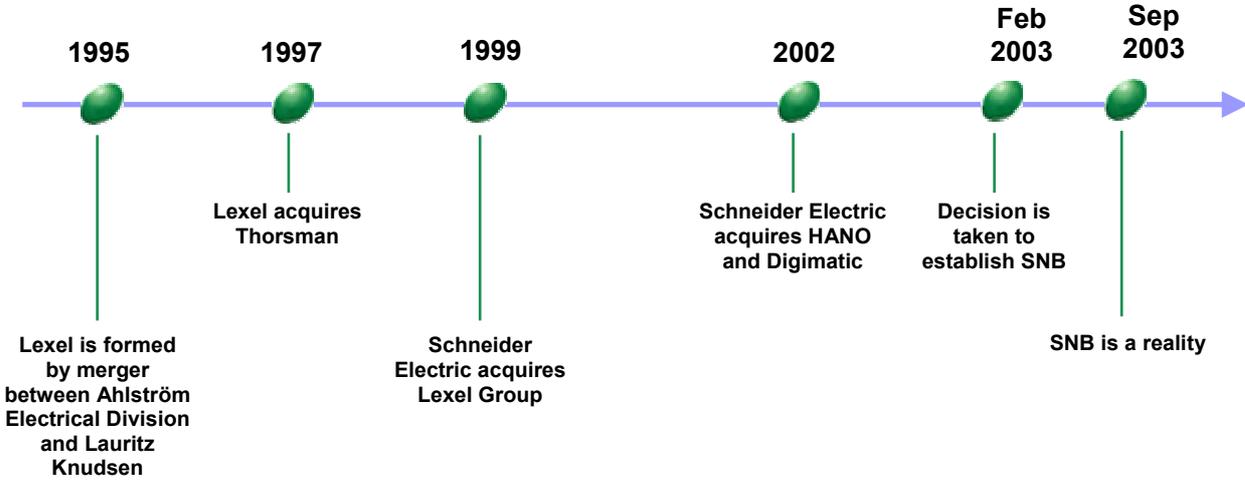


Appendix 4: SNB employees 2003

Employees 2003 - in total: 3,578



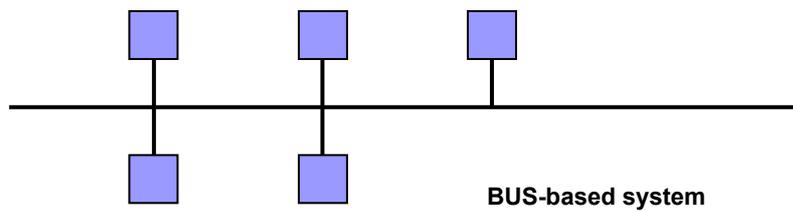
Appendix 5: History of SNB



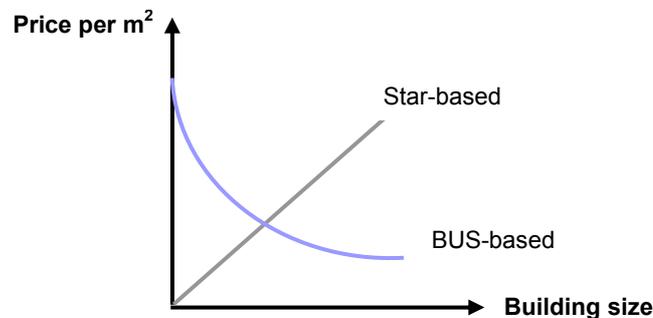
Appendix 6: BUS-based system

A BUS-based system is either based on an EIB or a LON protocol (as the name indicates, NetLON is based on the latter), the functioning is, however, the same.

The components in a BUS-based system are serially connected to a main wire that passes through the entire building. As there is only one main cable, the installation cost is much lower than for a star-based system, however, the BUS-based system requires more expensive components for each outlet. The intelligence in the BUS-based system is placed within each of the components whereas the intelligence in the star based system is placed centrally in the controller. This means that the BUS-system is most suitable for large buildings, since the savings from installation more than outweigh the extra component costs. Moreover, the software for BUS-based systems is more expensive compared to the star-based systems, and the entire BUS-system breaks down in case the main wire is cut.



It has been estimated that a BUS-based system currently is up to 50% more expensive than a star based system if installed in a standard single-family house. As it appears from the figure below the price difference depends on the size of the building.



