Stimulating Employability through Cross Sector Virtual Mobility

European funded research on flexible modality internships

Cornelis Adrianus van Dorp (Eds.)

Project information

Cross Sector Virtual Mobility (CSVM) is a project co-funded by the European Commission under the Leonardo da Vinci programme. The objective: to facilitate (distance education) students to enter into online working, stimulate their employability, and provide (distance) educational systems with increased business and market connectivity by means of flexible modality internships. The CSVM consortium is comprised of 10 partners from seven European countries (BE, ES, EE, IT, HU, PL and NL).

Project consortium

European Association of Distance Teaching Universities (EADTU)
European Students' Union
Estonian e-University
Universidad Nacional de Educación a Distancia
e−Collegium Foundation
University of Miskolc
Università Telematica Internazionale UNINETTUNO
Open University of the Netherlands
Universiteit Maastricht
Maria Curie Sklodowska University

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European funded research on flexible modality internships

Cornelis Adrianus van Dorp (Eds.)

Abstract:

This publication presents the results of European funded research on flexible modality internships. The research was conducted under Cross Sector Virtual Mobility (CSVM): a project co-funded by the European Commission under the Leonardo da Vinci Programme (Lifelong Learning). The main objective: to facilitate (distance education) students to enter into online working, stimulate their employability, and provide (distance) educational systems with increased business and market connectivity by means of flexible modality internships. The publication describes the background of the project CSVM, the theoretical introduction as to why internships are actually needed, the results of the experience survey of conventional internships, the state of affairs of remote internships inside and outside Europe, the overview of technical, pedagogical, organisational, and economic barriers of remote internships, the distinct models identified from research as concerns the organisation of remote internships, the results of actual pilot cases on remote internships as configured and realised by the European partners of the CSVM project, and the development path towards the realisation of the premier European portal for clearing remote internships.

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Preface

As of 2005, the notion that open and distance teaching universities needed to differentiate beyond sole (online) education delivery, got more substance. Many of the single mode open and distance teaching universities in Europe at that time, seemed to have quite a strong focus on educational delivery, without the possibility of providing their students access to work experience during the enrolment, the kind of experience the traditional universities refer to as: internships. Stakeholder relations were limited as regards the cooperation with (public and private) organisations, professional bodies, chambers of commerce, social partners, et cetera. Also, the typical characteristics of online education prevented the immediate implementation of (proven) conventional solutions for employability enhancement. It was quite clear that research was needed on the kind of initiatives that could be taken to enhance employability for online education, and (traditional) universities serving online education.

Accordingly in 2006, the European Association of Distance Teaching Universities (EADTU) started its first collaborative European 'employability' project with the objective to facilitate (distance education) students to enter into online working, stimulate their employability, and provide (distance) educational systems with increased business and market connectivity by means of flexible modality internships. This first project, referred to as Cross Border Virtual Mobility (CSVM), also signalled the launch of a four year 'EADTU Employability Programme' (2006-2010), in which such projects as Cross Border Virtual Entrepreneurship (CBVE), Cross Border Virtual Incubator (CBVI), and The Employability Clinique (TEC), entered the drawing board. It is a real challenge for me to be able to conceptualise, initiate and coordinate the Employability Programme on behalf of EADTU.

In this publication, the results from the CSVM project are elaborated on. The publication describes the background of the project CSVM, the theoretical introduction as to why internships are actually needed, the results of the experience survey of conventional internships, the state of affairs of remote internships inside and outside Europe, the overview of technical, pedagogical, organisational, and economic barriers of remote internships, the distinct models identified from research as concerns the organisation of remote internships, the results of actual pilot cases on remote internships as configured and realised by the European partners of the CSVM project, and the development path towards the realisation of the premier European portal for clearing remote internships.

The research described in this publication may be very useful for universities (both online education and traditional education) and organisations (both public and private), as well as the

different stakeholder organisations active in the field of education and employment. The publication contains some 42 European and non-European case references to remote internships, and provides a first-hand look into 7 intern projects, conducted by two of the CSVM partners i.e., the Estonian e-University and the Open University of the Netherlands. The number of pilots conducted is actually even higher. More than a dozen remote internship experiences are available from the Hungarian CSVM partner as well i.e., the University of Miskolc. Results hereof have come available when going to press with this manuscript. They are to be taken up in a second edition of the publication.

I would like to express my thanks to the European partners of the CSVM project for their pleasant collaboration over the two years. Moreover, collaboration has been so successful that it has been able to extend it towards other European projects as well.

The research described in this publication has been co-funded by the European Commission under the Leonardo da Vinci Programme (Lifelong Learning).

September 2008

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Contents

1. Cross Sector Virtual Mobility: the project

This chapter presents the general project Cross Sector Virtual Mobility (CSVM). It describes characteristics of open and distance teaching universities (section 1.1), their barriers towards physical internships (section 1.2), the opportunities as presented by flexible modality internships (section1.3), the specific objectives of CSVM (section 1.4), and the outline of the research as presented in this publication (section 1.5).

1.1 Open and Distance Teaching Universities

Open and Distance Teaching Universities (ODTUs) make up a large part of the target audience for remote internships. It accordingly makes sense to first introduce ODTUs along with their particular characteristics in this section. As set out by van Dorp and Herrero (2008), ODTUs and conventional (mainstream) universities run different kinds of educational services. Whereas campus-based universities focus on conventional student cohorts and face-to-face learning modalities, ODTUs have an explicit focus on off campus audiences and flexible learning modalities i.e., modalities in which place and time are apparent variables. The ODTUs allow for a mix of distance learning, e-learning, open learning, virtual mobility, learning communities, and the integration of earning and learning. Prospect learners search for ODTU offers (often) for interrelated reasons, like: (re)study opportunities, personal and cultural enrichment, part-time learning, career migration, professional training, mid-career retraining, in-company learning, services for disabled, et cetera. Strong points of ODTUs are the off campus didactical concept, the delivery of courses specifically designed and developed for distance learning, the inherent nature of the courses i.e., pedagogically-rich learning materials for independent self-study, the use of state-of-the-art technology and learning platforms for highest accessibility, and the application of innovative support structures for group interaction and tutorial support. ODTUs aim to facilitate learner support by implementation of collaborative learning environments and leading-edge learning management tools. In placing greater emphasis on the learner and its social environment, ODTUs tend to recognise that learning does not take place in a social vacuum.

Although on campus and off campus education increasingly resemble each other whereas modern content delivery is concerned, the students in on campus situations however gain additional knowledge and experience through formal, informal and non-formal learning activities, such as classes, study meetings, colloquia, workshops, apprenticeships and/or internships. In as far as professional experience and ODTUs are concerned, the internship modality has not been addressed properly. Internships represent an apparent blank spot in ODTUs' current operations.

However by supporting internships, ODTUs can actually offer their students profound professional benefits. The assertion is that mastering professional skills is not perceived to take place solely through the university. With regard to the deployment of internships and the associated development of students' professional skills, there clearly exists a challenge. ODTUs need to replicate and/or extend their modes of communication and learning modalities, if they are not to be seen as a poor relation to conventional education. ODTUs must innovate and develop new didactical and pedagogical concepts for students to gain a real business experience. By means of a flexible internship model, ODTUs will be able to provide their students with a serious (virtual) extra-university, intra-curriculum, working experience. Business liaison may simultaneously stimulate a much broader discussion, as concerning the difference between the ODTU as education-based model, and the conventional university as research-based model.

1.2 ODTUs and barriers to internships

Internships represent a conventional approach for the development of students' professional skills. It is a proven pedagogical concept for gaining work experience. Internships are embedded in the Bachelor (BSc) and Master (MSc) programmes of universities. In most universities internships are necessary for completing a degree, though not always. The duration of internships may range from approximately two weeks to six months. Conventional higher education is familiar with a vast array of models for organising internships for students. Typically, interns are guided by academic and business supervisors and work independently on their assignment by their pre-devised methodology. Interns contribute to the development and application of (new) knowledge in the field. Moreover, they support the reciprocal knowledge transfer between the business and the academic community. Personal benefits for students are apparent: they learn specificities of another organisation, experience the freedom and constraints of professional life, deal with personal responsibility and autonomy, interact with colleagues and experts, and are rewarded with valuable business credentials.

The transferability of the concept of internships to ODTUs however, is a real challenge. Next, an insight is given into the feasibility of applying internships in ODTUs. Barriers are actually found as to why (conventional) internships would face problems.

A first barrier which emerges is related to the work situation of distance education students. Their current work situation actually inhibits them from allocating time to an internship. Many students enrolled in open and distance teaching programmes have full-day jobs and combine their (distance) learning with their earning. Learning materials are delivered electronically and studying

is conducted in the learner's spare time. A regular internship however, requires office-hours attendance. For students working from eight to five, attendance to such internships, would bring them in a difficult position. They are not able to participate in the internship without compromising on their income or days of absence. Of course, there are variations in the flexibility of the jobs learners have, but overall taken their schedules do not allow for it.

Another barrier towards traditional internships which needs to be touched upon concerns the personal properties of the learners in distance higher education. Students enrolled in ODTUs have selected that particular type of education for a specific reason. A proportion of learners turns to ODTUs in cases when traditional universities are unable to serve them. This especially holds for people with disabilities. Persons with physical or physiological disabilities or persons with complicated home situations or social obligations turn to ODTUs to enrol for educational services that meet their personal demands. It is apparent as of the personal properties, that internships cannot be performed in a regular way by this group.

A barrier for distance students to attend internships, not discussed yet, has to do with the internship base. In most cases internships are served in the city where the providing organisation has its seat. Chances are that the internship is not within the vicinity of the actual living situation of the distance education student. For a fact, a number of students enrolled in distance programmes have done so because of reasons of geography. Students in rural areas for example have done so because of their deprivation of adequate educational resources. Willingly or unwillingly, such students are in a position where geography is a decisive factor. It is hard for them to participate in an internship which has a geographical imbalance.

Besides the barriers to internships mentioned above, there may also be students which wish to attend internships but are unable to do so because of financial constraints. It is difficult to have exact numbers on the size of that group. Clearly, the distance education system appeals also to learners which are not able to fund an entire year or programme at once, but who enrol for a single course or module, with the notion that obtained credits remain valid when they continue their study. Internships without financial compensation/reimbursement/remuneration, would confront these learners with additional costs such as travel and subsistence costs, next to education enrolment costs. The internship module would not be a popular one in this group. Depending of the student numbers in this particular group, remote internships are best left facultative.

A last barrier to discuss is the opposition towards embedding. Should the distance student be of the type of earn and learn, a case can be made for embedding the internship into his or her (own)

professional work situation. On agreement with the employer, there seems no real obstacle. Unfortunately, this is not completely true. Students enrolled in ODTU programmes may hold professions that are quite different from the study. For example, learners may have enrolled in a differentiated study programme because they seek to migrate or switch careers. Moreover, there is an important drawback of embedding. In having the professional work place determine the better part of the assignment, the academic freedom and the academic level may be at risk. The internship process with regard to academic quality and deliverables can become compromised.

1.3 Flexible modality internships

Conventional internships are field-driven assignments designated to students by third parties i.e., public or private organisations, under full approval of the university. Students work for the most part on-site and during office hours. Flexible modality internships however, are field-driven assignments designated to students by third parties i.e., public or private organisations in which students work for the most part off-site and on flexible hours, herewith utilising generic and/or specific information and communication technology.

Given the inability of much of (single-mode) distance education to organise conventional internships, the arrival of the concept of flexible internships is a potential solution for many. Programmes for flexible internships bring along an alternative way for companies, academics and students to interact and exchange stakeholder value. Distance students enrolled in flexible internship programmes obtain great benefits. They are able to acquire vital field-driven work experience and have chances to significantly improve their employability. Flexible internship programmes also imply a much broader mechanism for companies to actually match-up with students: students can easily be recruited from other countries or states. In delivering match-ups for flexible internships, the constraints are simple: delivering the right expertise, for the right job, in the right period.

The ability to deploy remote internships effectively reflects ones competence in innovative ICT. Such ICT can vary between freely available Web 2.0-based tools and technologies, towards more sophisticated (open or proprietary) working and learning environments. Flexible modality internships clearly present a novel way of university-business cooperation, with benefits to be harvested on both sides of the relation.
This new internship modality is tailored towards flexibly-organised work placements in an increasingly global and knowledge-based economy. It caters for innovation and transformation

towards the knowledge-based economy in general, and the (training) needs and constraints of the lifelong earner, in particular.

Many different notations for referring to non-physical internships are in existence. Examples hereof are: off-site internship, virtual internship, remote internship, e-internship, flexible modality internship, and distance internship. Any of these notations are valid throughout this publication so as to denote non-physical internships. For the main part of the publication however, the terminology shall be delimited as much as possible by using the term: remote internship.

1.4 Cross Sector Virtual Mobility

Cross Sector Virtual Mobility (CSVM) represents the innovative remote internship action coordinated by the European Association of Distance Teaching Universities (EADTU). CSVM aims to encourage cooperation in research, implementation and dissemination of remote internships. Such internships enable ODTUs to efficiently connect with the demands and preferences of employers and increase the general employability of students. CSVM has been taken up by a leading Consortium of 10 partners from 7 different European countries: Belgium, Spain, Estonia, Italy, Hungary, Poland and the Netherlands. The partnership has been built on former and successful cooperation between the partners, which all hold their own track-record in European projects.

The objectives of CSVM:

(1) to facilitate distance students to enter into online working, stimulate their employability, and provide distance educational systems with increased business connectivity;
(2) to sensibilise distance higher education to the contribution of remote internships to professional training and the value of associated skills and competences;
(3) to contribute to the Lisbon strategy (EC, 2005) and the Copenhagen declaration (EC, 2002) in the sense of realising (be it a small part) the emergence of a European labour market and the modernisation of the European education and training system.

1.5 Description of the research

In contributing to the objectives stated before, and in facilitating remote internships to become a reality for ODTUs, substantial research has been conducted. The results of this research are presented in the different chapters and sections.

- Chapter 1 refers to this chapter, presenting the general project Cross Sector Virtual Mobility. It describes characteristics of open and distance teaching universities in section 1.1, their barriers towards physical internships in section 1.2, the opportunities as presented by flexible modality internships in section 1.3, the specific objectives of CSVM in section 1.4, and the outline of the research as presented in this publication in section 1.5.

- Chapter 2 presents an introduction of theory as to why internships are actually needed, and considered of importance. The chapter is subdivided into five sections: section 2.1 discusses internships, universities and students; section 2.2 discusses internships and organisations; section 2.3 investigates internships and the concept of knowledge; section 2.4 elaborates on internships and knowledge transfer; and, section 2.5 describes knowledge transfer beneficial to universities.

- Chapter 3 describes an experience survey of conventional internships. Besides the introduction and the description of the research methodology in sections 3.1 and 3.2, different internship types along with their characterisation are described in section 3.3. How internships are organised along with their cycle and pass through is presented in 3.4 and 3.5. Improving the organisation of conventional internships is presented in section 3.6. The overall strengths and weaknesses of conventional internships and the derived opportunities for remote internships are described in section 3.7 and 3.8.

- Chapter 4 refers to the description of the state of affairs as concerns remote internships in Europe. This chapter presents the case studies on remote internships inside Europe. Section 4.1 provides an overview of case descriptions, whereas section 4.2 provides for an initial evaluation of the cases.

- Chapter 5 describes the state of affairs as concerns remote internships outside Europe. The chapter is subdivided into different geographical areas. Section 5.1 elaborates on cases in the U.S. and Canada. Section 5.2 elaborates on cases in South America. Section 5.3 elaborates on cases in Australia and Asia. Section 5.4 elaborates on cases in Africa. Section 5.5 provides an initial evaluation of the cases.

- Chapter 6 provides an overview of a number of important remote internship barriers, which have been found in the conduct of research. Four types of barriers are

distinguished: technical barriers in section 6.1, pedagogical barriers in section 6.2, organisational barriers in section 6.3, and economic barriers in section 6.4.

- Chapter 7 presents from research an identification of distinct remote internship models. Six different models will be elaborated on in this chapter: section 7.1 provides for the explanatory introduction to the models. Section 7.2 presents Model I: individual remote internships (national or international). Section 7.3 presents Model II: group or class remote internships (national or international). Section 7.4 presents Model III: transnational group or class remote intern projects. Section 7.5 presents Model IV: portalised remote internships (open access). Section 7.6 presents Model V: portalised remote internships (delegated management, fee structure). Section 7.7 presents Model VI: remote internships (virtual site).

- Chapter 8 provides the pilot cases on remote internships, as configured and realised by the European partners of the CSVM project. The chapter provides theoretical insight in the measurement of student employability by means of section 8.1. The organisation of the remote internship pilots is explained in section 8.2. The results of the pilots on remote internships are presented in section 8.3. A reflection on the obtained remote internship results is given in section 8.4.

- Chapter 9 describes the development path towards the realisation of a premier European portal for clearing remote internships. The product development cycle is placed in its overall stakeholder context and evaluation. Section 9.1 presents the contextual diagram and stakeholder description. Section 9.2 describes the general stakeholder needs. Section 9.3 gives a review of contemporary ICT applications. Section 9.4 describes design phase one: incremental prototyping. Section 9.5 describes design phase two: automated portal functionality. Section 9.6 provides the final evaluation.

2. Why do we need internships?

This chapter presents an introduction of theory as to why internships are actually needed, and considered of importance. The chapter is subdivided into five sections: section 2.1 discusses internships, universities and students; section 2.2 discusses internships and organisations; section 2.3 investigates internships and the concept of knowledge; section 2.4 elaborates on internships and knowledge transfer; and, section 2.5 describes knowledge transfer beneficial to universities.

2.1 Internships, universities and students

A long time ago Chesterton[1] pointed out the fallacy of crying out for a practical man. He noted obviously enough, that when a problem is really bad, one should rather wail and pray for an unpractical man. The more serious the trouble gets, the more probable it will be that some knowledge of scientific theory will be required; and though the theorist will be called unpractical, he will probably also be indispensable. What generally is meant by a practical man, is a man who knows the way in which our particular modern business generally works. It does not follow that he is imaginative enough to suggest alternative solutions, when something obviously isn't working.

Chesterton's point of view was shared by Mr. John Parker, who Chesterton described as a hundred per cent American, a highly successful engineer, the vigorous agent of a company named after Edison who astonished his friends by delivering an address with truly admirable title, 'Wanted: An Unpractical Education'. It is important to mention, that for Chesterton the whole point of education was to give a man abstract and eternal standards by which he can judge material and fugitive conditions. His complaints about business education, which has begun to be supported in Europe after having long subsisted in America, could be summarised as follows: training youth to earn a living is not education at all; second, training may keep the youngsters from earning the best kind of living; and third, that it can not be done at school anyhow.

What the colleges and universities teach, determines to a great extent how persons will enter the professions and what kind of knowledge and skills they command. Colleges and universities, while they are one of the major repositories of intellectual capital, have traditionally stayed at arms length from the activities of the companies that hire their graduates. It is probably appropriate that there is significant difference in the operating premises and mission philosophies

[1] Gilbert Keith Chesterton (1874 - 1936): a British writer, critic and author of verse, essays, novels, and short stories.

of the two types of organisations. However, organisations and colleges do share a mutual interest in the economy. If future success of the economy is based upon innovation and knowledge, it seems opportune for these two types of organisations to become colleagues in an economic partnership, which brings together the resources and needs of each for the betterment of both.

Of course, (partial) adaptation of university curricula to firms' or corporations' needs is something that must be done only if society wants to assign universities to the (demand-driven) task of knowledge provider to firms. But this would only touch upon a part of the problem. There is a logical reason, which can explain the gap between university students' abilities and business demands for high educated students. The fact is that besides explicit disciplinary knowledge, a second kind of domain knowledge – how a business works - can not be taught in full at the university, because part of it includes tacit knowledge, a kind of knowledge which sometimes can not be made explicit and which must be acquired though socialisation inside the firm. This is one of the reasons as to why internships are created: practices in firms will help students to acquire the kind of knowledge that university can not supply, because it is not an explicit knowledge modality.

As regards to the lack of explicit (business) knowledge with university students, one could argue that firms as a whole, have acquired a different and more advanced explicit knowledge than universities as regarding the operation of their business: a type of (hidden) knowledge stored inside their own firms. This type of knowledge is not available inside the universities, and students apparently must do internships to actually become acquainted with it. However, students of course cannot be as made responsible for feeding in, or compensating the lack of explicit knowledge at universities: this should be an institutional task. But strangely enough, considering that firms indeed have their own (enhanced) reservoir of explicit knowledge, why is it then that some of the most powerful and leading firms in the world, still demand from the business schools as part of universities, the recruitment of their well paid managers? Apparently, firms still look for university knowledge (among other things, such as personal qualities). And besides, new knowledge can only be acquired through research, of which most firms do not employ much time and money in.

Another possible explanation of the lack of explicit knowledge by university students, could be caused by the fact that some universities are below on the average of explicit knowledge, as comparing firms and universities. In that case, the university and the teachers from these universities will tend to think that firms are at the leading edge of knowledge, while universities as a whole are far away from reaching this state. In respect to this point of view, it is worth remembering the words of Keynes: "Practical men, who believe themselves to be quite exempt

from any intellectual influences, are usually the slaves of some defunct economist". Indeed, one may analogously state for teachers within universities upholding the thought that business is exempted from interaction or influence by university, is indeed himself a slave of some defunct university professor and/or researcher from another university.

Student internships can not solve the presumed lack of explicit knowledge in universities. In relation to firms this is true: the lack of explicit knowledge at universities should be faced by university as institutions or by teachers, and not by students. But there is another issue that firms and society should be aware of, which is that universities according to their role in society, can transmit or generate knowledge but they can not improve the quality of students, unless the concept of education is involved in the process. In Spain they say: "that what nature does not give, Salamanca does not lend". Universities can give and measure students' explicit knowledge, but nothing else. Most of the qualities necessary to succeed in a work do not rely on knowledge: professional success depends on much more, and has a lot to do with personal skills and sociability. Internships could test, just to a certain stage, if students have the qualities necessary for professional work and increase students' knowledge, but cannot assure that interns will succeed in their future work.

2.2 Internships and organisations

Many economists view the skills of the labour force i.e., human capital as the engine of economic growth, or at the very least, a major contributor to economic performance. Although the most common indicators of human capital measure the amount of formal schooling, on-the-job training may be at least as important in determining productivity. Most lines of business require specific skills which cannot be provided by general-purpose education. Similarly, new technologies and organisations require continuous learning, best accomplished by workplace training. It is therefore not surprising that policy makers are often interested in the issues of worker training. For example, training of less skilled workers was a major policy initiative of the first Clinton administration; the current Labour government in Britain has similarly made training and skills a key policy issue. Company training is also directly or indirectly subsidised in many countries. This leads us to pose a question. Why do firms train? There are at least two theories that can explain some of the reasons.

The first is investment in human capital: an important exponent of theory is Gary S. Becker. Becker has provided for leading publications on education, labour and distribution of income; some in conjunction with authors Murphy, Tomes or Chiswick (1992, 1985, 1979, 1972, 1967). A

large portion of human capital accumulates in the form of training and on-the-job learning, which takes place inside firms. Publications by Becker (1960, 1962, 1964), Becker and Chiswick (1966), and Mincer (1974) provide theoretical analysis, explaining education, training, investments and associated wages of workers. The theory draws a crucial distinction between general and firm-specific training. General training will increase a worker's productivity in a range of employment opportunities, and therefore will translate into higher earnings in a competitive labour market. Thus, it is the worker who has to pay for general training. The firm should pay only for the firm-specific component of training that does not help the worker receive higher wages elsewhere. However, these predictions seem to be at odds with reality. The second explanation as to why firms train, comes from theory and evidence by Daron Acemoglu and Jörg Pischke (1998). Both authors developed a theory of training whereby workers do not pay for the general training they receive. The superior information of the current employer regarding its employees' abilities relative to other firms', creates ex post monopsony power, and encourages this employer to provide and pay for training, even if these skills are general. The model can lead to multiple equilibria. In one equilibrium quits are endogenously high, and as a result employers have limited monopsony power and provide little training, while in another equilibrium quits are low and training is high. Using micro data on German apprentices, they show that the predictions of the model receive some support from the data. However, this is not the place to discus which of these theories is the right one, but we must admit that economic theory supports the idea that companies are interested in training; internships are just one form of training for the future workers of a firm. One can say that productivity is the key word behind the academic point of view of training, but there are other more specific reasons for internships.

Still standing is the question as to why firms participate in internship programmes, in specific? As far as one can tell, economic theory says nothing about this type of training. But, there are many surveys on this matter and each has contributing suggestions. Take for example the case of Achieving Scale and Quality in School-to-Work Internships: Findings from an Employer Survey (MDS-902) by Bailey, Hughes and Barr (1998). Their data suggest that the most important motivation for participation in internship programmes remains philanthropic. One could propagate that the reasons for implementing internships programmes are actually simple and realistic. According to an experience survey conducted for this CSVM project, reasons indicated for internships can be subdivided into:

General and theoretical:

- increase firm productivity by training;
- philanthropy.

Common and practical:

- it is a cheap kind of work;
- seek for new workers to replace the old ones in the near future;
- cover a temporal vacancy;
- cover a temporary rise in the amount of work of the company;
- avoiding or reducing costs of work (for example the costs of social security of the worker).

These reasons are typically reasons for having any kind of internship; however, in this chapter the focus is also on the specific reasons for remote internships. Why do firms participate in remote internship programmes? Reasons emerging from a conducted CSVM survey on remote internships include:

- increase of profits (productivity is higher with remote than with traditional internships);
- overcome space limitations (space restrictions can cause decrease in trainings as space is one of the most expensive inputs for firms, remote internships allow for an increase of the labour force independent of the space of the firm);
- overcome geographical limitations (no geographical relocation of workers is needed, firms don't need to relocate the student, he/she can remain at home);
- reduce dependency on the labour supply of a particular area;
- overcome time limitations;
- reduce x-inefficiency of workers (avoid free riders, the work of the trainee can be measured easily, also when part of a team);
- short in duration and/or unpaid (the firm can save money);
- easier than traditional ones (employers are experimenting with the idea because more college students have access to computers, virtual work has become more common, and companies want to tap from more affordable labour sources).

No initiative however, is without a few downsides. There are costs associated with remote internships. Such costs include:

- the cost of surveillance of the student or the team of students is higher;
- interns do not have the opportunity to experience the company culture and learn valuable information usually gained from on-site sessions, such as on-site employee orientations and employee brain-sharing groups (this is a cost for the firm if the intern remains working online for the company in the future);
- communication overhead on remote internship placements; recruiting the interns requires web space and management of placements, something that may be too much effort for (especially) small companies to manage; which is also the reason for third party portal creation, in this area.

2.3 Internships and the concept of knowledge

Knowledge generally refers to a theoretical or practical understanding of a certain subject. A more enhanced inside into the concept of knowledge however is required in order to determine the advantages of remote internships. Such authors as Davenport and Prusak (1998), Nonaka (1991), Polanyi (1997), and Nickols (2000) have made important contributions to the understanding of knowledge. Indeed, one can obtain better insight into the concept of knowledge by investigating the way knowledge can be classified and formalised. To explain this in greater detail, Figure 2.1, will be supportive in depicting a first classification.

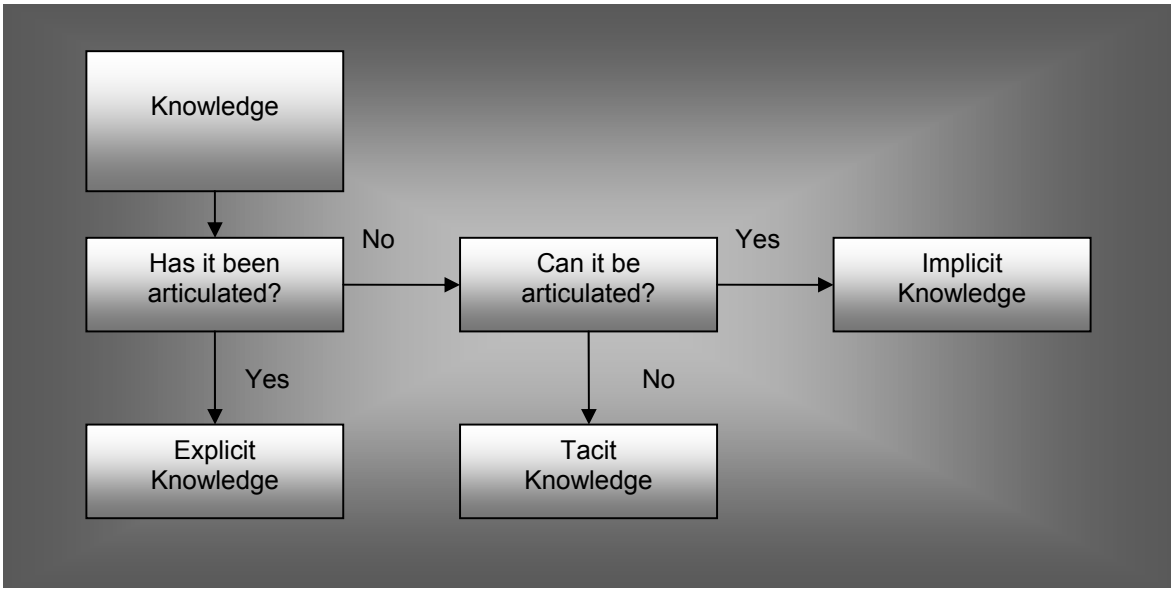

Figure 2.1 Explicit, implicit and tacit knowledge (Nickols, 2000)

A first classification of knowledge is found in the distinction between explicit, implicit and tacit knowledge (Figure 2.1). First, an elaboration is presented on the meaning of explicit knowledge. Explicit knowledge is knowledge that has been articulated and captured in the form of texts, tables, diagrams, product specifications, and so on. Some examples of contained explicit knowledge are: product specifications, scientific formulas, computer programmes, a formula for finding the area of a rectangle (i.e., length time's width), and documented best practices. A student's explicit knowledge can be measured through the Scholastic Aptitude Test (SAT), which is widely used by colleges and universities to gauge the academic potential of applicant students.

Second, an elaboration is presented on the meaning of implicit knowledge. Knowledge that can be articulated but hasn't, is considered implicit knowledge. Its existence is implied by, or inferred from, observable behaviour or performance. Implicit knowledge is the kind of knowledge, which can often be teased out of a competent performer by a task analyst, knowledge engineer or other person skilled in identifying the kind of knowledge that can be articulated but hasn't. In analysing the task in which underwriters at an insurance company processed applications, for instance, it quickly became clear that the range of outcomes for the underwriters' work took three basic forms: (1) they could approve the policy application, (2) they could deny it or (3) they could counter offer. Yet, not one of the underwriters articulated these as boundaries on their work at the outset of the analysis. Once these outcomes were identified, it was a comparatively simple matter to identify the criteria used to determine the response to a given application. In so doing, implicit knowledge becomes explicit knowledge.

Third, an elaboration is presented on the meaning of tacit knowledge. Tacit knowledge is knowledge that cannot be articulated. Tacit knowledge is part of everything that we do and say, and as it is inherent in our very thinking, it is deeply embedded in the way that we work. When you ask someone to describe what they do, whether it is a task at the office, the manufacturing plant, or in the kitchen at home, their best attempt at a description will most likely be incomplete. What will be missing, of course, is the important tacit knowledge. Tacit knowledge is involved in a task when we are reduced to trying to explain the "feel'" of something, particularly the way that it feels when it feels "right". In many cases, this feel eludes all of our attempts to describe it, and so success in tacit domains comes, ultimately, to a matter of doing it. Only after you have done it will you know what it feels like, and perhaps only after you have done it repeatedly will you know how to get it to feel just right, especially when you can't specifically define what "just right" is.

As Michael Polanyi (1997), the scholar and professor who coined the term, put it: "We know more than we can tell". Michael Polanyi demonstrates the prevalence and importance of tacit knowledge in our daily experience simply by challenging us to express how it is that we can

invariably recognise the faces of those we know. Polanyi used the example of being able to recognise a person's face but being only vaguely able to describe how that is done. It is not their particular shape or colour, but something else, some other essence perhaps, something very specific that nevertheless remains indefinable which enables you to pick out the faces of your family or your colleagues amongst a sea of faces in a crowd. This is an instance of pattern recognition. What we recognise is the whole or the gestalt, and decomposing it into its constituent elements so as to be able to articulate them, fails to capture its essence. The consistency of this ability is reflected in our system of laws, for recognising someone's face is considered to be "positive identification" and is among the most compelling forms of evidence that can be entered in a court of law. In spite of the fact that we can not tell how we have recognised somebody, it is considered a proof by the court.

The distinction between tacit and explicit knowledge is well expressed by David Pye (1995), professor of Furniture Design at the Royal College of Art, in his discussion of the difference between design, which is explicit, and workmanship, which is tacit: "Design is what, for practical purposes, can be conveyed in words and by drawing; workmanship is what, for practical purposes, can not.....The intended design of any particular thing is what the designer has seen in his mind's eye: the ideally perfect and therefore unattainable embodiment of his intention. The design which can be communicated - the design on paper in other words - obviously falls short of expressing the designer's full intention, just as in music the score is a necessarily imperfect indication of what the composer has imaginatively heard."

The explicit, implicit, and tacit categories of knowledge are not the only ones in use. Cognitive psychologists provide for a second classification: this second classification of knowledge is found in the distinction between declarative and procedural knowledge (describing versus doing), as depicted in Figure 2.2.

First, an elaboration is presented on the meaning of declarative knowledge. Declarative knowledge, also known as descriptive knowledge, or propositional knowledge, is the kind of knowledge which is by its very nature expressed in declarative sentences or indicative propositions. Declarative knowledge is factual knowledge. For example knowing that "A cathode ray tube is used to project a picture in most televisions" is declarative knowledge. Propositional knowledge or declarative knowledge is knowledge or the possession of information that is either true or false. Declarative knowledge is assertion-oriented. It describes objects and events by specifying the properties which characterise them; it does not pay attention to the actions needed to obtain a result, but only on its properties. Declarative knowledge has much in common with explicit knowledge in that declarative knowledge consists of descriptions of facts and things or of

methods and procedures. The person most closely associated with the distinction between declarative and procedural knowledge is John Anderson of Carnegie-Mellon University. He has been writing on these two notions of knowledge for almost 25 years (Anderson, 1995, 1993, 1976). Being able to state the cut off date for accepting applications is an example of declarative knowledge. It is also an instance of explicit knowledge. For most practical purposes, declarative knowledge and explicit knowledge may be treated as synonyms. This is because all declarative knowledge is explicit knowledge, that is, it is knowledge that can be and has been articulated. Nevertheless, not every explicit knowledge is declarative.

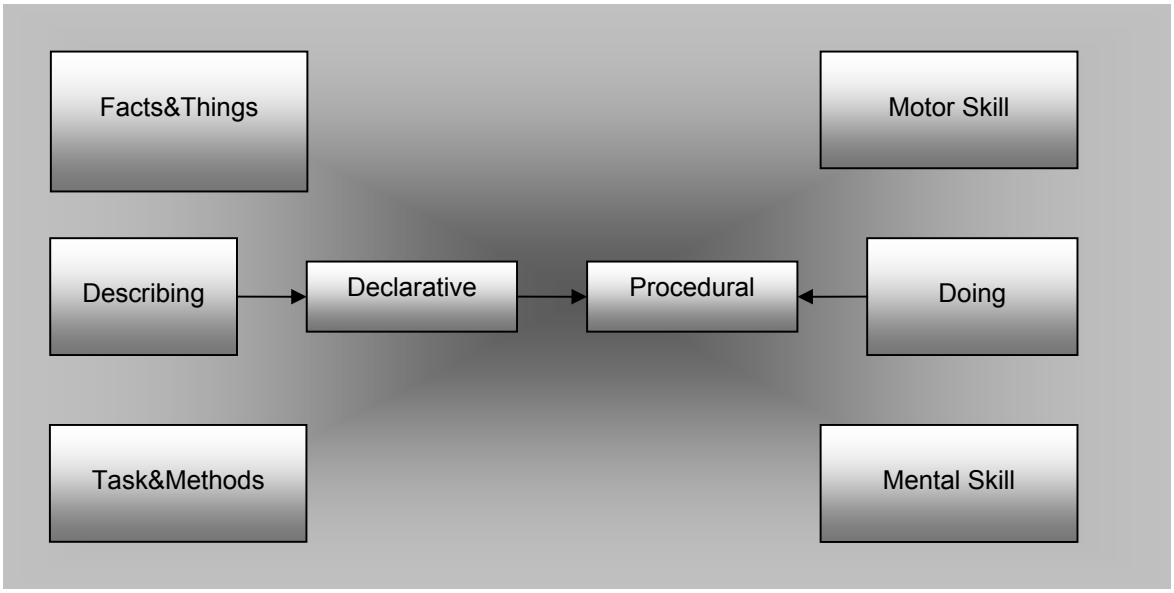

Figure 2.2 Declarative and procedural knowledge (describing versus doing) (Nickols, 2000)

Second, an elaboration is presented on the meaning of procedural knowledge. Procedural knowledge is a type of knowledge still somewhat under debate. One view of procedural knowledge is that it is knowledge that manifests itself in the doing of something. As such it is reflected in motor or manual skills and in cognitive or mental skills. One thinks, one reasons, one decides, one dances, one plays the piano, one rides bicycles, one reads customers' faces and moods (and our bosses' as well), yet one cannot reduce to mere words that which one obviously knows or knows how to do. Attempts to do so are often recognised as little more than after-the-fact rationalisations. This knowing-is-in-the-doing view of procedural knowledge is basically the view of John Anderson, the Carnegie-Mellon professor mentioned earlier. Another view of procedural knowledge is that it is knowledge about how to do something. This view of procedural knowledge accepts a description of the steps of a task or procedure as procedural knowledge.

The obvious shortcoming of this view is that it is no different from declarative knowledge except that tasks or methods are being described instead of facts or things. Indeed, one must acknowledge that some shall refer to descriptions of tasks, methods and procedures as declarative knowledge whilst others refer to them as procedural knowledge. Pending the resolution of this disparity, this section will elect the position of Nickols (2000). For our own purposes, we (also) choose to classify all descriptions of knowledge as declarative and reserve procedural for application to situations in which the knowing may be said to be in the doing. Indeed, as the diagram in Figure 2.2 shows, declarative knowledge ties to "describing" and procedural knowledge ties to "doing". Thus, for our purposes, we comfortably view all procedural knowledge as tacit just as all declarative knowledge is explicit. If all procedural knowledge is tacit, that means we can't articulate it. When we describe a task, step by step, or when we draw a flowchart representing a process, these are representations. Describing what we do or how we do it yields declarative knowledge. A description of an act is not the act just as the map is not the territory.

