

## **Making the Finnish Virtual University**

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#### **1. Introduction**

Perhaps unsurpassed in the history of Finnish academia remain the success stories of Johannes Petri (1357), Petrus Roodh de Abo (1416) and Olavus Magnus (1435), the three Finnish scholars before there was Finland, who became rectors of Sorbonne in the middle ages. Ever since the Finns have played a role in Academic Europe. In recent years Finns have seemed to be reassuming similar pivotal positions in the new eEurope. Many have become familiar with the Nokia phenomenon and their slogan, 'connecting people'. The Finnish Virtual University is happy with less. Connecting academic communities virtually would suffice.

The Finns populate the land strip of the same size as the Brits, with one tenth of the number of people only. The number of universities, however, totals 21 incremented by 36 polytechnics. This means that units are small and scattered around. It is difficult and costly to deliver quality education throughout the country under such circumstances.

Among many strengths of the Finnish higher education (HE) there are well-equipped and networked modern campuses with nomad students virtually grazing around with mobile gadgets. Another asset is the commitment of the government and the HE institutions to the shared vision of a knowledge-based society with a national virtual university in its pivot.

Moving from the current situation into the desired direction is not an easy and straightforward job. On the contrary, the list of challenges is dauntingly long and it tends to expand when we move on. Nevertheless Finland seems to be progressing. The federal funding for the project is ensured at least for the next two years. The sustainability of the Finnish virtual university model will be put in the real mode test not until in 2004, when the pilot phase is over.

Finnish universities and polytechnics have made considerable investments in ICT in recent years. At present, all of Finland's research and arts universities, most of the polytechnics and the most important research institutes—a total of about 90 organisations—have joined the Finnish university network (FUNET). All higher education students can use the services provided by FUNET. During the past decade, traffic in FUNET has grown at an annual rate of 150%, or, in other words, it has doubled every nine months. This growth has been made possible by the unbelievable rate of development in the information transfer technology of telecommunications networks.

In general, universities have a relatively good and well-functioning ICT infrastructure. Teachers have nearly enough personal computers at their disposal. The greatest needs are in the area of student workstations. Another problem is insufficient technical and pedagogical support services

Information technology expertise possessed by individual students can, however, be a significant resource in the development of teaching applications. The problem often lies rather in the attitudes of teachers and even in their fear of losing authority.

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According to a survey conducted, teachers mainly use information technology to prepare lectures and assignments, maintain contacts with other members of academia, acquire and process new information, and to conduct their research. Students mainly use information technology to complete their individual assignments, communicate with each other and their teachers, and acquire new information (Sinko, 2000).

The same survey showed that ICT has thus far not had a particularly profound effect on how teaching at the universities in general has been carried out. This does not mean, however, that new teaching practices have not been created through utilising these technologies. Many individual pilot projects show that when coupled with innovative pedagogical thinking, technology opens up interesting possibilities for revitalising higher education.

## 2. Rationale for going virtual

In many countries the fear of intensified external competition in HE or high commercial expectations have been driving forces in pushing universities towards virtualisation of their education services. This was not the case so directly in Finland. The virtual university initiative was first outlined in the national information society strategy for education and research for the years 2000-2004 adopted by the Ministry of Education and the Finnish government. Based on the analysis of the global situation of Finnish HE, the vision for improving HE through going virtual was outlined and the plan for implementing it launched:

By the year 2004 a high-quality, ethically and economically sustainable network-based model of organising teaching and research will have been consolidated.

*There will be set up a virtual university by 2004 based on a consortium of several universities, business enterprises and research institutes. It will produce and offer internationally competitive, high-standard educational services.*

The aims have evolved from the original documents into this list:

- To enable networking in teaching, studying and research
- To develop a new model of network based cross-university operation
- To diversify university studies
- To develop university curricula
- To improve the quality of teaching and studying in HE
- To make better use of the ICT networks
- To improve the competitiveness of Finnish academia.

## 3. Implementation

The virtual university will be established in stages. At the initial stage, the ministerial virtual university task force has coordinated the project. In connection with the negotiations on target

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outcomes between the ministry and the universities in spring 2000, the universities committed to establish the virtual university consortium.

The ministry of education chose then, based on applications from universities, about twenty specific inter-university projects to be funded until 2003. These projects are anticipated to play a key role in shaping the services of the virtual university and a substantial number of exemplary net-based courses and study programmes.

