

## NKI AS

By Morten Flate Paulsen and Torstein Rekkedal, NKI Distance Education

### 1. Facts about the institution

Name of institution	NKI AS
URL of institution	<a href="http://www.nki.no">www.nki.no</a>
Country	Norway
Number of Employees	145
Revenue in 2005	NOK 193 M
Experience with e-learning since	1986
Business sector	Education
Target group/participants in e-learning	Prospective tutors in distance education, All full-time employees
Content	About 100 tutors have completed the course Tutor in distance education since 1996. About 30 employees have enrolled in one or more courses on the initiative of the management. About 15 employees have enrolled in one or more courses or study programmes because they wanted to learn more about the subject.
Form	Online distance education
People interviewed	Svein Qvist-Eriksen Gerd Børresen Bjørg Firing Truls Fagerberg Einar Gaarder

NKI AS comprises NKI Distance Education, The Norwegian School of Information Technology (NITH), and NKI Publishing House. In 2005, the NKI Group had 145 full-time employees. NKI's headquarters are situated in Bærum, a suburb of Oslo.

The Norwegian School of Information Technology, NITH, was originally founded in 1964 as NKI College of Engineering, but has since specialized in information technology. NITH is the only Norwegian university college that specializes in information technology. NITH is also the country's largest provider of bachelor's degrees in the field of Computer Engineering and Information Systems. Currently around 650 students are studying full time at NITH. NITH has three campuses, one in Oslo, and two in the western part of Norway, in Bergen and Stavanger.

NKI Publishing House develops learning material for upper secondary schools and colleges of higher education, with special emphasis on vocational subjects and learning materials for the traffic and transportation sectors.

NKI Distance Education is a non-profit organization aiming to support Norway's educational policy as a reputable complement to the public education system. The overall business idea is "to cover needs for competence development by offering courses and programs for adult learning adapted to the participants' previous knowledge and skills, place of residence and socio-economic conditions." As a non-governmental institution, NKI is largely dependent on student fees for its operation. As a fee-charging institution, NKI has been devoted to the beliefs and values of the service industry,

considering students as customers who have the right to demand high-quality services. State accreditation has also required the institution to develop and update a formal system for quality assurance.

NKI is recognized by the Ministry of Education and receives government grants covering less than 10% of operating costs. NKI Distance Education employs some 65 full-time and 400 part-time employees. The number of active students has typically been around 12,000, but varies from month to month as shown in Figure 1. Enrollments in online courses have increased substantially since 1996. In 2006 more than 50% of the active distance students are taking their courses online. During the last two decades NKI Distance Education has developed from a correspondence school to an institution applying the Internet for delivery of a large number of courses.