One can understand the distinction between declarative and procedural knowledge also by assessment of its application. When the description of tasks or methods leads to people obtaining the same results, then that kind of knowledge is declarative, like in mathematics. But when following the instructions and the output is seemingly different, then the knowledge is procedural. For example, in music the score is a necessarily imperfect indication of what the composer heard, directing and orchestra is not just following the instructions of the score or imitating the movements of some great director; there are things that can not be made explicit. Another example: you can teach football and tell the students how to shoot, you can tell them the place where they should hit the ball, but only a few will do it properly, others would not have that kind of ability, even if they have read and understand the instructions manual. This is implies that the training is way to acquire tacit knowledge. Of course, all football players know where they should hit the ball to obtain a certain effect, but only a few know how to do it.

The two models discussed before, can be projected onto each other, herewith generating one single model of knowledge modalities. Figure 2.3 integrates the models and illustrates the fit between and among explicit, implicit, tacit, declarative and procedural knowledge. Having described the before mentioned modalities of knowledge, the relationships shall not be given any further discussion; with the exception of two. The arrow connecting declarative and procedural indicates that one often develops procedural knowledge or the ability to do something, as a result of starting with declarative knowledge. In other words: we often "know about" before we "know how". The arrows connecting explicit with declarative and tacit with procedural are meant to indicate the strong relationships that exist between these terms.

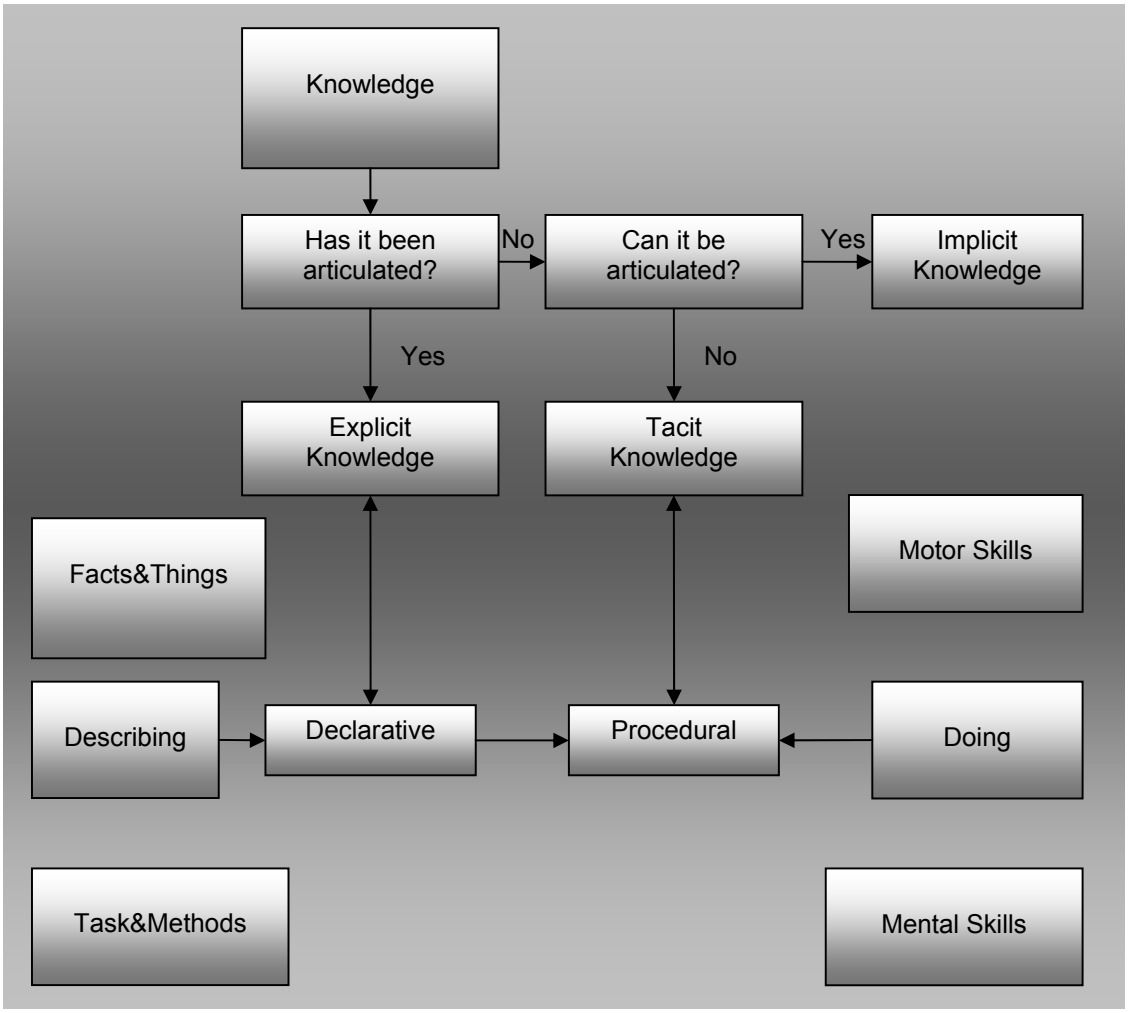

Figure 2.3 An integrated model for thinking about knowledge (Nickols, 2000)

2.4 Internships and knowledge transfer

In discussing internships (and especially remote internships), the concept of knowledge must be developed somewhat further in as far as to determine how different modalities of knowledge can actually be created, and how knowledge modalities can be transferred and transformed. To visualise how tacit and explicit knowledge can be transferred and transformed, the Japanese professors Ikujiro Nonaka and Hirotaka Takeuchi developed a matrix which describes the transitions between the tacit and explicit knowledge modalities (Figure 2.4).

	To Tacit	*To Explicit*
From Tacit	**SOCIALISATION**	**EXTERNALISATION**
From Explicit	**INTERNALISATION**	**COMBINATION**

Figure 2.4 Transitions between the tacit and explicit knowledge modalities (Nonaka, 1991)

Nonaka (1991) addresses the important issues of knowledge transfer and knowledge creation. He describes four of such transfers and/or creations:

1. Socialisation: tacit to tacit. The matrix shows that tacit knowledge can be shared from one person to another without being made explicit e.g., the process of socialisation that is used in advertising to convey social meanings that are powerful, even as they are intended to remain at the unconscious level. Tacit knowledge could also be acquired through observation, imitation and practice. The example Nonaka uses is that of a product developer, Ikuro Tanaka, who apprentices herself to a hotel chef famous for the quality of his bread. She learns how to make bread his way, including an unusual kneading technique.

2. Externalisation: tacit to explicit. The upper right quadrant shows that when tacit knowledge is made explicit it is externalised, made manifest in spoken words, writings, or tangible objects. Researchers seek to do just this, rendering the hidden tacit forms explicit and therefore applicable in the innovation process. Nonaka cites here the product developer's subsequent conversion of her acquired tacit knowledge into specifications for a bread-making machine. However, as defined by Polanyi (1997), who coined the term, tacit knowledge cannot be articulated. Thus, although Nonaka's product developer was clearly able to devise a set of product specifications

based on what she learned while apprenticed to the chef in question, it seems doubtful that she actually articulated the chef's tacit knowledge or her own. It seems more likely that she articulated some rules or principles or descriptions of procedures, that is, she created some declarative knowledge that subsequently proved useful in the design and development of the bread-making machine.

3. Internalisation: explicit to tacit. Explicit knowledge is made tacit when it is internalised through experience. A pilot reads the MacLaren's instruction manual and then drives the car to develop a feel for driving that cannot be expressed. Through such experience, the descriptions in the manual are translated into an appreciation of the actual driving characteristics of the car. Here, Nonaka indicates that the product development team acquired new tacit knowledge; specifically, they came to understand in an intuitive way, that products like the home bread-making machine can provide quality, that is, they can produce bread as good as that made by a professional baker.

4. Combination: explicit to explicit. In the fourth quadrant, combination occurs when explicit knowledge is shared and integrated through learning. Combining discrete pieces of explicit knowledge to form new explicit knowledge, for example, compiling data and preparing a report that analyses and synthesises these data. The report constitutes new explicit knowledge.

2.5 Knowledge transfer beneficial to universities

As we have seen in the previous sections, there are four ways to transfer and transform knowledge: (1) socialisation, (2) externalisation, (3) internalisation, and (4) combination. Universities must be sure that students get to know these four ways, because this could effectively help them to obtain the most benefits from the internship. By tapping from different modalities, and transferring between them, both the student and the university can obtain the knowledge benefit they look for. Universities could acquire enhanced explicit knowledge from companies, while students could acquire their enhanced professional experience.
For the most part though, only the first three ways i.e., (1) socialisation, (2) externalisation, and (3) internalisation, play a role in the on-site internshipping. Combination (4), is mostly performed at the university itself.

As concerns socialisation (1), one refers to the transfer of tacit knowledge. The key here is to remember that tacit knowledge cannot be articulated, but can be communicated or transferred. Remember Polanyi's example of being able to pick a face out of a crowd? Although one might not

be able to adequately articulate how one is able to do that, or even to describe facial characteristics in such a way that someone unfamiliar with the face in question could pick it out of similar looking faces, one is able to develop the ability to recognise that face by presenting pictures and developing the ability to recognise that face from several different angles. In professional life, socialisation often occurs through observation and/or imitation, but also by communication in such social places as the canteen and/or at the coffee machine. As far as remote internships are concerned, the process of transferring tacit knowledge from company employees to interns, is a real challenge. Deployment and proper use of Web 2.0 social technologies, will help to facilitate that process.

As concerns externalisation (2): making implicit knowledge explicit. This is a process of articulation. Sometimes students are able to do this on their own, and sometimes it will require the assistance of the teachers. As concerns internalisation (3), one speaks of skills development, more specifically, the acquisition of explicit, declarative knowledge as the basis for skill development. Often this works as follows: the intern is presented with a description of a way to perform a task, he/she practices it, perhaps haltingly at first but the proficiency improves with continued practice, and benefitting from feedback. Finally, the intern reaches the point at which the ability to perform the task is automatic, the intern no longer needs to think about it. Over time, the intern might even forget the original task descriptions which enabled the early attempts to perform the task.

Universities can benefit from internships in many ways. With regard to the knowledge transfer and transformation mechanisms, universities can benefit from two ways in particular: externalisation (2) and combination (4). These will help universities to acquire new knowledge and to know what kind of knowledge the industry is interested in, in order to develop new curricula and to strengthen the research in particular issues that teachers have not studied before. One cannot reject the idea that some tacit knowledge could be transferred from firms to university through the teachers involved in the internship programmes, but one can not be sure that this process will take place. It is unlikely that universities as whole are behind firms in knowledge. Of course nowadays university is far away from the German University of the thirties that was at the leading edge of knowledge in almost any field.

3. Experience survey of conventional internships

This chapter describes an experience survey of conventional internships. Besides the introduction and the description of the research methodology in sections 3.1 and 3.2, different internship types along with their characterisation are described in section 3.3. How internships are organised along with their cycle and pass through is presented in 3.4 and 3.5. Improving the organisation of conventional internships is presented in section 3.6. The overall strengths and weaknesses of conventional internships and the derived opportunities for remote internships are described in section 3.7 and 3.8.

3.1 Introduction

Internships can be considered work-related learning experiences which provide students, graduates, and career changers with the opportunity to gain important knowledge and skills in particular fields. From the academic point of view, an internship can be regarded as a short-term (intra curriculum) experience within a (public or private) organisation, which provides a work experience in the domain the student is already engaged in, or would like to know more about, in order to make certain career steps. Internships provide for valuable work experiences and successful internships will increase a student's confidence in his/her abilities. Student internships can provide the opportunity for students to gain valuable experience in certain domains. They can help determine if a student's interest in a particular career is genuine. Internships can also help create a valuable network of professional contacts, and internships are a good means of building credit for a university. Internships are applicable to any educational level, ranging from undergraduate student to postdoctoral fellow. They are embraced by corporations, trade associations, non-governmental organisations, and national, state, and local government. Internships can also have an international character, stationed in different countries, and can provide valuable cross-cultural experiences and immersion opportunities to improve foreign-language skills. There are two basic kinds of internships, valid throughout universities and organisations, which serve different purposes.

The work experience internship:

Most often this type of internship is served within the second or third year of the university period (Bachelor). The placement can range from 2 months to sometimes even one full university year. During this period the student is supposed to apply the academic knowledge as consumed during university study, and put this into practice. In this way, the student obtains valuable work

experience in the field of study. The experience gained, will be helpful in finishing the last year of the study.

The research internship (graduation) or dissertation internship:

This type of internship is generally served to students which are in their last year of university study (Master). In this type of internship, the student performs research for a particular organisation (public/private). The organisation can have something that they feel they need to have improved, or the student can choose a challenging topic within the organisation himself. The results of the research study are described in a report and are most of the times presented to a supervisory board.

Internships definitely have a lot of benefits. Internships provide one with the opportunity to focus on one's aspirations, broaden one's base of skills, and add to one's base of work experiences. An internship is an excellent way to investigate a prospective employer; it can provide an easy and productive way to gain understanding of an organisation and the people who work in it. Internships also offer opportunities to develop new skills and networking with individuals, with whom the student might ordinarily not have come in contact with during his/her formal education. Developing such network could lead to a recommendation for student's first "real" job. In a competitive job market, a positive internship experience could provide students with an edge, especially if colleagues with whom you are competing with have not had this opportunity afforded. The range of experiences varies from working in teams, drafting reports, communicating your work in verbal and written form, solving real work-place problems, making decisions, learning leadership skills, and supervising other people. Or, students could be asked to do something completely new for the organisation, such as developing strategies for (new) websites on behalf of specific projects.

Internships provide students with opportunities to experiment and pursue careers that match academic and personal interests. There are many benefits to completing an internship including the development of strong teamwork skills, balanced with the exercise of individual responsibility, the opportunity to experiment with jobs that match academic and personal interests, and/or the chance to develop industry-specific commercial or marketing skills, not provided for in education, as such. Internships also increase the likelihood of building professional networking contacts and mentoring relationships. Internships can also help students to become more experienced and successful job applicants when seeking employment after graduation. In fact, many employers specifically ask for internship experience in the application process, and often look to their own interns as possible candidates for full-time positions. One might expect that with more and more

people engaging in internships, employers are coming to expect to see them listed on the resumes of their prospective employees. Internships often turn into job offers: all the more reason to do an internship and to take the job very seriously - it is the first impression you make on the organisation and person, who is likely to become your future employer. An internship is a great way to get an inside glimpse of an organisation and/or a particular occupation. It can help discover whether the career a student is considering, is actually the right choice or not.

Internships can be viewed along different dimensions. One dimension of internships is that they can be either paid or unpaid. Internships may be either paid, unpaid or partially paid (in the form of a stipend). Paid internships are most common in the medical, science, engineering, law, business (especially accounting and finance), technology and advertising fields. Internships in not-for-profit organisations such as charities and think tanks are often unpaid, volunteer positions. Internships may be part-time or full-time; typically, they are part-time during the university year and full-time in the summer, and they typically last 6-12 weeks, but can be shorter or longer. Another dimension of internships is that they can be either for-credit or not-for-credit. For-credit internships require the students to develop a strong academic backbone, a set of organising principles that will foster a particular discipline of mind. Internships that are primarily clerical or mechanical do not qualify for schemes of academic credit. Students looking to perform an internship for-credit usually will have an academic supervisor overseeing and setting criteria for the internship. To meet the academic component of the internship, students may be required to complete a journal, essay, or presentation so as to illustrate the knowledge and skills they have learned. Although credit for an internship usually rolls into the cost of regular college tuition, most colleges require that students pay per credit hour for a summer internship, which can get to be quite expensive, especially if the internship is unpaid. Generally, credit-based and non-credit-based internships are considered to have equal value. If a student is not in need of academic credit, and it is not required for a major, the student may elect to do an internship as a skill-building experience. Note that some organisations only offer for-credit internship opportunities. Internships for-credit can offer an experience which is rewarding and geared specifically towards academic maturation. Internship credit is usually included in the academic curriculum, but summer internships may require a per-credit hour fee paid to the college. Internships generally do not provide students with any major income source. Many internships are often unpaid, although in some cases, universities offer course credits for these internships. Another dimension of internships is typically that internships can vary across a wide variety of domains including a range of possibilities within both private and public sectors. Last but not least, location is a final important dimension of internships. Internships can often include opportunities to move to different geographic sites. Interns can choose for stationing either locally, nationally, or internationally.

Internships also provide students with a kind of personalised, subjective, experience. The experience may sometimes be a mixture of excitement and anxiety. Students may worry that they are not prepared for the internship or worry about fitting in. Students can prepare for this though: they can check with their supervisor to find out what is expected of them, and check if their assumptions are correct. Discussing learning objectives with the supervisor can help. An apparent part of the internship process is called the stage of disillusionment, when the excitement wears off, and students may feel somewhat disappointed about the "real world." Sometimes students discover that the world of work is very different from what they are used to in university. Also, they might be disappointed to find that their supervisor has other responsibilities besides supervising them. Confrontation is another stage. After the students experience disillusionment, they may have to re-examine their goals and expectations. Comparing the internship description and/or the learning goals with reality may help as a reality check. Interpersonal issues should be discussed. As the students gain competence in the field, their morale increases. Students feel more professional, and can show increased productivity. Students can ask for (even) higher level tasks; and, feel more part of the organisation. At the culmination stage i.e., at the end of the internship, students may feel pride in their accomplishments, as well as sadness upon ending the work experience. There may be some guilt at not having accomplished more, or because the project on which the students have worked, may not continue once they leave. Talking with the supervisor may help to deal with these feelings.

3.2 Research methodology

In order to outline models of traditional internships in European higher education, and to discern possible challenges or barriers to the preparation and implementation of remote internships, research has been conducted on conventional internships at higher education institutions, using a qualitative survey questionnaire. The main aim of the initiated (CSVM) research was to obtain insights in how internships at higher education institutes throughout Europe, are organised, if hosted at all. Such insights are very important to the providing recommendations on the possibilities for generating possible remote internships in higher education. Research was conducted during the period of December 2006 to January 2007. The research methodology included a two-step approach. The questionnaire was firstly directed to the partners of CSVM and secondly, passed along to affiliated universities of those partners, in specific countries. One of the big advantages of this two step approach was the enhanced outreach obtained. In the first step, the CSVM university partners from the Netherlands, Estonia, Hungary, Spain, Italy and Poland were taken up. In the second step, the affiliates were included. Respondents of the overall survey: five universities from the Netherlands, one university from Estonia, one university from

Hungary, one university from Spain, one university from Germany, one university from Lithuania, four universities and a polytechnic from Italy, and one university from Poland. The survey was designed to assess practices of conventional internships and to provide both positive and negative arguments for the possibility of servicing remote internships in institutes. The survey was designed as a qualitative survey, and was not meant for any statistical inferences. All respondents of the survey were in a position in which they were responsible for internships within their university and/or faculty. Given the different echelons within universities involved in organising internships i.e., central or decentral, the outcomes of the survey not always (and necessarily) represent official university policy. All respondents were asked their expert view on hosted internship types and their characterisation, the actual organisation of the internships, the internship cycle and pass through, the internship evaluation, and any strengths or weaknesses of internships.

3.3 Internship types and characterisation

Based on the conducted survey, the traditional internships can be (sub)divided into certain academic levels. They can be divided into: Bachelor, Master, or the combination of the two. Within the institutions where research was conducted, also PhD internships were indicated. Based on the research, no difference seemed to exist between BA and MA internships concerning them being placed in the frames of studies programme, and getting credits for doing them. Most of the internships were obligatory and connected with getting credits for studies. There was also mentioning of ‘additional internships’. These ‘additional internships’ differ, and do not apply to all students of a given faculty, but are obligatory for only those persons, which have chosen a particular specialisation in the frames of their faculty. Universities in the Netherlands and Italy also indicate the possibility of internships not being included in the curriculum and accordingly not obligatory for obtaining a degree and/or the possibility in which an (obligatory) internship may be substituted by 2 exams.

From research various types of internships can be distinguished: work placement internships, research internships, teacher internships and/or the combination of work placement and research ones. Work placement internships seem to be realised within each faculty, and also research internships seem mostly met. The remaining types appear rarely and are often considered pedagogical internships.

The internships observed in our (CSVM) research, can be subdivided to location, sector and activity profile of an institution which offers the student its internships. Whereas location or intern

stationing is concerned, the internships are generally realised on a local, national and international level. For example in Poland in most cases students realise their internship in the region where they study, rarely on national level. In the Netherlands though, more internships are executed on national and international levels. In Hungary for example, internships are also typically executed on the national level. In Italy, internships are also executed mostly on national and local levels. With regard to the sector characteristic: institutions accepting students for internships seem to stem from a variety of sectors: governmental, NGO, business sectors, as well as scientific research. The research indicates that a substantial part of internships are actually executed within the governmental sector; this is apart from internships of economic faculties, for which most internships are designated to the business sector. Whereas research internships are concerned, the industry and research sector seem the obvious choice.

Some particularisation of the internship findings within our research, can be given. Although statistically limited, examples from a Polish university are presented, so as to provide an indication as to what kind of domains, the university is active in. In the domain of (media and industrial) production, the following departments are active: philology, psychology, economy, management, marketing, business administration, mechanical engineering, engineering and architecture, and internationalisation. In the domain of trade and commerce, the following departments are active: philology, psychology, economy, management, marketing, mathematics, internationalisation, engineering and architecture, law. In the domain of transport, the following departments are active: philology, psychology, economy, internationalisation. In the domain of services, the following departments are active: philology, psychology (healthcare), economy, management, marketing, biotechnology, medical services, applied linguistics, mathematics, social sciences, information studies, business administration, internationalisation, health, medicine and life-science, law. In the domain of education, the following departments are active: all pedagogical internships regarding specialisation of animator and culture manager, social welfare and disability studies, architecture. In the domain of research, the following departments are active: economy, earth and life sciences, wetland and water research, agricultural and environmental sciences, internationalisation, mechanical engineering, engineering and architecture, law. In the domain of social institutions, the following departments are active: pedagogy. In the domain of land investigations, the following departments are active: archaeology. In the domain of government administration, local government administration, and archives, the following departments are active: history. In the domain of cultural institutions, the following departments are active: pedagogy - animator and culture management.

3.4 The organisation of internships

It is unlikely one finds one single central unit which is responsible for the coordination of all students' internships for all faculties. Central organisational units responsible for internship coordination on individual departments are a scarcity as well. Every department seems to have its own structure and system for internship coordination. The units responsible for internship coordination are often placed on different management levels. An overview of some observations:

- dean's office for a given department;
- faculty unit at faculty level;
- central unit on university or institute level;
- internship supervisor at faculty;
- internship supervisor of a specialisation at the faculty;
- internship supervisor of a certain study subject of a specialisation at the faculty;
- internship supervisor of a certain study year;
- promoter or coaching professor;
- placement co-ordinator for a master programme;
- career service office from the university.

A central database would be an outstanding help for internship matchmaking in cases where internship coordination is not that transparent. Unfortunately, many universities are deprived of a central database with available internship places for students. The conducted research though, revealed an Italian university, at which students could post their CV on the university website, and companies which had an internship agreement with the university, could access applicants' CVs and select students for internships. Often such a central database, or information about it, does not exist (even) on the faculty level. Examples hereof were found at universities in the Netherlands, Italy, Hungary, Estonia, Hungary, and Lithuania. Moreover, it often occurs that universities do not even have an internship coordinator on the department level. Concerning the research, in the Netherlands, one university for example, lacked that. In many cases, students themselves seek for places where they can have their (either facultative or obligatory) internship. They consult with their internship supervisor, and also with units within the university that are experienced with internships, as well as probe the university's career service office, when present.
Within the university, a member of the staff might be appointed on the department level, so as to be responsible for the actual internship organisation. Usually he or she is then responsible for a certain group (specialisation) of students, in looking for internships places. In some cases, the initiative of providing an (obligatory) internship comes from the employers directly:

instantaneously scouting for students they need. This type of internship provision is a rather passive one, in which students have the luxury to select internship offers they deem appropriate. This works only when universities have built a name for themselves, and when market conditions allow for it. Students are accepted to progress their internships on the basis of an agreement: (1) between the university or faculty authorities and the internship organisation, (2) between the student and the employer, or (3) one which binds all three parties: university, employer and intern. Only in sporadic cases do internships take place without the need to make any agreement.

Regarding the remuneration of internships, it may well be the case that students do not get any salary during their internship, although organisations often provide the students with some compensation. Sometimes employers may pay for the actual students' work, sometimes they may provide only for a return of the incurred expenses during the internship i.e., transportation costs, accommodation costs, et cetera. Obtaining a scholarship for an internship also belongs to one of the possibilities. The university is usually not the one financing students' internships. However, research noted, that compensation could be given to students for support of professional training useful to the institute, faculty, department, but never as a direct financial compensation for the internship.

Admission requirements for students to enter internship vacancies seem to be not as high as requirements posed in professional recruitment. Sometimes there is no formal recruitment and assessment for student internships, but rather a recommendation from an academic supervisor which can be considered by the employer indirectly. Occasionally, employers who are greatly in demand may ask candidates to write a research proposal in advance and use these proposals for selection purposes. Relevance and quality are important criteria at this level. In most cases, the procedure is to write a CV with a motivation letter. In some cases, marks of certain (specialisation) courses count as additional expertise. Often an individual interview between the employer and the student candidate is organised for the internship. In a few cases there are exams which test certain abilities which are essential to pursue the actual internship, such as with an internship for an applied linguistics student, an exam of translation and understanding of a professional text could be obligatory.

3.5 Internship cycle and pass through

During internship students are usually obliged to independently prepare an initial plan of their work during the internship, sometimes they get such a plan from an internship supervisor.

The duration of an internship varies and depends on faculty, specialisation and internship type. In Poland for example, internships last usually less than 1 month - about 2 weeks, rarely there are monthly internships or longer (1-3 months). The same is the case in Hungary where internships also last less than one month. In Italy internships last between 3-6 months and more than 6 months. In Estonia internships last 1-3 months and in the Netherlands both research and work placement internships last longer i.e., between 3-6 months. The number of internship hours during a week, varies. Often students work 8 hours per week (officially). There are also faculties, where internships could last more than 40 hours per week e.g. history, biotechnology, pedagogy, animator, mathematics. At some European universities the time of the intern's work is constant and lasts 40 hours per week e.g., work placement internships in the Netherlands or in Hungary. Sometimes organisations manage internship procedures and intern's work times, in different ways. Depending on the faculty, the specialisation and the internship type, internships can join with studies or be divided in separate slots allocated for it. Examples are internships conducted inside a faculty e.g., library science, with up to 8 hours of internship together with studies; or, 9-24 hours, for holiday internships.

The university which obliges students to complete internships, will help in looking for a place for internship, will sign the agreement with the internship organisation, and will provide the student with support during the internship. There is a local supervisor present on behalf of the employer and a supervisor on behalf of the university: often the internship coordinator or coaching teacher. Scope and form of such a support is determined by the units coordinating the internships at the university. The supervisor from the university is in constant contact with the student during the internship. The task of the supervisor is consultation and control during selection of the place of the internship, paying special attention to the specialisation of the students, as well as topics of their research/diploma work; also to oversee a student on an internship by visiting the place of the internship, consulting with the student on the progress of the internship, process monitoring, providing feedback, facilitating the research process, and taking in the student's remarks and problems. The (on-site) internship supervisor from the organisation, provides assistance by making the introduction to the work environment system, and by planning and supervising the intern's tasks. A cooperation between the two types of supervisors is normal in this case.

Students are assessed on the internship by the organisation, where the assignment takes place. In most cases it is an appraisal after internship completion, sometimes in the middle of duration, or sometimes more often. There are flexible categories for internship appraisal: the report of an internship, internship documentation, assessment of "internship diary", opinion of the employer, scenario of lessons, documentation of other didactic activities, et cetera. The appraisal in most cases is made by mark of internships, attendance at internships and by written report. In few

cases, students are assessed by points of certain tasks. The written report is considered excellent, satisfactory or non-satisfactory. Often, the aim and the order of the work for the internship are predefined in a document. Students obtain feedback hereon, from the employer, after completion of the internship. It may be in an verbal or written form e.g., report. Also, the university receives a kind of document as a feedback from the employer after the internship completion e.g., filling out an evaluation form which is provided by the faculty. This may also take the form of e-mails expressing the opinion of the local supervisor on behalf of the employer on the intern's performance, which are sent to the internship coordinator. An opinion that sums up the whole of behaviour and attitude of the student during the internship is provided by the academic supervisor. Sometimes this summary can have the form of a meeting or discussion, or a letter between the two supervisors on both sides. Specific forms of student assessment can occur on completion of an internship. For example, some universities hold a public defence at the end of an internship, at which the student is to present her/his activities of the internship, and a commission consisting of representatives of the academic department and the internship organisation, will assess his/her activities on the basis of a written report and verbal presentation/defence.

As internships are an intrinsic part of the study programme, students will obtain credits for them. They will receive a certain number of ECTS points. However, this number of ECTS is not the same in all universities, or faculties, and not the same for different countries. The provision of credits depends on many elements, such as the kind of internship, the kind of internship organisation, the duration of the internship, et cetera.

3.6 Improvement of the organisation of conventional internships

To obtain more information on how the persons responsible for organising the internships at the university, actually assess the functioning of internships, the respondents of the survey were asked to assess the internships from an economical, organisational, technical, and pedagogical dimension. Much information was obtained concerning the economical dimension. There seems to be a need to improve economic conditions of internships. By our European respondents, the following improvements have been suggested:

- improved financial support for students;
- gratifications for the work of students during internship or for the best students;
- official insurance for students during internships;
- scholarships for interns, full reimbursement of all of students' expenses;

- more funding for Master students who enrol for internships abroad;
- those responsible for internships in the institutions, should be compensated;
- possible financial gratification for unpaid internship supervisors from university side;
- to find resources to pay experts in practical placements for their work;
- on-site organisational supervisors should receive a financial contribution;
- reimbursement of internships supervisor's expenses for visiting internships;
- subsidy possibilities for organisations that are willing to host internships;
- specific financial support and incentives by government, for organisations providing efficient and productive practical training for students. It is noted that a considerable amount of time and expertise is needed to provide for the management of internship placements, something which is not always available at those organisations which work according to a prescribed and strict production plan.

With regard to the organisational dimension several needs were listed:

- the idea of using an internship database with available internship organisations, which is open for staff and student;
- carrier service centre as a support unit for organising internships;
- enough staff to advise students on academic and organisational aspects of internships;
- improved communication between university and internship organisation;
- development of specific contacts with international networks for internships abroad;
- matching preferences of students' and internship organisations' sides;
- more involvement of students in the process of goal defining for the practical placement;
- unifying organisational dimensions of internships at different faculties at the university;
- coordination of internships, on-site (one person responsible for all internships);
- obligatory organisational insurance for students during internships;
- improving the organisation's reward system for internships;
- possibility of flexibilising the internship duration (extension possibilities).

Concerning the technical aspect of organising internships, a number of remarks came forward:

- creating an information and communication platform for internships e.g., an internship portal;
- web-provision of educational internship resources to students and on-site supervisors;
- unification of tools and methods of internship systems (e.g. unifying "internship diary");
- allowing students to obtain certain guaranteed technical skills;
- invoking internships which may last longer, using ICT flexibilisation possibilities;

- work placement hosting inside the university, by improvement of ICT infrastructure;
- install enhanced communication tools between university and organisations for process management of the internships.

With regard to the internship assessment in the pedagogical dimension, especially the cooperation between the university and the internship organisation comes forward. It deals with contacts between the internship supervisor from the university and the organisation, and also with the way students are treated by employers. Contacts between both supervisors relate most often to the tasks and the skill training needs of the internship, and how to best complete the internship with success. A serious treatment of an intern by the organisation, as well as possibilities for long-term cooperation with the internship organisation is regarded as upmost important by the university.

To asses the (pre or post) suitability of intern organisations, evaluation reports and/or forms are exchanged between supervisors. Important herein is the question whether all required fields have been filled in by the employer. Receiving but a portion of the answers on the questions, or receiving uncompleted open questions, may reveal a lack of comprehensive look on the internship, and may show lack of will or a need for change of organisation. Different organisational aspects can influence the success of a work placement though. The most important aspects can be subdivided into: organisational staff, organisational structure, and organisation and atmosphere.

Important aspects denoted concerning the organisational staff:

- qualified, professional employees with a relevant education;
- well trained, highly qualified experts, providing theoretical and practical guidance for students during the internship;
- qualified, experienced, creative and communicative internship supervisor, a person responsible for internships in the organisation, acknowledgement from the organisation’s director side;
- will to cooperate from the internship’s organisation side (deep contact opportunities);
- good coaching on every level and aspect during internship, with written reporting of work;
- knowledge about the aims of the internship and the faculty’s rules and procedures, and acceptance of these rules and procedures.

Important aspects denoted concerning the organisational structure:

- generally larger organisations, with a very wide range and a variety of research, a variety of work;
- modern and transparent structure of management; unites rightly sized, with good level of documentation, high level of organisation, good infrastructure;
- appropriate facilities (i.e., work space, computer, access to data sources)
- good technical/didactic equipment;
- up to date technical background relating to the profile of organisational activities;
- organisation which is interested and involved in interns' developments;
- good attitude towards academic education;
- international company or national company with international contacts.

Important aspects denoted concerning the organisation and atmosphere:

- openness of organisation's workers to students' proposals;
- suitable organisation of internship activities; well organised didactic process;
- presence of internship supervisor, who executes the tasks and gives support;
- time investment in coaching, experience with supervision of students;
- ample space and time for a student to learn new skills;
- enable the gathering of practical experience; show possibilities of practical usage of knowledge;
- motivate students and entrust them with responsibility for certain projects or tasks;
- offer students the possibilities of personal growth and development;
- relevance to the competence development of the study programme.

In order to optimise the realisation of future internships, a description of internship barriers, which can be used in the selection of suitable internships, shall be presented next. Although the success of an internship is always a combination of several factors, it does provide handles for more awareness for those involved in the organisation and management of internships.

Staff related matters:

- no on-site responsible internship coordinator;
- no internship mentor appointed within the organisation;
- lack of qualified staff in the organisation;

- unequipped staff to face contemporary challenges;
- not enough (interactive) working hours by the on-site internship supervisor;
- general lack of good quality supervision or coaching.

Organisational structure related matters:

- administrative and legislative barriers;
- bureaucracy, only paperwork for students;
- low administrative culture of institution;
- underdeveloped structure of management;
- too small of an institution;
- to many internees to manage;
- no time to supervise, not a specific project;
- narrow range of offered work activities;
- technical problems, not enough work places;
- not enough technical resources (TV, DVD, technical instruments);
- no human resource for the research or study work for students;
- unsuitable working conditions;
- no reference to science and academic education.

Organisation and atmosphere related matters:

- no possibilities for students to realise their own initiatives and ideas;
- very slow process of assimilating students into the work;
- students are restricted to routine work only;
- not a flexible enough programme of internship;
- not enough possibilities for students' development and competences;
- not enough attention given to students;
- the contact at the employer is not able to communicate with or give feedback on the work of students due to time constraints, willingness, and/or position;
- employer is interested only in quick, qualitative results;
- director of the organisation does not acknowledge the presence and compensation of students.

3.7 Strengths and weaknesses of conventional internships

Internships are a kind of promotion for the university. For students, internships are required so as to complete ones study. In this section the strengths and weaknesses of conventional internships are recapitulated. Many strengths of an internship relate directly to the students: students can have direct contact with the work environment, choose between different job positions, discover structures and organisations, take part in different activities in the organisations, gain practical/professional skills in the work environment, find out the reality of professional life, work with and learn from people who are experts in their fields, gain interpersonal and social skills, gain professional contacts, verify university knowledge and put this into practice, and obtain responsibility for the tasks they do. Weaknesses at the university: lack of a central unit for internship organisation and management, lack of unified methods and tools for internships, lack of a database with available internship places, and administrative and legislative barriers. On the employer side, weaknesses are: the organisation is not prepared for hosting interns, there are no possibilities for students to realise their own ideas and initiatives, there is a narrow range of offered work activities, students are restricted only to routine work, lack of recruitment procedures, lack of good quality of supervision, no reference to science and academic education, and no job time or programme flexibility. More technical, weaknesses refer to: lack of work places, inappropriate working conditions, and not enough ICT and office resources. Financial weaknesses refer to: lack of financial compensation for students, academic supervisor and on-site supervisor, and financial difficulties for students when choosing an internship abroad.

It has become apparent from the research performed and described in previous sections, that there are many factors in play that influence the success of internships. In fact, it has confirmed that various student internship models are in existence within European higher education. On the basis of the research conducted at the different higher education institutions in Europe, it has become apparent that there is no unified model of internshipping, for countries and universities. The research indicates that there is no general model of internshipping in the given countries, not even in the given universities. There are only guidelines for internships, prepared to fulfil the needs of individual faculties at the university, and approved by the authorities of a faculty. There is no central university unit found, which coordinates the entire internship management system for a single university.

3.8 Opportunities for remote internships

In this section the opportunities for remote internships are discussed, by taking in the viewpoints of the previous sections, concerning statements on traditional internships (i.e., on-site internships). It appears as tough many of those responsible for organising the traditional internships, are not sufficiently aware of the potential of remote internships. In the academic world there seems to a deeply rooted face to face master-apprentice educational model. The conviction that live interaction with an academic of certain educational background is an essential element, if not the most important facet of an internship, generates an important barrier in accepting benefits of remote internships in this community. If one takes pedagogical and psychological faculties, where interpersonal communication is playing a basic role in an internship, opinions are ventilated such as: “very important in the internship is a contact "face to face", “the added value of the human relationship would be lost”, “in regard to internships in kindergarten – it is not possible”, “no possibilities at clinical specialisation (therapy and diagnosis)”, “it is not possible because of the specificity of the pedagogical internships”, “direct work with pupils is needed”, “in regard to pedagogical studies it isn't a good idea”, “internships through internet can not replace direct contact with children (pedagogy)”, “is not possible because of specificity of psychologist work (therapy and diagnosis) and limited possibilities of controlling whether occupational ethics is obeyed”, “I can not imagine virtual pedagogical internship”, “there aren’t human relationships and in this hypothesis it would be difficult to evaluate the quality of the internship”.