The development unit was set up in August 2000 to coordinate the start-up phase and emerging services. The consortium contract between the universities was signed up, the steering committee elected and the action plan approved by the consortium in early 2001. The virtual university strategy document is under preparation and will be adopted by the consortium in 2002.

All students (first degree students, post graduates or open university students) of any member university will be eligible for studies in the virtual university or to put it more precise for studies in any member university of the Virtual university consortium. Students can take courses relating to their degree programs in the virtual university, but it is the home university, which will award the degree.

The main distinctiveness of the FVU compared to other virtual university initiatives is the following:

- It is a national initiative that involves all of the country's universities;
- It is set in a context of a national information society strategy to improve the quality of teaching and learning at universities and offer learners greater access and flexibility through the integration of technology.
- It is not solely targeting the development and/or marketing of totally online courses to learners outside of its borders or responding to a competitive threat; and
- While not yet realized or fully planned, the FVU has a comprehensive vision of including teaching as well as research and support services.

An effective FVU was envisioned to offer the following advantages:

- freedom from the restrictions of time and place
- flexible programs/courses and possibilities for individual additional studies
- international exchange of educational material
- co-operation and co-ordination of development work
- saving on space and facilities
- efficient use of time

The FVU was also seen as an opportunity to address more general weaknesses in Finland's higher education system such as the lack of a tradition in collaboration among universities and a slow progression of studies for students. The FVU was not the result of international competitive pressure. While improvement in the competitiveness of Finnish academia is discussed, Finnish university students do not pay tuition and receive subsidies for books and living costs while studying at Finnish institutions. This and the relatively small market for programs in the Finnish language obviously limits opportunities for foreign institutions.

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Due to the large expenditures required to develop virtual university programs, there was the need to pool limited resources to achieve economies of scale by connecting the work across Finnish universities. In addition to achieving economies of scale, the FVU was intended to address barriers to online learning applications including technical, pedagogical, social, administrative and regulatory issues. Key personnel involved with the FVU emphasize that the initiative does not require or promote full virtuality as the only model. Most of the persons met during the visit program were very resistant to the idea of offering fully online alternatives.

#### 4. Challenges

The demand for tertiary level graduates has been estimated so high in the near future that the percentage of the tertiary level degree holders from each age group entering the labour force is targeted to rise nearly to 70 per cent. The figure is so high that it cannot be met merely by increasing the in-take in institutions based on traditional on-site education only. In the meanwhile the average study times in HE institutions have remained considerably long. Also the drop-out percentage has increased in some areas.

Increasing the share of students attending HE, increasing the number of students on certain popular fields while some areas suffer from shortage of students, calls for new pedagogical solutions. Increasingly heterogeneous student groups demand for improved didactics. Going virtual and meeting the more complex needs of students is one way of trying to address these problems. They are great challenges for staff development.

HE institutions are facing also serious resource problems. All these challenges have to be met with limited budgets. Earmarked extra funding covers only the piloting phase.

These facts place totally new demands on developing HE. Net-based education has been welcomed by many as, if not a panacea to all problems, but to bring substantial relief or at least alternative solutions to many ailments and challenges of HE. Online education, however, is by no means rendering easy solutions. On the other hand, there is no easy way of solving the pertinent problems HE is facing by continuing to develop campus-based education either. Face-to-face education is neither cheap, nor cost-effective. So educational policy-makers have to come to grips with the same fundamental problems of education whether seeking solutions from the net or inside the campus.

According to our action plan key issues to be addressed and hopefully to be turned into success factors will be

- Support to collaborative design and delivery of net-based courses
- Solving IPR issues
- Integration of different modes of instruction
- Online tutoring
- Virtual mobility of students
- Finding a sustainable model of operation.

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These issues are currently in active work-out by for instance through a number of inter-university projects. The aim of those projects is not only to design excellent courses to be run on the net successfully. It is hoped that they will serve also as examples of good practice to be scaled up. Moreover it is hoped that they will sow the seeds of new type of academic collaboration among professionals across institutions, faculties and research paradigms. The lack of adequate pedagogical and technical support also calls for sharing resources between institutions.

