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Telecommunications Management and Cost Awareness in Finnish Firms Some Preliminary Findings

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Introduction

Merging of information and telecommunications technologies is one of the main trends within information systems field. Telecommunications components penetrate even into internal information systems because of modern systems development and application concepts such as local area networks or client-server architecture. As internal information systems arrive to a mature state within most organizations, new growth paths have to be found from external connections, where real added value and resulting competitive advantage can be achieved.

Conceptual achievements have also shown how firms through telecommunications are a part of a larger entity - concepts such as logical firm networks or value chains witness this. At the technical side, developments are hard to keep up with: mobile communication, ATM, optical cables, Internet boom, just to name a few.

This article reports some preliminary findings from a Finnish study aiming at raising telecommunications management and cost awareness. The first phase of the project is an analysis of the current state of the art, conducted through questionnaire surveys following in-depth interviews.

The starting point for the project is that research on competitive advantages and benefits of telecommunication -based systems is huge, and so is management awareness (of course, work here is too needed). So, this project concentrates on the other side of the cost-benefit calculations: how much should we pay for all the good things telecommunication applications can provide, and more importantly - through which management and other measures can we save on these costs.

The Finnish Telecommunications Environment

Operating telecommunication networks is in Finland a regulated business activity. Running voice networks necessitates a licence. In the case of running switched data communications one should just notify the Ministry of Transport and Communications. General telecommunication means offering telecommunications services to an unlimited user group. Council of State accords primarily the licence for general telecommunication. The Ministry of Transport and Communications can grant limited licenses.

Finland is ahead of most other countries in Europe in the liberation of telecommunication markets. Finland is also one of the leading countries in the development of telecommunication techniques and new inventions. This can be explained by the exceptional history of Finnish telecommunications. In 1855, only ten years after U.S.A., the first telegraph line was opened and the first telegram sent. The first telephone line was constructed in 1877 and the first telephone company was established in 1882. Licenses were granted solely to local enterprises that were outside of Russian control. A national decentralized telephone service was created, consisting of several telephone operators and supervised by the Finnish Senate. Thus the high number of telephone and telecommunications operators is very typical to Finnish telephony largely due to historical reasons. In 1933 the number of local operators was as high as 809, but has since gradually decreased to 46. At the moment the local teleoperators are joining forces under the name Finnet Group, in order to give a clearer counterweight for Telecom Finland.

For decades, the State had the monopoly for long-distance networks and catered too for local services in the sparsely populated areas in eastern and northern Finland, while the local companies had a monopoly for local networks in other parts of Finland. In 1927 the telegraph services and the State telephone services were administratively joined with the postal services. In 1990 they were changed into a state-owned business enterprise under the name of The Posts and Telecommunications of Finland, which became a state-owned stock-holding company - PT Finland Ltd - at the beginning of 1994. Its subsidiary - Telecom Finland Ltd - is at present a telecommunications enterprise that is active locally, nationally and internationally, and competes with the private telecommunications operators. (ibid)

At the moment there are 66 operators with a licence for public telecommunications in Finland. The amount of notified switched data communications operators is 35. Foreign operators such as Swedish Telia or France Telecom are opening up business in Finland, but their market share is still marginal. Within international data communication, international operators such as IBM Networks or GEIS are well situated in the market.

The best known Finnish telecommunication enterprise is Nokia, which has during the last years heavily concentrated its activities on the mobile phone and network solutions business. Behind Nokia's success we can see certain factors:

- Nokia was one major traditional industry company in Finland (active in forest industry, car tires and light bulbs, cables among others) and has been able to raise a lot of capital (in Finnish circumstances) from selling in pieces over time this basic old business

- Nokia has benefited a lot from the demanding and aware local teleoperators as customers, as well as from the capable competitor Ericsson in Sweden.

- the high educational level of Finnish work-force has formed a basis for successful action in a high knowledge industry.

It should be remembered that Nokia is just the spearhead of Finnish telecommunications industry, supported by many small and medium-sized enterprises as subcontractors.

Current Telecommunications Management and Cost Awareness

The data for this study was collected as a postal survey using questionnaires containing open-ended and choice questions. Question formulation took advantage of a pilot study of personal interviews in 34 large or medium-sized organizations.

A thousand addresses were ordered from the company register of the Finnish statistical centre, Statistics Finland using the following criteria:

1. 1/3 of the companies should be small (5-19 employees), 1/3 of the companies should be medium-sized (20-199 employees) and 1/3 of the companies should be large (200-). The smallest companies (1-4 employees) were left outside the survey.

2. within the industries, distribution should be even representing the normal weight of the industry in the Finnish economy. Because of the nature of the study, teleoperators were anyway being left out of the study group.

Altogether 218 questionnaires were returned (21,9 %) and 195 of them were usable so that the final answering rate was 19,6 %. The small sample size available does not allow us to draw any very strong conclusions. However, from the questionnaire-study, and especially from the interviews, some trends seem to be deductible.

Local area networks seem to be the area where most daily work, most investments and also most problems are concentrated on. Even though technical problems are often severe here, a positive factor is that activity is taking place on own installations, and no external negotiations are needed: the companies are relatively free to do what they want.

