Technology Evolves but Basic Ideas Survive.
Enabling Institutional Collaboration through ICT

Harald HAUGEN
Stord/Haugesund University College
Stord, N-5416, Norway

and

Bodil ASK
University of Agder
Grimstad, N-4876, Norway

ABSTRACT

In 1994 four colleagues from different HE institutions in Norway started a collaborative R & D project for net based, open and flexible higher education. The project was named Norway-net with IT for Open Learning (NITOL), with focus on professional and institutional collaboration. Exchange and distribution of learning material through electronic networks were hard to implement in the pre-WWW days, and much attention was given to technical solutions at the early stages.

Students’ interest in the project was overwhelming. From 30 students registered in spring 1994, enrolments exceeded 2500 students in fall 1998. NITOL had outgrown the project stage, and the group asked their institutions to take over administration of course activities. Other institutions joined in and the management of a new, national, networked university, NVU, was given to administrative representatives from 9 partner institutions. After a couple of years, however, they decided to close down the joint course activities, and NVU became a forum for exchange of ideas and organisation of annual conferences.

The basic principles from NITOL, however, were carried on through international projects on virtual universities, and now - nearly 20 years later - still seem to be relevant for fruitful collaboration across institutional borders.

Keywords: Higher Education, Net Based Learning, Institutional Collaboration, International Projects, Virtual Universities

ESTABLISHING THE NITOL MODEL OF COLLABORATION

It is not always obvious to administrators and professional staff at HE institutions that collaboration is superior to competition when it comes to attracting students. Four Norwegian higher educational institutions, the three University Colleges of Agder, Stord/Haugesund and Sør-Trøndelag, and the University of Trondheim (NTNU), have all been active in a European collaborative project on open learning, i.e. JITOL - Just In Time Open Learning, 1992-94 [1] (Lewis et al, 1992) under the European Delta programme [2]. 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, and NITOL - Norway-net with IT for Open Learning [3] was established in April 1994.

NITOL was initially a joint open learning project for students, teachers, IT professionals and others. Research questions particularly focused on collaborative development and distribution of course material. A group of around 30 students participated as “guinea pigs” in the experiment. Interest in the courses showed that there was possibly a large potential for business, expanding the experimental group and perhaps demanding student fees for participation and examination.

At the pre-www time learning material had to be distributed through different electronic network systems, e.g. the nationally developed WINIX [4], a system that included many of the present World Wide Web features. The institutions collaborated on technical solutions and in the development of goals and objectives, strategies, courses, course material and evaluation tools for the project as well as in the on-line contact with students. Hypertext and hypermedia were at the time under development, parallel to the project.

Experiences from the initial part of the project, i.e. 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, etc.
– 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
– evaluation of open and distance learning/training

In to-days world of e-learning, with Internet, World Wide Web (WWW), broad band connections, social media 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 made the project group appreciate the facilities eventually becoming available and simplifying practice of the basic thoughts that were once the foundation of NITOL [5].

**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 wider selection of courses. Similarly the initial teachers and developers convinced some of their colleagues to join an interesting field of development. This changed the scope of the project. In addition to being an R & D project on collaboration and distribution for facilitation of learning, focusing on pedagogy and learning principles, the project group also had to look into the area of administration and organisation for larger groups of ODL-students.

The resulting development of student enrolment is shown in Figure 1:

![Development of NITOL, 1994-98](image)

*Figure 1. Development of NITOL, 1994-98 [6]*

Parallel to the increase in student interest there was a growing political interest in ODL and the applications of Internet. The European year of lifelong learning in 1996 stressed the work for making education at all levels available to the public, and lots of attention was drawn towards the use of new technology. Funding of international projects helped the development both at national and international levels.