Appendix 7: Average cost price and end-user price including wages in Scandinavia

System including wages (EUR)	Cost price	End-user price
Traditional installation (non-intelligent) (150m2 house)	5168.24	6718.71
<i>IHC prices in addition to the price of a traditional installation*</i>		
+ IHC Home package (150m2)	2258.56	2993.05
+ Small multimedia network 8 double outlets	2077.43	2821.86
+ Large multimedia network 16 double outlets	2901.68	3977.48
+ Automatic light	292.26	401.64
+ Dimming	328.01	410.92
+ Outside power	235.83	349.37
+ Safety: Home 150 m2	892.25	1174.43
+ Remote control/visualization	736.51	898.29
+ Water alarm	336.74	454.99
+ Gas alarm	418.84	544.62
+ Alarm modem	205.59	259.21

DKK/EUR 7.4419

*This table thus shows the additional cost of installing IHC instead of a traditional installation

Appendix 8: IHC fixed costs (% of IHC sales 2004 estimates)

R&D	6-8%
Marketing	8%
Other	4-6%
Total fixed costs	20%

Appendix 9: Technology adoption

2004 est. (% of population)	Denmark	Finland	Norway	Sweden	Estonia	Latvia	Lithuania
Stationary telephone	68.37%	52.27%	73.08%	73.21%	35.40%	28.35%	22.84%
Mobile phones	88.40%	86.62%	83.95%	88.46%	65.66%	52.88%	45.61%
Internet hosts	22.54%	23.40%	5.59%	10.52%	6.12%	2.24%	1.88%
Internet users (2003)	50.91%	50.82%	50.02%	57.03%	33.09%	18.90%	19.28%

Source: CIA Factbook

Appendix 10: Households by type of dwelling

'000 units

	1998	1999	2000	2001	2002	2003
Households by type of dwelling: Detached house						
Denmark	990.06	989.97	989.71	990.02	990.68	990.97
Finland	953.77	962.55	967.81	960.06	958.05	953.51
Norway	1145.18	1165.88	1187.33	1197.38	1208.68	1221.37
Sweden	1689.95	1693.24	1693.47	1699.54	1706.58	1712.35
Estonia	137.07	142.57	151.69	151.32	150.92	150.58
Latvia	149.9	151.8	156.25	156.03	155.78	155.77
Lithuania	279.7	286.62	293.31	296.26	297.48	299.72
Households by type of dwelling: Semi-detached and terraced house						
Denmark	303.81	305.45	306.2	308.12	309.36	310.5
Finland	299.08	319.28	319.66	324.83	331.91	338.1
Norway	374.56	371.45	369.82	366.83	364.14	361.77
Sweden	1018.38	1048.43	1058.06	1071.54	1085.74	1099.24
Estonia	24.84	26.49	29.74	29.96	30.17	30.39
Latvia	47.87	49.81	50.62	50.54	50.46	50.46
Lithuania	107.06	115.03	121.34	122.56	123.06	123.99
Households by type of dwelling: Apartment						
Denmark	1093.02	1109.46	1121.75	1129.65	1139.48	1148.97
Finland	1029.13	1019.31	1028.07	1026.65	1031.34	1033.3
Norway	381.61	385.3	389.29	397.33	405.85	414.9
Sweden	1001.48	1045.66	1072.27	1079.88	1088.16	1095.67
Estonia	383.7	388.55	393.89	391.37	388.76	386.35
Latvia	592.76	588.28	582.78	578.19	573.53	569.78
Lithuania	905.65	896.27	889.49	889.12	883.55	880.96
Households by type of dwelling: Other						
Denmark	20.12	18.33	16.46	16.87	16.58	16.25
Finland	73.01	63.86	66.46	70.45	74.88	79.14
Norway	N/A	N/A	N/A	N/A	N/A	N/A
Sweden	366.93	305.54	280.75	276.55	272.44	268.06
Estonia	4.97	6.1	6.76	7.56	8.35	9.13
Latvia	12.32	13.04	13.2	13.76	14.3	14.85
Lithuania	43.4	44.09	44.9	48.88	52.91	57.08

Sources:

National statistical offices/Euromonitor

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Appendix 11: New dwellings completed

'000 units

New dwellings completed	1998	1999	2000	2001	2002	2003
Denmark	17.1	16.7	16.3	16.02	15.8	16.01
Finland	10.3	10.8	11	10.72	10.16	9.97
Norway	20.66	20.58	20.5	20.28	19.39	18.93
Sweden	11.5	11.7	12.98	15.41	19.94	19.99
Estonia	0.88	0.79	0.8	0.87	0.97	1.08
Latvia	1.4	1.4	1.4	1.39	1.35	1.99
Lithuania	5.6	5.6	5.6	5.19	5.64	6.4

Sources:

National statistical offices/Euromonitor

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Appendix 12: Penetration rates for intelligent house solutions and IHC

	Denmark	Finland	Norway	Sweden	Estonia	Latvia	Lithuania
% of new dwellings with an intelligent solution such as IHC	25%	10%	10%	10%	1%	1%	1%
IHC market share (IHC Net & Control)	80%	25%	25%	25%	5-10%	5-10%	5-10%
IHC sales 2003* ('000 EUR) (IHC Net & Control)	3500	288	184	480	10	3.5	2
Number of houses built with IHC 2003* (IHC Net & Control)	2000	115	40	90	13	3	0

* Sales outside Denmark are primarily project based. This explains the major fluctuations in sales in this category.

Sale pr. house depends on whether it is a commercial/private building and which functions that has been installed. Sale of components to existing systems is included in IHC sales.

Appendix 13: Extensive renovations

Number of extensive renovations in 2003	
Denmark	30,000
Finland	28,800
Norway	25,000
Sweden	50,000
Estonia	N/A
Latvia	N/A
Lithuania	N/A

Source: Schneider Electric estimates