The IPR issues cannot be solved adequately within one national project, because of its global nature. The Virtual university has just issued a set of applicable contract models. In this endeavour FVU combined efforts with other educational institutions under the umbrella of the Ministry of Education, which provided best legal assistance in drafting model contracts and will hopefully provide certain level of online consultancy as well.

The Finnish virtual university is not aiming at full virtuality in the course offerings. Consequently attention will also be paid to improving current teaching and studying practices through incorporating online elements in any courses whenever appropriate. It will hopefully lead to a new practice optimising the use and the mix of different teaching and learning modalities in a flexible way. This gives the students an opportunity to choose from various methods of course delivery and different realization of the learning process. Flexibility should be stretched to its limits to allow maximum personalising and customising of learning environments and teaching arrangements.

A certain level of online tutoring is already available to open university students. The solutions developed there is a rich source for adopting and adapting the practice for degree students tutoring. It is believed that the tutoring services will largely be distributed and among member universities and the centralised services provided by the national portal will be quite thin in the beginning. In the long run when course design and course offerings will be provided on a large scale and when information systems and databases will be fully-fledged, there will be possibilities to provide more comprehensive services.

The Finnish universities are small. It means limited opportunities for students within their home campus. Regardless of high rates of student mobility, there is need for dramatically expanding virtual mobility of students. Providing students flexible opportunities to pick up courses from other universities without needing to engage in a lot of time and money consuming traveling, there is enormous potential for the virtual university service provision. A task force has been collected to tackle the administrative challenges of the virtual mobility with credit transfers, financial transactions, student registering etc.

Even though the virtual university initiative is in the focus of the Finnish government information society strategy, it is not run top-down. Neither is it run bottom-up. It is clearly network based and managed. All the universities are stakeholders. The activities and services are thus defined, designed and will be run by innovative and enthusiastic academic networks assisted by the ministry owned company, CSC, which is responsible for the Finnish university network and scientific computing. The current organisational model will certainly need many modifications to run the virtual HE service successfully in the future. It remains also to be seen, how soon the

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consortium will manage to attract non-academic partners and extend its activities beyond national borders.

## 5. Finnish Virtual University Funding and Governance

The Finnish Government, through the Finnish Ministry of Education, has committed funding to the FVU until the end of 2003. The FVU has funding of approximately 10 million Euros for the first year of its development. Approximately half of the sum has been awarded to the individual universities for their development and the other half to the 20 selected inter-university network projects. The funding in each of the two following years will be on at least the same level as the first year. Additional funding of 1 million Euros has been raised for the development of a portal. According to the Ministry of Education representative, implementation projects and services were funded based on proposals and budgets submitted by the universities or the Development Unit. Financial forecasting or costing based on existing data did not occur. The Finnish Ministry of Education intends to make the FVU a permanent program and to consolidate the service provision developed through this initiative and the projects within the program.

All 20 research and art universities in Finland as well as the defense academy have joined the consortium that is developing and managing the FVU. Projects, such as the scientific national electronic library FinELib and the Finnish open university, SUVI, will be closely integrated in the new initiative and collaboration is intended with the Virtual Polytechnic Initiative which will be discussed further in this report.

The task force presented its report in December, 1999 and a FVU consortium of all of the participating universities was formally established to:

- develop university level net-based educational services
- co-ordinate educational services offered on-line, student tutoring and the activities of research networks
- develop course information, student achievement recording and databases
- engage in (on-line) publishing activities

The consortium is also an important mechanism to discuss and propose solutions to practical issues such as intellectual property rights questions, technical support required in the development work, and the development of teachers' knowledge and skills concerning online education.