**Technical and Software Development**

During the first couple of years technical hurdles had to be overcome almost daily. As Internet and PCs stabilised and became more user-friendly, pedagogy and subject content came more to the foreground of the work. The sudden introduction and rapid development of WWW indicated a major breakthrough for ICT-based ODL. NITOL happened to be there “just-in-time” to meet the requirements. The project group had a feeling of body-surfing at the front of a huge wave, only hoping that the ride would end on a soft beach, not in rough waters and rocks.

**Organising the Project**

The increase in student numbers required serious thinking about daily routines of the project running. In 1996 some systematic work was done to develop “The Administrative Concept of NITOL” [7], covering the central issues of the project organization.

An important part of the concept was the free flow of material between the four NITOL partners. Of course, copy rights and the academic property rules applied equally well to electronic products as to printed material. At the start of the project, however, an agreement was signed, stating that partners were free to “borrow” material from their colleagues, use it in their own courses, develop it further and offer it back to the original author as well as to the other partners. The condition was that the name/institution of the author was visible to everyone who was exposed to the material. During the project period this free exchange of competence and material was one of the major assets of the project. All partners had great advantages from it.

The NITOL project was based on inter-institutional collaboration on the organisational level, and also encouraged collaboration between professionals on content and pedagogical issues.

**Examples of Professional Collaboration**

Sharing and exchange of learning material could be as simple as just putting courses together in an open course pool, making a joint catalogue of courses etc. In NITOL this was called the Open Access Model (Fig 2). Teaching staff having access to other colleagues’ materials could study their way of dealing with pedagogical problems, as a well of experience and inspiration. But it might be tough for the author to be scrutinized by several colleagues and their students. Once they got used to it, however, it was a win-win situation [8].

![The Open Access Model](image)

*Figure 2. The Open Access Model*

Another way of dealing with learning material was to join forces in development of course material, the Joint Venture Model (Fig 3). An example here can be when professionals from two or more institutions - even across national borders - join forces in developing a course. Networked institutions can really profit from this way of sharing workloads [9].
A third option, the Composite Model (Fig. 4), was to develop independent modules - or learning units - that could be components in different courses or studies within the collaboration. This kind of arrangement requires particularly strong cooperation for recognition of credits and academic level. The model may have its special strength when colleges/institutions are small or medium sized, where resources and the staffs' expertise and capacity are limited.

Organising Networked Learning Environments

For inter-institutional collaboration it seemed to be an advantage to agree on a common technical platform or learning environment. During the first years of NITOL this kind of environment had to be developed through special software techniques, e.g. the aforementioned WINIX system [4], and later on the basis of web pages. Today several Learning Management Systems (LMS) offer this kind of platforms. The weaknesses of many LMS’es are that they often focus more on management than on pedagogical approaches and facilities for developers. This is particularly supporting electrification of the traditional correspondence school where learning material and exercises are distributed to students, answers are returned and grades are awarded on the basis of work during the course and/or traditional exams. The initial courses in NITOL were often organised this way.

As new tools became available more advanced pedagogical approaches were introduced, e.g. the popular socioconstructivist models, where students and tutors jointly exchanged ideas and developed new knowledge through discussion forums and social media on the net.

NITOL exchanged ideas and evolved in close relations with projects funded by the European Commission under different framework programmes and specific initiatives. Joint experiences through these projects have supported and inspired new developments, both on the R&D side and more practically for courses and study programmes that were offered. But establishments of collaborative virtual universities constituted great challenges for existing higher education institutions [5].

FURTHER APPLICATIONS OF THE NITOL MODEL

A rather modest national project showed a way that many other collaborative projects and net based education providers could follow for establishing and further develop towards virtual universities [10]. The model could be applied both nationally and across national borders.

Establishing a national networked university

The NITOL project group realised that course activities soon grew too large for ad hoc administration. Leaders of the four partner institutions were invited for an institutionalisation and a more official status of the project. In early 1998 the agreement for establishment of a national networked university, NettVerksUniversitetet (NVU), was worked out. In December 1998 the partnership agreement was officially signed by the four NITOL institutions - plus five other Norwegian partners. A board and a steering committee for NVU were appointed at the institutional administrative level.