As it comes to applications, electronic mail is the parade application. Internal e-mail is already running in most cases, but many companies first plan external e-mail communication possibilities. In this Internet is coming to the picture. Many companies would like to begin there with just e-mail. Having proper WWW-pages is high in the priority list of many telecommunication managers, however the clear vision of the future application is missing. Internet is considered to be a viable solution because

- cost structure that is independent of actual traffic amount
- openness, whoever likes can acquire a connection
- international reach, through Internet nearly the whole world is reachable.

Cost management within telecommunications has leaped very much forward because of new digital telephone switches which allow cost tracking in a very detailed way. Leased lines are usually also easy to track to the individual users. Problem points are data communication connections, where the actual traffic caused by every single user is not cost-effectively trackable. Their costs are usually considered as infrastructure costs. At least the trend is that costs are usually charged from the actual users. However, user managers are not sensitive to telecommunication costs, but take them as more or less given.

A vital element in telecommunications cost management is that for every external service and product needed, one should have at least two alternative sources. The Finnish telecommunication managers seem to have well internalized the idea of the oligopoly ruling in Finnish telecommunication markets.

An astonishing observation is that telecommunication management is approaching some kind of mature state. All the interviewees speak of the same topics, bring out the same ideas and seem to be thinking in the same way: major differences are hard to extract. Either this should be interpreted as some kind of maturity in the management field, or more negatively as a state of non-innovativeness and stagnation.

A further observation - as it comes to the organizational issues - could be named Iron Curtain. Telecommunications and information resource managers are isolated from strategic management by a curtain of iron, which their superordinates formulate. The superordinates, often vice presidents of administration or finance, belong to the strategic management group, but for information resource managers the road is closed. The superordinates do not handle information technology or telecommunication issues, even though these issues formally belong to their management area.

This Iron Curtain describes why managers responsible for telecommunications were quite reluctant to comment on the strategic advantage maybe acquired because of proper telecommunication facilities. They seem not to handle the business issues on a daily basis, but concentrate on the cost-effective management of networks. Had we asked for business opinions, the results would have maybe been different, but now the interviews were run with telecommunication managers, and the questionnaires in companies were most obviously routed to their desks, instead of business management.

Most telecommunication managers seem to have adopted a politics of not making very much noise because of advanced telecommunication facilities, though all had some pioneering customers that put demand on their telecommunications facilities. Nearly all interviewees agreed that telecommunication issues - however - tend to take more and more of their time.

The Iron Curtain is eliminated through three processes: First, information and telecommunications resource managers are granted the actual but not formal status of a strategic manager, with considerable freedom to formulate strategies and allocate resources, without actual membership in the strategic management. Second, information or telecommunications resource managers are involved in the strategic management work on an ad hoc basis, and the need for part-taking may be so frequent that information resource managers actually visit nearly every meeting of the strategic management group. The third possible process is a direct link between information or telecommunications resource management and Chief Executive Officer, of unofficial character but often very strong. In the worst case, the Iron Curtain is broken only through written communication.

Even relatively large firms seem to operate with very minimal staff. In this situation, no separate telecommunications staff can be afforded, not to speak of a telecommunications manager. What can not be done self is outsourced to external firms or individual employees. Telecommunication issues are usually considered to be a sub-issue among other topics, such as LAN-management, and personal resources allocated to that function are scarce. The result is, that knowledge on telecommunication issues and technologies is very scarce in companies, being accumulated to just a few persons. Dependence on some internal key persons and vendor and teleoperator personnel support is big. In some instances, even basic functions of the companies are in a danger should some kind of malfunction exist at the same time as the key persons are away. Further, many telecommunication issues needing planning can no be tackled. For example, traditional postal services are not being planned very intensively, even though many new developments would make planning needed:

- new services making the border line between traditional post and electronic data transfer such as electronic letters available
- multiple postal service operators available
- multiple services with different quality (speed, reliability, tracking) and price structures available.

Infrastructure thinking - though the actual word is still missing from the Finnish telecommunication managers vocabulary - seems to be well rooted in the sample firms. For every project, there must be a payer in the business functions, unless we speak of infrastructure investments, that are financed by information resource management budgets or by company level management decisions. In the case of every project undertaken, a close look whether we speak of an infrastructure investment or not is taken.

Although security was not identified as a prime problem for telecommunications managers in the questionnaire study, in interviews telecommunications managers are most worried about the issue, and consider securing traffic as their primary responsibility. Although some small problems such as often harmless and easy-to-track viruses exist, however, telecommunications managers can not report of any major threats that would have tackled their information systems.

Many of the organizations interviewed felt that they are pioneers in telework. However, this does not mean daily work at home, but the companies are eager to cater for possibilities for employees to connect to company network at which ever time they want, and many employees take advantage of this possibility.

Conclusions

Regardless of all the development documented above, telecommunications remains a step-child in the management portfolios of most companies. Few companies have especial telecommunications strategies, and telecommunications architecture and management issues all too often leave behind open issues in most organizations.

In spite of marginal cost-awareness and attention from senior management at the moment, no indicator can be found that would tell us that the importance of telecommunication is to decline - on the contrary all

respondents indicated growth in both telecommunication demand as well as in telecommunication resources.

Our study will continue with an interview round through Finnish teleoperators. Through this data collection effort, we will be able to expand our understanding of the telecommunication market. Especially interesting would be to see whether there are any basic differences about the basic business premises of the telecommunication market between the customers and service providers.

Another direction for further studies is international comparison. Differences between Finnish and other telecommunication markets remain to be revealed. We are looking for international partners.

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