An often repeated argument is the necessity of embedding an intern into the work environment in a given organisation. This argument is repeated not only by representatives of pedagogy and psychology, but also in case of students serving teacher internships in various faculties. Attendance at school and observation of working of a school system is required in that case. An internships through internet is rather ineffective, as of the specific nature of the internship i.e., direct contact with workplace is needed. During teacher internships, students need to be in direct contact with school reality. The same situation appears in case of e.g. archive internships, libraries or research internships, where getting accustomed to the work environment constitutes a very important element of the internship: “practical and direct involvement in archival work is necessary”, “attendance of library is necessary in order to get to know its organisational structure”, “internships exclusively via the internet wouldn't give students possibilities to get to know work environment as a whole”, “no, because of the nature of the research”, “no, student have to perform practical research work in a laboratory”. It seems clear that we don’t have to worry that the traditional internships will be replaced by remote internships. Inevitably, certain tasks shall always require a physical proximity. However, in many faculties it is possible to transform current traditional internships into on-line versions. The coordinators of traditional

internships on such departments as economy, management and marketing, mathematics, linguistics, and computer science, perceive and indicate a possibility for realisation of remote internships.

An area in which remote internships could be helpful, either remotely or blended, is mechanical engineering, where ‘electronic’ consultation on a certain problem, and communication on the solution of that problem, can be very advantageous, given the speed and efficiency in which it can take place between parties. It can be used not only for theoretical problem solving, but also be effective in cases of practical/experimental work, e.g. carrying out round robin tests, comparative measurements, running computer programmes, simulations, or solving modelling problems. In such cases, partners carry out their tasks separately, in their own way at their institutes, according to the mutually developed work plan, with simultaneous and regular consultation via the internet. Based on results and experiences, they can exchange new information, even daily. The work is then executed much more efficient and effective. For parties just starting with this type of cooperation, a blended method might be more appropriate at first. The method of blended learning is considered advantageous in the personal consultation process, and moreover joint training by trying technical facilities of each other, could promote the mutual understanding and cooperation. The best results are probably obtained in combining the two approaches: by periods of individual (off-site) work, followed by short site-visits of the partners (on-site), repeated a number of times.

Among the respondents that were in charge of organising traditional internships in their universities, a number of them, were explicitly and outspoken positive about remote internships. They considered remote internships to be quite new and innovative. Feedback of the sort, opens up possibilities for remote internships within a given faculty, and may result in applying the computer and the internet, as basic tools, in remote intern work placements. Even if persons serving traditional internships within a given faculty do not perceive remote internships to be applicable to all specialisations, they indicate that within certain frames of specialisations, in which the internet and the computer are a significant element of work (e.g. in philology media and editors specialisation), remote internships will stand the test. In traditional universities, where a significant majority of the internships is served in a traditional system, it is unlikely to see radical transition from traditional to remote internships. Combined face to face internships with remote ones, are more realistic i.e., application of a blended model. Such a scenario is especially powerful within universities or faculties, where on-line forms of education such as virtual campuses, are used as a support of traditional academic education. Respondents’ enhanced knowledge on e-learning and the application of ICT in education, seem to correspond with a more positive opinion on the possibilities of organising remote internships.

4. Case studies on remote internships inside Europe

This chapter describes the state of affairs as concerns remote internships in Europe. The chapter presents case studies on remote internships inside Europe. Eight cases on remote internships are described. The first four cases stem from: Central Europe Review, Knowledge Politics, Turin University, and Open University of Catalonia. The second four cases stem from a European project called INTERN. This project, which was co-funded by the European Commission under the Minerva programme, piloted remote internships, so as to find global guidelines and recommendations for promoting remote internships. The INTERN project typically was an on campus student class project inside the curriculum. Student projects were supported by relatively expensive university video conferencing facilities: interactive Web 2.0 audio/video applications, were not available at that time. Section 4.1 provides the overview of the case descriptions, whereas section 4.2 provides for an initial evaluation of the cases.

4.1 Overview of case descriptions

Case description one: Central Europe Review, the Journal of Central and East European Politics, Society and Culture, Czech Republic

Introduction:

Central Europe Review is an online weekly journal founded in June 1999 so as to offer new perspectives on Central and East European politics, society and culture. The magazine became an authoritative source of information on the region, cited widely and winning awards and commendations around the globe. It won the “NetMedia 2000 Award for Outstanding Contribution to Online Journalism in Europe”. In the beginning of Central Europe Review, the informal structure of the magazine was no more than a URL, owned by one person for the first year of its existence. In the summer of 2000, Central Europe Review Ltd. was established as a company limited by shares in the UK. Central Europe Review (CER) provides authoritative news and analysis from across the world. A characteristic of CER is that it is runs solely by volunteers. All writers, editors, proof-readers or photo-editors are volunteers, which have been top-notch: experienced journalists, seasoned editors and distinguished academics. Who collaborated with CER felt it was an exciting project to be involved with. The journal is edited around the clock and around the planet; offices are always virtual, and texts would fly from Stockholm to San Diego to London to San Jose, Costa Rica for all the work they needed: translation, first edits, second edits, proof-reading and HTML mark-up. With 30 or 40 articles per week and as many as 100

contributing editorial volunteers located all over the world. The open mind mentality of this journal is also represented by the choice to use remote internships from higher education (aspiring journalists and publicists) from all over the world; they should be motivated, they should have internet access and the desire to deepen their knowledge about Central and Eastern Europe.

Internship activities:

Students, who wished to have an experience in the on-line publishing and journalism sectors, could join the remote internship programme. They were expected to take part in practical activities such as editing, photo-editing, translation, article development and review. CER works with university students from all parts of the world through their remote internship programme. Interns are given a series of assignments such as readership drives, establishing link exchanges, internet site registration, HTML mark-up of articles, proof-reading, fact-checking, link support for articles, link checking, and graphic work and design.
In return for these efforts, CER endeavours to teach interns as much as possible about journalism, Web publishing and, the politics, societies and cultures of Central and Eastern Europe. With an extensive network of journalists, academics and business people in the region, CER is well placed to offer such knowledge. Through extensive networks of journalists, academics and businessmen in the region, CER is able to offer this kind of knowledge; and, it is a “bridge” to the working environment. CER is engaged in training trainees according to the individual interests and lets everyone work in contact with trade experts. For example, for the interns that speak Polish, they assign them the task of assisting their Poland Editor with proof-reading, fact-checking and commissioning new contributions. The Poland Editor would act as a mentor. Moreover, the interns wanting to learn more about Web publishing would be instructed in HTML (the language of Web pages) and the ins and outs of getting articles to look properly on the Web. They promise to tailor the internships to the individual interests of each intern and get him or her working closely with someone who knows the ropes. The intern’s application submission is by e-mail, to the Coordinator for the Development of CER. In the text, the trainee will describe himself, his interests, his language skills, his experience, and he will explain its reasons and its expectations.

Information and communication technology:

CER's remote internship programme is essentially based on asynchronous communication between the intern student and the company. Interns take part in CER’s activities primarily through e-mail, sending their work, and learning from their mentor electronically. This principle is considered suitable for CER, as no matter where the mentor and the intern are, they can

communicate easily with e-mail. In some cases interns meet their mentors face-to-face, or speak at the telephone, but most of the time they communicate virtually. They have no special infrastructure, and do not use any virtual conference tool. The website of Central Europe Review is located at: http://www.ce-review.org/_internships.html.

Case description two: Knowledge Politics - Theory and Practice for the Information Society, an independent think-tank, United Kingdom

Introduction:

Knowledge Politics is an independent think-tank dedicated to exploring the implications and possibilities of the development of an "information society", and dedicated to influencing the debate over its meaning and future. Indeed, the Knowledge Politics' field of research consists of policies and changes related to the information society: media, internet, culture, education, intellectual property, e-government, technology and research. Knowledge Politics defines its primary function as providing a gateway to research produced by other individuals or organisations, notably academics and think-tanks. This approach emphasises the importance of knowledge and its distribution as the key to a progressive information society. An extensive set of links on the Knowledge Politics website demonstrates this. But the organisation also publishes its own material. This is mainly in the form of pamphlets or discussion documents. To date, all of Knowledge Politics' publications have been written mainly or entirely by external contributors. The organisation brings together the different strands and perspectives on information society policy in one place, to allow political scientists and public policy researchers to access the best new research and opinion from across the political world.

Internship activities:

With regard to a remote or virtual internship programme: Knowledge Politics recruits interns to assist its research team. All of its internships are virtual. It allows people to work whenever and wherever they want. The internships are unpaid and generally last up to three months, with the possibility to extend that period. The interns are expected to take part in a research conduct, based on their preferences on the following activities: monitoring policy developments, editorial work on publications, writing material for the site (e.g., blog postings, news stories, press releases), and literature reviews. The intern's application submission consists of sending, by e-mail, its Curriculum Vitae to the so called Research Responsible.

Information and communication technology:

At Knowledge Politics there is no special technological infrastructure. Knowledge Politics does not use any virtual conferencing tool, and their virtual internship programme is essentially based on the use of e-mail and telephone. E-mail is the main communication tool between the interns and the company. The website of Knowledge Politics is located at: http://www.knowledgepolitics.org.uk/index.html.

Case description three: Turin University, virtual internships as part of a Master, Italy

Introduction:

Turin University provides a special educational offer, which consists of two online university Master courses lasting 9 months, plus 3 months of internship: a Master in writing and direction for television and the new media, and a Master in management, marketing and production for television and the new media.
A company referred to as the UNIST company, has the mission to develop excellence-oriented innovative training courses. This UNIST company, devised the didactic method for the Master, which is based on simple and flexible usability. Turin University has implemented the approach.

Internships activities:

It is possible to access to the Master's course contents directly from one's home, thanks to video lessons delivered by the best Italian and international teachers, and by the most important experts in communication, marketing and management. The video lessons are supplemented by graphical slides, video supports, key words, final syntheses and by a self-assessment of the learning process. At the end of each cycle of lessons, there is an assessment i.e., intermediate tests which are useful to monitor one's own knowledge and skills. The Master course activities are carried out within a specific learning environment, the Virtual Campus. In order to put into practice what the learner has learned, workshops aimed at developing specific skills and competences, such as write down screenplays, prepare production plans or plan the marketing activities of a communication product, are organised. A tutor is always available to support the student in the many activities envisaged by the Master course so as to answer the questions and coordinate the team work. With regard to the remote or virtual internship possibilities: a three-month remote internship is envisaged which will integrate at a practical level, all training paths. It will be performed "at a distance", at a multimedia communication company's site. The students

will be engaged in the realisation of concrete design activities. The remote internships are carried out, not as simulations, but in reality. The students can become truly involved in the scheduling of web TVs, which are used by some of the big companies for their local communication networks.

Information and communication technology:

With regard to the technology infrastructure: access to facilities supporting the remote internship, depend on the enrolment into the Master course. For this to happen, they must go through an assessment process. Students must first be selected into the programme. Students should perform an online test, aimed at assessing the student's basic skills. Once the selection is completed, the student will be contacted by a Didactic Manager who will let him know the result of the test, and will explain him how to get enrolled. The only technological tools required for the student are: a PC and a 640 Kb ADSL Internet connection. The website of the Online University Master's Courses is located at: http://www.master-telematici.it/index.php, Turin University: http://www.unito.it/.

Case description four: Universitat Oberta de Catalunya (UOC), Law Faculty, Spain

Introduction:

The UOC is deeply rooted into the knowledge society; its mission is to promote lifelong learning. For this reason, the university's educational methods make intensive use of information and communication technology, which allow for designing customised and flexible study programmes. The UOC, in meeting the needs of the knowledge society, adopts also the web-based educational model, which promotes: high-quality didactic activities, research work on ICT, and the spreading of knowledge.

Internship activities:

The design of a 'Practicum programme' was inspired by the need to deliver to the students/graduates in Law not only theoretical knowledge, but also the main skills that are required to practice this profession, and that are useful to access the labour market. The project, which is under investigation, obtains satisfying results as compared with the set objectives. It is to develop skills, by applying law in virtual contexts, herewith reproducing typical professional situations. The programme does not aim to transfer new theoretical content, but gives the opportunity which is viable in the UOC's Virtual Campus, to put into practice what is being learnt.

The student carries on his work at distance, going to his workplace virtually, where his head will entrust him several tasks. Actually, when the student accesses the Practicum area for the first time, he is welcomed by the Lawyer, owning the Bureau where he will carry on its internship and who, each time, will tell him the work he will have to do. The head communicates the tasks to be carried out, by leaving a written note on the desk of the virtual bureau, which the intern will note when accessing the Practicum; or by leaving a telephone message, indicated by a red signal on that same desk. An archive collects all the communications from the student. Once he has displayed its tasks, he will perform what he has been asked (task of various type and difficulty level), and he will save it on a file on the desk, that can be reviewed by the Lawyer to, who will reply by assessing the work done. In this way, all the student's activities are constantly monitored. Each task must be fulfilled compulsory. The student, who has any questions, can contact the owner of the bureau at anytime. By this same interface, the student can also access the Law Faculty database and the UOC library.

Information and communication technology:

With regard to the technological infrastructure, the student needs to have at his disposal an internet connection. He has to be online every day from Monday to Friday, connected to the Practicum Portal. In addition, he has to be expert on Law. 180 ECTS credits are awarded for successful internship completion. The intern website is located at: http://www.uoc.edu/portal/catala/index4.html, and at Centro Virtual Cervantes http://cvc.cervantes.es/obref/formacion_virtual/campus_virtual/peguera.htm.

The fifth, sixth, seventh and eighth case descriptions, have been taken from reports from the European INTERN project (Bijnens et al., 2002; Kristensen, 2002):

- in the fifth internship case description, a Norwegian SME, Tronrud Engineering, engaged students in Denmark, Norway and Finland in research markets, exhibitions and fairs for one of their products in other countries. The internship took place from September until December 2001;

- in the sixth internship case description, a French company, Kremlin Inc., a leading manufacturer of finishing equipment ran an internship programme from January until May 2002 and involved students in Denmark and France. The main task was to find out more about the Danish market and the potential market for spray equipment;

- in the seventh internship case description, a Nordic service provider, ICL Invia, which is and operator of advanced information systems, ran an internship that involved students from Finland and Norway, from September 2001 to December 2001. The objective of this internship was to investigate the use of information technology in Customer Relationship Management (CRM) for hotel chains and hotel marketing chains in Finland and Norway;

- in the eighth internship case description, the Danish DFDS Transportation Group ran an internship that involved Finnish students for three months, from September 2001 to December 2001. The objective was to carry out a logistic survey of track and trace systems in Finland.

Case description five: Tronrud Engineering

Introduction:

Tronrud Engineering is a Norwegian SME with about 50 employees working in the fields of industrial automation and purpose built machinery and has been in production for 25 years. The company is focused on innovative solutions for highly-specialised equipment, and among them the “Thread Controller TC1” loom, which reproduces digitised patterns, where every thread is controlled by a central computer. Tronrud Engineering, for the first time, works with a group of foreign students in the framework of the INTERN project organised by Buskerud, although it has past experience with this university. The project was about researching markets, exhibitions and fairs in other countries with a view to TC1’s market expansion. The company was also interested in having recommendations about marketing in different cultural settings.

Internship activities:

The remote internships, which took place from September until December 2001 involved students from Tietgen Business College in Denmark, Buskerud University in Norway and Arcada in Finland. The internship project represented an integral part of the course on Project Management (Multi-professional Teams and Trends). The specific work to be completed, consisted of the preparation of a company profile, the analysis of potential customers for Tronrud Engineering's digital weaver, the location of possible trade fairs in Denmark where Tronrud Engineering could market their products, the preparation of a list of competitors in Denmark, the description of how these competitors market their products at trade fairs in Denmark, the preparation of suggestions on how Tronrud Engineering could best be represented on the Danish market, and to report main findings to partner companies and to students in other countries. The internships were executed by students groups: students had to work together, responding to the lessons set by Buskerud. One group of volunteers was responsible for videoconferencing systems. The project aim was to offer the students the possibility of working as "market analysts" and as "research consultants" with a research project. Students were provided with the opportunity to acquire experience in the practical use of videoconferencing systems in consultations with a foreign company, the development of an individually prepared Power Point presentation, and the use of this Power Point presentation in reporting the final conclusions of the market research project. At the end of the internship the participants rated the use of tools, including the INTERN collaborative workspace, e-mail, telephone, and videoconferencing, highly. Many felt that the use of such tools was paramount to the success of the project. As regards learning, the most important results were considered to be the acquisition of new knowledge about the design and textile industry, the development of communication skills, the practice of English, the writing of reports, the use of videoconferencing, and the experience of working in a team. The main hints coming from the groups at the end of the project were the following ones: it is important that all participants dispose of clear information, there should be no problem as regards the technologies used, the liability transfer process should be more explained more clearly, and it would be important for the students to meet at least once.

Information and communication technology:

Students Baskerud University had to compulsorily participate in INTERN, since it was already envisaged by the study programmes. All students were made acquainted with this project by Power Point presentation; the students of the Arcada University (Finland) and Tietgen (Danmark) were invited to get in touch with the company and the Norwegian professors and students. As regards to the technology, the collaborative workspace which was especially developed for the

INTERN project, provided the main communication and collaboration for the students, teachers and company representatives. Audio and videoconferencing was also of great importance during the project.

The websites of the projects are located at:
Tronrud Engineering: http://www.tronrud.no/;
Buskerud University College: http://www.hibu.no/english/home/;
Tietgen Business School: http://www.tietgen.dk/;
Arcada University: http://www.arcada.fi/.

Case description six: KREMLIN

Introduction:

KREMLIN Inc., a subsidiary of the EXEL GROUP, is based in France, just outside Paris. The company is one of the world leaders in the manufacture of surface finishing equipment, and offers a complete range of products and accessories. 70% of the company's business is generated from export, and KREMLIN has established a worldwide distribution structure built on a network of distributors, together with wholly owned subsidiaries in strategically important markets such as North and South America, the Far East and Europe. In the framework of a strategic review of its activities in Scandinavia, Kremlin got in touch with the "Institut de Formation International" (IFI) of Rouen in France, to carry out research on the Danish market. IFI, on its turn, had recourse to the competence of the Danish Tietgen Business School.

Internship activities:

The activity was divided into two phases. Students of Tietgen Business School developed and managed the field research, and prepared a comprehensive report in English during the two month period from January to February 2002, and presented it by videoconferencing to three KREMLIN managers. During the project, the Danish students went on a business visit to KREMLIN and IFI in France. In a second phase, March–May 2002, a team from IFI provided an executive summary of the research findings in English, for wider dissemination to KREMLIN management, and then went on to develop detailed analysis and recommendations in French for future development of their business in Denmark. During the whole project, KREMLIN had direct contacts with the students. At the end of the internship, students were happy to have been selected for this special project. It provided them with a good opportunity of working with

professional managers and the potential to influence the decision making process within the company. Students displayed a high level of diligence and professionalism and from the company' point of view, the project was a success: they indicated their interest in a follow-up project at a later date.

Information and communication technology:

The project was allocated to five students from the second year of the course on "Carriers in International Business" of the Tietgen Business School, and four students of the "Business Administration" course at the IFI. In both cases, the project replaced the traditional modules on Marketing. With regard to the technology infrastructure, e-mail was the main communication tool between students and KREMLIN. Fax and telephone were used to gather information from the companies questioned in the market research. Market research, additional communication with KREMLIN, and communication between the two student groups, was done by telephone. Two videoconferences were setup between IFI and Tietgen.

The websites with information are located at:
KREMLIN Inc.: http://www.kremlin.com/;
Tietgen Business School: http://www.tietgen.dk/;
Institut de Formation International: http://www.ifi84.fr/.

Case description seven: ICL Invia

Introduction:

ICL Invia, which became Fujitsu Invia on April 2002, is a Nordic service provider and operator of advanced information systems. This Finnish company develops and implements systems that bring business benefits to meet the needs of the networked economy, assuming responsibility for their customer's entire IT infrastructure from design to maintenance. The purpose of the ICL Invia remote internship project was to investigate the use of information technology for Customer Relationship Management (CRM) in Finnish and Norwegian hotel chains.

Internship activities:

The remote Internships were carried out from October to December 2001 and involved ten students from the Arcada University (Finland) and nine from the Buskerud University College

(Norway), and also professors of two faculties. The assignment was: to find out how CRM is carried out in a hotel chain, to establish to what extent the hotel management was aware of IT based CRM systems, what kind of information they missed from the systems currently in use, and to find out how well IT based CRM was integrated in a hotel marketing chain in Finland. The internships were to use to the information technology to manage customer relations. In particular, the Finnish students were divided into two groups, which respectively dealt with:

- the modes by which CRM was conducted in a Finnish hotel chain, the extent to which hotel management was aware of CRM systems, and what kind of information was lacking in the systems they were currently using;
- a survey on how a computer-based CRM could be integrated into the hotel marketing chain in Finland.

Norwegian students, who formed a single group, carried on with the same task of the first group of the Arcada, but in their own national context. Part of the internship was meant to encourage the students of both countries to work together. They interviewed the directors of hotels and managers working in the field and conducted research on private chains and hotels, based on a scheme devised by them. In the Arcada University, the students met the professors twice a month to show their progress and the results of their market survey. From a general point of view, the internship was successful, in the sense that the students were interested in the project area and found it challenging, although they had very little knowledge about CRM.

Information and communication technology:

With regard to the technology used, the students used internet for surveys, e-mail, and telephone. A videoconferencing system for synchronic meetings was used as well, including for communication on the final report. One of the objectives was to encourage students from Norway and Finland to work together through the INTERN interactive platform, this did not happen as envisaged. The students did not try to communicate with each other; neither did the teachers of the two colleges. Both groups felt, that they had too little contact with each other. Students used only e-mail and telephone, and videoconferencing for group synchronous meetings.

The websites are located at:
Fujitsu Invia: http://fi.services.fujitsu.com/;
Buskerud University College: http://www.hibu.no/english/home/;
Arcada University: http://www.arcada.fi/.

Case description eight: DFDS Transportation Group

Introduction:

The Danish DFDS Transportation Group is a multinational company in the transportation field, which has 12,000 employees in 250 agencies; it is active in two business areas, roll-on/roll off (ro/ro) liner traffic and passenger traffic. Ro/ro liner traffic is based on daily departures on the North Sea and the Baltic Sea. Passenger shipping is done with overnight sailings, based on a city-to-city cruise concept on the North Sea and the Kattegat Sea. DFDS took part in the remote internship, as it was interested in having a logistic survey of track and trace systems in Finland. The Tietgen Business College (Denmark) established the first contact with DFDS, and subsequently with Arcada University (Finland). The internship project was conducted between September and December 2001, and involved ten Arcada students (for whom the project was an integral part of the "Multi-professional Teams and Trends") and three members of the Tietgen Business College Faculty.

Internship activities:

Students started the internship after theoretical lessons; they studied how tracking systems could be used in transportation companies to manage a chain of suppliers. In addition, pupils assessed the opportunity to use the “Just In Time” model. The internship assignment was based on three types of pedagogical approach: lectures, virtual classrooms and videoconferences. The lectures focused on theory, group work, the use of ODL tools and problem solving. Thanks to virtual classes, which were held in the INTERN virtual collaborative space, students were able to work together without any space and time limitations. By the collaborative work space, also the company was able to access information at any time. Companies however, preferred to communicate with students by e-mail rather than through the web space. The videoconferences were useful in the sense that they made direct feedback possible from the company, and required students to thoroughly prepare their work. At the end of the internship, the company involved was pleased with the professional report which the students had written. It contained useful and interesting information. From the point of view of the students, the faculty, and the management, videoconferencing appeared to be a useful tool. Multicultural learning was facilitated by the use of ICT. The presence of a local mentor to groups of students was considered an added value. They also reported some negative points: according to the students, not everyone participated actively in the project. Another negative aspect concerned the fact that the group was considered too big. Also, the communication with the company representative turned out to be difficult at times. According to professors and management, students had not sufficiently prepared

videoconferencing sessions, and the tasks assigned to them were too technical. Cooperation between students should be increased. Everyone expressed their interest to continue cooperating with international companies, but better clarifying the role of the respective persons. Another problem concerned the lack of intermediate evaluation of the project, only an end-evaluation was included.

Information and communication technology:

With regard to the technology infrastructure, the students and the company representative used videoconferencing for group (synchronous meetings) and the INTERN interactive platform for document exchange, asynchronous communication (one-to-one and one-to-many). Students and the company representative also used e-mail and telephone.

The websites are located at:
DFDS Transportations Group: http://www.dfds.com/;
Arcada University: http://www.arcada.fi/;
Tietgen Business School: http://www.tietgen.dk/.

4.2 Initial evaluation of cases

In this chapter eight cases on remote internships have been described. In studying the eight cases, it appears that the concept of remote internships is relatively new for Europe. Actual running cases of remote internship are very sporadic. In numbers, remote internships in Europe, don't really seem to count. Moreover, the cases that have been found, make use of rather straightforward technology, such as e-mail and telephone. The findings are rather unexpected, considering that remote internships appear to be so promising. In general, organisations and universities which have realised remote internships are very positive. Remote internships can productively be used by educational institutions and organisations: they are a very flexible and suitable tool for different training needs. For any organisation with a challenging business task, talented remote interns can be recruited from renowned universities, be supported by academic staff, and work at a distance. Especially for organisations with resource constraints i.e., time, space, and money, the model of remote internships offers great possibilities.

Of course, besides strengths of remote internships, weaknesses are accounted for as well. It is necessary to train teachers, tutors and managers differently, as regards didactics and pedagogies of remote internships. All involved parties have to make clear agreements on technology tools,

communication plans and actual deliverables, for the internship not to derail. Conventional universities which have their students mostly managed on campus, do provide sound structures by means of classes and groups. This allows for structured and systematic contact moments between the academic supervisor and the students (as opposed to having students work solely from at home), and enables the students to utilise the ICT resources as provided by the university.

One would expect to see a tendency to develop and/or implement remote internships at some of the major institutional e-learning operators in Europe. However, in the cases reviewed, it seems that the traditional universities in Europe are actually doing it, despite the fact that open and distance universities have years of experience in e-learning. Open and distance teaching universities are not explicitly recorded in the case reviews of remote internships. It is most peculiar that such internships have not been picked up by open and distance teaching universities, also because most of single-mode open and distance teaching universities do not provide for gaining work experience through any kind of physical internship programme. By experimenting with remote internships, the traditional universities seem to have taken the step towards including this new learning offer into their curriculum: they have taken a first step in a virtual direction. Remote internships will complement their existing physical internship programme and will help facilitate the building of national and international business contacts in a more efficient manner, herewith establishing new networks for the sharing and exchange of knowledge in Europe.

5. Case Studies on remote internships outside Europe

This chapter describes the state of affairs as concerns remote internships outside Europe. The chapter is subdivided into different geographical areas. Section 5.1 elaborates on cases in the U.S. and Canada. Section 5.2 elaborates on cases in South America. Section 5.3 elaborates on cases in Australia and Asia. Section 5.4 elaborates on cases in Africa. Section 5.5 provides an initial evaluation of the cases.

5.1 Geographical area: USA & Canada

Case description one: Johnson & Company, Brigham Young University (BYU)

A remote internship allows students to gain real-world, professional experience in a cutting-edge work model: being able to work anytime, anyplace, anyway at any pace. In investigating a new and unique internship model, Johnson & Company (Jo & Co) partners with the Brigham Young University (BYU): the department of communications. Jo & Co awarded an internship opportunity to a senior student of that department.
Students in BYU's communications department are normally required to complete at least one internship in their field of study. Students often travel to New York City or Washington, D.C. – big cities viewed as required territories for valuable mentoring experiences – to fulfil their internship requirement. But the senior student from BYU's department of communications from Orem Utah, discovered a compelling alternative and has become Jo & Co's first remote intern. Rather than relocating for the summer or commuting daily to a corporate or agency headquarters, the student has the flexibility of completing work assignments from his home office in Provo, from BYU's on campus computing facilities, or from virtually anywhere equipped with phone, fax, and internet access.
Without traditional corporate headquarters, but being a Utah-based company, Jo & Co is a 100 percent virtual marketing and public relations firm focusing on clients in the corporate training and knowledge management industries. Jo & Co leverages the skills of a network of home-based free agent professionals representing all four time zones in the continental United States and has been profiled by the U.S. Department of Labour for its unique, "open-collar" virtual business model.

Information and website at: Johnson & Company Sponsors "Virtual Internship", Johnson & Company, The Virtual Agency, http://www.joandco.com/nb/clients/joco/pr/990722intern.asp.

Case description two: AJR & Partners, University of South Florida

AJR & Partners is a full-service PR and marketing agency focusing on delivering ideas, communication and results through a fully integrated approach, including advertising, branding, direct mail, internet and public relations. AJR has a description of a remote intern, which at the time was a junior at the University of South Florida, and pursuing a degree in public relations (with a minor in marketing). The student was on a full athletic scholarship playing basketball at the university. All students working virtually with AJR & Partners, work on one or more of the following core PR and communication disciplines: media planning, media relations, writing press releases, press kits, and developing media lists. The AJR virtual internship programme is a one of a kind in the U.S. and is designed to allow responsible and self-starting communication students an opportunity to intern for a fast-paced agency. All AJR interns must be self motivated and demonstrate an ability to juggle school, work and other extra-curriculum activities.

Information and website at: AJR & Partners, Inc., Announces Alana Tanksley as Newest Virtual Intern via the Firm's "Virtual Internship Program", http://www.ajrpartners.com/news1.htm.

Case description three: Cardinal Health Contacts, Arkansas State University and others

As the leading provider of products and services supporting the health care industry, Cardinal Health Contacts recruits people who are looking for the challenges and rewards of a Fortune 20 company. They offer college students either full-time employment or internship opportunities with the right mix of responsibility, training and support to help you make meaningful contributions to business and enhance your career. Through leadership development programmes, entry-level positions, and internships, students will gain hands-on experience for the future. The virtual internship programme links Cardinal Health and Arkansas State University with the goal to extend students' knowledge and experience in business and technical applications, and to better prepare those students graduating from the ASU Business and Computer Science programmes for the challenges they will face upon completion of their degree plans. The intern programme is intended to provide the intern with technical experiences. They will gain exposure to various functional areas within the Cardinal Health Medical Products & Services organisation. Job responsibilities are extremely varied and could include: programme/system design, coding and testing, systems development and maintenance, PC support/network administration, system and user documentation, data analysis and reporting, software tool evaluation and recommendation, customer support/user training, and computer operations. If a student qualifies as an ASU undergraduate student majoring in Management Information Systems or Computer Science and

has two or three semesters remaining, he/she can become a part of the ASU's virtual internship programme. Following acceptance into the programme, interns will have the opportunity to gain full-time experience during the summer at the Cardinal Health Medical Products & Services campus at McGaw Park, Illinois, about 40 miles North of Chicago. They can continue that experience by working in the Virtual Technology Center (VTC) on campus, during the fall and spring semesters.

Information and website at: ARS, Arkansas Rural Sourcing, internship programme, http://www.arruralsource.org/internships.htm.

Case description four: Global Business Gateways

Global Business Gateways is a hub for business information from countries around the world and is designed with business users in mind. GBG provides: concise summaries of the trade, investment and travel environment in each member country, business highlights, and quick access to a categorised database of potential business partners, service providers and investment opportunities. Global Business Gateways, Inc. was created to facilitate global trade, investment and tourism/travel through improved information flows. It is structured to help countries promote business opportunities, and to help business people identify potential partners, by providing one site with company listings and business information from all member countries. Global Business Gateways was developed in partnership with East West Communications, a company specialised in government-to-government communications and nation branding. GBG principals have worked with many countries around the world to promote trade, investment and tourism. In the course of work, they discovered that although business development is a priority for almost every country in the world, and much money is spent on promotion, it continues to be difficult to identify trading partners and investment opportunities in most countries. Global Business Gateways aims to provide a solution.

The Global Business Gateways internship programme offers university students the opportunity to gain experience on international issues by researching and developing content for country business gateways on the GlobalBusinessGateways.com (GBG) website. GBG is an online tool created to help countries promote the three pillars of economic development: export, foreign direct investment and tourism i.e., the project of East West Communications: the Washington DC-based company specialised in nation branding and communications. The project develops a business gateway for every country and independent territory in the world, based around a central hub. Each country gateway contains detailed information and articles on the national

economy as well as trade, investment and travel/tourism opportunities and related legislation, regulations, incentives and institutions. During the internship, students will research and become familiar with the business profile of a country, including its outlook on trade, investment and travel/tourism, write or update articles on country background, trade, investment and travel/tourism for publication on the web site, monitor business developments in the country, and write short highlights on specific topics such as new legislation, marketing initiatives and trade negotiations, and develop a resource list of websites on the country. Interns will work online from their home campus under the supervision of the staff in Washington, DC. Interns must be eligible to receive academic credit from their college or university. Although GBG internships are virtual, the organisation will not expect laxness in the expectations of timeliness and quality.

Information and website at: Global Business Gateways, GBG student internship programme, http://globalbusinessgateways.com/index.php?pd=YXBwbGljYXRpb246e2FjdGlvbj1wcmV2aWV3LG1kPWNtc19kb2NzLGRvYz1HQkdJbnRlcm5zaGlwc30%3Dpz_&md=country&inst=&zone=fogot.

Case description five: Microfinance institutions: funding from transnational organisations such as the United Nations

Colleges and universities engage in virtual projects with developing countries throughout the world. The projects give faculties the opportunity to collaborate with their peers, to conduct research, and to strengthen their organisations. Students who enrol in virtual internships or who participate in such projects, are able to gain experience in employing 'appropriate technology' e-solutions in places where information sharing, education, training, and community and health support are desperately needed.
Funding for such projects may come from transnational organisations such as the United Nations, or various relief or developmental agencies.

The following intern description is one of such kind, and used for a business or information management class, which seeks to help rural microfinance institutions in the South or lesser developed nations. The primary objective is to utilise a team effort, to share resources, gain insight, enable programmes to work effectively, and to train local and regional personnel. Sustainability is important, as well as the development of productive linkages. The project in which interns can play their part, consists of several steps: 1. Create a directory of microfinance institutions. The directory provides online information for individuals who often have difficulty in locating information. It should be made available in English as well as in the language of the

country: provide address, overview of services, list key contacts, list of loan products, services, support, one paragraph overview of the economy and communities served, and an overview of growth areas/challenges; 2. Set up virtual libraries. Virtual libraries allow the sharing of valuable information. Ideally, the interface will allow qualified individuals to classify articles and upload it onto correct directories on the server; 3. Create weblogs. Weblogs are intended for the individuals at the individual microfinance institutions to stay in touch with each other, and to communicate with the virtual interns; 4. Establish a Microfinance Institution Cooperation and Collaboration Task Force. By establishing a Task Force, concrete projects can be identified and implemented. Ideally, the participants will make a commitment that virtual internships lead to ongoing cooperation; 5. Realise training and education. The transfer of skills, knowledge, and philosophy is not possible without a robust training solution. It is not economical feasible without utilising online resources.

Information and website at: E-Learning Queen, April 08, 2006, Using Virtual Internships to Set up Rural Microfinance Institutions, http://elearnqueen.blogspot.com/2006/04/using-virtual-internships-to-set-up.html.

Case description six: U.S. Journal of Academics

The U.S. Journal of Academics is a small company, located in a provincial, former coal-mining town in Pennsylvania. It recognised the power of the internet in terms of identifying the most skilled colleagues from around the world. The U.S. Journal of Academics reviews applications from anyone with an interest in new technologies and global marketing. The unpaid virtual internship is conducted solely online, and can be completed at the convenience of the intern (within a specific time frame). Communication with the Project Manager typically occurs via e-mail and/or scheduled chats. USjournal.com has had about a dozen virtual interns from all over the world as well as from the USA. Some of the countries/U.S. states have been Belarus, Beijing, Boston and Bloomsburg, Pennsylvania (the nearest town to them with a university), as well as New York City, Tokyo, Mexico City and the Ukraine. The interns have worked on projects involving database management, global online promotions and web/graphic development, and some specialise in professional translations. The one commonality among them is their passion for integrating technology into the promotion of U.S. education. Samples of particular USjournal.com virtual Internship projects: multi-lingual translations of content, specifically designed for particular language markets; integrating ODBC (a database language) into a MySQL system, for easier evaluation of statistics; and, a global search engine for promotions and worldwide viral marketing campaigns.

The virtual internships have been running since the year 2000 with great success. They are designed on a per-project basis, based on the capabilities of each intern and the immediate needs of the U.S. Journal of Academics at the time. All but one of the internships began as un-paid positions. USjournal decides whether to offer an intern a paid position after he/she has proven himself /herself over the course of several months.

Information and website at: USjournal of ACADEMICS, Non-Paid Virtual Internship at USjournal.com, http://www.usjournal.com/en/about/internship.html.

Case description seven: CPR's programme for students

CPR, which is an acronym for Career Placement Recruiting is specialised to automate and set up virtual internships for companies. The executive stock analyst internship programme, for example, offers students and recent graduates the opportunity to enrol in a class of up to 100 interns (nationwide) with a consulting firm that hosts a quarterly nationwide virtual (off-site) internship programme and course certification of stock analysis. Interns will serve to be a focus group for the consulting firm and will assist the consulting firm to monitor their teaching & training methodologies. This is a once in a life time opportunity where students and executives seeking to diversify their experience and education toward investment finance may do so in 12 weeks. The internship will cover: technical analysis, financial strategies, lesson plans & required readings, weekly mentor/manager questions-answers and commentaries sessions, portfolio postings of intern's performances, earnings report conferences, publishing investment commentaries, providing best stock research analytical tools, excellent experience, and much more. Regardless of the major, the opportunity will provide the student with an impressive amalgamation of project & account management duties, responsibilities and business analysis experience with a firm concentration within financial stock analysis.

Information and website at: Career Placement Recruiting, How Does the CPR Program Work? http://www.cpr4me.com/; and, http://www.cpr4me.com/works1.htm.

Case description eight: The New York Times

The New York Times describes a virtual internship vacancy devoted to politics online at NYTimes.com. It is based in Washington, D.C. They consider college juniors and seniors, as well as graduate students, who are knowledgeable about the internet and domestic politics, including

campaigns, elections, media coverage of politics and the political blogosphere. The salary is five hundred dollars a week, and the internship is a semester or quarter-long stint. Qualifications include: ability to write clearly and succinctly on deadline, ability to summarise news stories and bloggers' postings quickly, a flexible schedule to allow for early a.m. and mid-to-late afternoon postings, 24/7 access to laptop/computer, and previous media internships, whether print, television or web. They need to read political blogs, and submit four or five summaries of top bloggers for three consecutive days. Summaries should be no more than one paragraph each. See such examples as Slate's "today's blogs'' or summaries found as part of the National Journal's Daily Hotline. Students need to submit six to eight published samples of their writing. They must also submit a short essay of no more than 500 words, explaining their interest in politics/journalism, and provide at least three references.