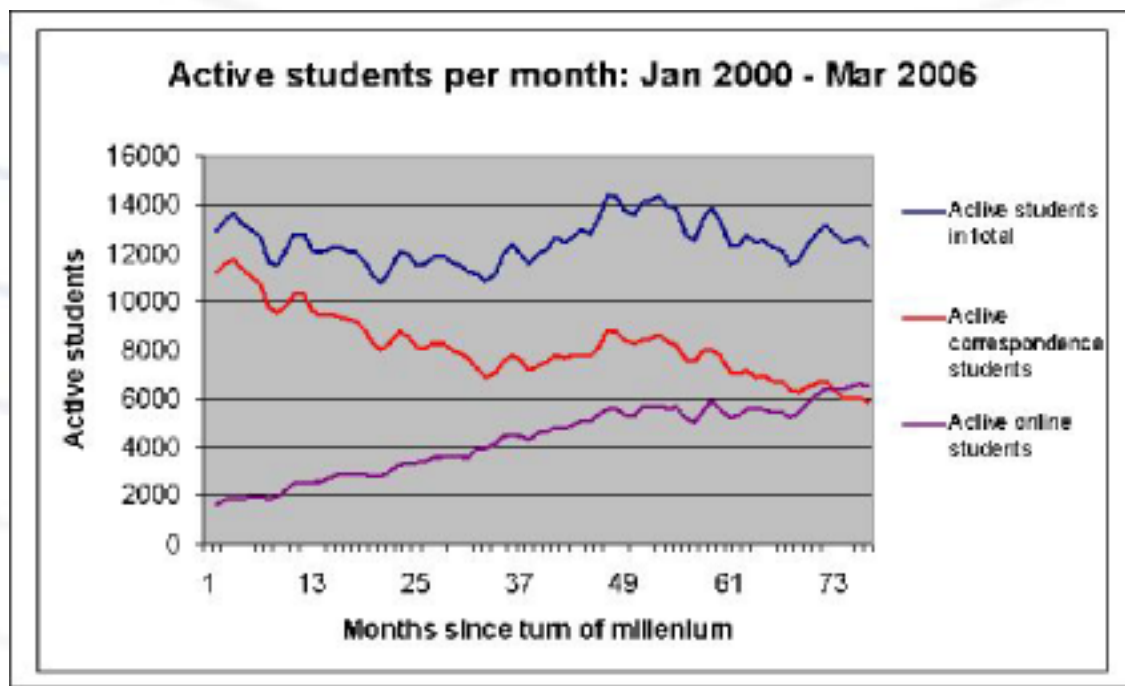


Figure 1. Monthly variation in active NKI students

In 2005, the revenue of NKI Distance Education was about € 14 million, 52% of which came from online education. Still, there is a substantial demand for traditional distance education courses in the market.

NKI was one of the very first European online colleges, and it has offered online, distance education every day since 1987. Few, if any, online colleges in the world have been in longer continuous operation.

The increase in online enrollments from 1997 to 2006 is shown in Figure 2. During the summer of 2006 the accumulated number of online course enrollments reached 60,000, with the NKI Internet College having about 150 tutors and 7,000 registered students. Most of the students live in Norway, and almost all courses are taught in Norwegian. But there are students registered with addresses in about 35 countries around the world. Women constitute about 70% of the online students.

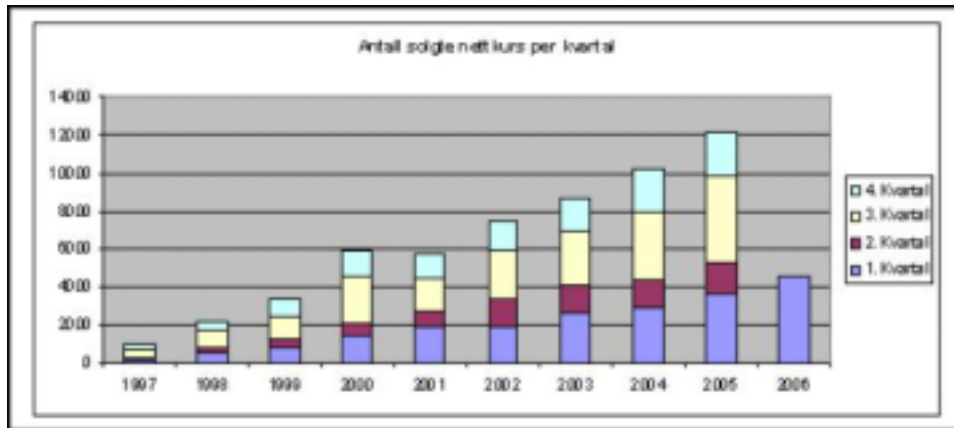


Figure 2. Number of course enrollments per year in NKI online courses since 1997

## NKI Policy for competence development

*Competence* is defined as the totality of *knowledge, skills, abilities and attitudes*, which are *required to carry out the functions and assignments in accordance with defined standards and objectives*. The *competence policy* of NKI concerns the *aims, plans, directions and actions to manage and develop competence in accordance with the goals of the institution*.

Competence and competence-development is emphasized as a core factor in line with strategic personnel management, i.e. personnel management integrated with strategy development, systematic planning of needs of personnel, supply and reduction, monitoring and improving internal culture and planned competence development.

