

# **INTRODUCING INFORMATION TECHNOLOGY AT NORWEGIAN REGIONAL COLLEGES**

*Distiktshøgskoler og Ingeniørhøgskoler*

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**Abstract:** Information technology was introduced in the curricula at the Norwegian Regional Colleges in years 1965-1975. New Regional Colleges were established all over the country. In this period, we experienced the rapid development of minicomputers and the Norwegian company, Norse Data AS, played an important role in supplying suitable equipment for the educational market. This development was very well supported by the governmental policy in the fields of education and IT.

**Key words:** Information technology, education, regional colleges, Norsk Data AS

## **1. INTRODUCTION**

The 1960s were The Golden Years for the Norwegian universities. The period of reconstruction after the war was over and it was time to secure a bright future for the nation. Education and research became the focus. In addition to the expansion and modernization the existing universities, the University of Tromsø was established in 1968 under strong protests from the old institutions. The number of students grew rapidly.

There was a strong political push to develop a regional system for higher education. The government appointed a high-level committee in August 1965. The committee, called The Ottosen Committee after its chair Kristoffer Ottosen, was given the task to develop proposals for the structure and contents of the new system. Again, the existing institutions protested, this time including the new university in Tromsø. The second report from

the Ottosen committee came in June 1967. The recommendation was to build a set of regional colleges (distriktshøgskoler).

It was obvious that the fast growing field of data processing (DP) had to be a major discipline at the regional colleges. The Ottosen committee appointed a subcommittee in 1968 to come up with proposals for how this field should be included in the regional colleges. This committee, called "Barca komiteen" after its chair Eivind Barca. Prognoses, made by the committee, showed a rapid growing demand for personnel with a solid educational background in data processing disciplines. The committee delivered its report in 1970, the same year as the colleges in Kristiansand, Stavanger and Molde started as pilot institutions. All of them had a curriculum in data processing and related fields. In 1972-73 there were six regional colleges in operation. In the years to come another six colleges emerged.

The staff in the new institutions enjoyed a great freedom in developing their teaching and research activities. They used this freedom to find a profile that was appropriate for their own background and that also could take care of the important interaction with activities in the region. The regional colleges developed soon into very useful regional centers of competence in the fast growing and changing field of information technology. This was one of the main goals of the Ottosen Committee.

## **2. TECHNICAL COLLEGES**

Another regional system of colleges was the technical colleges. These institutions, some of them had been in operation for many years, were partly at the high school level and partly at the post-gymnasium level. In the late 1960s, the time was ripe for a revision of the curriculum in the technical colleges to incorporate the new field of information technology. Created in 1968, a committee looked into this. The Harloff committee, named after its chair Albert Harloff, delivered the report in 1971. The technical colleges needed computers and suitable software. The government provided the necessary funding. Some of the colleges had the privilege to have important and useful neighbours. Tinius Olsens Tekniske Skole and Kongsberg Våpenfabrikk had long traditions of good cooperation in several areas. In the 1960s, Bergen Tekniske Skole had moved close to the University of Bergen and could benefit of assistance from the university when the information technology entered the curriculum. Kåre Fløysand at the university played a very important role in this cooperation. Trondheim Tekniske Skole had a close and natural contact with the Norges Tekniske Høgskole (The Technical University of Norway). Arne Lyse at TTS was the

driving force to build up the new department for information technology at TTS.

Because of the Harloff committee, several technical colleges were in process of buying computers in the spring of 1972. Norsk Data saw the opportunity and wanted to dominate the educational market and ND delivered bids to several technical colleges. Einar Krokeide, director at Gjøvik Technical School, saw the advantages by coordinating the procurement process. Together with Knut Brautaset they took initiative to a meeting in Grimstad at Sørlandets Tekniske Skole to coordinate the purchasing of equipment for six institutions. Only two Norwegian companies, Kongsberg Våpenfabrik (KV) and ND, competed for this large contract.

