

SCANNET

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Thirty years ago one could hardly imagine the situation of today when people use personal computers, e-mail and the Internet as a matter of fact item. Neither PC's nor computer networks existed then. However, the need for information was there.

The experts in NORDFOSK's committee for Scientific Information and Documentation had noticed that the amount of information had increased rapidly. They had seen libraries use computers to handle the information. They had studied organisations in the USA that had started to use databases to collect information. To connect to the databases networks were made. The best known of these was the ARPA network. The American networks also allowed you to communicate in a way that today is called e-mail.

The Nordic countries, of course, needed to take corresponding actions. In Sweden fumbling efforts were made. Some databases were imported from the US. Soon a few databases were built in the Nordic countries.

Research was also done to develop an information retrieval system for free text search in big databases.

But more needed to be done. Nordic resources were small and they needed to be pooled together to achieve progress and success.

The Great Idea

A brain storm session in one of NORDFORSK's I&D committee meetings gave some interesting results:

- the databases being established in the Nordic countries need more potential users
- the access to the data bases also need to become more user friendly, eg a common access procedure
- for this a computer network is needed
- we cannot wait for the Nordic PTTs to offer a data communications network for this purpose

The obvious conclusion from the meeting was: "Let's build a simple Scandinavian computer network for information retrieval purposes! Let's make it the centre for Nordic Data Base Co-operation."

A group of people were appointed to investigate the possible realism in such a project. NORDFORSK's owner organisations were exposed to lobbying.

To our surprise and delight we could soon take a project suggestion into consideration.

We planned to build a network with one node in each one of the Nordic countries. We needed five so-called minicomputers with communications software to achieve that. Leased telephone lines should connect these nodes.

Such a thrilling, almost revolutionary project needed a good name. The name we invented was very clever indeed:

S C A N N E T

Scan for Scandinavia. Scan also for scanning information!

Theory meets practice

But could we afford such a project? Could we raise the money?

The obvious and only solution was to go to manufacturers of computers and offer them an "ever lasting good reputation and honour" if they made us a good offer! Only Norsk Data Elektronikk A/S was seriously interested. They accepted one million Swedish Crowns as payment. For the money we got five NORD 12 computers with all

necessary support equipment. The software which was included was recently delivered to the Norwegian Railways. The network software was based on the packet switching standards to come, X.25 and X.75. Norsk Data became a sponsor of the SCANNET project!

The project of course was given a strong steering committee.

The PTTs showed very little interest in offering leased lines for the connections. They advised us to wait for them to establish a network. After some negotiations they accepted a temporary solution:

SCANNET got permission to lease lines for its purpose. We had to promise to switch over to the PTT network immediately when it existed. A set back was the fact that a leased line to Iceland was too expensive for the project. That's why the five nodes were placed in Oslo, Gothenburg, Copenhagen, Stockholm and Helsinki.

The computers were ordered and delivered, the lines between them were set up. The network was tested and taken into use in 1976. It worked from the very start with five databases connected!

Hello from SCANNET

The SCANNET project was eager to get the network as useful as possible. We connected existing databases in the four countries and we supported new database initiatives. For the administration of the project a mail function within the network was used!

The number of databases rose slowly and steadily. So did the number of users.

Information about the progress of the project was spread through a newspaper called "SCANNET today". The information was, of course, also spread over the network itself.

The SCANNET steering committee tried to get acceptance from the PTTs to connect to other networks like the Esanet and Euronet, the French Cyclades/Cigale and the American Tymnet. Without any success. We came really close, however! In Copenhagen the node of the Euronet and the SCANNET stayed in adjoining rooms! What was needed was two meters of cable!

In 1980 the number of databases were close to 40 (depending how you define an information database). The new Nordic body, the Nordinfo, was there to accept the responsibility of the development of the databases and the user service connected with this matter.

Now the time had come to switch over to the network offered by the PTTs. The much longed-for Nordic Public Data Network (NPDN) did still not exist. The PTTs offered a network consisting of one node in Stockholm and one in Oslo. In Helsinki and Copenhagen there were multiplexors. We found it practical to preserve the NORD computers as front-end processors. Thus the log on procedure could remain the same as before: "hello from SCANNET".

Exit NORDFORSK

NORDFORSK's mission was to initiate projects but not to accept long term responsibilities. That is why NORDFORSK transformed SCANNET to a foundation in 1980. Nordinfo appointed the steering committee for the foundation.

With the communications in the hands of the PTTs and the database development, co-ordination and financing in the hands of Nordinfo, NORDFORSK could abandon SCANNET.

In NORDFORSK we were convinced that we had contributed with a unique pioneering effort in raising Nordic know-how. The evolution in the I&D field had taken a great step forward.

In 1983 the PTT took the NPDN into use, and the Nord computers were not needed anymore.

In 1985 the number of connected databases had risen to around 200!

NORDUnet

At the time when NORDFORSK abandoned SCANNET we had already initiated another project in a related field. In the different Nordic countries universities had established communications networks. In Sweden there was the SUNET (Swedish University Network), in Finland the FUNET, in Norway the NORNET and in Denmark there was the Centernet.

There was never a more natural field for Nordic co-operation than computer networking! The synergy effects were automatically there!

To begin with, from 1980, NORDFORSK arranged annual conferences concerning the theory of computer networking in a research and development environment.

As a result of these conferences a project, or rather a programme, arose in 1984. It was called the NORDUnet, short for Nordic University Data Network.

The aims were:

- to raise the level of computer communications in Nordic research and development to an international one
- to add an effective, rational and economic alternative to travels of Nordic co-operation

The tools to reach these goals were

- to establish a well working Nordic computer network based on the national networks
- to enable connection to international networks by using accepted communications standards
- to build a common infrastructure and competence
- to stimulate and catalyse Nordic R&D projects that may lead to new network services and competencies

At that time NORDFOSK's achievements were little by little taken over by the Nordic Council of Ministers. In 1985 this body took over the responsibility and the financing of the NORDUnet program.

Let us mention a few proof of the foresight of NORDFORSK and of the specialists involved in NORDUnet:

- We immediately started to study the TCP/IP protocol. The Internet of today is based on this protocol!
- Like the SCANNET this program was converted to a foundation
- It got a long life. It's still alive!
- A new contract is written in 2002 between NORDUnet and Telia International Carrier. The bandwidth today is a fantastic 2,5 Gbit/s
- The 20th NORDUnet Networking Conference is held in Copenhagen this year!
- Around 110 institutions are connected to NORDUnet

NORDUnet is today run as a company, the NORDUnet A/S.

Facts:

NORDFORSK- the Scandinavian Council for Applied Research- was a joint Nordic body for the promotion and co-ordination of inter-Nordic R&D activities in six major fields of technology.

The five technical research councils and the four academies of science and technology in the Nordic countries set up NORDFORSK in 1947. These councils and academies financed most of the projects initiated by NORDFORSK. The guiding principle was joint venture.

The idea of joint venture is that technical progress poses identical problems in two or more countries. Co-ordination of R&D will therefore yield higher efficiency and rational utilisation of available resources.

The fields covered by NORDFORSK were

- Technical information and documentation
- Materials technology
- Environmental technology
- Social technology
- Computer, control and component technology
- Inter-disciplinary research and co-ordination

NORDFORSKs responsibilities were taken over by the Nordic Council of Ministers in 1986.