From R&D Project to Virtual Universities

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BACKGROUND

Four Norwegian higher educational institutions—the University Colleges at Agder, Stord/Haugesund, and Sør-Trøndelag, and the University in Trondheim (NTNU)—had all participated in a European collaborative project on open learning, that is, JITOL (Just-In-Time Open Learning, 1992-1994) under the Delta program of the European Community. Building on experiences from this and other related projects, representatives from the four institutions decided to propose a national experiment along the same principles. Support was granted from a governmental agency, SOFF, and NITOL (Norway-net with IT for Open Learning) was established in April 1994.

NITOL was in the beginning an open learning project for the training of students, teachers, IT professionals, and others. Research and development activities, particularly focusing on distribution of courses and learning material, required some "guinea pigs" to gain experience in the field. The project group therefore invited a group of around 30 students to participate in the experiment—and found that there was possibly a large potential for business, expanding the experimental group and perhaps demanding student fees for participation and examination.

Learning material was initially distributed through different electronic network systems, covering topics from informatics/computer science, educational applications of IT, and a few other subject areas, at introductory, intermediate, and advanced levels. The institutions collaborated in the development of goals and objectives, strategies, courses, course material, and evaluation tools for the project, as well as in the online contact with students.

The series of courses from the four cooperating institutions gave credits that could be part of degree programs. Central to the R&D project was the combination of several types of media and the development of methods for presentation, with emphasis on the use of IT and electronic networks. Hypertext and hypermedia were at the time under development, parallel to the project.

At the time, open learning (OL) was a frequently used phrase, indicating:

- Open with regard to *availability*, independent of time, place/geography, economy/social situation
- Open with respect to *methodologies*, like computer-supported collaborative learning (CSCL), project-based learning (PBL), inductive learning, discovery-based learning, problem solving, and the classic, academic lectures in the form of electronic "lessons."

To incorporate experiences and traditions from distance education, the expression was frequently extended to open and distance learning (ODL), or open and distributed learning. In all cases the focus was meant to be on learning and the learner, not teaching and the provider.

Experiences from the initial part of the project, that is, *pre-WWW* existence, covered areas related to the learning process, such as:

- the establishment of an open network making higher education available to students, groups, and individual participants from business, schools, administration, SMEs, and so forth;
- production of joint learning/training materials;
- distribution of educational materials through electronic networks;
- development of an extensive, dynamic, and creative electronic learning environment based on local and wide area electronic networks;

- development and application of assessment tools; and
- evaluation of open and distance learning/training.

Hard experiences were also gained in the field of technology, where networks were unstable, students had difficulties with downloading and decoding of formatted documents from news conferences, e-mails had different standards for attachments, and our particular set of Norwegian characters (æ, ø, å) caused extra problems in transfers of texts.

In today's world of e-learning—with the Internet, World Wide Web, broadband connections, and lots of research and experiences from ICT-based open and distance learning—it is hard to imagine how much trouble the items listed above could cause. On the other hand, it enabled the project group to appreciate the facilities available now and to bring along some of the basic thoughts that were once the foundation of NITOL (Ask, 2004).

GAINING MOMENTUM

From a careful start in April 1994, with 12 course modules and around 30 students, NITOL outgrew its founders' intention rather quickly. It seemed to be an initiative that came along "just in time," and NITOL turned out to be the start of a virtual networked university.

Student Attraction

The initial R&D group of students obviously told their friends about the Net-based possibilities for higher education where they could cross borders and distances between institutions—virtually—having access to a larger collection of courses. Similarly the initial teachers and developers convinced some of their colleagues to join an interesting field of development. Already in the following semester, in the fall of 1994, 27 different courses were offered through a published catalog (NITOL, 1994), and around 150 students decided to join the new learning environment.

This changed the scope of the project. In addition to being an R&D project on electronically based distribution and facilitation of learning, focusing on pedagogy and learning principles, supported by networks and new information technology, the project group also had to look into the area of administration and organization for larger groups of ODL students. Still, it was possible within reasonable efforts to manage 150 students between the four staff members of the NITOL project.

As the number of students kept multiplying, the NITOL group had to decide between two alternatives:

1. to restrict the number of participants in order to cope with the research goals of the project; or

Figure 1. Development of NITOL, 1994-98 (Maribu, 1999)