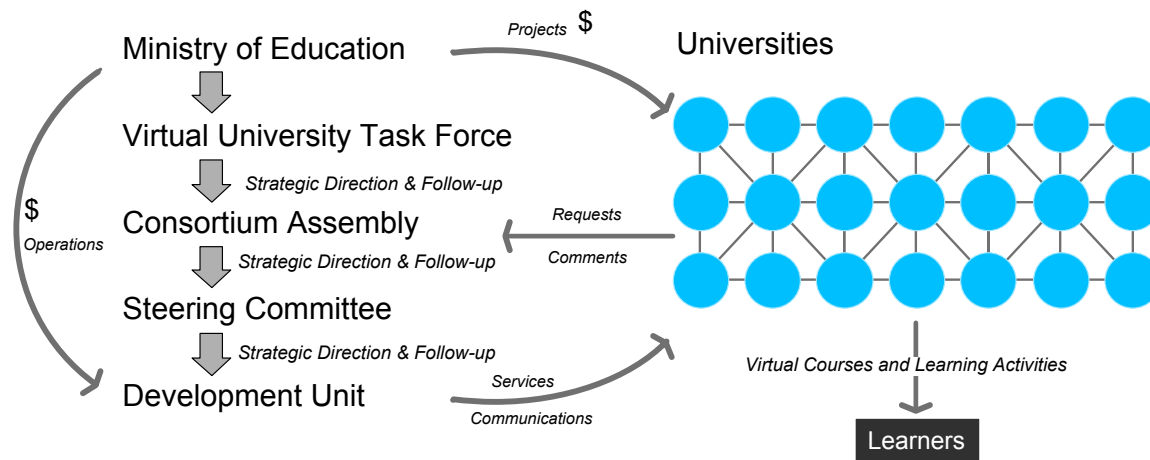
To carry out the practical development and building work, in August, 2000, a Virtual University Development Unit was established as a joint service unit for the universities. The tasks of the Development Unit, which now has a staff of about 10 professionals, include:

- development of activities and the administrative structure of the virtual university consortium
- policy design and strategic planning regarding functions of the virtual university
- providing support to the projects initiated by universities and the consortium
- investigating and reporting on the activities of the virtual university, monitoring and benchmarking relevant developments in other countries and reporting about them

- publicizing the activities of the virtual university and maintaining contacts with project partners in order to further develop joint activities
- ensuring efficient functioning of services on a practical level
- preparing model agreements for members (for example, agreements for partner networks, copyrights, and financial transactions)

The Development Unit works in close co-operation with the Ministry of Education's Virtual university task force and with a steering committee of a subset of consortium representatives. The Development Unit also creates and maintains contacts internationally, collecting and disseminating information on global trends in order to react quickly to changes in the environment while strengthening the operating capability of the network.

A diagram of the FVU initiative is provided below. The consortium and the Development Unit is not established as a legal entity. The FVU Development Unit activities are classified as one of the network projects and coordinated by the Helsinki University of Technology, the institution that is hosting the offices of three of the FVU Development Unit staff.



## 6. Status of the Finnish Virtual University Project

Parallel to the work of the FVU Development Unit, at the beginning of the year, 20 three-year, joint projects between universities were initiated that will produce the first online courses and form the basis for the activities of the FVU. These projects include 3 regional networks, 5 joint projects aiming at providing services ("meta-projects"), and 11 networks of specific disciplines ranging from social work (SOSNET) to a graduate training program for faculties of law. In addition, the funding provided directly to universities has been used to hire part-time or full-time support people to help in the training and support of teachers and staff who are developing online learning materials. The first programs started during the academic year 2001-2002.

A virtual university portal is another major component of the FVU. The portal is intended as a functional and adaptable gateway to the virtual university net-based services with the necessary functions and services for teaching and learning including:

- course selection

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- course information including search engine
  - registration tool
  - student support services (guidance, advisory and information services, portfolio management)
  - information and contact channels
  - access to national electronic library services
  - discussion forums and collaboration areas for teachers
  - support services including versatile assessment tools.

The portal will be personalized to the various users including students, various categories of staff (teachers, researchers, administrators) and citizens. The portal will also have a tool for defining teachers' expertness profiles that can be used for defining individual, team, and organization specific training needs.

The aims of the portal, services offered, its structure, technical solutions and method of implementation were defined and were recently presented to the Consortium committee. The major anticipated challenge in the portal's implementation is the development and funding of the mid-layer of functionality where the responsibilities of the universities and the development unit intersect.

The portal was launched in the autumn of 2001 with additional functionality added by the end of 2002. The portal as currently envisaged is estimated to be fully functional in the autumn of 2004. While the FVU is intended to facilitate all academic activity including research, these services have not yet been elaborated.

## 7. Implementation Benefits and Pitfalls

While only officially launched in January, 2001, the FVU has been the subject of a much longer planning process that included a task force implementation plan that was ready at the end of 1999. The FVU has already had a major impact in Finland in the following ways:

### *Building of awareness of the use of computer networks for teaching*

It is apparent that the announcement of the FVU and funding awards have raised awareness and interest among university administrators, faculty, and staff in the practice of and research into the use of computer networks for learning. There is some confusion about the meaning of the terms "virtual course" or "virtual university" and a general belief that a face-to-face component will always remain necessary. However, the FVU has already had a beneficial impact in highlighting the opportunities provided through online learning and encouraging discussion and debate.