KV had delivered a system, SM 4, to Tinius Olsens Skole and KV had a great reputation in the Norway. KV was a big company with long industrial traditions and a heavy political influence. ND had one trump card to meet this formidable opponent, working relevant software.

The computers, SM 4 and Nord 1, were almost identical since they had the same origin at the Defense Research Institute at Kjeller. KV made a small modification to make the two computers incompatible.

At ND Bo Lewendahl and Jørgen Håberg had worked day and night to finish the prototype system for Nord TSS and the Basic compiler. They had finished the work on the prototype system a few days before the critical meeting in Grimstad. The meeting, 20-21 April 1972, specified the software and hardware requirements, questions concerning the bids and for discussion of further cooperation between the institutions. ND and KV were each given a two-hour presentation of their bids, demonstrating their systems and responding to the requirements. Per Hovde represented KV and I was representing ND in this fight for this important contract. KV had very little relevant operating software to demonstrate. We could demonstrate the prototype of the NORD TSS with the new Basic compiler. Our system worked perfectly with a Teletype and a modem connection to the data centre at ND office in Oslo. Kåre Trøym assisted me in Grimstad. The next day we got the first order. It was from Gjøvik, signed by Krokeide. Very soon, ND had gained a dominating position in this important market.

Several technical colleges bought timesharing service from the company TeamCo AS in the first period. This solution proved useful for the introductory programming courses in Basic in the very first period. It was an expensive and not very reliable solution. The institutions had to have control over their own computing facilities.

### **3. REFLECTIONS**

The following is an illustrating story from the early days. It happened when Agder Regional College was to buy its first computer system. My friend, Tor Brattvåg, was the head of the department of data processing and I was marketing director at Norsk Data (ND), then a small and newly started company. ND had submitted a bid, based on Nord-1 and the timesharing system Nord TSS. We knew that Hewlett-Packard (HP) was our main opponent. For ND it was critical to keep HP out of the Norwegian market and it was important to win the regional college market for ND computers.

In the critical days before Agder should decide, I called Brattvåg. He informed me that the President of HP Europe should arrive in Kristiansand the next day. I responded directly "Just a moment; you can talk to the World President of Norsk Data, Mr. Lars Monrad-Krohn". Brattvåg laughed and told me that they would get a very favorable bid from HP. HP wanted to enter the Norwegian market with their computers. I then asked if HP would give the same offer to the other regional colleges. Brattvåg answered that this was a special offer to Agder and they were in favour of this offer. After this conversation, it was obvious that HP was trying to enter the market with a dumping offer, and we started a political action. Øivind Fjell, working in the marketing department at ND, was a schoolmate of the Minister of Industry. Øivind called him and asked for a meeting. One hour later Øivind and I met him in the Parliament and explained the situation. The minister took swift action and when we returned to ND, the message came from Agder informing us that HP was out and ND was in.

This was the first, but not the last, time that ND used political manoeuvring to get a contract. After a short period, ND dominated the market for computers in the regional colleges. Only Møre & Romsdal Regional College in Molde was lost to DEC. Since the Nord Time Sharing System included the Basic compiler, it was so decisive in winning the education market for ND in the early 1970s.

### **4. CONCLUSION**

I will include some comments about the development of the previously mentioned systems. Rolf Skår met Bo Lewendahl in the U.S. and Bo came to ND in 1971. Bo had worked for a company in California as a member of a team that developed a very advanced timesharing system in the mid 1960s. This was an excellent school for the young and very talented Bo. The company went broke after just one delivery, a system to the University of Hawaii. At ND Bo quickly implemented the editor QED, a copy of the

Californian system, on Nord 1 and embarked on the task of designing and implementing a timesharing system for Nord. After a few months, the first version of the system was in operation.

At the same time, Jørgen Haaberg worked on a Basic compiler for Nord 1. He was then a student at the University of Oslo and made his thesis work at ND under supervision of Monrad-Krohn. The prototype of his Basic compiler was ready in the spring 1972, about the same time as Bo's TSS. ND had a system that functioned well and was very well suited for educational purposes.