NKI views *human capital* as the most important input factor to achieving the institution's aims in the basic areas: *profile, quality, development and cost-benefit*.

NKI accepts that the learning of relevant work competence is most effective in connection with work. Day-to-day management includes competence development, and learning takes place through meetings, internal seminars, coaching/guidance, teamwork, job rotation, external presentations, project work, time for personal reading and PC training.

The institution shall also stimulate participation in formal training courses of shorter or longer duration. Employees who participate in external training programmes shall as far as possible bring new learning back to the workplace using presentations for colleagues.

Managers on all levels are responsible for planning and implementing job training and competence-development of their staff. External courses and training programmes should be used when suitable. When training activities are decided upon, it shall always be first considered whether or not there are courses or programmes within NKI's own portfolio that are suitable for the purpose.

Specifically for NKI Distance Education: As most employees in some way are involved in course development, administration or support, e-learning courses also supply the experience of being a customer and thus experiencing possible positive and negative aspects of the course as a background for quality development.

## 2. How the institution used e-learning

### 2.1. The courses

Since the start in 1986, NKI has registered about 60,000 enrollments in online courses. As NKI has online learning as one of its core businesses, the management naturally considers this form of learning as an effective and efficient means for competence-development of its staff. During this 20-year period, NKI employees have been allowed to enroll in any of the online courses offered by NKI free of charge. Over the years the number of course enrollments made by NKI employees is estimated at about 300.

NKI Distance Education's Strategic Plan from 2005 to 2007 states that all employees should be encouraged to enroll in NKI's e-learning courses. The goal is both competence-development in the chosen subject area, but also competence-development in online learning through experience as students.

### 2.2. Number of employees involved

All full-time employees may enroll in any of the courses provided by NKI Distance Education. NKI covers all fees related to the courses.

The employees have primarily enrolled in three categories of e-learning courses:

1. Tutor in Distance education is a course that is obligatory for all prospective NKI tutors. It is estimated that about 100 NKI tutors have completed this course since it was first offered online in 1996.
2. Competence-development of staff at the initiative of NKI management by actively motivating employees to take courses that involves training in the chosen subject area related to the individual employee's need and at the same time enhances the employee's awareness and knowledge about NKI's online services and pedagogy. Examples of these initiatives are three courses on *Wine knowledge* (about 15 employees), *PowerPoint* (about 10 employees), *Communication* (about 10 employees), and *Mobile learning* (about 15 employees).
3. Courses taken at the initiative of the individual employees to learn more about a chosen topic or academic area. Available statistics indicate that in total about 15 full-time employees have enrolled in about 50 courses with a broad spectrum of different subject areas.

### 2.3. E-learning platform and technology issues

NKI has a number of self-developed and commercial applications that together make up a comprehensive system for student support services. Integration of these applications is extremely important for the total functionality, efficiency, and quality of student support services.

The backbone of an efficient large-scale distance teaching institution is the computer system for administering students. STAS, NKI's self-developed student management system has been developed over many years to satisfy the needs of a large-scale institution, including registration of assignments, monitoring student progress, distributing new learning materials, and paying tutors.

STAS was initially developed for correspondence courses and bar code registration of assignments. Initially it was not suited to serving online students, as there was no connection between the Internet systems and the administrative systems. It was

necessary to develop STAS further to handle online students efficiently. The integrated development of STAS and the LMS system for online learning, SESAM (Scalable Educational System for Administration and Maintenance), is continuously ongoing.