### *Putting the focus on teaching and learning*

The prime goal of the FVU is to improve teaching and learning at Finnish universities. Through discussion of the use of online learning and teaching models, there is evidence of increased focus on teaching and learning.



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*Creating networks for collaboration, faster dissemination of best practices, and acceleration of staff capacity building*

Each of the FVU projects that has been funded has linked faculty and staff across a number of Finnish universities. For example, one project called KASVI links the eight faculties of education in Finland. A number of projects have organized workshops and some of the workshops have attracted several hundred participants.

Some of the meta-projects in particular could have a major beneficial impact. The goals of four meta-projects are summarized below:

IT PEDAs: To support universities developing strategies for virtual university activities including the creation and support of a network of pedagogical centres at participating universities. The project is also responsible for seminars for administrators on strategy development.

Tie Vie: Training of faculty in the pedagogical use of information and communication technologies.

IQ Form: Creating tools through which students can learn about themselves as learners and acquire skills to become more effective learners in virtual courses

OVI: Project for developing the virtual environment for assessing and study counseling of students including improving the skills and abilities required for successful studies, career counseling, and study management.

*Creating a forum for discussion of key issues among administrators*

The bringing together of the top administrators of all of the universities in Finland as part of the consortium has had an immediate impact with much promise for the future. The issues raised at consortium meetings range from the required support services for virtual university activities to copyright issues. Much of the topics for discussion are not restricted to virtual university matters and will impact institutional policies for classroom teaching, such as credit transferability and copyright issues.

*Creating economies of scale for content development, program delivery, and critical support services*

Participation in one of the meetings of the FVU projects, the Eastern FVU project, clearly substantiated the benefits and necessity of pooling resources and efforts given the limited capacity and budgets of individual institutions. This project brings together three of Finland's smaller universities to offer jointly-designed courses, expand the course offerings, and ensure better quality and better use of local resources and expertise.

There is no doubt that the FVU will face significant challenges, especially given limited resources and a complex and difficult to change operating environment. Several major issues and

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challenges in implementing the vision of a Finnish Virtual University network are identified. Some key issues and suggestions for possible solutions are as follows:

### *Managing Expectations*

The announcement of the FVU and the funding award has raised huge expectations despite the relatively limited funding to carry out the initiative and a lack of history and widespread knowledge of how to implement online learning in Finland. The number of full-time staff devoted to the FVU is low and success will be dependent on continued efforts from other specialists as well and on goodwill. There are also different expectations and different definitions of virtuality or effective virtual learning among the many participants. The impact of the FVU will probably be overestimated in the short term and, if successful, underestimated in the long-term.

To address the issue of managing expectations, the FVU needs to immediately:

- Identify the various stakeholder groups including funding groups and define their expectations as quantitatively as possible
- Develop and implement a communications plan and public relations strategy that includes short overviews addressing what the FVU is and what it is not. Illustrate the funding level through comparisons to investments made in other countries
- Continue to utilize the FVU contact persons in each of the FVU participating organizations to inform academia and local interest groups and bring forward misconceptions and concerns.

### *Institutional commitment and strategic leadership*

The level of knowledge and commitment of university administrators at the participating institutions varies. For many, online learning is viewed as a nice demonstration of innovation or a source of some funding to shore up weak departments. In a few cases, virtual university courses or programs are seen as an integral component of the institution's primary mission or one part of a solution set to address a challenging issue. In part, the lack of attention and funding commitment may be due to the increasingly difficult budgetary environment for Finnish universities.

The FVU has begun to address the requirements to increase the knowledge of university administrators with plans underway for a seminar for consortium committee members. In addition, the FVU and Ministry of Education could take the following actions:

- The Ministry of Education should propose a template for this strategic plan that identifies the critical elements that need to be addressed, such as how the administration will support the acquisition of necessary skills and knowledge by faculty, as well as indicators for evaluating progress.
- The FVU should prepare a background paper that outlines the range of organizational change strategies that have been utilized around the world and document Finnish approaches as they are developed, implemented, and evaluated.