Information and website at: The New York Times, http://www.nytimes.com/.

Case description nine: Studica's internship programme

The Studica internship programme is a virtual internship programme i.e., a portal, which provides interns for Torcom and other companies. The Studica internship programme is free to educators and students seeking internship or cooperative education positions for high school and college credits. It is a source for education technology products and services. Students or their educators can post resumes or search posted internships. The Studica internship programme is also free to employers who can either post internships or search posted student resumes. The Studica internship programme promotes valuable workplace experiences to take place at the employer's site (on site) or online within a classroom, or from the comfort of the students dorm or home. Known as virtual internships, the latter removes barriers and provides opportunities for all students, including those that are at-risk; cost effective on a financial basis. There is no commitment of in-house resources such as computer workstations or software. The Studica internship programme is cost effective on a time management basis. Educators can supervise student interns within the local school environment without losing contact time with the remainder of their students. Employers can respond to student intern and educator e-mail and can schedule chat room conferences at their convenience. The relationship between the employer, educator and student intern is initiated by any of the three parties posting employment opportunities, or resumes that they would be interested in initiating. Online student interns remain in their school using school-based equipment under the supervision of the educator. The Studica internship programme is interesting to the university as it allows for accessing of resources to enrich the university's learning environment, expanding the learning opportunities available to their students

to include industries not necessarily available in their local community, and establishing an active connection to the industrial community to enable them to be aware of current industry practices and to potentially influence future curriculum design.

Information and website at: Studica Internships, http://www.studica.com/internship/index.cfm.

Case description ten: NetWEB Elite Solutions Inc.

Company or RecruiterNetWEB Elite Solutions Inc. is in the industry of management and strategy consulting. The company assigns Ph.D. candidates and post docs from any business or technology discipline with a strong vision to participate, as part of an elite team, in acquiring leading edge and groundbreaking skills relating to 'virtual organisation management' best practices, policies and procedures. Students will be involved in writing white papers and the development of, and participation in, 'virtual organisation management' CEO Summits, webinars, seminars, workshops, symposiums and conferences to be held worldwide. Students will be eligible to request participation at these events in one or more of the following capacities: Panel Moderator, Panel Member, Speaker, or Trainer. The level and extent of participation will depend on how quickly one absorbs the 'virtual organisation management' consulting training as provided, as well as overall background, experience and performance. At the end of the 9 month internship - subject to completion of the entire term of your internship and satisfactory performance – the student will receive the official certificate and designation of elite 'virtual organisation management' consultant. As well, the student will be eligible for consideration as a 'virtual organisation management' consultant working for NetWEB Elite Solutions on either an ON DEMAND consulting or permanent full time basis. NetWEB Elite Solutions, Inc., the world's preeminent 'virtual organisation management' consulting company can provide possibilities to make the 'virtual organisation management' consultant internship a rich, exciting, rewarding experience and adventure. The student must be prepared to develop highly advanced virtual organisation management skill and learn highly refined and state-of-the-art best practices, policies and procedures for managing, and or functioning in, a virtual organisation.

Information and website at: NetWEB Elite Solutions Inc., http://www.netwebelitesolutions.com/.

Case description eleven: Beta Technologies, Harley Davidson, Iota Studios, Sloan Consortium, and Monroe College

As more and more educators explore the usefulness of the Second Life (SL) platform, one academic is already utilising SL to place students in semester-long internships. Monroe College, a 6,500 student school located in the Bronx and New Rochelle in New York, has placed 12 interns working for SL firms such as Beta Technologies, Harley Davidson, Iota Studios, Sloan Consortium, and Monroe College (itself). One student is a business student and all the others are students in the School of Information Technology (SIT). School staff sought out development firms, corporations, and other organisations in SL as potential sources for online internships, while looking for students with the required technical and business skills. According to the SIT, it is one of the few colleges whose students are virtual world interns. “This puts our students at the cutting edge”. “They won’t only be doing research, but they’ll be developing tools that will make them more employable as the concept of virtual reality develops throughout the computer industry. And it most surely will”. Online internships are also a way to make life a bit easier for the students, where at the Bronx campus most are commuter students with full-time jobs. “This is a way for students not to have to come to school, to take courses at home”. The interns perform tasks specified by their employers, working a minimum of 15 hours a week for a three-hour semester credit. Their academic performance and development is supervised by SIT professors, who meet regularly with the students in Monroe College's "Center for OnLine Internships on Second Life“. The center, developed by the ‘Dean of OnLine Learning’, has a meeting room designated for the interns as well as a Student Lounge. The students also have access to many meeting and education tools in an adjacent center on the sim which is shared with its neighbors, NYU, University of Wisconsin, Darton College, Williams College, and Wright State University.

Information and website at: Monroe Goes Virtual, http://www.monroecollege.edu/aboutmonroe/news/archives/2007/mcgoesvirtual; and, Virtual Interns on the "Cutting Edge", http://www.slnn.com/article/monroe-interns/.

Case description twelve: International Truck and Engine in Warrenville, Illinois

International Truck and Engine in Warrenville is a manufacturer of commercial trucks and diesel engines. Around 2001, the company launched its virtual internship programme (Armour, 2002). The programme kick-off included the deployment of four students at Hiram College in Hiram, Ohio. They worked on assignment for the company and were supervised by phone and e-mail.

The students each received an intern payment of five hundred dollar. The company assignment focused on work for a web-marketing project.

Information and website at: Armour, S. (2002). Internships go virtual as firms seek ways to save, USA TODAY, October, http://www.usatoday.com/tech/news/2002-10-21-virtual_x.htm.

Case description thirteen: Edwards & Hill Communications (multimedia company) in Baltimore

Edwards & Hill Communications is a multimedia company in Baltimore (Maryland), a US-based company. About 10 college students participated in the remote internship programme and worked on remote internship assignments. The multimedia company managed a website, which was catering to the entertainment industry. The assignment of the students involved the posting of casting notices, online. The students made use of their own computers and did not require computers from the company.

Information and website at: Armour, S. (2002). Internships go virtual as firms seek ways to save, USA TODAY, October, http://www.usatoday.com/tech/news/2002-10-21-virtual_x.htm.

Case description fourteen: Dharma Communications

Dharma Communications is the not-for-profit educational arm of the Mountains and Rivers Order. It provide products and services to assist people interested in spiritual practice, particularly those on the path of Zen Buddhism. The firm is staffed by full-time residents and monastic's whose work in the various branches of communication is seen as an integral part of their practice and spiritual training. Working at DC offers state-of-the art technology in print and video. The remote internship programme described, provided possibilities for students from the United States, Canada, Europe, New Zealand, and Australia. During residence at Zen Mountain Monastery, students were given the opportunity to do a virtual internship in media arts within the framework of Zen practice.

Information and website at: Dharma Communications, A history, http://www.mro.org/mr/archive/21-4/articles/dchistory.html.

Case description fifteen: Evelexa

Evelexa BioResources is dedicated to all interested in the biotech venture creation process. Evelexa offers virtual internships that allow members to work independently on business projects in their spare time. Also, scientists who cannot afford the high cost of admission to industry conferences may volunteer to work at a conference in exchange for free access, although such opportunities are not always advertised. These experiences allow a scientist to stand out from the rest. And as they say, fortune helps those who help themselves.

Information and website at: Evelexa BioResources, http://www.evelexa.com/.

Case description sixteen: Environmental Valuation & Cost Benefit News

Environmental Valuation & Cost Benefit News covers legal, academic, and regulatory developments pertaining to the valuation of environmental amenities and disamenities, such as clean air, trees, parks, congestion, and noise. Environmental valuation apprises the reader about ways in which costs and benefits are measured, and the results of empirical studies. With regard to remote internship activities, they describe the presence of a possible remote internship for marketing. Students need to write for an acclaimed newsletter, newsfeed, edit and summarise academic journal articles, legal decisions, government reports and news articles, conduct internet and/or library research on economics, finance, the environment and real estate, and assist with marketing and website redesign/development

Information and website at: The Cost-Benefit Group, Virtual Internship/Marketing/Writing Interns, http://www.costbenefitanalysis.org/employment.htm.

Case description seventeen: San Diego Zoo

Zoo InternQuest is a programme that provides San Diego high school students, interested in pursuing careers in the life sciences (biology, zoology, human or veterinary medicine, wildlife management, botany, et cetera), with the opportunity to learn from Zoo and Wild Animal Park experts. Students in this programme learn about such subjects as conservation, pathology, genetics, veterinary medicine, animal behaviour, reproductive physiology, ecology, and more by visiting the job sites, labs, and animal exhibit areas where experts in these fields spend their days. Though each term is different, students in each session visit a wide variety

of professionals and locations. It is possible to participate as a remote intern, in which students can learn about Zoology related fields: interns ask questions via e-mail or offer advice before the intern's journal is published online. Zoo InternQuest participants also receive all the necessary training to create weblogs of their experiences, illustrated with digital photos. Zoo InternQuest also communicates with remote interns throughout the world, on the web logs.

Information and website at: San Diego Zoo, Education: Using Zoo InternQuest in the Classroom, http://www.sandiegozoo.org/teachers/site_resource_ziq.html.

Case description eighteen: Curious Cat

The aim of the ‘Curious Cat Management Improvement Guides’ is to contribute to the successful adoption of management improvement, to advance joy in work and joy in life. Students need to have graphics and web design skills. The length of the internship is a minimum of 200 hours. This can be 10 weeks for 20 hours a week, or 20 weeks for 10 hours a week.

Information and website at: Curious Cat, http://engineering.curiouscatblog.net/; and, http://management.curiouscatblog.net/.

Case description nineteen: ElectionMall, Inc.

Anyone is eligible, though it is preferable to work with globally-minded people who are also tech-savvy in terms of navigating the internet. In particular, they are seeking for political science majors, HTML developers, communication majors, and English majors.

Information and website at: ElectionMall, Inc., http://www.electionmall.com/pubdocs/legal.asp; and, http://www.electionmall.biz/_virtual_internship.asp.

Case description twenty: Maui Media, Hawaii

Maui Media is a publishing company dedicated to raising planetary consciousness by helping individuals raise their own consciousness. Remote internships are possible. Ones own equipment needs to be used, along with a schedule that the intern chooses. There is always regular feedback and contact with Maui Media through the "home office" on Maui. The length of the

internship is three months. The benefits are: each intern who successfully completes the internship is rewarded with a solid week in the new, sunny, one-bedroom ohana (vacation rental) complete with kitchen, bath, and private laundry, just a half a block from the bluest, the most delightful beach on the island.

Information and website at: 'Virtual Internship Program', http://mauimedia.com/vip.html.

Case description twenty one: Operation Day's Work

Operation Day's Work - USA (ODW) is a national organisation which is run by students. ODW creates a framework to expose students to the dynamic and diverse world around them while learning about the importance of volunteerism and community building. It empowers young people to show the world that they can be real leaders, and that a good idea can make a powerful difference in helping people improve their own lives. ODW offers research about El Salvador on the web. The students' education must be of the kind: social studies and geography, arts and literature, and/or health and science. Interns select a developing country in which to fund a project related to education, for example, school construction or repair, school supplies and textbooks, scholarships and vocational training, and so on. Students across America then review and vote on project proposals in the selected country, deciding which activities would most effectively help their peers. In the spring, students and teachers at each ODW school organise activities to educate and enlist the help of their classmates, school administration, local leaders, and community.

Finally, students organise a work day to raise funds for the project they have helped select. Individual schools and students will choose what the work day will entail, from mowing lawns and working in factories or offices in the community, to getting sponsors for community service projects like cleaning a park. Proceeds earned by the students are donated to the development assistance project that the students have chosen. ODW brings a mission to learning and gives students an opportunity to help build a useful curriculum.

Information and website at: Operation Day's Work - USA (ODW), http://www.usaid.gov/odw/explain.html.

Case description twenty two: Platinum Media Inc.

Platinum Media Inc. is a worldwide group of companies, each targeted to a specific market and offering specialised benefits and services. Essentially, Platinum Media, Inc. is a solutions-provider to corporations and consumers alike; with distinctive forays into e-brand building, e-globalisation, e-commerce, and 'e-nabling' technologies. Platinum Media, Inc. achieves these objectives through an astutely modelled business structure which is compartmentalised into B2B Services, Business Networks, and Show Business. Platinum Media Inc. offers a remote internship programme opportunity for writers, researchers, net marketers, graphic designers with New York based new Media Entertainment and business-to-business services company. It is a great opportunity to learn about e-commerce from convenience of telecommuting. The length of the internship is 3 months. Participants will receive the internship programme certification letter.

Information and website at: Platinum Media Inc., http://www.platinummedia.com/.

Case description twenty three: Grassroots International

Grassroots International promotes global justice through partnerships with social change organisations. Grassroots is a human rights and international development organisation which supports community-led sustainable development projects. The intern position is ideal for someone with both an interest in Grassroots' work and an ease in finding and handling information via the internet. The intern will drive Grassroots' Web 2.0 presence under the guidance and supervision of development (fundraising) and communications staff. The intern will work to maintain and expand Grassroots' current presence on MySpace and YouTube while exploring other connectivity networks in which Grassroots may want to participate. The length of the internship is 3 months. The time commitment for this internship is 10 to 16 hours per week, and may be fulfilled from any computer in the United States that has a high speed internet connection. The intern is unpaid.

Information and website at: Grassroots International, http://www.grassrootsonline.org/.

Case description twenty four: WorkWorlds' Human Resource Corporation

The WorkWorlds' Human Resource Corporation advances the quality and value of human resource and management practices with national and international clients. The firm provides

online and/or in-person full spectrum, customised human resource and management assistance through: e-consultation, e-learning/education, e-research/special studies, publications, and e-outsourced services. Depending on the intern's interests, the internship or CO-OP placement may be in any of the eCenters that match the intern's interests, capabilities, and competences. The intern may be accepted into the programme, depending on the availability of the firm's expert Virtual Intern/CO-OP Mentors. The Virtual Internship/CO-OP experience may be a part of the college study requirements. It may also be related to the intern's own interest in further developing his/her career by having a role in collaboratively advancing ones competencies in a forward looking 21st Century workplace. The length of internship: the intern may be accepted into the firm's Virtual Internship or Virtual Cooperative Education Programme for variable lengths of time (from 1 month to 12 months). The InterVirtual Internships and CO-OP placements generally are unpaid.

Information and website at: WorkWorlds' Human Resource Corporation, http://www.workworlds.com/.

5.2 Geographical area: South America

Case description one: 'Argentina Exporta Program'

The remote internship description of the 'Argentina Exporta Program' includes an internship in foreign trade.

URL: no longer available.

Case description two: ILAM

ILAM refers to Instituto Latinoamericano de Museos. The organisation provides a wide variety of information relating to museums and parks in countries within Latin America. The virtual internship description of the ILAM includes activities to refresh and reorganise the information of Museums and Parks in South America and the Caribbean.

Information and website at: Instituto Latinoamericano de Museos ILAM, http://www.ilam.org/; and, http://www.ilam.org/ILAMDOC/ILAM_pub/ILAM%201997-2006_eng.pdf.

Case description three: CENEDIC and UNIVERSIDAD DE COLIMA

The virtual intern would fulfil a remote intern assignment for CENEDIC, which is an international private company, located in Colima, Mexico. CENEDIC is publisher of CD-ROMs containing information in Spanish language. The company coordinates a national documentation and bibliographic information network to enable publication of titles produced by Mexican and Latin American institutions.

Information and website at: CENEDIC, http://www.ucol.mx/acerca/coordinaciones/CGSTI/cenedic/; and, UNIVERSIDAD DE COLIMA, http://www.ucol.mx/.

Case description four: The Institute for Justice & Democracy in Haiti (IJDH)

The Institute for Justice & Democracy in Haiti's (IJDH) virtual internship programme provides highly motivated law students with an opportunity to contribute to a start-up human rights organisation that is already on the cutting edge of advocacy for the rights of Haiti's poor. Opportunities for law students who want to do remote internships have been recorded as a possibility, such as one law remote internship which was described for summer 2005, with an application deadline of January 31, 2005. Students with questions would needed to contact Professor Irwin Sotzky.

Information and website at: The University of Miami School of Law, www.law.miami.edu/cpc; and, http://www.law.miami.edu/cdo/newsletter/Newsletter_January-25_2005.htm.

5.3 Geographical area: Australia & Asia

Case description one: Drupal

Drupal is a highly evolved CMS that allows you to manage many diverse kinds of websites (CMS refers to Content Management System). Drupal allows website publishers to maintain websites through interfaces created in a web browser. The associated company provides possibilities for Drupel summer trainings, remotely.

Information and website at: Drupal, http://drupal.org/.

Case description two: Samooha Business Software Cooperative

This programme is to provide opportunity for students and fresh graduates with Java programming knowledge, to work on an innovative project that is already making progress in small enterprise software delivery across the globe. The aspirants have to register as users at http://www.sourceforge.net and then participate in the forums at Samooha project at http://sf.net/projects/samooha. Upon understanding the project sufficiently, the interns can work as testers for 2 months and then work as developers for 4 months. Upon completion of 6 months remote internship through online participation and based on the quality of work carried out, the project interns will get a certificate of participation and also be given preference for full time employment with Samooha Venture being set up in Singapore as Headquarters with 8-10 supportive development centers, incubated in academic campuses across Karnataka and elsewhere.

Information and website at: Samooha Business Software Cooperative, 'Virtual Intern Program', Sharing this information with ITVidya visitors, http://www.itvidya.com/virtual_intern_program; and, http://samooha.sourceforge.net/.

Case description three: Australian Network of Practice Firms (ANPF)

The Australian Network of Practice Firms (ANPF) is a network of training businesses which students manage and operate as part of their learning programmes. Each of these simulated businesses ('practice firms' or 'virtual enterprises' or 'training companies') follows real-world business practices and trades within a virtual economy. Practice firms are formed from a partnership between a training provider (school, TAFE, university, private provider), a real business that agrees to mentor the students, and the ANPF Central Office. Each firm is tailored to suit vocational outcomes, with a strong emphasis on developing a wide range of competencies that fit within the Australian Training Framework and qualification structure. Students work as business people, operating their own business and making decisions that lead the business into profitable (or not-so-profitable) outcomes. ANPF provides a safe and secure learning environment for students to work on a national basis with the 150 Australian firms and globally, with the some 4,000 international firms. ANPF is a great example of enterprise education, with students developing skills that make them highly employable. Students learn about business, but they also learn how business really works and how decisions are made. They test their skills in IT, customer relations, interpersonal relationships, negotiation, and time management. They learn to work with their business partner, who mentors and coaches them in how industry operates. The

Canberra University is engaged in practice firms with remote interns, from the faculty of Business and Information Technology. The practice firm trainings differ from other business training schemes in that: practice firms trade only within practice firm networks (not in the real world thus avoiding potential problems with real money), practice firms are coached and mentored by real businesses on a permanent basis (students move through the firm as employees and are recruited, inducted, work and leave the business), students take full responsibility for their business and its outcomes (which means both students and teachers take on different roles), and action learning underpins all activities within the firm.

Information and website at: Australian Network of Practice Firms, www.anpf.cit.act.edu.au/index.php; and, EUROPEN – World Wide Practice Firms Network, http://www.europen.info/englisch/index.html.

Case description four: Hong Kong Network of Virtual Enterprises (HKNVE)

The Hong Kong Network of Virtual Enterprises (HKNVE) is implemented at the Hong Kong Institute of Vocational Education (Tsing Yi Campus, Department of Business Administration). The activities of the Hong Kong Network of Virtual Enterprises (HKNVE) are the same as in case description three.

Information and website at: Hong Kong Network of Virtual Enterprises (HKNVE), http://www.hknve.org/hknve/index_e.html.

Case description five: Center for Entrepreneurship Development, in Kyoto, Japan.

Different educational institutes are affiliated to this programme: the Elementary School/Junior High School (Fukunishi Elementary School, Shirakawa Elementary School, and Kyoto Elementary School attached to Kyoto University of Education), the High School (Kyoto Prefectural OE Senior High School, Nabari High School, Ueno Commercial High School, Meijo University Senior High School, Goko High School, Iwatsuki High School, Senshu University Tamana Senior High School), and the College-School-Adults (Aichi Gakuin University, Osaka Shin-ai Jogakuin College, Doshisha Women's College of Liberal Arts, Maebashi Kyoai Gakuen College, Konan University EBA Course, Mejiro University).

Information and website at: The Center for Entrepreneurship Development, http://www.entreplanet.org/e_index.html.

5.4 Geographical area: Africa

Case description one: Amazwi

Amazwi (meaning “voices”) works to empower and educate rural women in the media arts while preserving indigenous cultures (past and present) and documenting social issues facing the under served rural villages of South Africa. Amazwi is committed to increasing the voices of rural women in all forms of media. Amazwi looks for on campus students who are eager to serve as marketing and organising interns for a certain semester. The students should have the following majors: communications, marketing, social work, education, journalism, English, philosophy, or marketing.

Information and website at: Amazwi, a volunteer-driven arts organisation, http://www.myggsa.co.za/connect/receivers/amazwi/.

5.5 Initial evaluation of cases

This chapter has presented numerous cases on remote internships outside Europe. Remote internships are realised rather more frequent outside Europe than inside. It is fascinating to see that the organisations which have actually experimented with remote internships, are for the most part U.S. based organisations. This country seems to be the frontrunner whereas remote internships are concerned. From the U.S., many cases are described in which students typically work in a time and spatially independent manner on an assignment, utilising generic and/or specific information and communication tools. The remote internships most often have the characteristic of providing low cost alternatives for staffing of organisations. The organisations hosting the remote internships don’t worry about (additional) staff costs, office space, lodging or housing reimbursements, travel reimbursements, et cetera; which indicates that remote internships are a match-made for organisations with small budgets and heavy workloads. Indeed, taking up students on remote assignments, can be very efficient and effective, as long as the students are backed by qualitative management from their on-site and academic supervisors. As far as the offers for remote internships are concerned: they are very different. A diversity of remote job offers stemming from different sectors has been noted.

The programmes for remote internships bring along an alternative way for companies, academics and students to interact and exchange stakeholder value. Students enrolled in remote internship programmes have great benefit. They acquire vital field-driven work experience and have

chances to significantly improve their employability. Remote internship programmes also imply a much more flexible mechanism for companies to actually match-up with students which can potentially be located in countries or states other than the ones in which the employer is based, implying possibilities for student-company match-ups which are more selective and creative. From the cases in this chapter, one can additionally conclude that remote internship programmes are not common in developing countries. Recordings of these type of internships are (mostly) found inside developed countries. Perhaps this has something to do with countries (still) being deprived of high speed internet access and/or the general ICT penetration in these parts of the world. Problems of this kind, have been evident for a long time in Central Eastern European Counties (CEEC) as well. Countries which are lining-up to engage in remote internships, will definitely need to overcome their accessibility problems: high-speed internet is one of the main prerequisites for teleworking in general.

6. Remote internship barriers

This chapter provides an overview of a number of important remote internship barriers, which have been found in the conduct of research. Four types of barriers are distinguished: technical barriers (section 6.1), pedagogical barriers (section 6.2), organisational barriers (section 6.3), and economic barriers (section 6.4).

6.1 Technical barriers

One of the barriers noticed in researching remote internships is: how to find them and how to obtain them? In this respect, it would even be interesting to know the companies that could actually offer remote internships within the discipline one is searching for. In scouting for remote internships, there is competition with traditional application placements as well. Company websites for internships are most often overwhelmed with regular placing and application prospects. Even if an internship opportunity is found, and an application letter is sent, then it may often get lost in an anonymous pool with hundreds of other, most often regular applications. One solution to this problem would be to organise a comprehensive, searchable database for companies and students to use in the process.

The awareness of remote internships within the company itself is also a problem. As remote internships are not broadly accepted as internal policy, the facilities for communicating remote internships are often not standardised. As a consequence, most companies do not even provide information on their website concerning remote internships, nor do they have any application form, to facilitate matters. One solution to this problem would be to communicate more internally, the benefits of remote internships, so as to have remote internships included in the regular company internship policy: make remote internships matter for the company and provide for information on the website.

Academic staff have often communicated that they are willing to offer remote internships at their department. It is mentioned though that they do not have the possibility on their websites to post any applications for their students. In the majority of the cases they do not even have sufficient information at all regarding remote internships. Accordingly, more information exchange on remote internships between academic staff and companies should be facilitated, in this respect.

Students are often in search of reference stories and experiences. Now that a growing number of students have experienced the challenge of a remote internship practice, there should also be an

outlet for their story, which is beneficial to other students. A virtual community or forum can be founded for remote or virtual internship students.

For students engaged in the remote internships, the compatibility of PC and software is an important issue. The use of any specific software, utilised by employers may be unknown to students. In this case the employer should grant the students particular resources, so as to enable compatibility with the company's requirements. Most often high speed-online access is a requirement. Of course, this is a relative term and may range from simple internet usage to intensive and high speed transfers. Depending on the company's specific requirements, the employer should again grant the necessary possibilities to the students.

Students should be granted the proper access to company (information) resources, which they need on performing their remote internship properly. In many cases, public resources are easily researched by students. Examples of public resources are: websites and/or portal pages and/or site maps that can show the inventory of resources, including links to directories, library resources, training materials, white papers, and technical assistance. Some part of the company's resources may be shielded and/or password-protected. As far as the internships requires it, access should be granted by the company to general web-based resources open to the public, web-based resources with private access only, and/or web-based resources open to the public in "lite" versions, implying restricted access to full versions.

6.2 Pedagogical barriers

One important barrier to remote internships is pedagogy. It seems to be a conventional perception that remote internships have a lesser pedagogical impact than traditional internships; partly for the reason that remote internships are not mandatory as opposed to conventional internships. The most important action to take here would be to explicate the benefits and opportunities that remote internships can have in the experience of students, as a complement to traditional practices. In many cases where conventional internshipping would be infeasible, remote internships can provide for help.

One of the barriers of remote internships is the implicit focus on discipline or subject. With remote internships having a particular focus as regards to the expertise of the task to be done, the possibilities of snooping around different areas of the company is limited as well. The interns simply don't have the opportunity to explore other disciplines or departments of interest within the company. One option to counteract this would be to extend the actual period of remote internships, and/or enable the companies to give interns (different or composite) assignments from different departments.

The general aim of remote internships is the acquisition of work-based competence. This acquisition will only occur when company representatives and colleagues share their tacit knowledge with the students. Communication and virtual socialising must be embedded in the remote intern's practice. Remote interns should become involved in the dynamics and core activities of the firm and not just act as external consultants to the firm involved in the remote internship. The appropriate action here would be to improve the interaction and technology-enabled socialisation between interns and company workers.

One of the problems that may occur within the intern's period is the deprivation of opportunities for gaining experience or training on the job. Reasonable possibilities should be present in the company by which the student is able to obtain more work-related competence and skills. A way to make sure that this is monitored is by periodically verifying the student's training activities and planning. There should be confirmation of reasonable opportunities for gaining experience, along with the verification of the students' training activities.

The lack of guidance and motivation of the remote intern is also a pedagogical barrier. The academic supervisor should be sure to implement the planning of supervision activities along with clear products to deliver. The intern should be motivated properly by having a challenging

assignment. The lack of academic guidance and motivation of the intern should be tackled by systematic scheduling of the student's activities and the educator's coaching.

The employer's verification of the student intern's training activities is of the most importance. Any problems with the employer looking after the work of the intern, is reason for concern. The solution here would be to improve the employer's involvement in the internship process, and also schedule that involvement.

It may also be the case that there is bad or no communication between intern's employer and intern's educator. The non-existence of communication between intern's employer and the student intern's educator, about his or her progress, must of course be resolved. The appropriate action here would be to assure the implementation of a communication plan.

No quality assurance or quality feedback loop may also be a reason for concern. As a matter of fact, all parties must be able to express their views on the quality of the internship process, including the student intern. The remote intern must (also) record his or her experience for the employer's and educator's review.

6.3 Organisational barriers

With regard to organisational barriers, employers do not always have the right skills to assess whether remote interns have the right qualifications for the job. The employers' lack of ability to qualify the value and feasibility of having remote interns, causes a problem. A possible solution to this problem would be to provide for value-feasibility assessment services. For employer screenings, the same is valid. Any career service centre may provide for the screening of the site sponsors, as well.

Another organisational barrier concerns the misconception among employers that having remote interns is too much work, and too little to gain. The way forward here would be to enable employers to gain valuable productivity and students to gain practical knowledge. For this, the employers need guidance to improve the internship programme's quality and the remote intern's productivity. This can be achieved by consultation and/or cooperation with career fair services.

Communication barriers among remote interns and professionals can occur. Communications tools need to be implemented, used and/or improved. The lack of synchronous interaction must be tackled, as e-mail may be no sufficient to communicate properly. Moreover, students must obtain opportunities to network and gain professionals insight. It can also be a possibility to consider real time communications tools such as, text chat, videoconferencing, et cetera.

A lack of sufficient company representatives or staff members for the recruitment, and for the period that the virtual internship lasts, is an important concern. Regarding company representatives: companies must select them carefully, train them well, and measure and evaluate their effectiveness.

Remote interns can be hard to reach, and they can forget to report to work. Some do not treat the position of remote intern as a real job, because there's no boss looking over their shoulders. How do you manage someone whose only contact with you is online? In a few cases, letting a remote intern proceed with little supervision, can work just fine, if you are not asking them to do anything they haven't done before. Otherwise, implementation of (more stringent) employer supervision is the answer. A good communication plan is essential for the student in letting the company now that the work is being executed, according to schedule.

In reference to the remarks stated above, most virtual interns actually need some 'hand-holding'. The best would be to start a system of daily or weekly progress reports where remote interns can talk about their projects, and any problems which they may face. Also, designate a person in the

company who coordinates the projects with interns and communicates with them frequently. It is important for interns to know that there is someone in the company that they can contact when they have questions.

Students may have problems with the ability to juggle school, work and other extra-curriculum activities. Of course the student's load can be assed very difficult as a personal factor is involved as well. However, it is always important for the academic supervisor to assess all the extra curriculum activities, as the company must also be maintained as a relation to the university.

Interesting with remote internships is the new relation between work and deliverables. A generation weaned on remote internships will expect to be judged by the work they complete instead of the number of hours they work. In other words, they will expect to be treated like free agents. Accordingly, employers should be prepared for this different mind-set.

In some cases remote interns need a home campus. This implies that the university has to change or create space (or enough space) for the remote interns on campus, and this could mean changes in the organisation.

With regard to the openness of resources to remote interns, there is also the case of information security to persons that they are not able to see or touch. The firm will try to hide some information for the remote interns as they can mistrust somebody which they cannot see.

The dimension of the firm also plays a role. Small and medium firms will have trouble trying to implement an internship as due to their lack of experience, and because some employees will have to spend time on the remote interns. Employees will respond negatively towards the remote interns because their work load increases without any kind of payment. On the one hand, the firm might be able to benefit from the work of the remote interns, while on the other hand (some) employees need to dedicate a part of their time to them.

6.4 Economic barriers

The interest from students as well as from companies is growing whereas it concerns remote internship assignments. However, the shortage of opportunities for students to become involved in remote internships must be reviewed. The shortage of descriptions of remote internships which make it into the universities, is outpacing student demand; although Web portals for student internships appear more and more. Remote internship possibilities can be promoted more increasingly. To obtain a better employer outreach, more site sponsors of remote internships must be listed on university sites and/or on third party internship portals.

The cost of selecting the right student by the university in a case of limited remote internship offers from companies, is high. Universities want to put their best qualified students on the job i.e., those which have the best 'remote' skills. The selection of students requires additional attention in case of assignment shortages. The limited number of remote internships offered by companies increases the costs.

Barriers between public-private collaboration on research still exist inside companies but also inside universities. Personal relations between representatives of companies and universities should be fostered and stimulated as much as possible. On actual internship possibilities, one should maintain continuity and feedback among students, companies, and academic colleagues, and make remote internships an important issue for companies, colleagues, and institutions.

Internship portals are a growing phenomenon. However, as concerns most specialised portals, the (remote) internship services are not for free, and in the case that they are free, the quality seems to be poor. Resources on remote internships should be enriched. Scholarships should be granted to students for piloting a remote internship experience. In many cases, the remote internships themselves are unpaid.

Similar to the operations in traditional internships, the employer has to realise that he has its (obligatory) duties as well, such as concerning insurance, reimbursement, personnel issues, et cetera. Hiring a remote employee implies also having employee-employer obligations.

To launch a student's remote internship could sometimes mean that the student needs to get wired and equipped with a home office. The student could take care of these expenses, but usually the employer does compensate expenses for required investments.

Remote interns must (also) be provided with a physical space to work, which is not the office of the company. Firms might benefit here because they do not need new space to increase the inputs of the firm. The space must be provided by the university. A grant from the employer's to the university could suffice here, and/or the student could work at home.

When remote internships are designated on a full time basis then more specific costs should be taken into account: when the remote internship is on a full-time basis, the enormous cost of opportunity for the student and the university must be accounted for.

There seems to be a relation between the degree of development of a geographical area and remote internship offers. Most economically developed regions seem to have remote internship programmes implemented. Remote internship programmes have succeeded, and are in demand, in most of the developed countries.

7. Identification of remote internship models

This chapter presents from research an identification of distinct remote internship models. Six different models will be elaborated on. Section 7.1 provides for the explanatory introduction to the models. Section 7.2 presents Model I: individual remote internships (national or international). Section 7.3 presents Model II: group or class remote internships (national or international). Section 7.4 presents Model III: transnational group or class remote intern projects. Section 7.5 presents Model IV: portalised remote internships (open access). Section 7.6 presents Model V: portalised remote internships (delegated management, fee structure). Section 7.7 presents Model VI: remote internships (virtual site).

7.1 Introduction to the models

The aim of this section is to describe the identification of different models of remote internships and describe the difficulties encountered with these models, so as to better determine any barriers. In this CSVM research publication we refer to a model as being a schematic description of a system, theory, or phenomenon which accounts for its known or inferred properties and can be used for further study of its characteristics: e.g., a model of generative grammar, a model of an atom, or an economic model.

A possible classification of remote internship models according to geographical location of students, university and company, can not be taken on. This type of classification, which becomes apparent in the Intern Best Practices Manual (Kristensen, 2002), is actually a contradiction to the remote internships concept. The point of remote internships is rather to interact with each other and companies, independent of time and space, and across traditional geographical boundaries, in order to carry out a specific and meaningful work-based activity. The classification further only considers three different parts: first, the students taking part, second, the academic or teaching staff, and third the company representatives. Indeed, conventional internships do involve those same parts, however as concerns the remote internship philosophy, the part of the ICT supported environment must be added as well. Another problem with the classification is the fact that it has been designed from a company's point of view. A company which is in control of directing internship assignments between several universities in different countries for example, is of no added value to any of the universities, as it doesn't allow for (real) collaboration between the universities. Language, finally, seems implicit in the classification. One must recognise that language is a barrier, but this recognition cannot lead us to articulate models around this variable. One could certainly say that English is recognised as the academic and

business language around the world, and that internships should be carried out in English. Most often, when company employees speak different languages though, there should be no real reason as to why remote internships cannot (also) be carried out in the language of the student.

Instead of applying the previous classification in existence, a novel way of classifying is proposed. A classification of models is proposed, which takes into consideration the way in which actors interact i.e., the type of organisation around the internship. At least six models have been identified. A description of each one of them is presented. Diagrams with textual elaboration are used to present the different models. Prior to presenting the actual models in the next sections, diagram schematics, is explained briefly.

A conventional internship is composed of two different parts. First the university, composed by the students taking part and the academic or teaching staff, and second the company. Remote or virtual internships include a third part, the ICT supported environment (Figure 7.1). This is a main difference between traditional and remote or virtual internships, and this is what the diagram below also shows. Remote or virtual internships involve the use of an ICT supported environment, by which students can interact with each other and with companies, independent of time and space, and across traditional geographical boundaries, so as to carry out a specific and meaningful work-based activity, a task which typically adheres to the student's compulsory educational curriculum. The upcoming classification of remote internships is based on the way in which actors interact i.e., the type of organisation around the internship; allowing also for recommendations on models best to use for universities in different situations. As concerns this chapter, the focus is on the visual and textual presentation of the identified models, along with their specific characteristics.

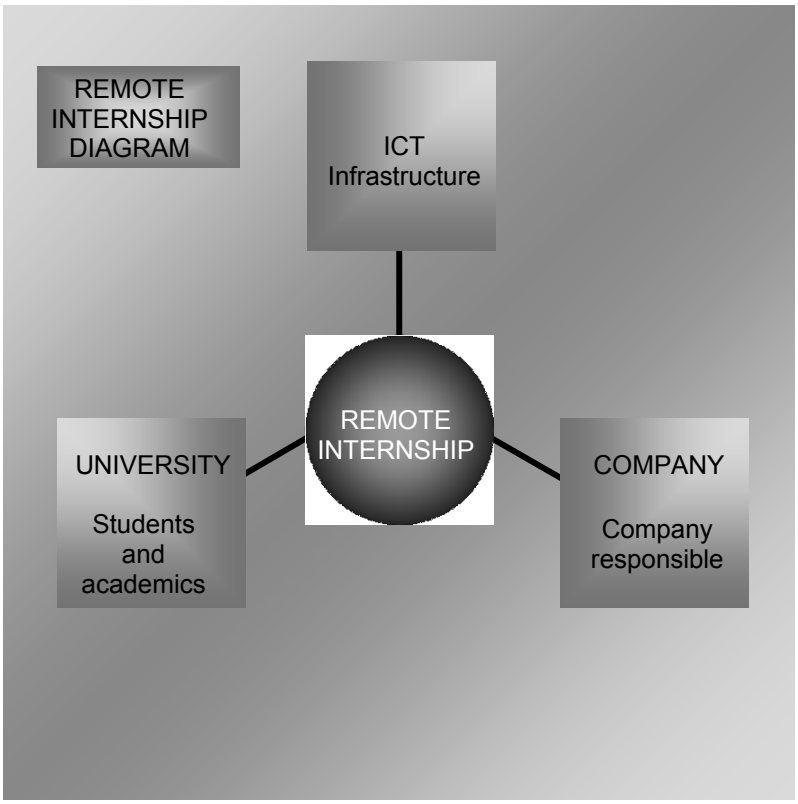

Figure 7.1 Remote internship diagram

7.2 Model I: individual remote internships (national or international)

The model presented here (Figure 7.2), corresponds with such described cases 1, 2, 4, 6, 8, 10, 16, 17, 18, 19, 20, 21, 22, 23 and 24 concerning the internship cases identified for North America and Canada, and with all the cases for South America and cases 1 and 2 regarding Asia. As concerns the remote internships within Europe, the cases 1 and 2 are valid. The structure of the remote internship model is fairly straightforward. The student remains at home, working for the firm, and there exists an agreement between the firm and the university which allows the remote intern to obtain the academic credit. The intern is acting by himself at home. Not every student will be able to work under these conditions though. The quality of the internship must be assured and must be high. In this model, the students are expected to use the internet's collaborative workspace for document exchange, collaboration and communications (one-to-one and one-to-many), the internet for research purposes, e-mail and telephone, and videoconferencing for group synchronous meetings. If the ICT infrastructure is at home, this implies that somebody must pay

the expenses for this. In most of the cases, this is the company, but if it does not, then the student or the university must deal with cost reimbursements. If the ICT infrastructure is at the university, then this would require space and resources from the university. The supervision costs are low. Teaching a group is much more difficult than teaching an individual: problems involved are less in the second case. The capacity of teaching staff required is different in both cases. Of course, this kind of internship limits the number of students of the university which could actually be involved in the internships programme. The supervision cost for the company is low as well. The type of internship is very attractive for companies and/or company staff, as it allows for them to have interns as an assistant. Of course, this kind of internship limits the number of interns, as well.