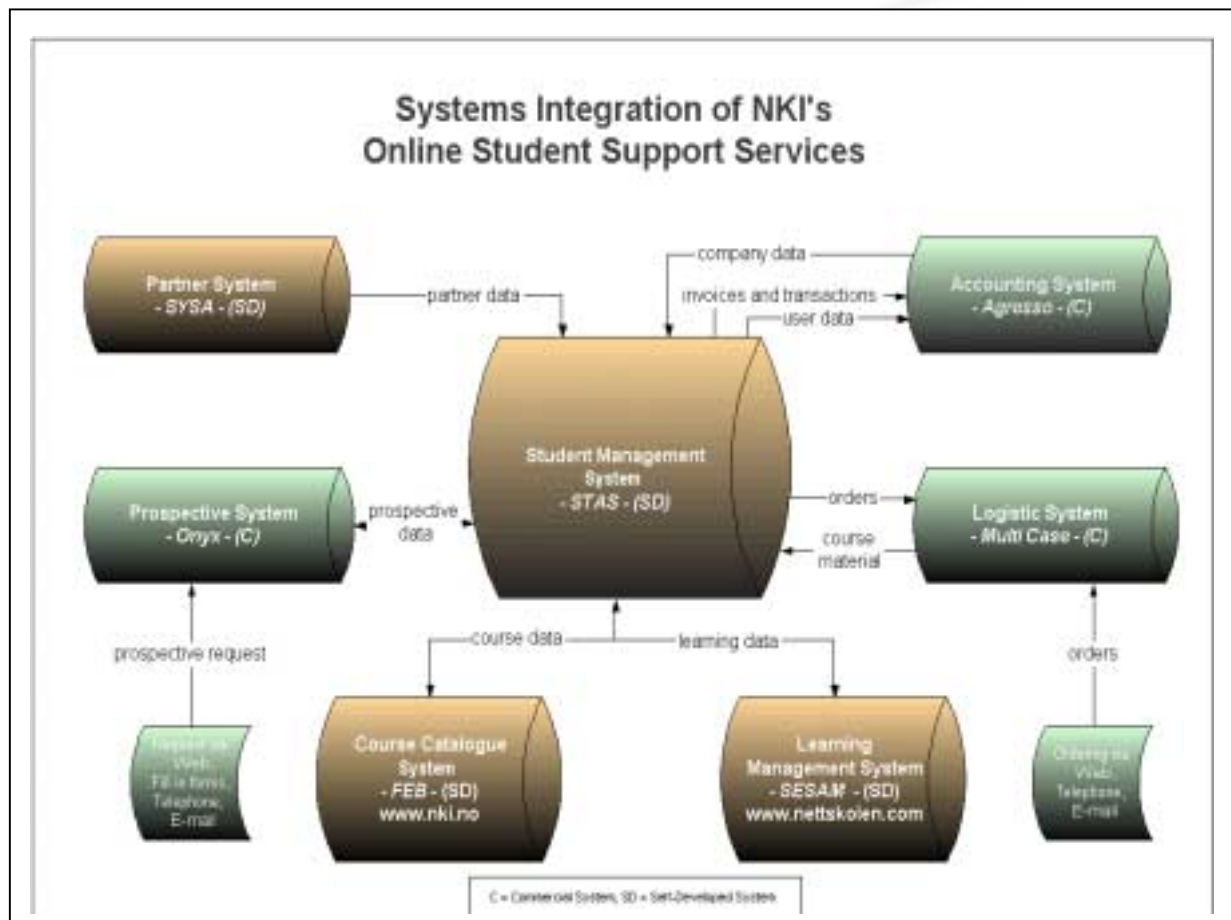


Figure 3. NKI's integrated systems for online student support

One of the greatest advantages with STAS is that it was developed to handle students with individual starting-times and progression. It also provides excellent tools for generating various reports and statistics. STAS is NKI's master system and it is integrated with all other essential systems such as accounting, logistic, prospective and partner systems.