The Networked University (NVU) was meant to be open to all HE institutions in Norway, not a new, independent Norwegian university, but a partnership between existing institutions, taking over the course activities from NITOL and develop it further. After a few years, however, the NVU board decided to skip most of their joint course activities, like course catalogue, enrolment of students, marketing etc.

Development of NVU did not meet the expectations of the NITOL group. The actual NVU joint activities ended up being the establishment of special interest groups (SIG) and the arrangement of a conference of e-learning once a year. Joint activities for marketing of courses etc. were abolished, the total course enrolments went down and there were only minor exchanges between the partner institutions. The major mistake is suspected to be that the new NVU administration distanced themselves from the professionals, the founders and enthusiast that created and developed the NITOL principles. The initial NITOL group remained active through 2008, since 1999 mainly with R & D work, engagement in national and international projects, and less with daily services to students and practical administration. There were lots of challenges that had been waiting for the group to find time for. Collaboration, openness and joint developments remained the major “glue” in the group. A final project report was printed, handed over to the four institutions and made available for interested parties [3].

International offsprings

As already mentioned in the introduction, NITOL got its first inspiration from participation in the European JITOL project (1992-94) [1], where 11 HE institutions from 9 countries
worked together for Development of European Learning through Technological Advance, DELTA [2]. The NITOL group further developed the principles of open collaboration, and “paid back” to the European Community through active engagement in several other EU projects, where the NITOL model was a central core of activities.

Internationally the NITOL group kept up the activity within joint networks and e-learning projects also after the NVU was established. During the total of 15 years (1994 - 2008) the gospel of collaboration was promoted through several projects. A short-list of such projects with references follows below:

**European projects.** During 1995 – 2009 one of the NITOL institutions were leading and coordination 5 different European projects:

- Do ODL Dissemination of Open and Distributed Learning (1996-97) [12]
- MENU – Models for a European Networked University for e-learning (2001-03), with a clear intention to create a European NITOL, or a European Virtual University EVU [14]

In several other projects NITOL was invited as a partner, either as a joint group, as four separate partners or through one of the institutions as partner representing the whole group. This was the case for e.g.

- EONT - (1995-96), coordinated from Greece [16]
- SHARP SHAreable Representation of Practice (1998-99), coordinated from UK [17]
- E-LEN (2003 - 05), coordinated from Cyprus [18]
- B-learn – Blended Learning (2005-07), coordinated from Estonia [19]

In particular the idea of developing a Model for a European Networked University (2004) was closely related to an initiative taken by the European Commission in 2001 [21], aiming at mobilising existing resources for designing tomorrow’s education. The partners of MENU defined strategy and models for collaboration - partnership agreement, for joint study plans, organization and economic strategy, which were tested and evaluated through user trials. Based on these building blocks, the model for establishing a sustainable ENU - a European Networked University for e-learning was presented in the reports from the project. Internationally MENU contributed to the direction of development for an offspring from the United Nations University, the Global Virtual University.

**Global Virtual University, UNU-GVU** [22] was established as an online network of universities for sustainable development, and had a particular objective to meet the educational needs of the third world. GVU was officially launched in September 2002 at the World Summit on Sustainable Development in Johannesburg, SA, where the Norwegian Government, the United Nations University, UNU, [23] and the United Nations Environment Programme, UNEP, [24] pledged their support and partnership.

The United Nations University - Global Virtual University, UNU-GVU, [25] offered courses from different universities, e.g. a course on global environment issues based on the UNEP report “Global Environment Outlook”, GEO [26], as part of a master degree programme, Global Environment and Development Studies, GEDS [27]. This was part of the MENU demonstrator, involving students and tutors from around the World, actually following the NITOL principles of joint development and collaboration for net based learning.