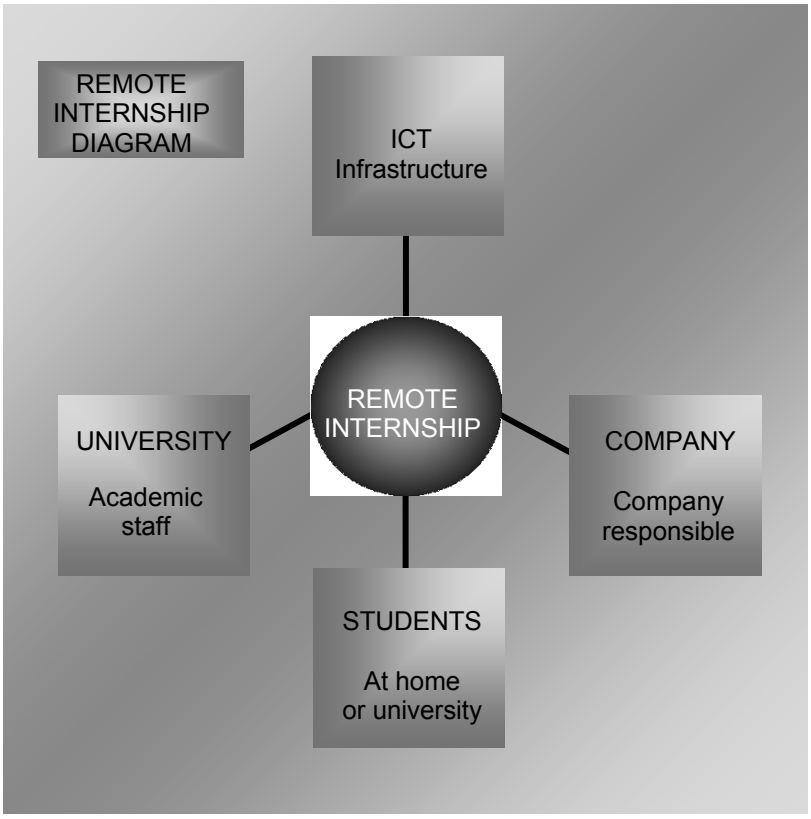

Figure 7.2 Model I: Individual remote internships (national or international)

The recruitment for this type of remote internship is most often done by the company itself. It is described by hmc.com, that actual recruitment for interns can be implemented in three ways: by agreement with universities (no job posting needed), by means of an online recruiting process implementation, and by means of newspaper advertisements (this is a very expensive way to

recruit people, but effective according to market data). As concerns the option of recruitment by means of the implementation of an online recruiting process, the following must be taken notice of. The on-line share of the recruitment market is eroding. Online companies seem thus far not to have meaningful success in penetrating the local recruitment marketplace that accounts for the bulk of newspaper help-wanted revenues. Newspaper publishers have firm grip in the battle for market share in help-wanted advertising versus the online players. The key to a successful internet job posting is first recognising that it is not a print classified advertisement. An internet job posting is interactive, and requires a good understanding of interactive marketing. The following advice is provided (hmc.com):

- the company website is fast becoming the first point of contact for most job seekers or prospective clients. Employers should update their corporate website so that it provides a professional and interactive presentation of the firm, its goals, key personnel, corporate culture, top achievements, and business philosophy;

- in the fast paced world of internet surfing, most job seekers will only take time to view the top 20 search results. Making it to the top is usually about keywords, since they often make the difference between a successful job posting and a waste of time;

- job postings should be believable and complete if they want to attract the top talent. Most executive job seekers are interested in job postings that contain detailed job descriptions and job requirements; many want to see salary and information about the company, and many others want to know job location. Most job boards claim that a well-written job posting can attract many more qualified applications than a poorly written one;

- employers should write clearly and present text in an organised, logical manner. Job postings should read like a composition and not a print classified ad. Sentences can be short but they should always be complete sentences containing correct spelling, punctuation, and grammar. The copy should include natural paragraphs with line breaks so that the job seeker can find relevant information quickly and easily. Writing in all caps, using too many exclamation points, or adding acronyms and abbreviations, will reduce the credibility of the job posting and potentially result in job deletion by the hosting job board. Acronyms and abbreviations should always be spelled out, since job seekers usually search by complete words;

- most job boards have a ‘Terms of Use’ agreement that members or users must agree to in order to utilise their service. It’s important that employers read and understand the terms that relate to job postings and keywords to get the best results;

- employers should make sure to immediately follow up on all qualified applications submitted. Today’s recruitment market is highly competitive and the hiring cycle should not allow for any dead time between in-house interviewing schedules and final selection. Employers should not leave job seekers hanging more than five to seven days without a scheduled follow-up meeting, otherwise they risk losing the job seeker entirely.

7.3 Model II: group or class remote internships (national or international)

The model presented here (Figure 7.3), corresponds with such described cases 3, 12,13,14, and 15, as referring to the area of North America and Canada, and with case 1 as referring to area of Africa. As concerns the remote internships within Europe: the cases 3 and 4 seem associated with student classes; whereas the INTERN cases 5, 6, 7 and 8, with certainty are. This remote internship model, is characterised by a simple structure. A group of students works on an assignment for a firm. Individual interns are part of the group of students. They perform the internship assignment in accordance with an agreement between the firm and the university. This allows the remote interns also to obtain academic credit. The (expected) quality of the internship is lower than that of first model presented. The students are expected to use the internet’s collaborative workspace for document exchange, collaboration and communications (one-to-one and one-to-many), the world wide web for research purposes, e-mail and telephone, and videoconferencing for group synchronous meetings. Whenever the ICT infrastructure is located at home, it implies that the student will be the carrier of the costs. In most cases it is the company, but if it is not, then the student or the university must cope with the costs. In case the ICT infrastructure is located at the university, the intern requires space and resources from its university. The supervision costs are high: the teaching or coaching of a group or class, is much more difficult than the teaching or coaching of an individual intern. The kind of skills required for group (intern) process management, differ as well. For the company involved, this follows the same line of argumentation, the costs of supervision are generally high. As regards the recruitment process for group or class internships, this follows the route as described for the previous model.

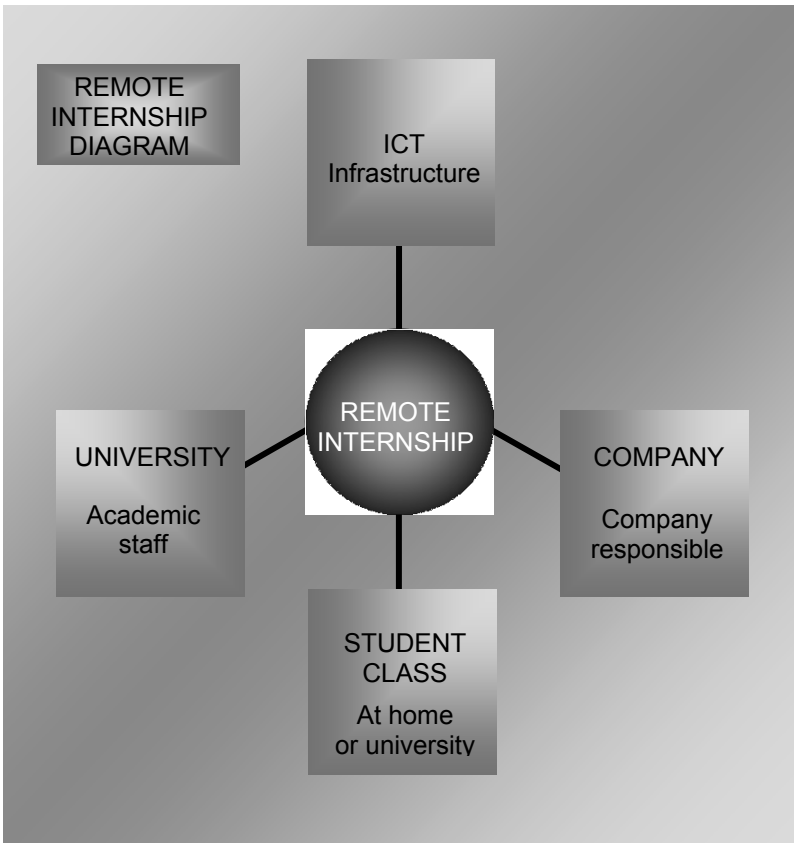

Figure 7.3 Model II: group or class remote internships

7.4 Model III: transnational group or class remote intern projects

The model presented here (Figure 7.4), corresponds with such described case 5, as referring to the area of North America and Canada. In this model, the students enrol in remote internships with the structure of the second. However, the difference with the second model is that internships of the third kind only come into being with faculties' funding from transnational organisations such as the United Nations, or various relief or developmental agencies. It are the colleges and universities that can initiate virtual projects with developing countries throughout the world, in order to help with information sharing, education, training, and community and health support, in places around the world where it is desperately needed. This type of group intern projects are initiated on faculty level and become viable through transnational organisations. The projects give universities across countries the opportunity to collaborate with ones peers, conduct research, and strengthen ones own local organisation. Funding for the projects may come from

transnational organisations such as the United Nations, or various relief or developmental agencies.

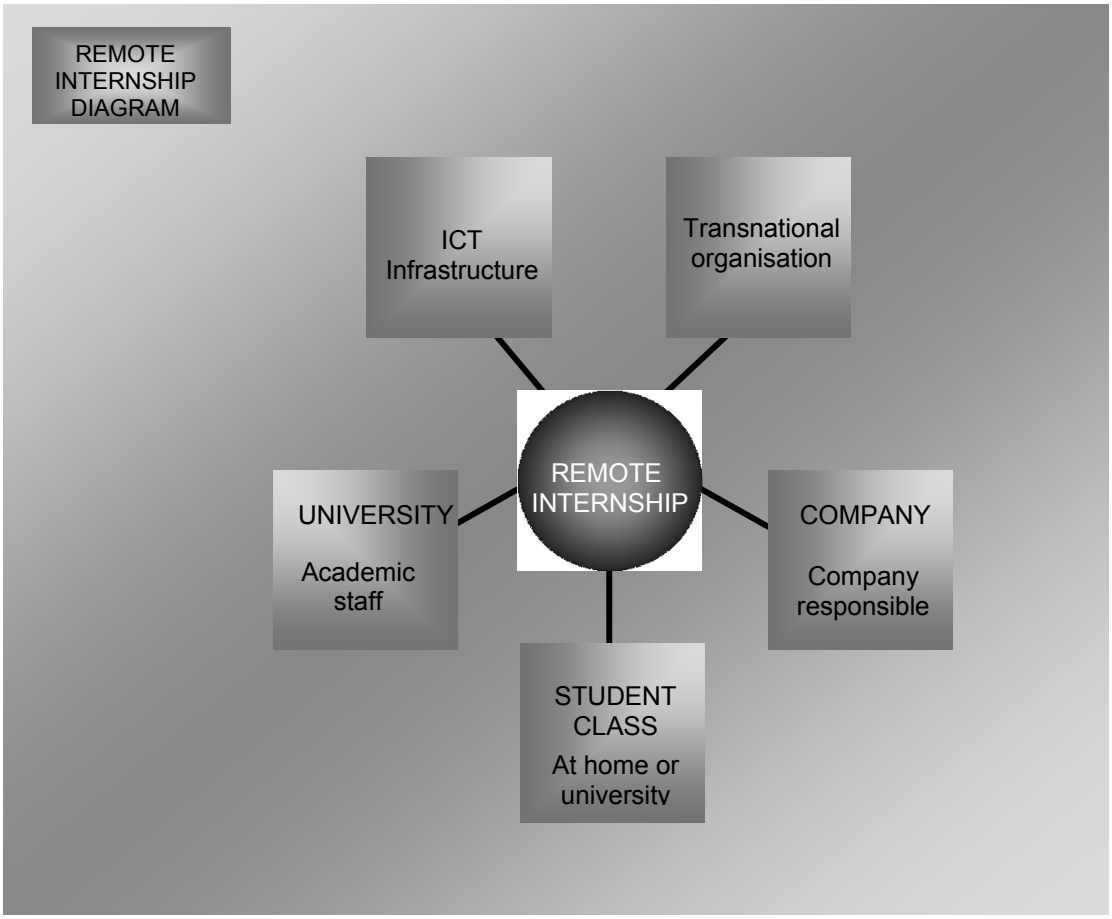

Figure 7.4 Model III: Transnational group or class remote intern projects

7.5 Model IV: portalised remote internships (open access)

The model presented here (Figure 7.5), corresponds with such described case 9, as referring to the area of North America and Canada. In this case, students from the comfort of the student's dorm, home or classroom, can enrol in remote internships with the structure of the first and/or the second model. However, the difference is the presence of another stakeholder, one which interacts in the model as well, and one which is the holder of a virtual or remote internship programme. This virtual or remote internship programme stakeholder interacts with the other parties by offering them services for free. Students, universities, and employers can benefit from the possibilities of the internship programme portal, as offered by this other actor.

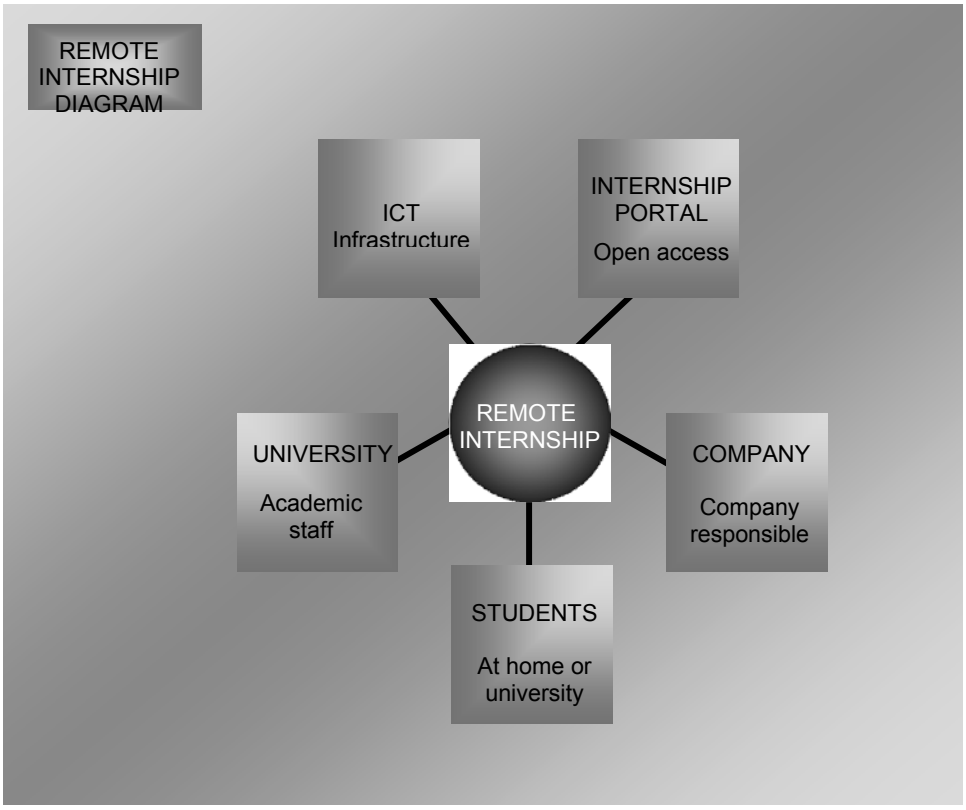

Figure 7.5 Model IV: Portalised remote internships (open access)

7.6 Model V: portalised remote internships (delegated management, fee structure)

The model presented here (Figure 7.6), corresponds with such described case 7, as referring to the area of North America and Canada. In this model, which follows the structure of the first model, students can enrol in remote internships from the comfort of ones student's dorm or home. However, the difference with model one is the presence of another stakeholder (similar to model four), one which interact in the model as well, and one which is the holder of a virtual or remote internship programme. This virtual or remote internship programme stakeholder interacts with the other parties by offering them services. As opposed to model four: the services are not for free. The difference with model four is that students have to pay to enrol in the internship programme. In addition, it is the recruitment organisation itself, which manages the delegation of projects between its recruits and its company affiliates. Both students and employers can benefit from the possibilities of the recruitment service, as offered by the other actor.

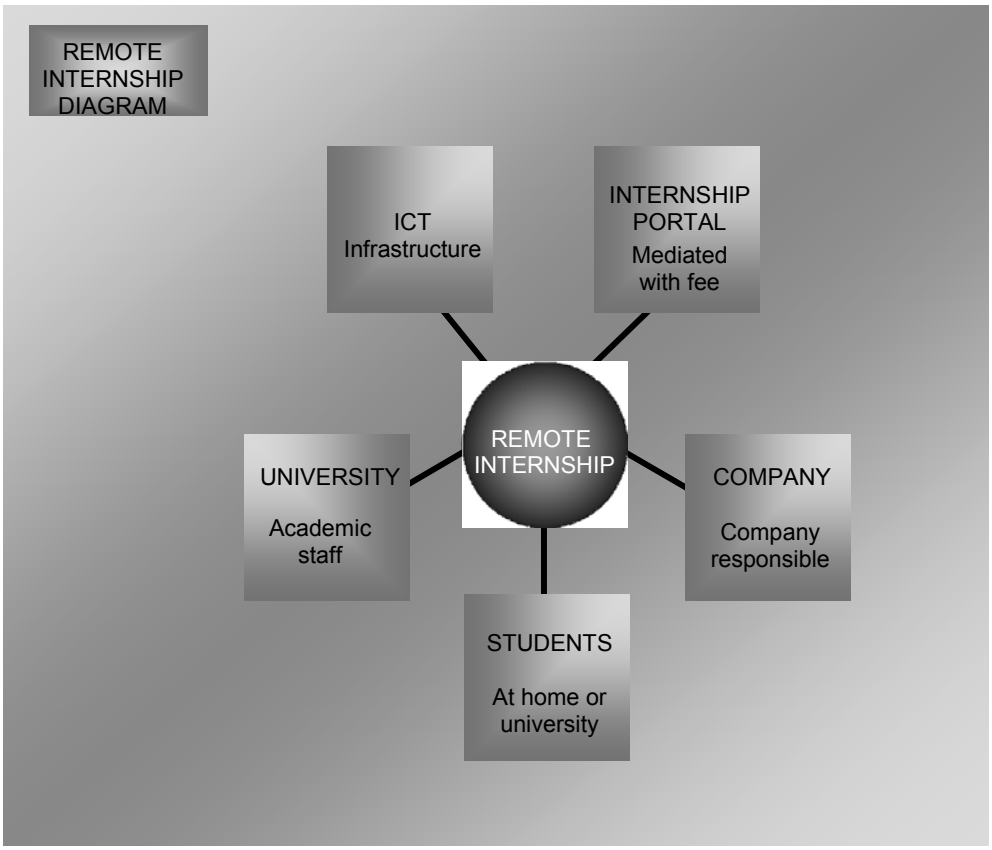

Figure 7.6 Model V: Portalised remote internships (delegated management, fee structure)

7.7 Model VI: remote internships (virtual site)

The model presented here (Figure 7.7), corresponds with such described case 11, as referring to the area of North America and Canada, and cases 3, 4 and 5, as referring to the area of Asia. In this model, students enrol in remote internships with the structure described in model one or two. However, the difference between the model described here and models one and two, is that the firms in which students enrol for their internship are virtual as well. The intern's activities and their causes take place in 'virtual firms'. The remote internship (case) description 3, as referring to the area of Australia and Asia, and the remote internship (case) description 11, as referring to the area of North America, provide useful explanatory information concerning firms being 'virtual entities'.

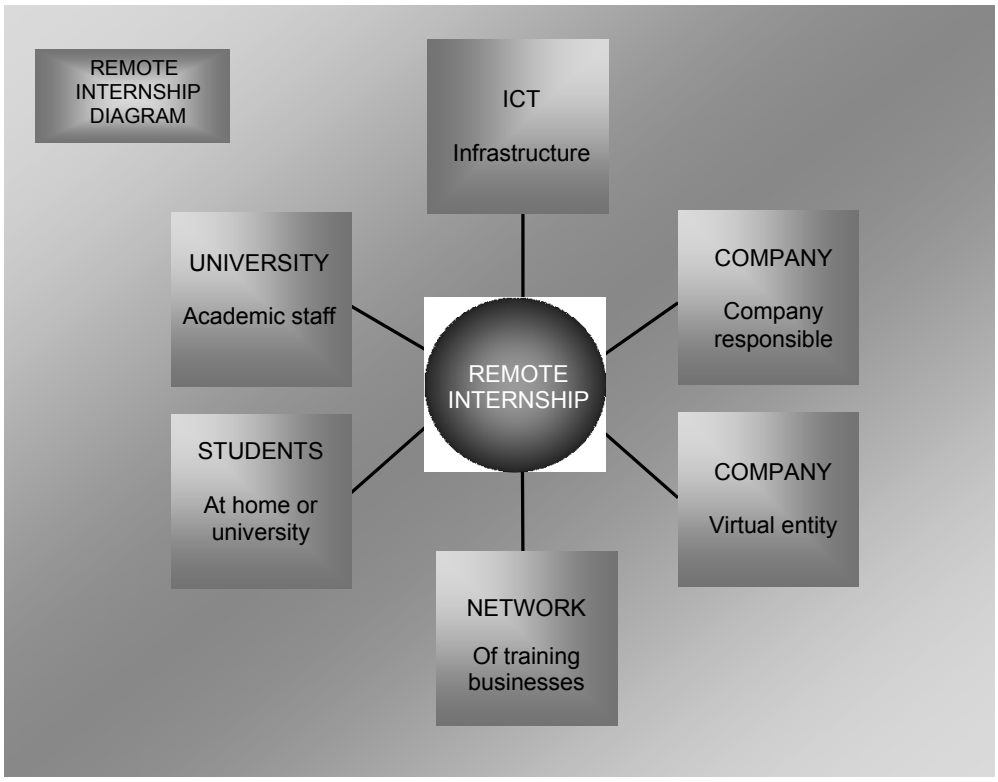

Figure 7.7 Model VI: remote internships (virtual site)

8. Remote internship configuration and trial results

This chapter provides the pilot cases on remote internships, as configured and realised by the European partners of the CSVM project. The chapter first provides theoretical insight in the measurement of student employability (section 8.1). Then, the organisation of the remote internship pilots is explained (section 8.2). Following, the results of the pilots on remote internships are presented (section 8.3). Concluding, the chapter provides a reflection on obtained remote internship results (section 8.4).

8.1 Measuring student employability

There has been pressure of national systems on higher education to contribute directly to national economic regeneration and growth (Ball, 1989, 1990). Both national and international assessments of the role of education indicate a need for higher education to contribute significantly to 'meeting the needs of the economy'. The pressure is driven by concern about the future competitiveness of individual economies and the Union. In this respect the Lisbon strategy must be mentioned (EC, 2005). Research undertaken at the Centre for Research into Quality during the 1990s (Harvey, Burrows and Green, 1992; Burrows, Harvey and Green, 1992; Harvey and Green, 1994, Harvey, Moon and Geall, 1997) highlighted in which way this pressure on higher education is reflected in the expectations that employers have of graduates. The research emphasised among other things, the effectiveness of work experience. At the heart of the research is the assertion that the primary purpose of higher education is to prepare students for the world of work. There has been growing pressure from government and government agencies to ensure better links between higher education and employers. Policy is to enhance employability of graduates as part of a wider strategy to extend the skill base.

From Harvey (1999) we obtain a definition of employability: employability of a graduate is the propensity of the graduate to exhibit attributes that employers anticipate will be necessary for the future effective functioning of their organisation. The implication is that employability relates to individuals seeking work, employers have an idea of what are necessary attributes, desirability is linked to future requirements, and employers have mechanisms for determining that graduates exhibit appropriate attributes. The definition does not specify that graduates need to exhibit graduate attributes nor that they are recruited into graduate jobs. This is because graduates enter employment at a variety of levels, and what constitutes a graduate job is no longer clearly specified. Indeed, it can be defined as any job that a graduate does. This is not a fatuous response to a changing situation but one that reflects the diversity of graduate employment.

According to Harvey (1999), there is plenty of evidence that graduates, in fact, take on jobs that may not necessarily have been seen as graduate jobs and grow them. That is, the 'mundane' job taken by the graduate evolves to become far more important and more far reaching and have a greater impact on the functioning of the organisation than was anticipated.

The context in which assertions are made about graduate attributes is the rapidly changing organisation in frame of a changing economy (Harvey, 1999). The fact that students have a degree basically confirms that they are people who think in a certain way and have certain abilities, so the next stage is a number of key competencies. Organisations are thus looking much further than degree subject and classification when recruiting. In short, graduates need to be flexible and adaptable. To succeed at work, most people in future must develop a range of personal attributes beyond those traditionally made explicit in programmes of study in higher education institutions. Personal attributes are attitudes and abilities including intellect, knowledge, willingness and ability to learn and continue learning, ability to find things out, willingness to take risks and show initiative, flexibility and adaptability to respond, pre-empt and ultimately lead change; and 'self-skill' such as self-motivation, self-confidence, self-management and self-promotion. These personal attributes are important to allow graduates to fit into the work culture, do the job, develop ideas, take initiative and responsibility, and ultimately help organisations deal with change (Harvey, Moon and Geall, 1997). On one level, the set of specified skills has not changed greatly for a quarter of a century: communication skills, numeracy, self-confidence and self-discipline, problem-solving, analysis and interpersonal skills featured alongside knowledge and intelligence in organisational graduate specifications in the 1970s (Kelsall, Poole, and Kuhn, 1972). However, technological and organisational changes over 25 years have added ICT skills, team working, flexibility, adaptability. Furthermore, 'problem solving' has become 'creative problem-solving' and risk-taking has become a key attribute. On the other hand, there is much less emphasis on knowledge and far more on willingness to continue learning and/or lifelong learning.

To make a causal link between a student's received higher education and his or her success on the labour market i.e., ones employability, implies that the higher education institution should be able to provide graduates with some sort of package of attributes that meshes with what an employer is looking for. This presumes that the higher education institution knows the desirable attributes of the labour market, and moreover knows the heterogeneity of the labour market (in which there are micro, small, medium and large size organisations, including public, private and international dimensions): not all organisations have the same preferences and those preferences probably change over time as well. It also presumes that graduate recruitment is a rational activity. However, despite the convergence amongst employers about the attributes they seek,

the graduate recruitment process of each organisation in practice is idiosyncratic, pre-judgmental, restrictive, and at times bizarre (Harvey, Moon and Geall, 1997).

Although it does not seem appropriate to assess student employability solely on the basis of recruitment activities of employers over which the higher education institution has no control, research over more than a quarter of a decade does provide consensus over some general attributes employers expect to find in graduates (Harvey, Moon and Geall, 1997). They should exhibit the following: (1) imagination/creativity, (2) adaptability/flexibility, (3) willingness to learn, (4) independent working/autonomy, (5) working in a team, (6) ability to manage others, (7) ability to work under pressure, (8) good verbal communication, (9) communication in writing for varied purposes/audiences, (10) numeracy attention to detail, (11) time management, (12) assumption of responsibility and for making decisions, and (13) planning, coordinating and organising ability. This list squares quite well with a list of 39 aspects of employability, which was developed from survey work conducted by Dr. Ray Wolfenden at Manchester University, and which can be found in full in Knight and Yorke (2004). Brown and Hesketh (2004) indicate that some employers choose to recruit new graduates from a particular institution, according to its reputation, often from the more prestigious universities. Purcell and Elias (2002) indicate that the subject(s) studied, have an effect on the speed with which graduates obtain their first graduate-level job. Brennan and Shah (2003) found that graduates from some ethnic backgrounds find it difficult to gain employment comparable to that gained by the ethnic majority and some other ethnic groups. A similar situation applies in respect of graduates from lower socio-economic groups (Brennan and Shah, 2003; Brown and Hesketh, 2004).

Once in post, the ‘graduate premium’ is far from even. Salary differentials relate to factors such as: the sector of employment, with large differentials between the private and public sectors. The latter are more likely to recruit mature students (Egerton, 2001). Collective Enterprise Ltd (2002) showed that male graduates in information technology, electronics and communications (ITEC) earned 20 per cent more than females within three years of graduation. Blackwell and Harvey (1999) showed that, even in areas of art and design dominated by female graduates, there was a salary bias in favour of males. Differences finally, are also found in parental socio-economic status (Conlon and Chevalier, 2002). Regardless, universities could sometimes have good graduate employment rates because of their reputation; but that may also have more to do with employers’ perceptions that the ‘best’ students go to that university rather than perceptions about how well students are developed, at them. Moreover, some universities have good employment rates because they specialise in areas that have good rates anyway, such as pharmacy, computer science, maths, and optometry: clearly, employment rates are discipline-specific as well. In essence, students should be entitled to an educational provision that contributes to their

employability in three broad ways: (1) fostering a continuing willingness to learn, (2) developing a range of employability-related capabilities and attributes, and (3) promoting confidence in reflecting on and articulating these capabilities and attributes in a range of recruitment situations. Increasingly, in a world of change, in which flexibility is expected, learners need to be able to help the organisations, in which they work after graduation, to transform in the face of this rapid and continuous change. Graduates will not be able to do that if they are not able to work in teams, communicate well, analyse, and synthesise. More importantly, the future graduate needs to be self-transformative, which requires reflective and critical abilities (Harvey, 1999).

Harvey (1999) goes even further by saying that universities themselves should not accommodate for employability. Universities should rather shift the traditional balance of power from the education provider to those participating in the learning experience. Indeed, in struggling to keep up with the changing world around us, some (weaker) universities would be tempted to restrict and say: “we provide for educated students” and not for “employable students”. This would however be a dangerous development, which should not be promoted: in withdrawing to education, universities start to devaluate work experience, work placements and internships, they would stop accommodating these concepts, and would gradually lose their feeling with the labour market. Being educated is not the same as being employable.

8.2 Organisation of the internship pilots

In this section the organisation of internship pilots is presented. Multiple remote internship pilots have been conducted by different university partners under the Cross Sector Virtual Mobility (CSVM) project. In as far as the number of universities concerned for presentation here, the section is delimited by describing cases of two distinct universities. The emphasis is on ensuring the presentation of ample qualitative details, instead of providing quantitative case narrations.

The description of the organisation or configuration of the remote internship pilots is a very important one. It provides for a clear structure by which one can infer conclusions on the approach for stimulating student employability. One particular approach for organising internships may have more impact than another. The section provides for clearly structured descriptions of the pilot cases, in terms of actors (i.e., student, university tutor, and employer mentor), processes (i.e., learning, didactic, instructional and organisational activities), contents (i.e., domain and assignments), and results (i.e., student products, assessment and/or evaluation). The different internship pilots stem from (1) the Estonian e-University (EITF) from Tallinn (Estonia), and (2) the Open Universiteit Nederland (OUNL) from Heerlen (the Netherlands):

(1) The Estonian e-University (EITF) is a consortium of universities and applied universities. The Estonian e-University was founded in February 2003. The consortium consists of the Estonian Ministry of Education and Research, the Estonian Information Technology Foundation, the University of Tartu, the Tallinn University of Technology, the Tallinn University, the Estonian University of Life Sciences, the Estonian Business School, the Estonian Information Technology College, and the University Nord. Functions of the Estonian e-University consortium are: coordination of cooperation between universities and applied universities based on principles of profound studies; increasing the availability of quality education for students and other people willing to learn, for example adults, handicapped people, Estonians abroad and foreign students; educating lecturers of universities to compile and practice quality and efficient e-courses; providing lecturers with necessary technical equipment; improving the reputation of university education in Estonia and creating contacts for cooperation between foreign universities and business circles. The Tallinn University represents the Estonian e-University and the Estonian Information Technology Foundation within the CSVM project, being a pioneer of virtual education in Estonia.

(2) The Open University of the Netherlands (OUNL) together with its School of Science, operates within different national and international networks and alliances. The OUNL develops, provides and promotes higher distance education of top quality. The OUNL is a pioneer in the innovation of higher education and aims at the wide-ranging needs of its students, the market, and the community at large. The OUNL is an institution that operates successfully in the field of lifelong learning and is a much wanted provider of market-oriented and commercial education. It is a frontrunner in open higher distance education and a leader in educational innovation, also on an international scope. Moreover, the School of Science of the OUNL engages in virtual consultancy. Virtual consultancy executes business assignments for commercial organisations and governments.

The remote internship pilots were conducted as an integrated curriculum part, as part of a ‘remote outplacement module’ during the years 2007 and 2008. Participants in the remote internship pilots: the students, the tutors of the university, and the external employer mentors. With regard to organisational figures: the EITF accounts for the participation of 2 students, 1 tutor, 1 external employer mentor, in 2 different remote internship projects; the OUNL accounts for the participation of 13 students, 6 tutors, 5 external employer mentors, in 5 different remote internship projects. Next, some characteristics of the pilots conducted at (1) the Estonian e-University and (2) the Open University of the Netherlands are described. The presentation of the characteristics

of the pilots is subdivided into three parts: (a) general description of the pilot run, (b) learning objectives, and (c) didactic feedback, assessment and quality assurance.

(1a) General description of the pilot run: Estonian e-University

The remote internship pilot of the Estonian e-University was integrated in the Business Information Sources (BIS) i.e., an educational module within the Information Studies BA Curriculum of Tallinn University. Herein, learning and research work experience is integrated, using a blended learning model. The term blended learning is used to describe learning that mixes various event-based activities, including face-to-face classrooms, online learning, and self-paced learning. The students in this model developed their business-related competences partly in face-to-face classrooms and partly in an online environment. The didactic design and educational format supported the development of research skills and social skills in the area of business information via guided individual study. The main aim of the module was to develop knowledge and skills to use, analyse, and synthesise business information, data, and sources, but also to collaborate with a peer-student and representatives of an optical firm. The model was developed as an experiment to test the possibility to integrate remote internships within traditional face-to-face courses. Students enrolled in this module, carried out a real project, conducting a market research for an optical firm, which enabled the firm to get information about other optical businesses and resources in Estonia. In the project, students were guided by their academic project tutor i.e., a lecturer at the university, and by the employer's supervisor, acting as a mentor. Students worked collaboratively on the research project, developing team-working, communication and presentation skills. The results of the collaborative project were delivered to the optical firm and were also presented to the fellow students as well as to the tutor, by means of verbal presentation in the classroom.

(1b) Description of learning objectives: Estonian e-University

- analyse and synthesise business information, data, and sources in the business context (optical sector);
- propose plans for improvements on data and sources;
- show, in words and by results, which professional competences of business information scientists, the student processes;

- have knowledge and skills for information seeking and retrieval to select and evaluate relevant sources (paper based and electronic form);
- have communicative skills for written and verbal presentations;
- have the ability to evaluate sources critically and systematically to raise and define problems and to solve problems.

(1c) Didactic feedback, assessment and quality assurance: Estonian e-University

The didactic guidance available to the students during the remote internship pilot, relates to the disciplinary subject matter, the learning and reflection, and the work performance. The assessment (grading) on the disciplinary subject matter of the remote internship, is provided by the tutor at the university. Assessment (grading) on the learning and reflection of the internship student, is provided by the tutor at the university. Assessment (grading) on the work performance of the internship student, is provided by the tutor at the university and the mentor at the client (employer). Quality assurance is implemented by collaboration between the university and the business organisation, through summative assessment. Feedback in between, is done by the tutor. Verbal feedback is obtained at the end of the internship period, from the business organisation.

(2a) General description of the pilot run: the Open University of the Netherlands

The OUNL integrated the remote internship in the educational module Virtual Environmental Consultancy (VEC), in which working and learning has been fully integrated by means of a distance learning environment. The VEC's didactic design and educational format supports guided individual competence development. The VEC offers a networked learning environment that resembles an authentic professional situation, in particular the consultancy and advisory business to private and (non)governmental organisations, as one of the major businesses in the professional arena of environmental science graduates. Students and teachers working in the VEC carry out real projects for real external clients (employers at private and (non)governmental organisations). The module caters for two parallel processes, one focusing on delivering high quality products to the external clients, and one enhancing the specific competences of the individual student employees (Ivens et al., 2007). In their group internship work, the students are guided by the group itself (Computer Supported Collaborative Learning - CSCL), by their project tutor (an environmental science lector at the university), and by the contact person

at the employer's, who serves as a mentor. In their ability and attitude to learn and to develop competences, students are coached on an individual level by the tutor at the university and by peer feedback and work reviews from their peer students in the same run of the module (not only team mates).
The VEC serves as an end of terms, integrated research project for Bachelor-of-Science graduation, and meets the scientific requirements at that level.

(2b) General description of the learning objectives: the Open University of the Netherlands

- to show, in words and by results, which professional competences of environmental scientists the student processes at Bachelor graduation;
- to develop a task-oriented and systematic planning approach in working and learning, to be able to develop with guidance the lacking or minor developed individual professional competences of environmental scientists;
- to study and address real environmental problems of external customers, within a team of peer students, and deliver real products.

(2c) Didactic feedback, assessment and quality assurance: the Open University of the Netherlands

Feedback on the disciplinary subject matter of the internship is given by the tutor at the university, the coach at the client's, and peer-students. Feedback on working performance of the internship student, is provided by the tutor at the university, the coach at the client's, and peer-students. Feedback on learning and reflection of the internship student, is provided by the tutor at the university. Assessment (grading) on the disciplinary contents of the internship job, is provided by the tutor at the university and the coach at the client's. Assessment (grading) on working performance of the internship student, is provided by the tutor at the university and the coach at the client's. Assessment (grading) on learning and reflection of the internship student, is provided by the tutor at the university. Quality assurance is implemented through a protocol, by means of assessment (grading) instruments at each intermediate and final product (project work plan, personal development plan, intermediate report, self-reflection report, final report), and through cumulative assessment of all products by one final assessor.