SESAM is self-developed to support the services that are important to NKI. As such, it is specifically well adapted to NKI's needs. SESAM is developed for large-scale online education and it applies state-of-the-art Web technologies including Java, XML, XSL, Oracle 9i databases and Apache Web servers. SESAM is excellent for handling continuous student enrollment 365 days a year. The major additional advantages it has, compared to commercial LMS systems, is its focus on cost-effectiveness and the necessary integration of all the critical student support systems. SESAM provides a number of services for students. Among them are:

- Access control
- Personalization of user-interfaces and services
- Access to course content and assignments

- Discussion forums
- Class lists
- Student presentations
- Information on exams and grades
- Course evaluation

The teachers have access to additional services such as:

- Online registration of grades
- Tutor support services
- Wage and payment data

Agresso ([www.agresso.com](http://www.agresso.com)) is a commercial accounting system that handles tuition fees, invoices, wages, etc. When a course enrolment is registered in STAS, the corresponding student account is debited in Agresso. When tutors register grades in SESAM, they are transferred to STAS and the remuneration is added to their accounts in Agresso.

SYSA is a system for presentation of information about local business partners that organize face-to-face classes as support for NKI's distance education courses, providing contact information and information about classes being offered.

Onyx and Multi-Case are commercial systems. Onyx handles marketing activities and requests from prospective students, while Multi-Case is a commercial logistics system for administration and shipment of textbooks and miscellaneous learning materials. When course enrollments are registered in STAS, Multi-Case automatically initiates shipment of the corresponding course materials.

FEB is a self-developed business portal. It is the main portal for the NKI online course catalogue ([www.nki.no](http://www.nki.no)). It presents all courses and programmes offered by NKI. This includes information on course content, necessary prerequisites, credits, exams, tuition fees, etc. Prospective students may register or apply for courses directly via FEB. The introduction of FEB has had a very positive effect on the increase of unique users and prospective students. The number of unique users that visited [www.nki.no](http://www.nki.no) increased from 37,372 in January 2002 to 60,166 in January 2003. Similarly, the number of registered prospective students increased from 5,305 in January 2002 to 6,531 in January 2003.

In addition to course information, FEB also includes a comprehensive database of articles with news, frequently asked questions, and more general information on distance and online education. A number of research articles and reports are also available in FEB. It also provides a search engine covering the course catalog, [www.nki.no](http://www.nki.no) and [www.nettskolen.com](http://www.nettskolen.com). FEB is built on current Web technologies including Java, XML, XSL, Oracle 9i database and Apache Web server.

## 2.4. Course development

Courses have primarily been developed with the intention of selling them to individual students on the open market. The decision to develop a course is primarily made on the

basis of a market analysis. A project team usually consists of a project manager, an editor, an author and a web-designer who develop all courses.

## 2.5. Course administration

NKI has a comprehensive set of student support services. Each course has a tutor and an administrative contact person that can be contacted via e-mail or telephone. In addition there is a support service for ICT support.

## 3. Effects and outcomes of e-learning activities

### 3.1. Completion rates

Experience over the years shows that completion rates vary between the three different categories of courses. The course *Tutor in distance education* seems to have the highest completion rate since it is a prerequisite to becoming an online tutor at NKI. The courses that employees enrolled in at their own initiative also have a rather high completion rate. The courses initiated by the management seem on the average to have a lower completion rate. Differences in completion rates relate mainly to differences in motivation levels of participants.

### 3.2. Satisfaction

NKI has not conducted any systematic overall survey to evaluate the satisfaction or outcome of the e-learning among the employees. However, individual students have clearly expressed their satisfaction.

#### Course for tutors

For instance, nearly 100 percent of those who completed the course for tutors express that the course was interesting and resulted in new insights and a good background for their tutoring work. Comments from a random student:

*“Today I completed the Course for Tutors. I must say that I am very satisfied – both with the course itself – and not least a very active tutor. Concerning the course and learning materials, I find that it, in an easy-to-understand way, gives insights into the subject, specifically the emphasis on the important aspects of the work of the tutor. Now the challenge is to remember and to put theory into practice. Concerning the course Forum, it should be stressed that all students have the responsibility of using the Forum for the benefit of all, and to take the opportunity to use it when one has a need for support or feedback. Thanks for the course – I look forward to starting my work as a distance tutor – and I hope I will be the kind of tutor that I have read and learned about”.*