One of the most popular courses offered through the GVU network, was e-Teaching, actually a sequence of two courses, E-teaching I [28] and e-Teaching II [29], both based on structure and content ideas from the NITOL course on Pedagogy in Open Learning, PIOL [30]. The main idea behind these courses was to qualify professors and teachers to develop and tutor e-learning - or net based - courses within their own subject areas. This was particularly important for the partners of GVU that should provide higher education for students in developing countries, in remote areas and at universities lacking capacity and competence in certain disciplines.

The concept and principles of open collaboration, mutual trust and joint efforts are fragile, but still a key issues for success at local, national and international levels. They turn out to be hard to carry over from the initial NITOL partnership to other HE institutions. Even at the founding institutions, most of the basic principles in NITOL have suffered shifting support.

**PRESENT STATUS**

NITOL is history with its final report in 2009 [3]. The four member institutions continued on separate basis with different net based activities that could be linked to the NITOL experiences. The courses that survived were mainly within ICT related topics at bachelor and masters level. The focus on inter-institutional collaboration, however, seemed to be dormant - at least for a while.

At national level the NVU still exists. It has now 5 member institutions [31] with a revised partnership agreement signed in 2009. The intention is to create a meeting place and a network for professional collaboration on matters related to net based learning, with the main event being the annual NVU conference. There are no joint courses, marketing or catalogues.

At the European level, there is still no real joint virtual university according the MENU prescriptions. In discussions between e-learning professionals, the idea is generally supported. But the implementation of such an organisation, with devoted commitment from the participating institutions, still seems to be out of reach. This agrees well with experiences from the MENU trials, where institutional regulations, traditions and national laws were in conflict with the principles of open collaboration required by the suggested model. These hurdles are still hard to overcome. Paper presentations and discussions at international conferences on e-learning, reveal that in 2010 - 11 new projects and R&D groups are still working on similar challenges for net based collaboration.
On the global level, UNU-GVU lost its governmental funding from 2008, and therefore had to wind up its portfolio. The e-teaching courses continued for 2-3 years under the umbrella of University of Agder, UiA [32]. The same university also coordinates a revised version of GEDS now named a master programme in development management [33], offered as blended learning in cooperation with African and Asian universities. The net based parts are designed and run in accordance with parts of the MENU model and the principles taught through the e-teaching courses.

**Returning to the roots**

Stord/Haugesund University College, SHUC [34], was the coordinating institution for NITOL as well as for MECPOL and MENU, for longer periods also for NVU. Net based learning has been offered by the Department for Educational Information Science ever since the days of JITOL and the birth of NITOL. Attempts to involve other departments at the college have been met with scepticism, particularly when it comes to exchange and close collaboration over institutional borders. When the master’s programme for ICT in learning [35] was established in 2003, new approaches were made to other faculties again. And with the revision of study plans in 2006 several other subject specialists were involved as tutors and advisers for master students - but only for students registered at SHUC.

When new national regulations for teacher education in Norway were introduced in 2009, the division into separate lines of study, more specialisation and requirements for larger variety of electives at each site, made the resource situation particularly difficult for smaller institutions. At a meeting in UH-nett Vest [36], i.e. a network of 5 higher educational institutions in Western Norway, different ways of exchanging competence and expertise were discussed. After the meeting the old proposal for the NITOL project - written in 1993 - was brought forward by SHUC. It seemed to fit right into the concept at hand, and a “new” pilot project was composed, revitalizing the original NITOL idea of joint development and expert collaboration between colleagues from different institutions.

The new project was named *Campus based e-learning at topic level* [37]. It started in May 2011 and the partners will have its report and first products ready by June 2012. Technology has developed much sine NITOL started in 1994. Broadband connections, fast and high capacity PCs, video cameras, social media etc. were only *dream-ware* in the mid 1990ies. Now they are natural parts of the tools being applied. Educational methods for net based learning have also evolved over the past 17 years.