Overall quality is assured by the quality assurance protocol of the School of Science and the OUNL, which ensures the PDCA cycle (Plan-Do-Check-Act)[2].

To organise the measurement of students' learning outcomes and students' employability for the remote internships, an instrument was needed. A questionnaire was developed for measuring this. Students, tutors and mentors were targeted by this questionnaire. The questionnaire contained different categories. The questionnaire was designed to gain information on the properties of students participating in the remote internships, on the properties of the internship assignment and the associated university course or module involved, on the information and communication tools used i.e., the online learning environment, the documents supporting the internship or course module, the perceived quality of the internship, the communication during the internship, and the interaction and communication with fellows. The categories included different questions such as to reflect important employability indicators, personal and learning circumstances, and attitude of student, tutor and mentor towards remote internship pilots and its stakeholders. Most contextual questions were recorded by means of open and semi-closed questions. The majority of questions though, consisted of closed questions on a summated rating. Responses on each question were filled in on a scale of five fixed expressions, ranging from poor to excellent: poor - insufficient - sufficient - good - excellent. In deploying the questionnaire, an introductory letter to the students, tutors and mentors was applied, along with short instructional texts at the start of each category of questions. Students were asked to fill in all of the questions. The tutors and the mentors were asked to fill in only those categories of questions which were relevant in assessing the students' employability.

8.3 Results of the remote internship pilots

In this section, the results of the remote internship pilots from the Estonian e-University and the Open University of the Netherlands are presented. For each of the institutes that ran the internship pilots, the description of the intern projects shall be reiterated shortly, before elaborating on the results. First, the description of the projects and their results from the Estonian e-University are presented (section 8.3.1), followed by the description of the projects and their results from the Open University of the Netherlands (section 8.3.2).

[2] PDCA: Dr. W. Edwards Deming.

8.3.1 Pilot intern projects at the Estonian e-University

The remote internship projects were conducted as an integrated curriculum part, as part of a 'remote outplacement module' during the years 2007 and 2008. Participants in the Estonian remote internships: the students, the tutors of the university, and the external employer mentors. With regard to organisational figures: the EITF accounts for the participation of 2 students, 1 tutor, 1 external employer mentor, in 2 different remote internships. Both internships were to develop knowledge and skills to use, analyse, and synthesise business information, data, and sources, but also to collaborate with a peer-student and representatives of the optical firm. The model was developed as an experiment to test the possibility to integrate remote internships within traditional face-to-face courses.

Two (Estonian) female students took part in the research. Both students were from the Tallinn University - Institute of Information Studies, and full time students and 3rd year Bachelor students in information science. Both students were in their early twenties, consistent with 3rd year BSc students from a traditional university. The name of the internship course was 'Äriteabe allikad' (code INT6016/non-compulsory course). Two European credit points could be obtained i.e., equivalent of approximately 60 hours of weekly study load. The students involved in the remote internships worked in teams to conduct market research for the optical firm, which enabled the firm to obtain information about other optical businesses and resources in Estonia. Within the project, both students were guided by their project tutor i.e., an academic lecturer at the university, and by their contact at the employer's, who functioned as the mentor. The two students worked collaboratively on the research project, developing (also) team-working, communication and presentation skills. The results of the collaborative project were delivered to the optical firm, and also presented to fellow students and a tutor via verbal presentation in the classroom. The internship itself was unpaid.

The internship was indicated to be a research internship on the local scale. The methods to apply for the internship task and the objectives to achieve within the internship, were clearly communicated according to the students. Both students had relevant work experience, but not in the actual field of the internship assignment. Both students spent more time on (aside) work than on their study. The students spent between 1-10 hours on their intern task per week, although they both indicated to be full time students. Theoretically they should have worked 60 hours weekly on the intern course. In throughput and/or duration, one student spent up to one month on the course, the other student between one and three months. Students spent little time on family care activities, leisure and internet use. Both students did not make a sound planning at the beginning of the internship, and the evaluation of the internship indicated that one student worked

mostly off-site, whilst the other more frequent on-site. Table 8.1 reflects the students' activities and their time distribution.

Table 8.1 Student activities and time distribution

	none	1-10 hours weekly	10-20 hours weekly	20-32 hours weekly	More than 32 hours weekly
Studying		2			
Working			1	1	
Family and care		2			
Leisure and voluntarily	1	1			
Internet at work		2			

Both students participating in the remote internships from the optical firm, had computer and internet connection at their availability at home, by which they could connect to the university network. The students used the computer at home for their remote internship. One student carried out an internship before. Both students said to have former work experience and mentioned that they were in their 3rd professional job. The students' general skills were rated especially good to excellent in the management of traditional programme application, such as Outlook, Office, Google, et cetera. Also, for the so called new programmes such as management of webcams or SKYPE, they revealed adequate skills. Both students had sufficient experience with electronic environments, as well as with document sharing applications: these were useful ICT skills during the internship. The students had little or no experience with web authoring tools or project management tools. Table 8.2 presents the ICT skills of the students on conventional office applications. Table 8.3 presents the general internet/teleworking skills of the students.

Table 8.2 ICT skills on office applications

	poor	insufficient	sufficient	good	excellent
Text processing				1	1
Spreadsheets				2	
Presentation					2
Database			1	1	
Team workspace programme	1	1			
Web authoring tools	1	1			
Project management	1	1			
Mind mapping concepts	2				
Search engines					2
News feed channels		1		1	
Photo and paint design		1		1	

Table 8.3 Students' general internet/teleworking skills

	poor	insufficient	sufficient	good	excellent
E-mail programmes				1	1
Webmail				1	1
Mobile phone				1	1
Call forwarding			1	1	
Instant messaging					2
VOIP			1	1	
Webcam			1	1	
Online video conference	1		1		
Intranet access from home			1	1	
Online document sharing				2	
Online learning environment			2		
Laptop and WIFI				2	
PDA, phone with wireless internet	1	1			

The Estonian e-University also provides for an electronic learning environment: ICT and course information, for students to use during projects. The students found the electronic learning environment easy to use and logic. All students normally make an ICT test in the first course. Students are then to be aware of the ICT functionality. Accordingly, for the internship assignment nothing needed to be reintroduced, students simply had to know the basics of the course and had to know e-mail systems. As regards the electronic learning environment however, the students

indicated to mainly use the e-mail communication functionality. With regard to the (internship) course, no particular remote internship (electronic) handbook was foreseen. Students received written instructions from the academic tutor and also verbal explanations as how to complete their task. Table 8.4 presents an overview of the opinion of students on the online learning environment.

Next, we focus on the (perceived) quality of the internship from the perspective of the student (Table 8.5) and the employer (Table 8.6). The students found that the internship assignment was clearly formulated and that the knowledge was sufficient to carry out the internship. One student disagreed on the time aspect. Though according to the employer mentor, the students' time to finalise the internship was estimated to be quite sufficient. Both student and employer agreed that the assignment had developed the student's ability to relate theory to the workplace.

Table 8.4 Evaluation of the online learning environment

	completely disagree	**disagree**	**neutral**	**agree**	**completely agree**
Introduction to online environment was clear			2		
Introduction to environment was complete			2		
Course information was logical and clear				1	1
Online environment was easy to use				1	1
Online environment was easy to navigate				1	1
Online environment structure was clear				1	1
Online environment helped with internship				1	1
Hyperlinks functioned well		1			1

Table 8.5 The students' evaluation of quality and contents of the internship

	completely disagree	**disagree**	**neutral**	**agree**	**completely agree**
Internship was clearly formulated			1	1	
Student's knowledge was sufficient		1		1	
Student had sufficient time			1	1	
The assignment has developed the student's ability to relate theory to the workplace			1	1	
It has made a positive contribution to the student's understanding of the subject			2		
Academic supervision was beneficial		2			
Employer supervision was beneficial			1		1

The opinion on the judgement of the supervision by employer mentor and academic tutor, differed considerably among the students and the employer mentor. Both students indicated that the academic supervision was not very beneficial, whereas the employer declared neutral on this matter. Not reflected in the tables though, is the attitude of students taken towards the academic tutor. Students generally disagreed with the tutor's grading, in the sense that their grading turned out lower than expected. The students felt that they worked quite hard on the assignment. As regards employer supervision, the one student indicated that the employer supervision was neither positive nor negative, whereas the other student found the employer supervision quite beneficial. The employer itself, rated neutral on this matter. As regards the evaluation of the quality, there seems to be an asymmetry in the perceptions of the quality of the internship between the three parties.

Table 8.6 Employers' evaluation on the quality and contents of the internship assignment

	completely disagree	**disagree**	**neutral**	**agree**	**completely agree**
Internship was clearly formulated				1	
Student's knowledge was sufficient				1	
Student had sufficient time				1	
The assignment has developed the student's ability to relate theory to the workplace				1	
It has made a positive contribution to the student's understanding of the subject				1	
Academic supervision was beneficial			1		
Employer supervision was beneficial			1		

Effective communication between student, tutor and mentor is especially important in remote internships. The use of communication tools, and the frequency of communication, are an important indicator for the kind of supervision received. From the contact that the students had, it was noticed that the amount of support and supervision, as well as the quality hereof, varied. Students both indicated that they had difficulty in reaching and contacting the academic tutor and the employer mentor. As regards the academic tutor, one student indicated that she had weekly face to face contact and e-mail contact, whereas the other student hardly had any contact. Most contacts between the students and the tutor went through face to face meetings, e-mail and webmail. As regards the employer mentor, one student indicated to have weekly contact (even face to face), whereas the other indicated to have monthly contact (virtual). The online learning environment was hardly used. The cause for this lies in the fact that the electronic environment had typically (only) been tested for usage in traditional face to face courses, and not for management of remote internships. Students have indicated to mainly use the e-mail

communication functionality. Table 8.7 presents the deployment of communication tools in supervision by the mentor, as indicated by the students.

Table 8.7 Use of communication tool in supervision by the mentor, as indicated by student

	never	rarely	monthly	weekly	daily
Face 2 face meetings	1			1	
Telephone landline	2				
Telephone mobile	2				
E-mail			1	1	
Instant messaging	2				
VOIP	2				
Webcam	2				
Online video conference	2				
Online document sharing	2				
Online learning environment or project room	1			1	
Employer's platform or project environment	2				

Finally, internship communication between the students and their fellow (classroom) students was rated good. Both students were from the same discipline and course, and worked collaboratively on the same project for the optical firm. In the classroom, students subsequently presented their internship projects to the fellow students and the academic tutor. The remote internship evaluation counted for 50% of the course. Evaluation of face-to-face (course) activities, in the classroom, counted for the other 50%. One student got a better grade than the other, because she performed better in class activities. This caused some (student-felt) disparity, as they were both involved in the same internship project.

8.3.2 Pilot intern projects at the Open University of the Netherlands

Similar to the remote internship projects conducted by the Estonian e-University, the remote internship projects of the Open University of the Netherlands were conducted as an integrated curriculum part, as part of a 'remote outplacement module' during the years 2007 and 2008. Participants in the remote internship pilots: the students, the tutors of the university, and the external employer mentors. With regard to organisational figures, the OUNL accounts for the participation of 13 students, 6 tutors, 5 external employer mentors, in 5 different remote internship projects. An overview of the remote internship projects:

Project #1:

In 2007-2008, the CSO consultancy firm in the Netherlands was in need for an inventory on information required for subsurface spatial planning. In the Netherlands, the quantity of space available for infrastructure is limited: an increasing claim is made on the subsoil for infrastructural works underground. This in turn would lead to an increasing use of underground for housing, car parks, infrastructure, cooling and heat storage, and rainwater drainage. An internship to study 'subsurface spatial planning' was devised and was designated a 'project-internship': the assignment was fulfilled by a team of collaborative Bachelor students. Issues addressed in the internship: the type of information that can be made available for the land use planning of the subsurface, the design of a database structure in which before mentioned information could be stored and retrieved, the collection of associated data for the preselected study area, and the description of (most) important lacunas in information and/or accessibility.

Project #2:

In 2007-2008, a remote internship assignment was designated to a group of Bachelor students of the Open University Nederland, at the Regional Centre of Expertise Rhine-Meuse (RCE Rhine-Meuse). The RCE was acknowledged to be the first RCE in 2005, in Europe, by the United Nations University. As part of the RCE strategy, an action programme was initiated for world-wide development of Regional Centres of expertise with the aim to map (regional) knowledge in the field of sustainable development. The RCE Rhine-Meuse had a need for interns, to establish new methods for policymaking on a regional level, aligning with priorities of the 2007-2013 INTERREG Programme. Tasks for the interns: an inventory of sustainability subjects in regional planning of regions, an elaborated example of a regional (minimal) pilot project, and a meta-level model (methodology/working method). The internship 'Planning methodology on sustainable regions' was a 'project-internship' designated to a team of collaborative Bachelor students.

Project #3

Students from the Open University Nederland also did a remote (collaborative) internship for The National Institute for Public Health and the Environment (RIVM)/Laboratory for Ecological Risk Assessment (LER) in the Netherlands. The internship entailed a pre-study for research to be done by the RIVM/LER in cooperation with the Institute for Environmental Sciences (CML) at Leiden University, concerning a field study on the impact of the combined effect of chemical stressors on aquatic ecosystems. The students needed to make an inventory of the biological monitoring data already present in the Netherlands and the methods used for biological monitoring in Europe: what methods are used for biological monitoring in the Netherlands and in the rest of Europe and why are these methods used, how are reference conditions established, what are the differences between monitoring species, populations and communities, and, how do these differences affect the ecological reference conditions in the assessment of water quality? The internship on 'Biological monitoring of the quality of surface waters', was also a 'collaborative remote internship'.

Project #4

This project executed in 2007-2008, was aimed at describing the consequences for industry, of the implementation of the EU Water Framework Directive in the Dutch province of Limburg. The client was the Dutch Limburg Industrial Water Association (VIWL) in Maastricht (NL), in collaboration with the Chamber of Commerce of the Dutch Province of Limburg. In this study, the effects of the implementation of the EU Water Framework Directive for the industrial water users in the Dutch province of Limburg was investigated. The members (firms, using industrial water) of the Dutch Limburg Industrial Water Association (VIWL) required an overview of the impact of the implementation of the European Water Framework Directive. The students studied the contribution of the Limburg industry to water pollution of the Meuse river, using the EU water framework directive - water quality standards. On request of the VIWL, in addition, the students made an inventory of the changed water quality standards under the EU Water Framework Directive. Focus was especially on the physical and chemical parameters of industry water effluents, relevant to these firms in Limburg. The internship was a 'project-internship', designated to a team of collaborative Bachelor students.

Project #5

This final remote internship project (2007-2008) required the development of a university sustainability monitor for the Open Universiteit Nederland. The aim of the research was to

investigate the indicators to evaluate campus sustainability at the premises of the Open Universiteit Nederland. The Open Universiteit Nederland, the distance learning university of the Netherlands and Belgian Flanders, started an internal project 'Greening the Campus', aimed at the transition of the campus at the principal premises in Heerlen (NL) towards a green, low-emission campus. The main goals of 'Greening the Campus': improving the faculty buildings on the campus according to sustainable building standards, and to implement sustainability in the educational programmes of the university, both in content and in delivery procedures of distance learning courses. The students developed a monitor and methodology, by which the Open Universiteit Nederland is able to annually evaluate its overall sustainability performance. The internship was a 'project-internship', designated to a team of collaborative Bachelor students.

Thirteen students in total took part in the research (eight male, five female). All students were 3rd year Bachelor students in environmental sciences, and the internship was part of their bachelor thesis i.e., compulsory. Eight students were Dutch, the other five Dutch speaking Belgian students. The age of the students ranged between 25 and 50 with a mean of 39,8 years, which is consistent with the (distance) student population of the Open Universiteit Nederland, being mostly professional working people. Ten students were in paid employment during the internship. The average OU study load is between 200 and 400 hours. During the internships most students indicated their load to be between 10-20 hours weekly. Students seemed to spent little time on family care activities and leisure during the period of the internship (Table 8.8).

Table 8.8 Student activities and time distribution

	none	**1-10 hours weekly**	**10-20 hours weekly**	**20-32 hours weekly**	**More than 32 hours weekly**
Studying		1	8	4	
Working	3			3	7
Family and care	1	7	3	1	1
Leisure and voluntarily	2	9	2		
Internet at work		6	7		

All students had computer and internet connection at home, 6 students i.e., the majority had ADSL, 6 students had cable connection, and 1 had an IDSN connection. The majority of the students use the computer at home, 3 at work, and 2 at school/university meaning that some students used different workplaces for their internship. Eight out of thirteen students had former

experience in internships, 1 of these guided an internship as an employer. The students all had respectable work experience. For three students this was the first internship. As concern the management of ICT applications, students' general skills were especially good in the traditional programmes such as Outlook, Office, Google, et cetera, but the so called new programme skills such as PDA, videoconferencing or Moodle, were less developed. All students did have experience with electronic environments like Blackboard or e-room, as well as document sharing, all very useful during the internship. However, students had little to no experience with web authoring tools or project management tools. Table 8.9 presents the ICT skills of the students on conventional office applications. Table 8.10 presents the general internet/teleworking skills of the students.

Table 8.9 ICT skills on office applications

	poor	**insufficient**	**sufficient**	**good**	**excellent**
Text processing			2	9	2
Spreadsheets		1	3	8	1
Presentation			2	10	1
Database		1	3	7	2
Team workspace programme		1	4	8	
Web authoring tools	7	2	1	3	
Project management	7	1	3	2	
Mind mapping concepts	6	4	1	2	
Search engines			4	8	1
News feed channels	7	2	3	1	
Photo and paint design	3	2	5	3	

Table 8.10 Students' general internet/teleworking skills

	poor	insufficient	sufficient	good	excellent
E-mail programmes		1	1	8	3
Webmail			2	9	2
Mobile phone	1		1	9	2
Call forwarding	2	2	3	4	2
Instant messaging		1	5	6	1
VOIP	1		3	8	1
Webcam	5	2	4	2	
Online video conference	9	2	1	1	
Intranet access from home	1		5	5	2
Online document sharing	2	1	4	6	
Online learning environment	1	1	4	6	1
Laptop and WIFI	3	3	1	4	2
PDA, phone with wireless internet	8	2		2	1

The Open University Nederland also provided for an electronic learning environment. It integrated the remote internship in the educational module Virtual Environmental Consultancy (VEC), in which working and learning has been fully integrated by means of a distance learning environment. Although some students indicated that the introduction was not clear or complete, many students found the electronic learning environment easy to use and logic. However, one student would liked to have an additional SKYPE introduction. All students indicated that the

electronic learning environment helped them to carry out their internships, although the structure could be improved. The students could also make use of a handbook. This handbook (of the internship course) was considered comprehensive, although the structure could be improved. The students received the handbook 2-4 weeks before the start of the course. However one student mentioned that the material should have been available sooner. The handbook is available both as a hardcopy and as an e-workbook. Students indicate tentatively, to use the online resource more often. Table 8.11 provides the students' evaluation of the online learning environment.

Table 8.11 Evaluation of the online learning environment

	completely disagree	**disagree**	**neutral**	**agree**	**completely agree**
Introduction to online environment was clear		1	6	6	
Introduction to environment was complete		1	7	5	
Course information was logical and clear			4	9	
Online environment was easy to use			2	11	
Online environment was easy to navigate		1	3	9	
Online environment structure was clear			5	8	
Online environment helped with internship			2	11	
Hyperlinks functioned well			2	11	

Next, the results of research focuses on the (perceived) quality of the internship from the perspective of the student (Table 8.12). Quite a number of students indicated that the internship assignment was not clearly formulated, although the students' knowledge was considered sufficient to carry out the internships. The time to finalise the internships was sufficient. Students were not fully aware of the fact whether they had related theory to the workplace during the internship, although they did all agree on the fact that the internships made a positive contribution to the understanding of the subject. The judgement on the supervision and support by both the tutor and the mentor was rated positive by most students, although 3 students disagreed on this. One student commented that the tutor and mentor mainly reacted afterwards and provided their comments only when something was finished.

According to the students, some of the positive features of the internship were: learning new skills, gaining practical experience, document management training, experience in new topics in the field of sustainable development, planning and project working (begin-end-results), experience in working for the consultancy company, virtual cooperation, challenging assignments, good guidance, influence on what you learn, and interpersonal aspects (collaboration). The negative aspects mentioned by the students were: time pressure as a result of the fixed period, working in project groups, few possibilities to network for a future job, hardly meet other stakeholders, no face to face contact, not meeting fellow students and coaches, and peak moments.

Effective communication between student, tutor and mentor is especially important in remote internships. The use of communication tools, and the frequency of communication, are an important indicator for the kind of supervision received (Table 8.13). With regard to the pilot conducted, there were few face to face meetings between the students and the tutors, which seems inherent to the internship model. Most contact went through e-mail, SKYPE and instant messaging, other communication tools were hardly used. The online learning environment was also used frequently i.e., daily or weekly. The students found it quite clear how the academic tutors could be contacted and most students found the quality of the tutor beneficial, although supervision was not frequent for every student. The contact with the mentors was less than that with the tutor. Most students found the supervision by the mentor beneficial.

Table 8.12 The students' evaluation of quality and contents of the internship

	completely disagree	disagree	neutral	agree	completely agree
Internship was clearly formulated	1	4	5	3	
Student's knowledge was sufficient		2	4	7	
Student had sufficient time	1	2	3	7	
The assignment has developed the student's ability to relate theory to the workplace		2	6	5	
It has made a positive contribution to the student's understanding of the subject			2	9	2
Academic supervision was beneficial		3	2	6	2
Employer supervision was beneficial		3	3	5	2

Table 8.13 Use of communication tool in supervision by the mentor, as indicated by student

	never	rarely	monthly	weekly	daily
Face 2 face meetings	1	9	3		
Telephone landline	5	4	2	2	
Telephone mobile	11	2			
E-mail	2	7	3	1	
Instant messaging	9	2	1	1	
VOIP	8	4	1		
Webcam	13				
Online video conference	13				
Online document sharing	11	1	1		
Online learning environment or project room	9	1	3		
Employer's platform or project environment	10	2	1		

Finally, all students collaborated with fellow students from the same discipline. Communication with fellow students was considered an advantage, as by all students. Two students appreciated the different knowledge and the different viewpoints from fellow students. Also, the necessity to actually communicate about the project was mentioned as being quite stimulating. The contacts between students were generally very good, and it was clear how to contact each other. Most communication among students was by SKYPE. The intermediate reflection on the internship was based on the feedback by peer students and the tutors, through an anonymous feedback system in the electronic learning environment. The final evaluation of the tutors was provided by written feedback and a final grade.

8.4 Reflection on the remote internship results

This section provides critical reflections on the remote internship results and suggests (where possible) potential improvements. The section is subdivided into revisiting the learning outcomes and the didactic feedback, assessment and quality assurance, of the internship pilots, in relation to the actual outcomes of the questionnaire and qualitative feedback obtained from all the parties involved in the internships.

Students involved in the Estonian e-University pilot were to analyse and synthesise business information, data, and sources, in the optical sector. They needed to propose plans for improvements on these issues. In words and by results, they had to deploy professional competences of business information scientists, implying the use of knowledge and skills for information seeking and retrieval so as to select and evaluate relevant sources, paper based and electronic. Students needed to evaluate sources critically, and systematically raise, define and solve problems. Didactically, as regards the Estonian e-University pilot, guidance was provided to the students during the remote internship pilot and concerned the disciplinary subject matter, the learning and reflection, and the work performance. The assessment on the disciplinary subject matter of the remote internship, was provided by the tutor at the university. Assessment on the learning and reflection of the internship student, was provided by the tutor at the university. Assessment on the work performance of the internship student, was provided by the tutor at the university and the mentor at the employer's. Quality assurance was implemented by collaboration between the university and the business organisation, through summative assessment. Feedback in between, was done by the tutor. Verbal feedback was obtained at the end of the internship period, from the business organisation.

Students involved in the Open University pilot were to show, in words and by results, that they were able to deploy the professional competences of environmental scientists, required for Bachelor graduation. Students needed to address real environmental problems of external customers, within a team of peer students, and deliver real products. They were required to develop a task-oriented and systematic planning approach in working and learning. As deemed appropriate in the different internship assignments, students needed to develop (with guidance), specific individual professional competences. Didactically, as regards the Open University pilot, guidance was provided to students during the remote internship, and concerned the disciplinary subject matter, the learning and reflection, and the work performance. Assessment on the disciplinary contents of the internship, was provided by the tutor at the university and the coach at the client's. Assessment on learning and reflection of the internship student, was provided by the tutor at the university. Assessment on working performance of the internship student, was

provided by the tutor at the university and the coach at the client's. Quality assurance was implemented through a protocol, by means of assessment instruments at each intermediate and final product (i.e., project work plan, personal development plan, intermediate report, self-reflection report, final report), and through cumulative assessment of all products by one final assessor.

What becomes apparent from comparing the (remote internship) models of the Estonian e-University pilot and the Open University pilot, is that guidance and feedback from the employers, is apparently more dominantly present in the model of the Open University pilot than in the model of the Estonian e-University pilot. One must comment though, that this is only a formal comparison of the two models, and does not tell anything about the (more) informal contacts between the parties and the frequency and/or quality hereof, during the internship. To investigate the operations and the impact of the two models, a close look must be taken into the outcomes of the questionnaire.

As concerns the Estonian e-University pilot:
Students that took part in the remote internship pilot came from a traditional university. They were provided with the liberty of working on their assignment from home, hereby using their computer and internet connection. Whether this model has really worked out for the students, we shall now investigate further by explicating some of the findings in this chapter. As one could read from the tables and their narratives in this chapter, the students spent more time on (aside) work than actually on their internship, whilst they indicated that they had the impression that they were working quite hard on the internship. Apparently, the prescribed study load for the internship and the perception of ones own experience, are two different things. Probably, students must be calibrated into the new mindset of internship, and as to the devotion which is expected of them. In addition, the didactic model seems to allow for a loose supervision on the part of the employer supervisor. The didactic model does not explicate formal structured employer supervision contacts, in the time the student progresses his or her internship. It seems the OU model is more explicit in this. In the Estonian model, contact may be frequent and even face to face, but may also be infrequent and totally virtual. Besides, it is also noted that not all students made a sound planning at the start of the internship. Students may apparently require obligatory instructions, as to the development of a work planning and communication plan, so as to keep them on track. With regard to the academic and employer supervision, internship instructions for all parties to obey to, would be advantageous. One could compare the problems found here with some of the barriers identified in Chapter 6, as concerning: the lack of guidance and motivation of the remote intern, the employer's verification of the student intern's activities, and the lack of communication between student, intern's employer and intern's educator. Finally, with respect to student

guidance, control and supervision, the electronic learning environment of the Estonian university was not ready for remote internships at the time. This prevented students from doing (some of their) work on campus, a situation in which the tutor would have more control over the students' activities and progress.

In conclusion, the didactic model as used in the Estonian e-University pilot, has a clear advantage, but also a clear disadvantage. The advantage of the model is the freedom of working on a remote internship assignment, in ones own time and from a distance i.e., at home. The disadvantage is that it probably does not work for all students: students which are not so disciplined, and/or used to working on their own, are likely to experience difficulties. However, a solution to the disadvantage of the model is available. This solution typically connects the participating students to a tighter regime of supervision, which is campus based.
The solution is based on Model II (group or class remote internships) as identified in Chapter 7. In such model, the individual intern is part of a larger group of students which perform the internship assignment predominantly on campus. In such a solution, the ICT infrastructure is designated to the university, and the intern obtains space and resources from its university. The students are expected to use the internet's collaborative workspace for document exchange, collaboration and communications (one-to-one and one-to-many), the world wide web for research purposes, e-mail and telephone, and videoconferencing for group synchronous meetings. Moreover, students need to be present during project classes on campus, as prescribed by the academic schedule.

As concerns the Open University pilot:
Students that took part in the remote internship pilot came from a typical distance teaching university. The distance students were working professionals, their ages ranging from 25 to 50 (this is considered a typical distance student population, as concerns the Open Universiteit Nederland). The internships were facilitated by a specific project learning environment, in which working and learning had been fully integrated. The model provided off campus students with access to virtual workspaces, hosted by the university. The virtual platform had a crucial role in the interaction between all parties. The environment catered for two parallel processes: one aimed at delivering high quality products to external clients, and one aimed at enhancing specific competences of individual students. The students were guided by (1) the group itself i.e., computer supported collaborative learning, (2) by the project tutor, and (3) by the employer's contact person, serving as a mentor. Expected moments of interaction between students and supervisors had been explicated. A handbook was available for the interns to resolve problems and/or answer questions.

The model of the Open University had (inherently) less difficulties with managing the discipline of its students, but mainly because its students were familiar with the mindset of professional work. Interestingly enough though, a major benefit, which was appreciated in the Estonian pilot, was not available during the Open University pilot: 'individual' internships. Students of the Open University were required to work in a team, with the core experience being made up of collaborative working and learning. When soliciting for jobs afterwards however, the individual internship would perhaps account more for ones own performance. Another aspect of the internship configuration at the Open University was the choice to emphasise the process of internshipping and not so much the product of internshipping. Development of student competencies i.e., the process as an experience, was strongly promoted; whereas the actual satisfaction of employer requirements was of lesser (relative) importance. Given to say that the employers were all informed about this property of the internship at the beginning. A discussion on what should be the ideal in this case, is related back to the first discussion in this chapter, regarding the debate of being educated and/or being employable. Furthering on the issue of employability, the student feedback from the Open University also indicated that the expectancy of obtaining, post-internship, company-related job offers, was considered low in this model. In many organisations, physical internships are considered an important corporate (social) recruitment instrument. As for the obvious property of remote interns not being on site, they are unlikely to benefit hereof.

In conclusion, the didactic model as used by the Open University pilot, has a clear advantage, but also a clear disadvantage. The inherent advantage of the model is its ability to organise 'directed' internships for off campus target groups. Implicit to the success is (also) the rather specific composition of the student population i.e., most often working professionals themselves. The disadvantage of the model is the lack of freedom in performing the internships: the individual students depend on their group members. In comparing the model of the Open University with the identified models of Chapter 7, the Open University model foremost seems to resemble Model II (group or class remote internships); added though, that the actual group or class is predominantly managed off campus, and not on campus. The Open University model herewith seems to share characteristics with such cases as the Turin University and the Open University of Catalonia. One perhaps need to set these cases of remote internships in own their right now, by introducing a final (distinctive) remote internship model: the off campus group (or class) remote internships (Figure 8.1).

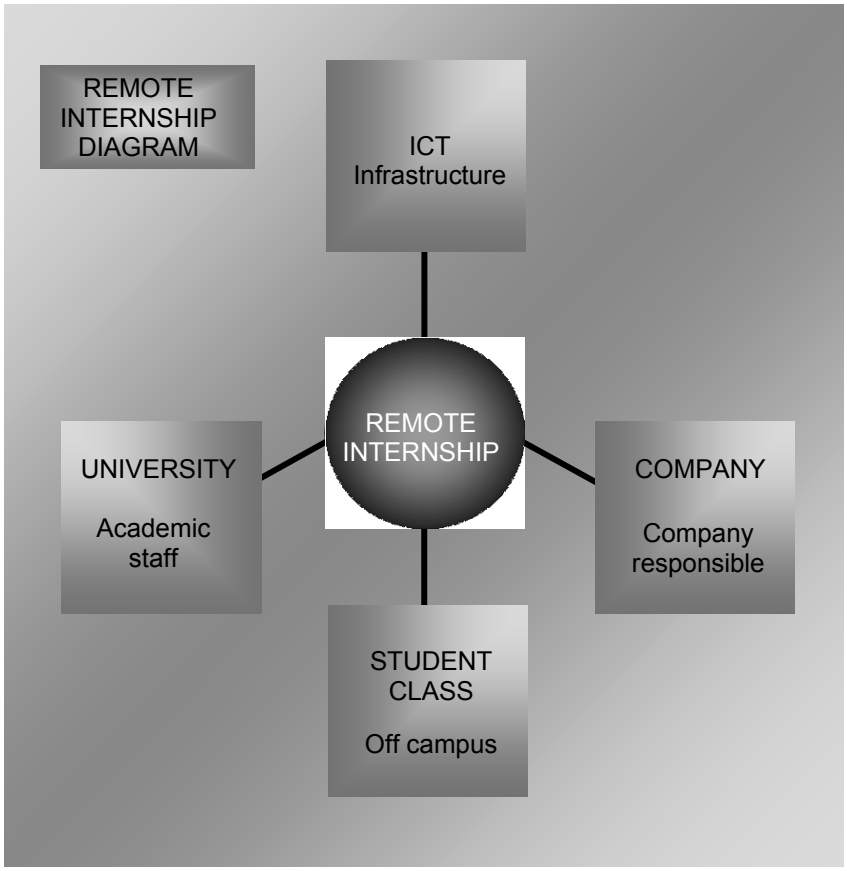

Figure 8.1 Model VII: off campus group (or class) remote internships

9. Towards a European portal for clearing remote internships

This chapter describes the development path towards the realisation of a premier European portal for clearing remote internships. The product development cycle is placed in an overall stakeholder context and evaluation. Section 9.1 presents the contextual diagram and stakeholder description. Section 9.2 describes the general stakeholder needs. Section 9.3 gives a review of contemporary ICT applications. Section 9.4 describes design phase one: incremental prototyping. Section 9.5 describes design phase two: automated portal functionality. Section 9.6 provides the final evaluation.

9.1 Contextual diagram and stakeholder description

In this section the stakeholders of importance to the development of a remote internship portal, are described. A contextual diagram along with individual descriptions is presented. Key stakeholders are: employers (public and private), students (student unions), Higher Education (HE) institutions, branch organisations (local, regional and national employer organisations), professional organisations (innovation networks, entrepreneur starter networks, regional innovation centres), chambers of commerce, ICT provider, issuing party, government bodies (local, regional, national), and e-learning networks (Figure 9.1).

Employers (public and private)

Employers from the public and the private sector are important stakeholders in the needs derivation for the remote internship matchmaking platform. Employers provide developers with key insights as to what functionality is desirable, and how they may incorporate that. Employers from large co-operations are important, but also employers from micro, small and medium-sized enterprises are important in the consultation. SMEs are socially and economically important, as they represent 99% of all enterprises in the EU and provide around 65 million jobs: they contribute to entrepreneurship and innovation. In general, employers are positive about the option of reaching out to intern students in different countries, considering potential (new) foreign markets. Employers find ease and efficiency of assignment postings and speedily clearings on a matchmaking portal, an important requirement. Moreover, internship quality is regarded an important issue. As remote internships differ from traditional ones, academic staff backing during the internship, is to be guaranteed and is to be of high quality, so as to obtain the desired

outcomes. Proper ICT support to interact with the student and its supervisor, is also considered important.

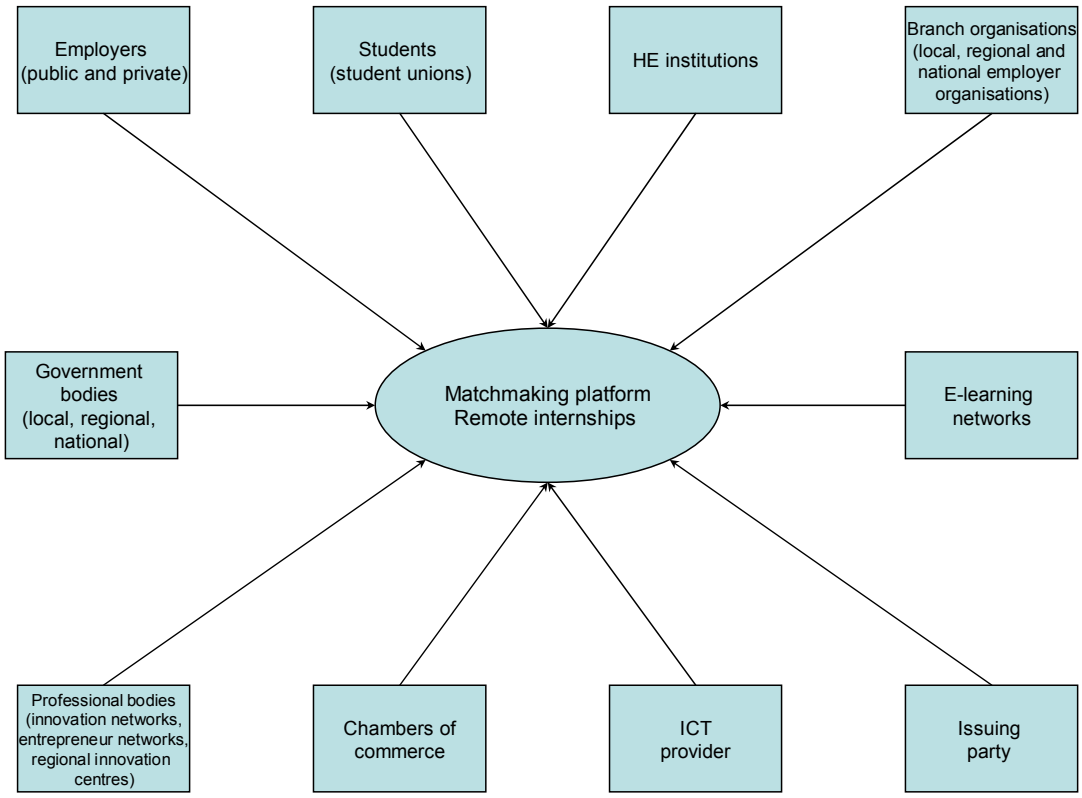

Figure 9.1 Stakeholder diagram

Students (student unions)

Students are important stakeholders of the remote internship platform. Students are together with employers, an important party. Both student and employer are match up parties on the platform. The articulation of students' needs must be taken into account when developing the matchmaking platform. Students are the engine of the remote internships. They are the ones that actually perform the internship assignment. An important requirement is that the remote matchmaking platform is able to inform students on new possibilities for gaining work experience and curriculum vitae enhancement. Representative bodies such as student unions are herein important as they communicate with students about any new possibilities which can raise prospects on the labour market. Students' needs concerning the platform typically concern efficient and effective intern assignment searches, without having to enter their personal data, a

multitude of times. Students should have access to resources and guides, as well as have access to best practices of internships. They typically have a need for reference materials, especially where it concerns students of which the university hasn't offered internships as such (yet).