### *Leadership on effective balance between pedagogical, administrative and ICT practices*

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The intention of the Ministry is to put pedagogy at the forefront of all funded and associated initiatives of the FVU. The FVU Development Unit is having a more balanced approach putting in addition to the pedagogical practices the admin and ICT practices into the big picture of the FVU. There is some resistance to “importing” models from other countries as there is a legitimate concern in adopting practices that may not be compatible with Finnish culture.

Most Finnish institutions have had some trial experiences in developing and offering online courses with a focus on videoconferencing classes or publishing course notes and useful course resources as opposed to implementing online learning activities. The departments of technical universities such as the Helsinki University of Technology and Tampere University of Technology have had prior experience with web-based offerings. The University of Helsinki Faculty of Arts, which has 9,000 students, has about 30 courses with a web-based component and approximately 5 online courses. The open university and continuing extension sections of the universities have also had a longer track record of offering online learning and have demonstrated core competencies in instructional design and learner support.

The FVU should fund and encourage projects and activities that take advantage of situations where online learning can add real value. A number of projects are expanding video-conference classes or providing an online option to a face-to-face classroom activity without examining this value-added factor or best application areas. The Ministry of Education should examine the current portfolio of projects and, working with the Development Unit, target new projects in areas that will demonstrate new pedagogical approaches that have not been utilized in the first set of projects. At the first annual reporting, it may be possible to steer some of the existing projects to use other approaches.

The FVU should develop a plan to disseminate effective practice. This plan should build on the current project meetings and presentations at the annual national conference for educators using technology and make use of the FVU web site. The web site could include a section on research evidence, strategic plan templates, discussion groups, and exemplar practices. An annual award series could recognize advancements in pedagogy.

### *Learner Focus*

There is a promising research that focuses on learners such as IQ FORM, and a survey has been carried out to determine and analyze the learner needs for the portal. A larger follow-up has been planned through a student and staff panel to evaluate the portal design.

The FVU should consider developing a “consumer’s guide” to help students in understanding and assessing the quality of online learning courses and components.

### *International Strategic Alliances*

With its reputation in the wireless industry, Finnish organizations receive a good reception from organizations around the world. The Finnish universities are fortunate in having opportunities to link with other EU countries in research and dissemination projects such.

Given the work involved in entering into and implementing strategic alliances, the FVU Development Unit should focus on entering into a few formal arrangements each year. These arrangements could include post-doc and faculty exchanges, cooperation in knowledge and tool

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exchange in areas such as learning object repositories, and faculty and expert visits. Further information should be posted to the FVU web site in other languages with projects encouraged to provide summaries and updates for posting.

### *Evaluation*

The Ministry of Education has asked each FVU project to prepare a self-evaluation report that documents approaches used and results obtained at the end of the first year. The evaluation measures are those proposed by project participants and there are no “top-down” Ministry of Education measures.

Given the importance of evaluation in managing expectations and feeding into continual improvement of the FVU’s investments:

- The FVU should immediately develop an evaluation strategy for the initiative.
- The Development Unit should approach the Ministry of Education for funding a separate project for formative evaluation.
- Further funding could be provided to the small evaluation project underway to develop a basket of measures and examples of evaluation instruments and templates for use by FVU project teams.

### 8. Latest developments with Approaches and Lessons to Others

One of the basic paradigms behind the Finnish Virtual University was the idea of giving the students an opportunity enhance their learning portfolio with courses from other universities in Finland. This has been achieved by

- setting up an agreement to include all Finnish universities, how the flexible studies are
  - planned
  - monitored
  - accepted
  - managed
  - financed
- building an information system to support these activities
- arranging extra funding from the Ministry of Education to cover the initial extra costs of these activities
- extensive training of students, teachers, administrative officers, etc about the new approach.

There are many developments in the virtual university setting that can be considered innovative and something to consider abroad as well. The key element is the learning service to facilitate the development of online courses and programs by encouraging:

- learners via one-stop shopping with a wide range of information, resources and services;
- participating institutions and their faculty members with an opportunity to take advantage of economies of scale by making available a wide range of services, knowledge and resources to support the development of online courses and programs; and

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- participating institutions with an opportunity to take advantage of synergies and economies of scale in the marketing of their online courses and programs at home and abroad.

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[www.virtualuniversity.fi](http://www.virtualuniversity.fi)