The principles of work, however, are not so very different. A major goal is to promote campus based e-learning at the partner institutions. A central part along that road is to develop a particular 10 credit (ECTS) course on *E-learning at HE level*, and make it compulsory for all new teaching staff members at the institutions. The course will be net based, developed jointly by experts in the field from all partners, and at a next stage also made available for teachers outside of UH-nett Vest.

Now in 2011 subject specialist groups are composed within a few limited topics early in the pilot period. In according with plans these are in the areas of Mathematics, Norwegian, English and Arts & Crafts. Each group has at least two subject specialists, coming from different institutions, who are now jointly developing their course, sharing responsibility and tutoring of 10-15 “students” within the network. Each topic has a content value of 5 - 30 ECTS credits.

The groups are already established, the development work is on its way, and the first trials will be performed during spring 2012. Partner and group meetings are performed through multi point Internet based video conferences, on low or no-cost platforms like *Adobe Connect* [38] or *LiveRoom/Fronter* [39], saving time and money previously needed for physical meetings. Otherwise, much of the methods and principles here are very close to the initial NITOL ideas, but at this stage only planning for services to campus students, i.e. net based support as part of *blended learning*, so far not inviting individuals outside the participating institutions. May be next year there will be an expanding round of the same ideas, from a small pilot through greater visions?

**REFERENCES**


Encyclopedia of Distance Learning: Idea Group Reference. Hershey, PA.

http://www.aitel.hist.no/prosjekter/ekstern/mecpol/

[12] Do-ODL - Dissemination of Open and Distance Learning:  
http://www.aitel.hist.no/prosjekter/ekstern/doodl

[13] EC - EuroCompetence:  
http://www2.tisip.no/engelsk/ec/

[14] MENU - Model for a European Networked University for e-learning,  
http://www.hsh.no/menu

[15] QUIS - Quality, Interoperability and Standards in e-learning:  
http://tisip.no/faces/public/forskning/index.jsp?ex=1&ink=prosjektkatalog#QUIS

[16] EONT - An Experiment in Open and distance learning using New information Technology.  
www.softlab.ece.ntua.gr/research/research_projects/EONT

http://www.softlab.ntua.gr/sharp/events/events.html

http://www.tisip.no/E-LEN

[19] B-learn:  

[20] e-JUMP:  
http://portaal.e-uni.ee/ejump

http://eurapa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11046_en.htm

[22] GVU: Global Virtual University:  
http://www.virtualcampuses.eu/index.php/Global_Virtual_University

[23] UNU: United Nations University,  
http://www.unu.edu/

[24] United Nations Environment Programme, UNEP:  
http://www.unep.org/


http://www.grida.no/publications/other/geo3/?src=/geo/geo3/

[27] Global Environment and Development Studies, GEDS  

[28] E-teaching 1,  
http://www.uia.no/no/portaler/studietilbud/etter_og_videreutdanning/e-teaching_1

[29] E-teaching 2:  
http://www.uia.no/en/content/download/84272/1400923/file/E-teaching+2+course+description.pdf

[30] Pedagogy in Open Learning, PiOL  
http://www.aitel.hist.no/prosjekter/ekstern/mecpol/catalogue/penopenlearning.htm

[31] The Norwegian Network University, NVU:  
http://www.nvu.no/ (in Norwegian)

http://www.uia.no/en

[33] MASTDEVIM: Masters programme in Development Management,  
http://www.uia.no/en/portals/study/student_info/ects/11-12/master_s_programme_in_development_management

[34] Stord/Haugesund University College, Norway; SHUC:  
http://www.hsh.no/english.htm

[35] Master ICT in Learning, HSH:  

[36] UH-nett Vest, i.e. a network of HE institutions in Western Norway;  
http://www.uhnettvest.no/

[37] Starting networked collaboration:  
http://www.hsh.no/nyheter/index.php?arkiv=201105000002059

[38] Adobe Connect Conference System,  
http://www.adobe.com/no/products/adobeconnect.html

[39] Fronter Elluminate,  
http://fronter.info/downloads/Meeting_Liveroom.pdf