Higher Education (HE) institutions

Open and Distance Teaching Universities (ODTUs) and conventional universities run different kinds of educational services. Whereas ODTUs are geared towards delivering off campus education i.e., learner centred, conventional universities transfer their knowledge basically through on campus classes, which are primarily teacher centred. Possibilities for students to gain work experience within the curriculum, differ as well within these two models. ODTUs generally do not cater for (physical) internships within curricula, whereas regular universities do. Whereas the matchmaking platform offers opportunities for ODTUs to provide students with serious extra-university, intra-curriculum, working experience; conventional universities shall regard remote mainly internships as supplementary to their existing physical internship programme. For students, universities, and employer organisations, to get started with remote internship for the first time, reference resources would be very useful - documents and templates to quickly kick-off. Resources may include: how to establish a Remote Internship Learning Agreement (RILA), an example of a final supervisory evaluation form, an example of a final student evaluation form, an example of a student internship report template, et cetera.

Branch organisations (local, regional, and national employer organisations)

Employer branch organisations offer a lot of different services to their individual employer members. Branch organisations are an important stakeholder group. A lot of knowledge is contained within these organisations. Members of branch organisations are typically familiar with the market and the profession, and are useful when in need for advice. Branch organisations often perform market surveys and present results directly within the membership. This knowhow allows members to react to new developments. The organisations also offer courses and workshops for their members and provide for information and communication services, such as keeping their members up to date on latest developments which are of interest to them. Branch organisations are an important stakeholder group, they provide the matchmaking portal with essential feedback on its functionality (whereas individual employers often are to busy), and they provide for enhanced 'portal operations', with the horizon to reach out to branch organisations' members, for acquisition of new internship assignments.

Professional organisations (innovation networks, entrepreneur starter networks, regional innovation centres)

Professional (intermediate) organisations have the objective to help employers, entrepreneurs, student starters, et cetera, to set up business, run business and innovate business. The organisations are advisors on mission, strategy, and innovation potential. The organisations are able to quickly connect to networks and professionals in order to answer questions. The networks are of particular interest to the matchmaking portal as they are an asset in pointing out the significance of internships to employers, entrepreneurs, and innovators. Especially in circumstances where ideas and plans are not financially sound (yet), internships might lend a helping hand in performing certain activities, as internships are economically beneficial. Professional organisations have a vast experience in the field. Their experience is taken along in developing the matchmaking portal.

Chambers of commerce

The chambers of commerce is usually a non-political, non-profit making organisation, owned and directed by its members, democratically accountable to individual businesses of all sizes and sectors. The chambers of commerce is usually regionally focussed. The chambers of commerce is in the heart of the local business community, reaching the entire business community and providing services, information and guidance to its members. The chambers of commerce is the voice of the business community, an important partner of choice for information and guidance, and a first natural choice to obtain business support. The chambers of commerce is to ensure that business thrives, and therefore it influences government decision-makers in the shaping of policy. It is out to create the best environment for business. The chambers of commerce also acts as a referatory to skills and competence development. Herewith connects the remote internship matchmaking portal: the matchmaking portal is able to provide organisations with (new) skills and competences through deployment of interns. In matchmaking portal development, the chambers of commerce translates portal desirables, by the knowledge it has on its members.

ICT provider

The ICT provider is a stakeholder in the development of the matchmaking portal. Depending on the degree of existing off-the-shelf functionality for the matchmaking portal, the provider becomes vendor or developer, or a combination of both. The ICT provider however is an economic entity,

and (only) agrees to provide functionality in the way a potential contract allows him to do so, financially. Accordingly, a suitable subcontract for realisation of the portal must be established, which is financial feasible for the issuing party, as well as realisable for the contracting party. Often, concessions on both sides are made to come to a satisfactory agreement.

Issuing party

The issuing party of the matchmaking portal, is stakeholder as well. This issuing party is a Consortium. The matchmaking portal is a product of the European Cross Border Virtual Mobility project, as submitted under the 2006 EC Leonardo da Vinci Programme by the CSVM Consortium. The Consortium consists of 10 partners stemming from seven European countries. Formal partners being: European Association of Distance Teaching Universities, European Students' Union, Estonian e-University, Universidad Nacional de Educacion a Distancia, e−Collegium Foundation, University of Miskolc, Università Telematica Internazionale UNINETTUNO, Open University of the Netherlands, Universiteit Maastricht, and Maria Curie Sklodowska University. So next to other stakeholders, the portal accounts for the needs and requirements of this whole consortium, as well.

Government bodies (local, regional, national)

Government bodies in the region often are a spider in the web of innovative developments. On the local level, they hold the overview of ongoing economic developments and innovative regional projects. In many cases regional developments are supported by funds from certain programmes. The matchmaking portal can stimulate universities in the region to boost their innovation whereas remote internships concerns. Universities can become involved in piloting remote internships, and apply for government funding as regarding innovative public-private cooperation. Moreover, their experience gained, is translated onto the development of the portal. On the national level, the government is (also) a stakeholder of remote internships and the remote internship platform. Wherever it concerns the financial support for people, their education, and social insurance, conditions should be made as favourable as possible. Financial deprivation for taking education or (unpaid) work experience, should be compensated as much as possible. With the debate on the lifelong learner, and the search for sustainable financing for lifelong learning and training, the government becomes an ever more important stakeholder to engage.

E-learning networks

Europe counts a number of influential e-learning networks. Examples are: EADL, EDEN, EADTU, EFMD, EFQUEL, ELIG, ESU, EUCEN, EuroPACE, and MENON. These networks are all engaged in providing solutions for distance learning and training. By communication of the initiative of the matchmaking portal, additional feedback on needs and requirements of users can be harvested. Moreover, the matchmaking portal will be able to extend its services to more and more users in Europe. On success, the portal may diversify its offers so as to serve distinct target groups more accurately.

9.2 General stakeholder needs

Key stakeholders in the review and research of needs have been: employers (public and private), students (student unions), Higher Education (HE) institutions, branch organisations (local, regional and national employer organisations), professional organisations (innovation networks, entrepreneur starter networks, regional innovation centres), chambers of commerce, ICT provider, issuing party, government bodies (local, regional, national), and e-learning networks. In the process of surveying the different stakeholder needs, the following requirements have been formulated :

- easy and efficient organisation assignment postings and speedily clearing of internships;
- the ability to search student and organisation profiles on different criteria;
- efficient and effective user searches, without having to enter data, a multiple times;
- token of certification for support from academic staff in the process of internshipping;
- ICT tool support for stakeholders involved in the management of the actual internships;
- access to getting started package, and templates to kick-off inexperienced universities and employers;
- access to student resources and guides, as well as access to best practices of internships;
- news and benefits of remote internships for student, university and organisation;
- selective category information feeds for users, including members of intermediate organisations;
- commenting and improval forms for users to apply on site, for submission of site feedback;
- references to social insurance services and financial (education) support services;

- expansion possibilities to educational operators and European networks with diversified needs.

The stakeholder requirements are important in developing suitable functionality for a remote internship portal. However, before entering into the development of a portal from scratch, a survey is required, so as to assess what contemporary ICT applications already exist, and from which applications particular functionality can be deduced, and used. Contemporary ICT applications with internship posting and matchmaking functionality are presented in the next section.

9.3 Review of contemporary ICT

The stock taking of stakeholder needs is a first step in the development of a remote internship matchmaking portal. The second step is a review of contemporary ICT applications in the field of remote internships. Existing functional realisations of internship or employment websites, may selectively provide for a match with (part of) the identified stakeholder needs. Solutions can be deduced, and/or used for benefit of remote internship portal development. It prevents reinventing the wheel, and improves the efficiency of the ICT development path for the remote internship matchmaking portal. In this section functionality of intern and employability realisations are presented; not withstanding the richness of some of the examples which have been presented already, in the Chapters 4 and 5.

Internship portals offering remote internships

Studica (www.studica.com) is a reseller of software and technology to high schools, colleges and universities throughout the U.S., Canada, and Europe. Studica manages a website called Studica Internships, which is free to educators and students in North America seeking internship or cooperative education positions for high school and college credits. Students or their educators can post resumes or search posted internships. Studica Internships is also free to employers who can either post internships or search posted student resumes. Studica Internships promotes valuable workplace experiences to take place at the employer’s site (onsite) or online within a classroom or from the comfort of the student's dorm or home. Known as virtual internships, the latter removes barriers and provides opportunities for all students, including those too distant from an employer, as well as handicapped and at-risk students. Studica Internships offers internship functionality for employers, educators and students. The functionality on site available to

employers involves: posting an internship, searching the resume bank, adding a selected resume to the favourite list, interacting with selected resume(s) and intern applications through the Studica internship messaging system, and offering an internship to desired candidate(s). The functionality on site available to educators involves: selecting a student, posting a resume, searching the internship bank, adding internships to the favorite list, interacting with selected employers and interning offers through Studica internship messaging system, and accepting the internship offer from the employer. The functionality on site available to students involves: posting a resume, searching the internship bank, adding internships to the favorite list, interacting with selected employers and interning offers through Studica internship messaging system, and accepting the internship offer from the employer. Studica Internships is presented in Figure 9.2:

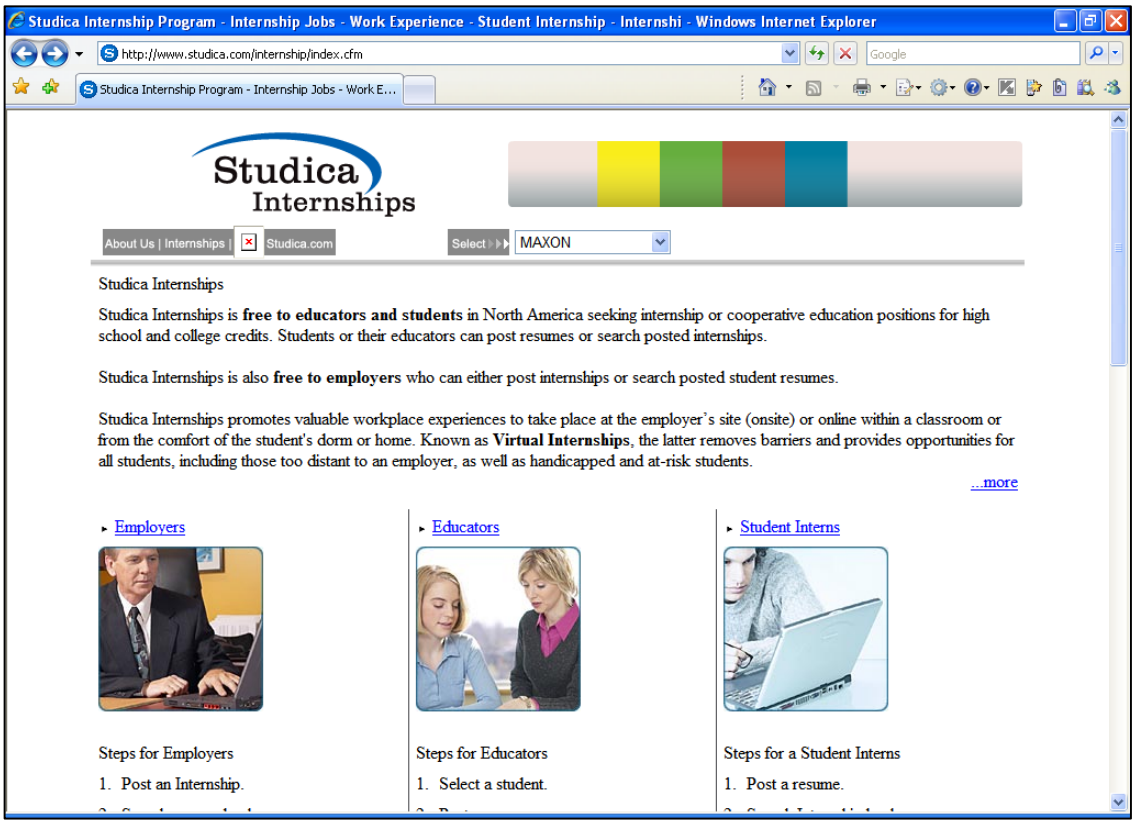

Figure 9.2 Studica Internships (www.studica.com/internship)

Externs.com (www.externs.com) provides resources for those interested in traditional internships and virtual internships. Externs.com claims that internet technology allows valuable experiences without the geographic barriers. Externs.com helps to facilitate increased opportunities for learning and organisational performance. The same trends allowing telecommuting for employees opens new opportunities for traditional internships. While some internships require on-site work,

many organisations could benefit from help by those working on projects off site. Students are able to benefit from the vastly increased opportunities when they are not limited to those organisations they are geographically close to. Increased flexibility of educational institutions to integrate practical learning (such as externships) into traditional learning, provides for additional opportunities.

There is no reason a student interested in a traditional internship programme (such as public policy) couldn't work on an internship during the school year remotely for credit. Obviously, working remotely will present challenges to traditional internship plans but remote internships also provide the opportunity of internships to a much larger audience. Externs.com offers functionality for students to search, and organisations to submit internships across the States: Alabama - Alaska - Arizona - California - Colorado - Connecticut - Florida - Georgia - Idaho - Illinois - Iowa - Kansas - Kentucky - Maryland - Massachusetts - Minnesota - Missouri - Montana - New Jersey - New York - North Carolina - Ohio - Oklahoma - Oregon - Pennsylvania - Rhode Island - Tennessee - Texas - Virginia - Washington - Washington DC – Wisconsin. Organisations are to submit their internship descriptions through web forms (Figure 9.3). Forms are manually reviewed by the operator, before posting it on the site.

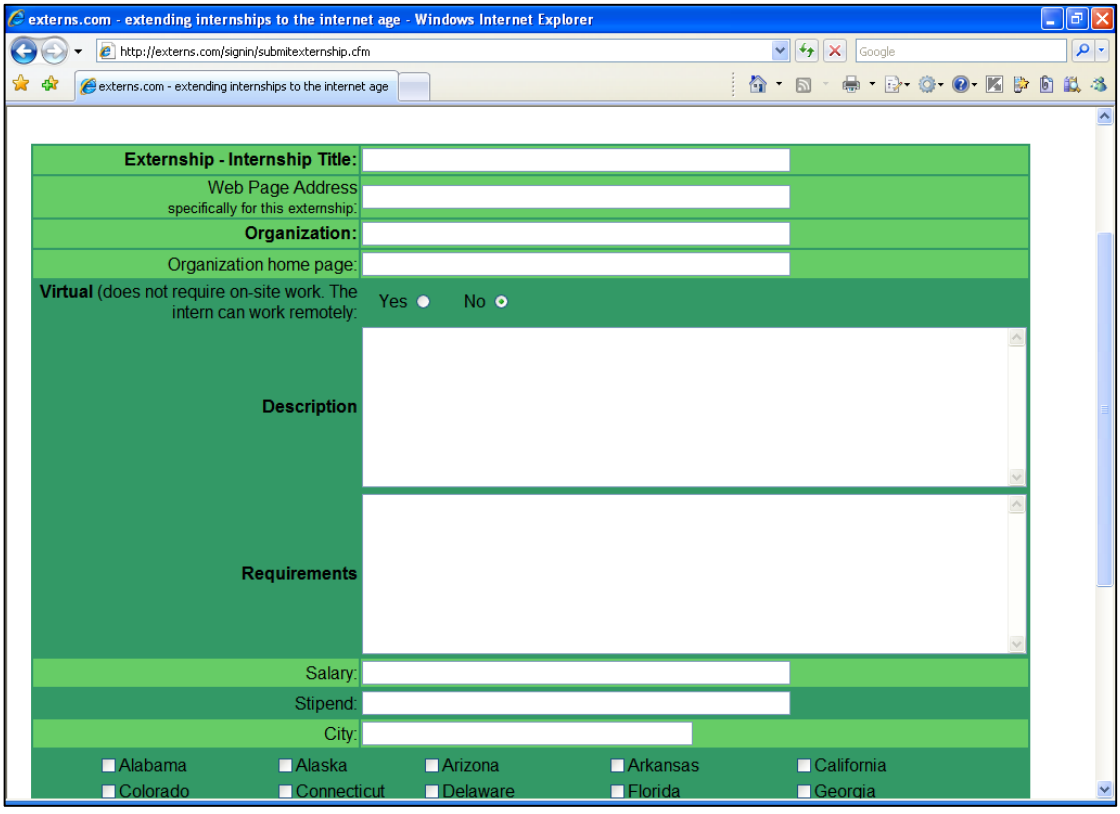

Figure 9.3 Externs.com (http://externs.com)

Globalplacement is a website for interns and placements (www.globalplacement.com). In close cooperation with a global network of franchise partners, Globalplacement's website has grown successfully. Together with its satellite partners, Globalplacement has built a network of placement websites in Europe. Globalplacement offers internships of the following kind: graduation assignment, voluntary work, work placement, apprenticeship advanced, apprenticeship foundation, sandwich placement, summer internship, traineeship, part-time work, SIWES/industrial training. Globalplacement offers organisations the functionality to register the company, place an internship or graduation assignment on ones profile, have a personal page with overviews of applications of potential trainees on the profile, invite trainees to apply on the internship or graduation assignment, approve an application of a trainee, and reject an application. Students can upload their Word CV, upload their photograph, access the organisations list, apply online, access company invitations, and have ones CV matched with relevant vacancies. Globalplacement offers paid services and trial services (Figure 9.4).

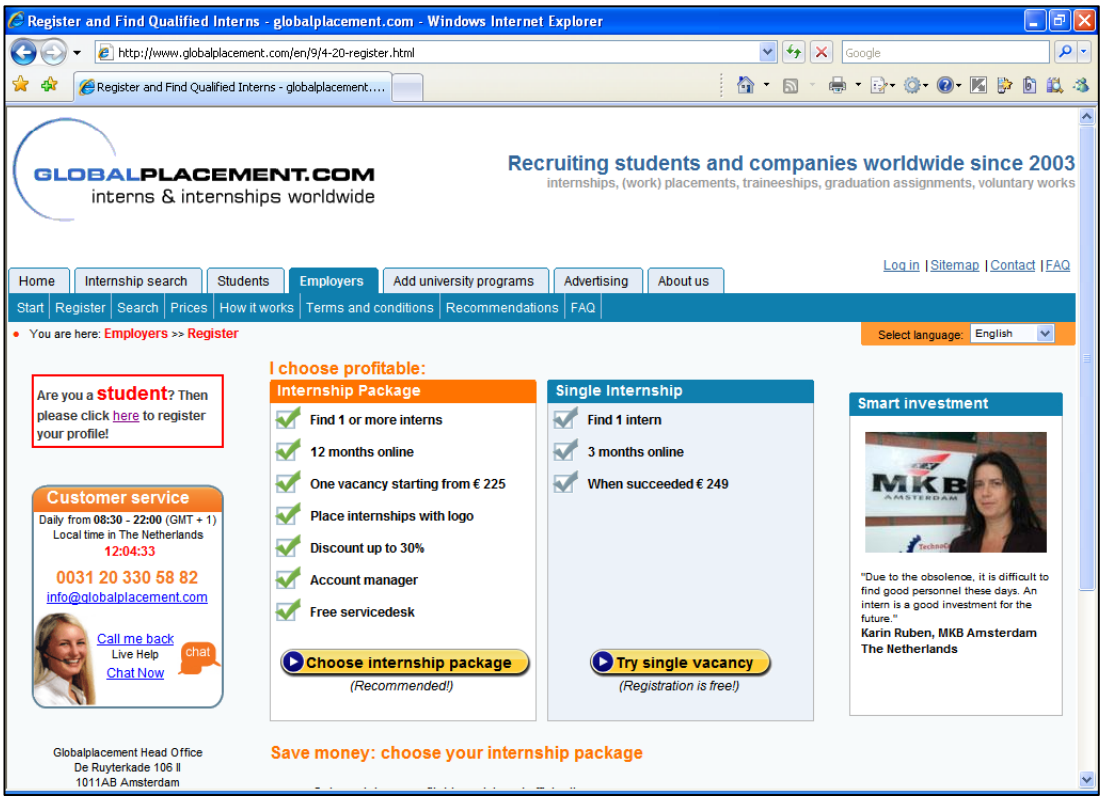

Figure 9.4 Globalplacement - Interns and Placements (www.globalplacement.com)

InternWeb.com (www.InternWeb.com) offers free internship posting for employers, and internship search tools for students (Figure 9.5). Unlike some sites, Internweb.com allows employers to post internship listings for free. It's easy and comprises of limited steps to post an internship. Postings can be as many as wanted, and as often as wanted, and listings can be edited and deleted at any time. For employers, the site offers straight forward functionality: the e-mail address and password entered are used as log-in account to administrate internship listings (a valid e-mail address is required so contact can be made in case of any questions), organisation information is entered (contact information is to be entered only once), and the final step being the internship assignment information to be entered. After submission, there is an option to add another internship; view, edit or delete internships; view or edit the organisation information; go back to the Internweb.com homepage; or logout. For students, functionality is included for advanced internship search: search internships by any or all drop boxes, limit the internship search by selecting options from drop boxes, broaden the internship search by selecting options from just one or two drop boxes (e.g., drop boxes on: internship type, employer type, U.S. state). Like most websites: InternWeb.com also provides for a 'share experience' option.

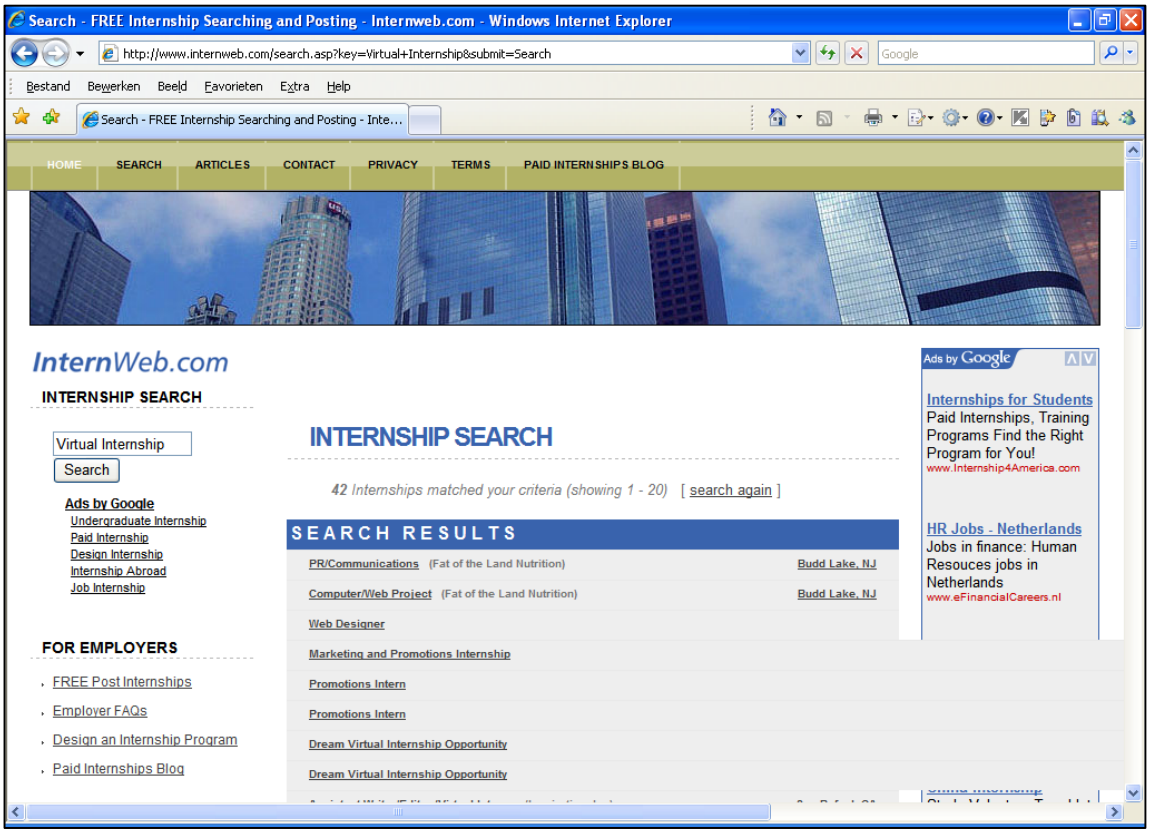

Figure 9.5 InternWeb.com offers virtual internship search functionality (www.InternWeb.com)

Individual employer sites offering remote internships

Next to internship portals offering remote internships, internships are also promoted on individual employer websites. Functionality of these sites is often fairly simple: flat text is displayed with intern assignment descriptions and contact information concerning how to apply. We suffice here with showing three examples of remote internships as offered on individual employer websites (Figure 9.6, 9.7, and 9.8):

Figure 9.6 Remote internship offering at http://hecse.net/

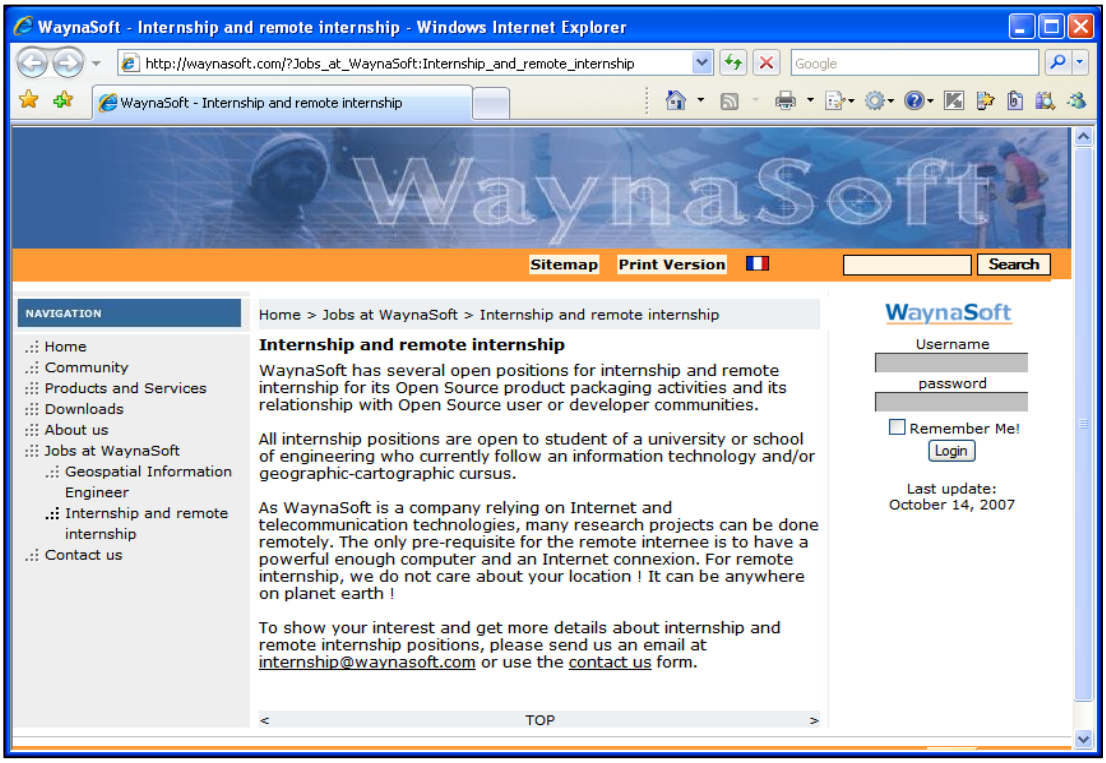

Figure 9.7 Remote internship offering at http://waynasoft.com

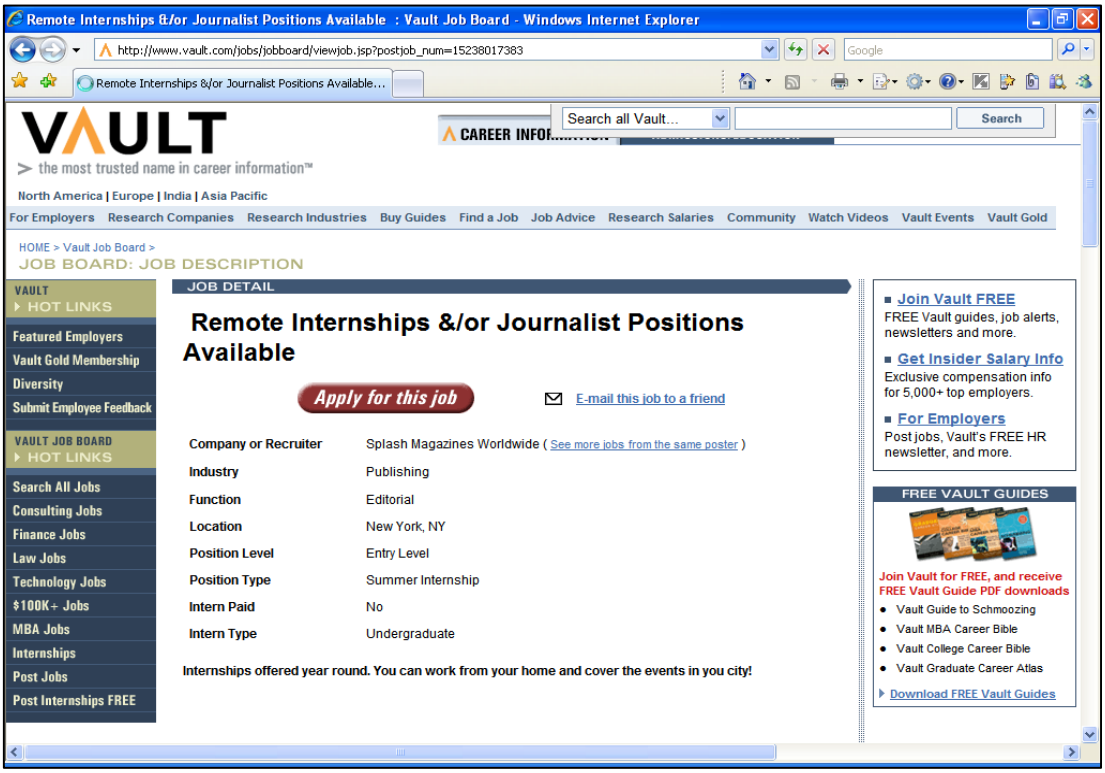

Figure 9.8 Remote internship offering at http://www.vault.com

9.4 Design phase one: incremental prototyping

The general stakeholder needs which have been identified in this chapter, together with the functional designs of the studied ICT applications have lead to a prototype of a remote matchmaking portal, presented in Figure 9.9. The prototype portal incorporates many of the identified stakeholder needs and offers an excellent matchmaking service for organisations that wish to address a business challenge but currently have limited resources (time, space, money), and for students who are looking for state-of-the-art working credentials.

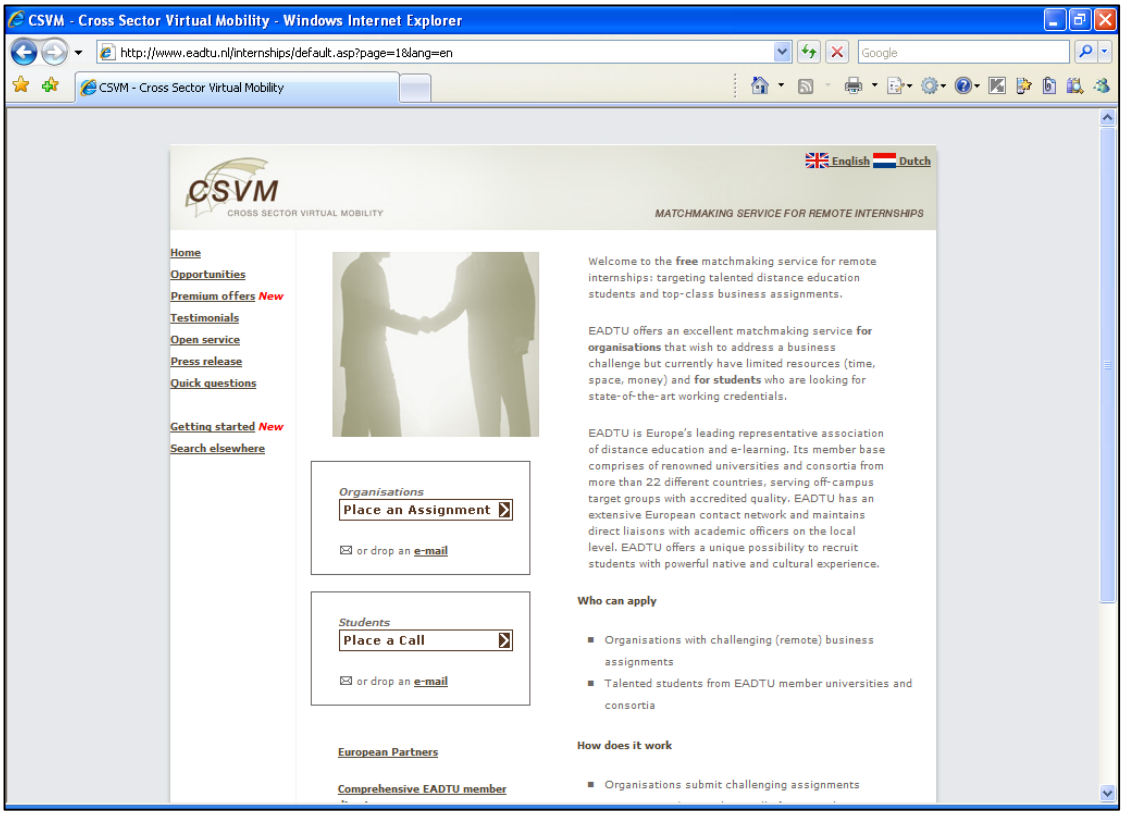

Figure 9.9 Initial matchmaking portal for remote internships (www.eadtu.nl/internships)

The developed portal is dedicated to serving the member community of the European Association of Distance Teaching Universities (van Dorp, 2007). EADTU is Europe's leading representative association of distance education and e-learning. Its member base is comprised of renowned universities and consortia from more than 22 different countries, serving off campus target groups with accredited quality. It has an extensive European contact network and maintains direct

liaisons with academic officers on the local level. EADTU can herewith offer the unique service to employers; of recruiting students with powerful native and cultural experience.

Organisations with challenging (remote) business assignments can apply for assignment posting (Figure 9.10). Remote internship assignments may be submitted by any organisation in the field, such as: small and medium size enterprises, entrepreneurs, non-profit organisations, government, semi-government, private companies, multinationals, European organisations, research institutes, and universities. Talented students from the EADTU membership base can apply for student profile submission. Remote internship requests can be submitted by both staff and students from universities listed in the EADTU membership directory. Whereas traditional universities are concerned i.e., not belonging to the EADTU membership base, they can simply get in touch, so as to apply.

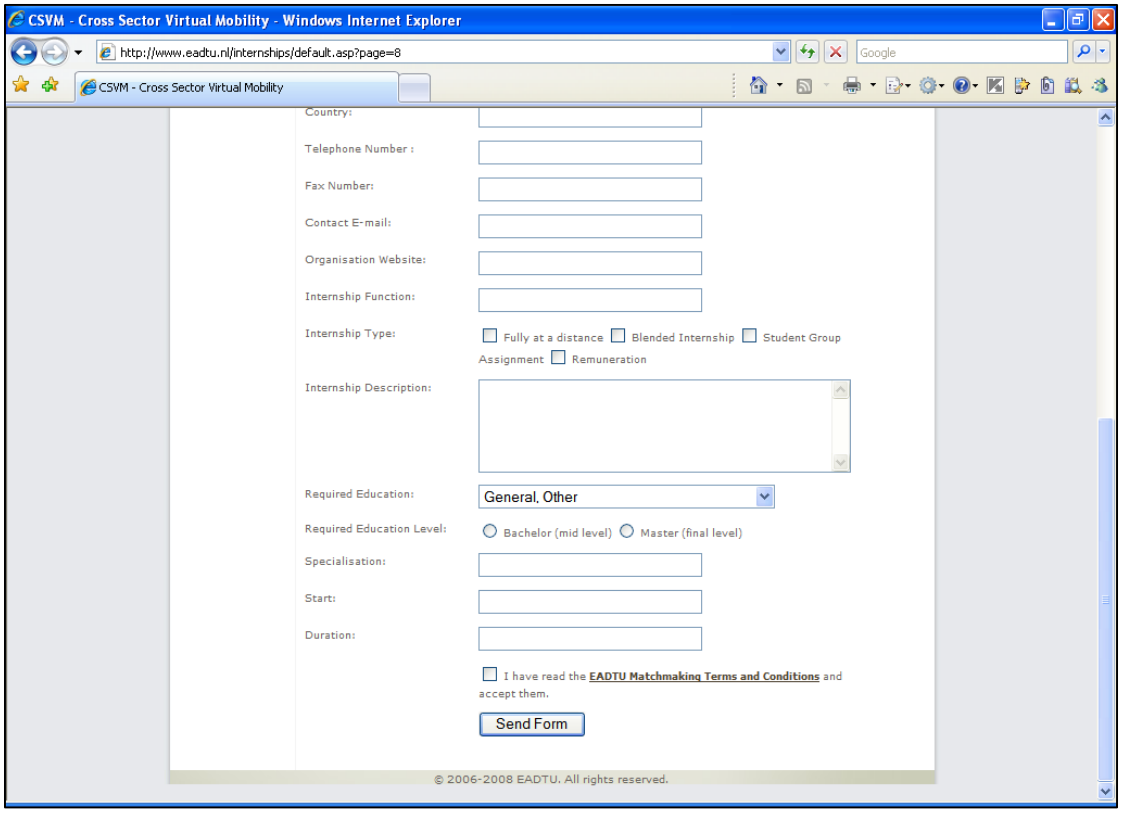

Figure 9.10 Easy and efficient organisation assignment postings (www.eadtu.nl/internships)

How does it work? Organisations submit challenging internship assignments. Distance students submit internship calls with their academic profile. There is a straight forward placement

procedure installed, and EADTU simultaneously provides high-quality matching for a period of approximately three months. The outcomes of both placement and matchmaking are forwarded for personal review. The site is operated by the staff of the EADTU, and the matchmaking service is free of charge (during the pilot period). Internship requests from participating European project partners are prioritised over requests stemming from the overall EADTU membership directory, and incoming other universities. EADTU always reserved the right to dismiss any submission without consultation.

9.5 Design phase two: automated portal functionality

The (incrementally) prototyped interim portal provides for basic functionality in the handling of remote internships. However, the portal still strongly relies on manual intervention, as not al stakeholder requirements have been attended to. Functions of matchmaking and profile data management have not been automated, implying that supplemental human activity is needed. In order to minimise human involvement in portal operations, and to allow for financial sustainability, the portal is to receive an upgrade. It is to include automated data management and is to provide for automated match up suggestions concerning the profiles of the different parties. Existing data entry forms on the interim portal website are to be applied as a lead in the transformation. With existing matchmaking sites often carrying a heavy load on administration and human intervention, this (new) portal is to ascertain more levels of autonomy with less administrative management burdens for humans.