Another comment:

*“Today I have completed the final assignment in the Course for tutors. I have learned a lot. I have worked as teacher for many years – but not in distance education. My learning has gone through a curve from deep “despair” when in the first study unit I read about all the demanding challenges of the distance tutor, through the growing understanding of the important task of the tutor in cooperation with high quality learning materials in the second unit to enthusiasm for the task after completing the third unit. Much of my inspiration and enthusiasm has come because of the excellent comments from my very good tutor and the deep insight in the subject his comments gave to me. I have also received helpful and quick answers to my questions – thanks. I feel that I now have a*

*good understanding of the work and really look forward to taking on the work and seeing how it works in practice.”*

### **E-learning course taken on the employee’s personal initiative**

Below is a comment from an employee who has taken the complete *“The Specialization Programme in International Online Education”*. This employee is a young person who worked as systems developer but had personal plans for competence-development in organisation and pedagogy. The internal NKI e-learning programme was completed as the first half of a master’s degree in *Educational Information Technology*. The second half of the master’s degree was completed as a part-time student at a foreign university.

#### **Comment:**

*“It was quite demanding to take such a comprehensive programme as online education being employed full-time. However, during part of the study I was given free time to study one day a week, and this helped a lot with completing within a reasonable time-frame. Coming from a background mainly in information technology and systems development, pedagogy was a rather new world, but according to my personal plans and types of work that I like, the change was just in line with my needs. The personal learning and development through the e-learning programme has given me new interests, new insights and also motivation and possibilities for changes of work, job types and promotion. Completion of the programme has already given me new work opportunities and changed the content and responsibilities in my old job. I have also gotten a promotion and been employed in a new job with more emphasis in pedagogy than technology, more in accordance with my personal career plans.”*

### **E-learning course taken at the initiative of the management**

In 2005 it was decided that all members of the management group should enroll in the course *Powerpoint*. The course constitutes the presentation module of the ECDL (European Computer Driver Licence). The management group enrolled on a voluntary basis. Eight participants took the course online with a few face-to-face seminars. The objective of taking the course was both learning better presentation techniques using power point and experiencing the functionality and quality of the institution’s online courses. Below are comments on the course from one of the participants.

#### **Comment:**

*I took the course more to experience being a student in the course than actually learning to use Powerpoint as I had previous experience. Concerning my learning of the subject, I experienced that I learned to use the tools more systematically and efficiently and got a better overview of functionalities and tools. Feedback from the tutor was quick and helpful. Concerning course structure and content, I found that it is easy to overlook important information. This means that important information must be presented with graphical effects and in ways that it becomes nearly impossible not to notice. I also found that assignments must be worded in ways that are clear to the student, as misunderstandings are difficult to clear up. All in all I found the course efficient for learning how to use Powerpoint as a presentation tool.*

## 4. Challenges and barriers

### 4.1. Technical issues

The technical barriers are quite low. All employees have access to the necessary ICT equipment at work. They also have easy access to all kind of in-house support services.

### 4.2. Organizational issues

The employees have to negotiate with their supervisors if they want to study during work hours. Study time during work hours is usually permitted, specifically concerning courses that are part of the planned institutional competence development of the employee.

### 4.3. Other issues

There is no doubt that due to pressure on personnel resources, it is often difficult for many employees to find time, even when time for study is agreed.

## 5. Success factors

Opportunities to study during work hours.

Courses relevant to their daily work or personal interests.

Courses will result in promotions or better payment.

Courses taken are part of the competence development plan of the management and at the same time of prime interest to the learner, i.e. management support and personal motivation.

## 6. E-learning investments, developmental costs and operational costs

The cost of e-learning is minimal since the institution itself provides and sells the courses on the open market. For a competence-based business, human capital is seen as the most valuable input variable for success. Taking e-learning courses from an internal portfolio gives a double effect of learning the subject and learning about important aspects of the business itself.