The novel portal is to deliver a true clearing service for remote internships. Potential applicants i.e., students and organisations, are to apply the service by signing up and receiving a login. Data on student profiles as well as employer internship descriptions are to be entered by the parties, and (initial) match up suggestions are to be provided by the portal, without any human intervention from the organisation hosting the platform. Students and organisations are also to browse the database. Students are able to leave a reference to their academic profile, at organisations' message boxes, whenever an organisational assignment is of interest to them. Employer organisations are able to leave a reference to their assignment description at students' message boxes, whenever a student profile is of interest to them.

The basic functionality for the final matchmaking portal is listed below:

1. Entry, storage, modification, and removal of registration- or user data by the student, or system and/or administrator;

2. Entry, storage, modification, and removal of registration- or user data by the (employer) organisation, or system and/or administrator;

3. Automatic dispatch of login data (username i.e., e-mail address, password being generated) to the participants after approval of registration data by the system and/or administrator;

4. Entry, storage, modification, and removal of data on organisation internship descriptions by the organisation, or system and/or administrator;

5. Entry, storage, modification, and removal of data on student profile by the students, or system and/or administrator;

6. The (restrictive i.e., public view) search of student data by the participating organisations, or system and/or administrator. Users of the portal must be able to notify the platform of any abuse or offensive data. Also, acquisition of e-mail addresses and other private data must not be allowed;

7. The (restrictive i.e., public view) search of organisation internship descriptions by the participating students, or system and/or administrator;

8. Enabling the different parties to register onto interesting offers from other parties i.e., internship offers or student offers, by leaving a reference link to any further contact data (i.e., private view);

9. The possibility of informing parties that showed mutual interest in the offer, by submission of a token or reference;

10. Enabling the (offering) parties, to assign a (maximum) number of responses to be received;

11. The transmission of information to the participating parties considering the outdating or correctness of their data, in light of automatic removal of their data i.e., internship descriptions and/or student profiles;

12. Automatic removal of internship descriptions, student information and organisation information on outdating of information, incompleteness or incorrectness of data. It will be notified to parties as to what procedure will be used to keep records up to date, and when records shall be considered for removal;

13. The portal language shall be English, with the option of complementing several other languages;

14. Successful matches between employer organisations and students need to be archived. Employer and student both need to indicate when the assignment is completed or terminated. Data on internships rounded-up must be archived;

15. System administration must have the possibility to request reports on internships in progress and completed internships;

16. Administration must have the possibility to request reports in which is denoted:
    a. Number of students registered (by country of origin);
    b. Number of organisations registered (by country of origin);
    c. Number of entered internship assignments (by country of origin);
    d. Number of running internship assignments and total number of completed assignments up to the moment;
    e. Overview of all internships, by internship assignment according to:
        i. Country of employer;
        ii. Country to student;
        iii. Starting date of the intern agreement;
        iv. Date of completion (in as far as appropriate already).

Next to the mentioned basic functionalities for the matchmaking portal, it ought to foresee in the offering of software options to facilitate virtual cooperation for students and employers. The portal must embed functionality (or references to) communication supporting the organisation and execution of virtual internships, which implies:

- supporting the communication between employer and student in visuals and sound;

- management (and sharing) of documents between employer and student, in secure (virtual) working areas;
- agenda management and mutual planning of milestones by student and employer.

The final structuring of the portal embedding the functionality as described, in conjunction with the 'look and feel' of the website, are responsibility of both the platform host and the ICT subcontractor.

The portal must finally provide its satisfied users i.e., students and organisations, with the possibility to a facultative financial contribution for delivered services, herewith supporting the business model for sustaining the portal. The financial contribution is to be implemented through regular transfer methods of payment such as those used in the European member states. Financial transactions must take place by secure line of transmission.

The actual functional design of the web portal can be subdivided into: homepage, students' portal (public), students' portal (user account), organisation portal (public), and organisation portal (user account). Below, this functionality is described in natural language. Please note that the precise wording on the portal of the mentioned functions may be somewhat different, as of possible screen legibility reasons.

The homepage is to provide space for:

1. General (static) information (i.e., an about function): opportunities for the employer, student, university, including the possibility of printing, and e-mailing information;

2. Information on the terms & conditions (regular static information), including the possibility of printing, and e-mailing information;

3. Information on Frequently Asked Questions (FAQ): textual static information; possibility to click certain questions for automatic answer. The questions can be subdivided into different categories;

4. An option to make a financial contribution: donation should be possible through regular international money transfer schemes;

5. Contact information: address, telephone, e-mail. Possibly different contact persons to be divided over the different categories. An e-mail form is made available for people that do not have their (own) PC at their disposal (so no own e-mail programme);

6. A testimonial module for textual (static) information: narratives which can be clicked at random. Possibly short introductions, with possibilities to click for further reading. On completing internships, students and organisations are asked to write a testimonial with the possibility to donate a financial contribution. E-mails will be sent automatically with a certain frequency to the parties, to ask their cooperation;

7. Textual information concerning latest news: latest news stemming from the category of student or organisation;

8. Registration of the parties: possibility to obtain a user account. By this mechanism, the users) can search profiles (students' or organisations'), or register for an internship;

   Example of student registration information:

   First name
   Surname
   E-mail address
   Address
   Postal Code
   City
   Country
   Gender (Male / Female)
   Date of Birth (DD-MM-YYYY)
   University
   Country of University
   Type of Education (Select from list)
   Specialisation (Select from list and text intake)
   Education Level (Bachelor / Master)
   Expected year of graduation
   Competences, Qualifications and Interests (memo field)

Example of organisation registration information:

Organisation Name
Branch/Sector (Select from list and text intake)
Organisation description
Contact name
Address
Postal code
City
Country
Telephone Number
Fax number
Contact e-mail
Organisation website

After registration by the forms, a confirmation e-mail is sent to the e-mail address. In the e-mail an activation link is included on which one must click, to verify the e-mail address;

9. Organisations' (home) page: link to the organisations' portal. From this page one can return back to the general information buttons;

10. Students' (home) pages: link to the students' portal. From this page one can return back to the general information buttons.

The students' portal (public) is to provide space for:

1. Some latest news (e.g., the last internship entered). This only concerns the news from the internship category; with the possibility of reading more;

2. Reviewing internship descriptions. Herewith, the entered internship descriptions can be looked into; possibly searchable, on available categories and branches. At the internship description, there is also to be a button which says: 'This is not OK'. Registering for an internship is only possible for when somebody is logged in;

3. A login module: through e-mail and a password, the user will obtain a number of additional possibilities and additional menu options (see further).

The students' portal (user account) is to provide space for:

1. General user information: information on the user, messages for the user, et cetera;

2. Information on the profile: possibility of adapting the information and the removal of (ones own) data. In reality, the data shall not be physically removed; they will simply not be shown. In the statistic overviews these data shall be included though;

3. Surveying the intern descriptions; intern descriptions can be reviewed, possibly searchable on available categories or branches. Regarding the search criteria: the starting date can be blank, this way showing more intern offers. With the overview of intern descriptions, a 'This is not OK' button is included. When somebody wants to register for an intern assignment he/she clicks on the button for registration for that offer. A notification will go to the corresponding organisation, which can reply before the end of the official registration period. When this confirmation reply is again confirmed by the student, there is a match;

4. An internal messaging system. Through this interface system, communication can take place between the other users on the site. There is a special inbox for registrations on an internship. When an organisation wishes to take on the student for the internship, the student must confirm here, that he/she wishes to take part in the internship;

5. Information on 'My project'. Whenever a student has accepted the assignment of an organisation, then he/she will find information about the project here. Such information concerns: general information, contact information, communication suggestions (MSN, SKYPE, et cetera), agenda pages where both parties can place information only visible to them.

The organisations' portal (public) is to provide space for:

1. Some latest news (e.g., possibly the last profile added). Information here only concerns the organisations category. There is a possibility of reading more;

2. Review of profiles. Here the profiles of students can be looked into. Possibly searchable on available categories or branches. With each profile for a student, there is also a button that says ‘This is not OK’;

3. A login module. By logging in with an e-mail and a password, the user obtains a number of additional possibilities and additional menu options.

The organisations’ portal (user account) is to provide space for:

1. General user information: information on the user, messages for the user, et cetera;

2. Information on the profile: possibility of adapting the information and the removal of (ones own) data. In reality, the data shall not be physically removed; they will simply not be shown. In the statistic overviews these data shall be included though;

3. Surveying the student descriptions; student descriptions can be reviewed, possibly searchable on available categories or branches. Regarding the search criteria: the starting date can be blank, this way showing more student offers. With the student descriptions, a ‘This is not OK’ button is included as well;

4. An internal messaging system. Through this interface system, communication can take place between the other users on the site. There is a special inbox for registrations on an internship. When an organisation wishes to take the student for the internship, the student must confirm here, that he/she wishes to take part in the internship;

5. Information on ‘My project’. Whenever a student has accepted the assignment of an organisation, then he/she will find information about the project here. Such information concerns: general information, contact information, communication suggestions (MSN, Skype, et cetera), agenda pages where both parties can place information only visible to them;

6. Submit an offer: the organisation will be able to post an internship offer here. Example of the registration information:

Internship function
Internship type (2 options)
- Fully at distance
- Blended Internship

Single/Group (2 options)
- Single student
- Student Group Assignment

Remuneration (Yes/No)
Internship description (Memo)
Required Education (List)
Required Education Level (2 options)
- Bachelor (mid level)
- Master (final level)

Specialisation (Select from list and text intake)
Start date (about) (DD-MM-YYYY)
Duration
Visible from (DD-MM-YYYY)
Visible until (DD-MM-YYYY)

Whenever a company has placed a group assignment and has enough students, then the organisation must indicate itself on the site that the assignment is fulfilled. They can do so by entering a passed date on e.g. a ‘visible until’ field. When an internship assignment is submitted, there will automatically be a notification in all boxes of users that match the description.

Finally, not mentioned yet is functionality for management and administration of the portal(s). The administrator should have the possibility of adapting text on the website, remove profiles and/or internship descriptions, obtain insight into statistics, remove users, change passwords of users, and send out mailings.

Figure 9.11 presents the upgraded and automated matchmaking portal. For a comprehensive insight into all the workings of the novel matchmaking portal, please be our guest, and visit the website: http://matchmaking.eadtu.nl.

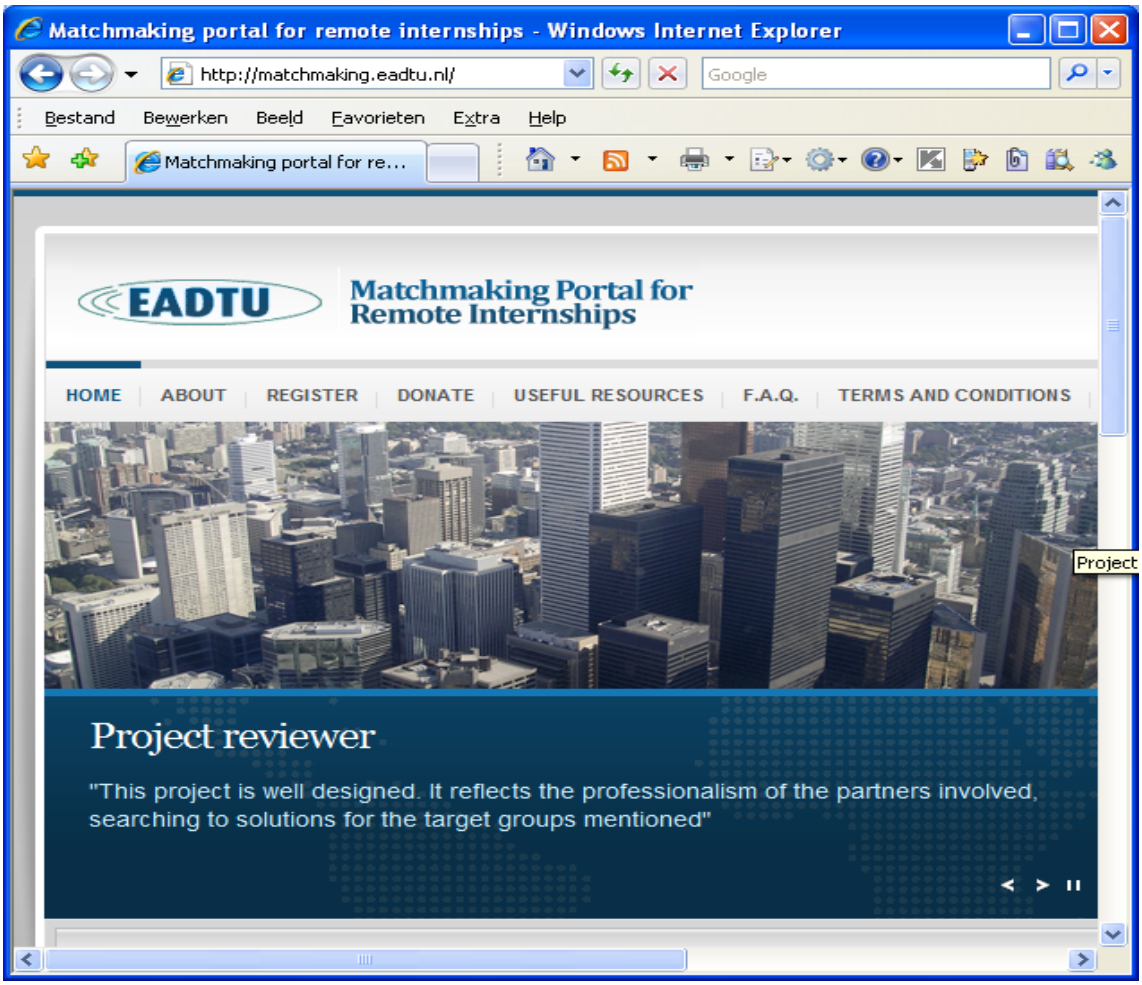

Figure 9.11 The upgraded and automated matchmaking portal (http://matchmaking.eadtu.nl)

9.6 Evaluation

The general stakeholder needs which have been identified in this chapter, together with the functional designs of the studied ICT applications have lead to a prototype of a remote matchmaking portal, as presented in Figure 9.9. The (incrementally) prototyped interim portal includes basic functionality for the handling of remote internships. This first portal provided the opportunity to learn along the way, and develop its functionalities further. The approach was well decided, as feedback was assured by the many visitors on the portal during its interim stage. Both project and matchmaking portal have been visited by the thousands i.e., over ten thousand during the interim period alone. Both on the regional level as well as on the European level, interest was recorded by academics who wanted to become involved and learn more about the initiative, as well as by businesses, non-governmental agencies and other organisations, wishing to recruit students for remote internship assignments and/or wishing to post profiles on the matchmaking portal. Although many responses proved perfect opportunities to enhance the portal with new functionalities, based on the feedback received from outside, it also implied more overhead as to the (manual) management of additional internship postings: postings which numbers went beyond the actual capacity needed for the remote internship pilot runs.

Strongly relying on manual operations by staff of the portal, could not be maintained for long on growing numbers. Several other stakeholder requirements were not attended to (also) and had to be fixed in an upgrade. For example, in the functional description of the interim portal, user profiles are considered to be static: users are not able to manage (read, remove, update) their (own) profile without the help of the host. Moreover, users always have to await the delegation of projects between students and employers, as this is carried out manually by portal staff. Functions of matchmaking and profile data management are not automated, implying unnecessary supplemental human activity. To minimise human involvement in portal operations, and to allow for financial sustainability, the portal needed to receive an upgrade, so as to include automated data management and automated match up suggestions concerning the profiles of the different parties.

The upgraded and automated portal (Figure 9.11) now ascertains improved levels of autonomy with less administrative management burdens for humans. The new portal truly delivers an (automated) clearing service for remote internships. Potential applicants i.e., students and organisations, apply the service by signing up and receiving a login. Data on student profiles as well as employer internship descriptions are entered by the parties, and (initial) match up suggestions are provided by the portal, without any human intervention from the organisation

hosting the platform. Students and organisations can browse the database. Students leave a reference to their academic profile, at organisations' message boxes, whenever an organisational assignment is of interest to them. Employer organisations leave a reference to their assignment description, at students' message boxes, whenever a student profile is of interest to them.

The remaining question is, to what model as described in Chapter 7, does the developed EADTU portal relate? As regards the initially prototyped portal inside design phase one, this typically resembles Model V. EADTU is the stakeholder, which operates in the model as the 'other party' by providing for remote internships. And, both the students and the employers can register and provide profiles, similar to operations in Model V. The owner of the portal (being EADTU), also manages the delegation of projects between student recruits and company offers itself, similar to the proceedings of Model V. The difference with Model V is however, that EADTU provides mediation services for free in its model, whereas Model V works alongside an obligatory fee structure. The fee for obtained internship services in the initially prototyped design of EADTU, is facultative.

In migrating towards the design with automated portal functionality, this highly-valued feature of facultative fee contribution, has remained unchanged. What has been changed is the manual and labour intensive delegation of projects between students and companies. This process has been automated with the provision of an open access environment. Students and employers are in the opportunity to control their own preferences and profiles. Students and employers leave each other a token of interest, to react upon. As regards the design realised in design phase two, the conclusion would be that this final design strongly resembles Model IV of Chapter 7: the open access model. However the distinction with Model IV and the final EADTU model is (again) the fee structure. Whereas Model IV offers services for free, EADTU asks for a facultative financial contribution. In retrospect, the EADTU model combines different features from Model IV and V, and can best be characterised as new synthesis model (Figure 9.12): portalised remote internships (open access, facultative fee structure). Given reference to Model VII in Chapter 8, this new model would then be referred to as: Model VIII.

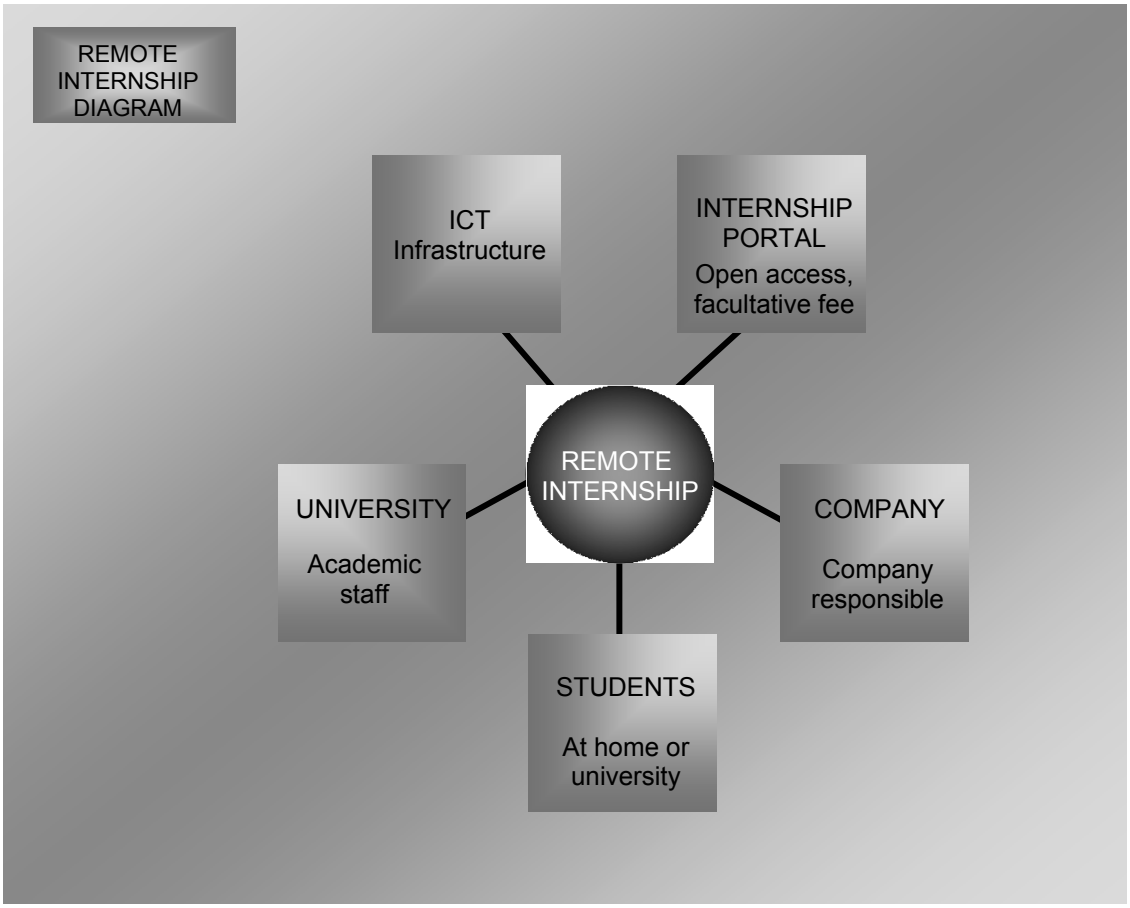

Figure 9.12 Model VIII: Portalised remote internships (open access, facultative fee structure)

References

Acemoglu, D. and J-S. Pischke (1998). "Why Do Firms Train? Theory and Evidence". Quarterly Journal of Economics, Vol. 113, No. 1, pp. 79-119.

Anderson, J.R. (1995). Cognitive Psychology and Its Implications (4th Edition). W.H. Freeman and Company: New York.

Anderson, J.R. (1993). Rules of the Mind. Erlbaum: Hillsdale, NJ.

Anderson, J.R. (1976). Language, Memory and Thought. Erlbaum: Hillsdale, NJ.

Armour, S. (2002). Internships go virtual as firms seek ways to save, USA TODAY, October, http://www.usatoday.com/tech/news/2002-10-21-virtual_x.htm.

Ball, C. (1989). Aim Higher: Widening access to higher education. London, Royal Society for the Encouragement of Arts, Manufacturers and Commerce.

Ball, C. (1990). More Means Different: Widening access to higher education. London, Royal Society for the Encouragement of Arts, Manufacturers and Commerce.

Bailey, T., K. Hughes and T. Barr (1998). Achieving Scale and Quality in School-to-Work Internships: Findings from an Employer Survey (MDS-902).

Becker, G.S. and K.M. Murphy (1992). The Division of Labor, Coordination Costs, and Knowledge. The Quarterly Journal of Economics, Vol. 107, No. 4, November 1992, pp. 1137-1160.

Becker, G.S. (1992). Education, Labor Force Quality, and the Economy: The Adam Smith Address. Business Economics, Vol. 27, No. 1, January 1992, pp. 7-12.

Becker G. S. (1985). Human Capital, Effort, and the Sexual Division of Labor. Journal of Labor Economics, Vol. 3, No. 1, Part 2: Trends in Women's Work, Education, and Family Building. January 1985, pp. S33-S58.

Becker G.S. and N. Tomes (1979). An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility. The Journal of Political Economy, Vol. 87, No. 6., December 1979, pp. 1153-1189.

Becker, G.S. (1972). Schooling and Inequality from Generation to Generation: Comment Gary S. Becker. The Journal of Political Economy, Vol. 80, No. 3, Part 2: Investment in Education: The Equity-Efficiency Quandary. May - June 1972, pp. S252-S255.

Becker G.S. (1967). Human Capital and the Personal Distribution of Income: An Analytical Approach. Woytinsky Lecture no.1. Ann Arbor: University of Michigan, Institute of Public Administration.

Becker G.S. and B.R. Chiswick (1966). The Economics of Education; Education and the Distribution of Earnings. The American Economic Review, Vol. 56, No. 1/2, March 1966, pp. 358-369.

Becker, G.S. (1964). Human Capital; a Theoretical and Empirical Analysis, with Special Reference to Education. National Bureau of Economic Research. General Series; No. 80; New York: National Bureau of Economic Research distributed by Columbia University Press.

Becker, G.S. (1962). Investment in Human Capital: A Theoretical Analysis. The Journal of Political Economy, Vol. 70, No. 5, Part 2: Investment in Human Beings. October 1962, pp. 9-49.

Becker, G.S. (1960). Investing in Education and Research; Underinvestment in College Education? The American Economic Review, Vol. 50, No. 2, Papers and Proceedings of the Seventy-second Annual Meeting of the American Economic Association, May 1960, pp. 346-354.

Bijnens, H., Boussemaere, M., Rajagopal, K., Beeck, I., Op de, Petegem, W., van (2006). European Cooperation in Education through Virtual Mobility: a Best-Practice manual. EuroPACE ivzw, Heverlee, Belgium.

Blackwell, A. and L. Harvey (1999). Destinations and reflections: Careers of art, craft and design graduates. Birmingham: Centre for Research into Quality, University of Central England.

Brennan, J. and T. Shah (2003). Access to what? Final Report. London: Centre for Higher Education Research and Information, Open University.

Brown, P. and A. Hesketh (2004). The Mismanagement of Talent. Oxford: Oxford University Press.

Burrows, A., Harvey, L., and D. Green (1992). Is Anybody Listening? Employers' views on quality in higher education. Birmingham, QHE.

Collective Enterprise Ltd. (2002) The experience of recent graduates in IT, electronics and communications (ITEC). Summary paper, prepared for presentation 18 April 2002 at the Conference Centre, Victoria Street, London.

Conlon, G., and A. Chevalier (2002). Rates of return to qualifications: A summary of recent evidence. London: Council for Industry and Higher Education.

Davenport, T., and L. Prusak (1998). Working Knowledge. Harvard Business School Press: Boston.

Dorp, K.J. van (2007). A premier European Platform for Clearing e-Internships. British Journal of Educational Technology (BJET), Blackwell Publishing, Volume 39, Number 1, January 2008, pp. 175-179.

Dorp, K.J. van, and A. Herrero de Egaña Espinosa de los Monteros (2008). Professional experience by the click of a mouse, Viewpoint article on (remote) internships in single-mode (distance) education. Paper for EADTU's 20th Annual Conference 2008, Lifelong Learning in Higher Education: Networked Teaching and Learning in a Knowledge Society, 18-19 September 2008, Poitiers, France, pp. 1-13.

EC (2005). Growth and jobs: working together for Europe's future. A new start for the Lisbon strategy. Communication to the Spring European Council. Communication from President Barroso in agreement with Vice-President Verheugen. COM (2005) 24, Brussels, Belgium, February 2, 2005.

EC (2002). Declaration of the European Ministers of Vocational Education and Training, and the European Commission, convened in Copenhagen on 29 and 30 November 2002, on enhanced European cooperation in vocational education and training: "The Copenhagen Declaration", Copenhagen, Denmark, November 30, 2002.

Egerton, M. (2001) Mature graduates I: occupational attainment and the effects of labour market duration. Oxford Review of Education, 27 (1), 135–50.

Harvey, L. (1999). Employability: developing the relationship between higher education and employment, Opening presentation at the Fifth Quality in Higher Education 24-Hour Seminar, Scarman House, Warwick University, 28 October, 1999.

Harvey, L., Burrows, A., and D. Green (1992). Someone Who Can Make an Impression. Report of the Employers' Survey of Qualities of Higher Education Graduates. Birmingham, QHE.

Harvey, L. and D. Green (1994). Employer Satisfaction. Birmingham, QHE.

Harvey, L., Moon, S., and V. Geall (1997). Graduates Work: Organisational Change and Students' Attributes. Birmingham, Centre for Research into Quality (CRQ) and Association of Graduate Recruiters (AGR).

Ivens, W., Kraker J. de, Bitter, M., and A. Lansu (2007). Collaborative learning in an authentic context: a virtual consultancy. In: J. de Kraker, A. Lansu, M.C. van Dam-Mieras (eds.), Crossing Boundaries. Innovative learning for sustainable development in higher education. Verlag für Akademische Schriften, Frankfurt am Main.

Kelsall, R.K., Poole, A., and A. Kuhn (1972). Graduates: The Sociology of an Elite. London, Methuen. National Committee of Inquiry into Higher Education (NCIHE), 1997, Higher Education in the Learning Society. London, HMSO.

Knight, P.T. and M. Yorke (2004). Learning, curriculum and employability in higher education. London: RoutledgeFalmer.

Kristensen, R. (2002). Virtual Internships: Real Experience in a Virtual World. A Best Practice Manual for those interested in the concept of Virtual Internships in Business Education. Tietgen Business College, Odense C, Denmark.

Mincer, J. (1974), Schooling, Experience and Earnings, Columbia University Press: New York.

Nickols, F. W. (2000). The knowledge in knowledge management. In: Cortada, J.W. & Woods, J.A. (Eds) The knowledge management yearbook 2000-2001 (pp. 12-21). Boston, MA: Butterworth-Heinemann.

Nonaka, I. (1991). "The Knowledge Creating Company." Harvard Business Review, November-December: 96-104.

Polanyi, M. (1997). "Tacit Knowledge," Chapter 7 in Knowledge in Organizations, Laurence Prusak, Editor. Butterworth-Heinemann: Boston.

Purcell, K. and P. Elias (2002). Seven years on. Graduate Recruiter, Autumn, 22–23.

Pye, D. (1995). The Nature and Art of Workmanship. Published by Herbert.

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Case studies on remote internships inside Europe; Case description one: Central Europe Review, the Journal of Central and East European Politics, Society and Culture, Czech Republic, from http://www.ce-review.org/_internships.html.

Case studies on remote internships inside Europe; Case description two: Knowledge Politics - Theory and Practice for the Information, an independent think-tank, United Kingdom, from http://www.knowledgepolitics.org.uk/index.html.

Case studies on remote internships inside Europe; Case description three: Turin University, virtual internships as part of a Master, Italy, from http://www.unito.it/.

Case studies on remote internships inside Europe; Case description four: Universitat Oberta de Catalunya (UOC), Law Faculty, Spain, from http://www.uoc.edu/portal/catala/index4.html; and, http://cvc.cervantes.es/obref/formacion_virtual/campus_virtual/peguera.htm.

Case studies on remote internships inside Europe; Case description five: Tronrud Engineering, from Tronrud Engineering: http://www.tronrud.no/; Buskerud University College: http://www.hibu.no/english/home/; Tietgen Business School: http://www.tietgen.dk/; and, Arcada University: http://www.arcada.fi/.

Case studies on remote internships inside Europe; Case description six: KREMLIN, from Kremlin Inc.: http://www.kremlin.com/; Tietgen Business School: http://www.tietgen.dk/; and, Institut de Formation International: http://www.ifi84.fr/.

Case studies on remote internships inside Europe; Case description seven: ICL Invia, from Fujitsu Invia: http://fi.services.fujitsu.com/; Buskerud University College: http://www.hibu.no/english/home/; and, Arcada University: http://www.arcada.fi/.

Case studies on remote internships inside Europe; Case description eight: DFDS Transportation Group, from DFDS Transportations Group: http://www.dfds.com/; Arcada University: http://www.arcada.fi/; and, Tietgen Business School: http://www.tietgen.dk/.

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Geographical Area: USA & Canada; Case description one: Johnson & Company, Brigham Young University (BYU), from Johnson & Company Sponsors "Virtual Internship", Johnson & Company, The Virtual Agency http://www.joandco.com/nb/clients/joco/pr/990722intern.asp.

Geographical Area: USA & Canada; Case description two: AJR & Partners, University of South Florida, from AJR & Partners, Inc., Announces Alana Tanksley as Newest Virtual Intern via the Firm's "Virtual Internship Program" http://www.ajrpartners.com/news1.htm.

Geographical Area: USA & Canada; Case description three: Cardinal Health Contacts, Arkansas State University and others, from ARS, Arkansas Rural Sourcing, Internship Program http://www.arruralsource.org/internships.htm.

Geographical Area: USA & Canada; Case description four: Global Business Gateways, from GBG Student Internship Program http://globalbusinessgateways.com/index.php?pd=YXBwbGljYXRpb246e2FjdGlvbj1wcmV2aWV3LG1kPWNtc19kb2NzLGRvYz1HQkdJbnRlcm5zaGlwc30%3Dpz_&md=country&inst=&zone=fogot.

Geographical Area: USA & Canada; Case description five: Microfinance institutions: funding from transnational organizations such as the United Nations, from E-Learning Queen, April 08, 2006, Using Virtual Internships to Set up Rural Microfinance Institutions http://elearnqueen.blogspot.com/2006/04/using-virtual-internships-to-set-up.html.

Geographical Area: USA & Canada; Case description six: U.S. Journal of Academics, from USjournal of ACADEMICS, Non-Paid Virtual Internship at USjournal.com http://www.usjournal.com/en/about/internship.html.

Geographical Area: USA & Canada; Case description seven: CPR's Program for Students, from Career Placement Recruiting, How Does the CPR Program Work? http://www.cpr4me.com/; and, http://www.cpr4me.com/works1.htm.

Geographical Area: USA & Canada; Case description eight: The New York Times, from The New York Times http://www.nytimes.com/.

Geographical Area: USA & Canada; Case description nine: Studica Internship Program, from Studica Internships http://www.studica.com/internship/index.cfm.

Geographical Area: USA & Canada; Case description ten: NetWEB Elite Solutions Inc., from NetWEB Elite Solutions Inc. http://www.netwebelitesolutions.com/.

Geographical Area: USA & Canada; Case description eleven: Beta Technologies , Harley Davidson, Iota Studios, Sloan Consortium, and Monroe College itself, from Monroe Goes Virtual http://www.monroecollege.edu/aboutmonroe/news/archives/2007/mcgoesvirtual; and, Virtual Interns on the "Cutting Edge" http://www.slnn.com/article/monroe-interns/.

Geographical Area: USA & Canada; Case description twelve: International Truck and Engine in Warrenville, Illinois, from Armour, S. (2002). Internships go virtual as firms seek ways to save, USA TODAY, October, http://www.usatoday.com/tech/news/2002-10-21-virtual_x.htm.

Geographical Area: USA & Canada; Case description thirteen: Edwards & Hill Communications (multimedia company) in Baltimore, from Armour, S. (2002). Internships go virtual as firms seek ways to save, USA TODAY, October, http://www.usatoday.com/tech/news/2002-10-21-virtual_x.htm.

Geographical Area: USA & Canada; Case description fourteen: Dharma Communications, from Dharma Communications, A history, http://www.mro.org/mr/archive/21-4/articles/dchistory.html.

Geographical Area: USA & Canada; Case description fifteen: Evelexa, from Evelexa BioResources http://www.evelexa.com/.

Geographical Area: USA & Canada; Case description sixteen: Environmental Valuation & Cost Benefit News, from The Cost-Benefit Group, Virtual Internship/Marketing/Writing Interns http://www.costbenefitanalysis.org/employment.htm.

Geographical Area: USA & Canada; Case description seventeen: San Diego Zoo, from San Diego ZOO, Education: Using Zoo InternQuest in the Classroom, http://www.sandiegozoo.org/teachers/site_resource_ziq.html.

Geographical Area: USA & Canada; Case description eighteen: Curious Cat, from Curious Cat http://engineering.curiouscatblog.net/; and, http://management.curiouscatblog.net/.

Geographical Area: USA & Canada; Case description nineteen: ElectionMall, Inc., from ElectionMall, Inc., http://www.electionmall.com/pubdocs/legal.asp; and, http://www.electionmall.biz/_virtual_internship.asp.

Geographical Area: USA & Canada; Case description twenty: Maui Media, Hawaii, from Virtual Internship Program, http://mauimedia.com/vip.html.

Geographical Area: USA & Canada; Case description twenty one: Operation Day's Work, from Operation Day's Work - USA (ODW), http://www.usaid.gov/odw/explain.html.

Geographical Area: USA & Canada; Case description twenty two: Platinum Media Inc., from Platinum Media Inc., http://www.platinummedia.com/.

Geographical Area: USA & Canada; Case description twenty three: Grassroots International, Grassroots International, http://www.grassrootsonline.org/.

Geographical Area: USA & Canada; Case description twenty four: WorkWorlds' Human Resource Corporation, http://www.workworlds.com/.

Geographical Area: South America; Case description one: Argentina Exporta Program, from the "Argentina Exporta Program", URL: no longer available.

Geographical Area: South America; Case description two: ILAM, Instituto Latinoamericano de Museos ILAM, http://www.ilam.org/; and, http://www.ilam.org/ILAMDOC/ILAM_pub/ILAM%201997-2006_eng.pdf.

Geographical Area: South America; Case description three: CENEDIC and UNIVERSIDAD DE COLIMA, from CENEDIC http://www.ucol.mx/acerca/coordinaciones/CGSTI/cenedic/; and, UNIVERSIDAD DE COLIMA http://www.ucol.mx/.

Geographical Area: South America; Case description four: The Institute for Justice & Democracy in Haiti (IJDH), from The University of Miami School of Law http://www.law.miami.edu/cpc; and, http://www.law.miami.edu/cdo/newsletter/Newsletter_January-25_2005.htm.

Geographical Area: Australia & Asia; Case description one: Drupal, from Drupal http://drupal.org/.

Geographical Area: Australia & Asia; Case description two: Samooha Business Software Cooperative, from Samooha Business Software Cooperative, Virtual Intern Program, Sharing this information with ITVidya visitors http://www.itvidya.com/virtual_intern_program; and, http://samooha.sourceforge.net/.

Geographical Area: Australia & Asia; Case description three: Australian Network of Practice Firms (ANPF) from, Australian Network of Practice Firms www.anpf.cit.act.edu.au/index.php; and, EUROPEN – World Wide Practice Firms Network http://www.europen.info/englisch/index.html.

Geographical Area: Australia & Asia; Case description four: Hong Kong Network of Virtual Enterprises (HKNVE), from Hong Kong Network of Virtual Enterprises (HKNVE) http://www.hknve.org/hknve/index_e.html.

Geographical Area: Australia & Asia; Case description five: Center for Entrepreneurship Development, in Kyoto, Japan, from The Center for Entrepreneurship Development http://www.entreplanet.org/e_index.html.

Geographical Area: Africa; Case description one: Amazwi, from Amazwi, a volunteer-driven arts organisation http://www.myggsa.co.za/connect/receivers/amazwi/.

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EADTU - Initial matchmaking portal for remote internships. Website located at: http://www.eadtu.nl/internships.

EADTU - Novel remote internship matchmaking portal. Website located at: http://matchmaking.eadtu.nl.

Externs.com. Website located at: http://externs.com.

Globalplacement - Interns and Placements Worldwide. Website located at: www.globalplacement.com.

Higher Education Consortium for Special Education (HECSE). Website located at: http://hecse.net/.

InternWeb.com. Website located at: www.InternWeb.com.

Studica Internships. Website located at: www.studica.com/internship.

Vault.com. Vault - The Most Trusted Name in Career Information. Website located at: http://www.vault.com/.

WaynaSoft. Open Source and Open Standards for Geospatial Information. Website located at: http://waynasoft.com.