Virtual Internships: Real Experience in a Virtual World

A Best Practice Handbook for those interested in the concept of Virtual Internships in Business Education

1. Summary

1.1. English Version

"Virtual Internships – Real Experience in a Virtual World" is a Best Practice Handbook for those interested in the concept of Virtual Internships in Business Education. It is based on the INTERN project, which was supported by the European Commission's Minerva programme. The idea behind INTERN was to explore the extent to which Information and Communication Technologies (ICTs) could support a system of Virtual Internships – where European business students take part in in-company placements, supported by ICT rather than by physically re-locating to the company premises.

The colleges taking part in INTERN are all experienced business schools, who used the INTERN project to test the Virtual Internship approach and to gather information about how such Internships might be improved in the future. The Colleges taking part were Tietgen Business College, Denmark, Arcada Polytechnic, Finland, Buskerud University College, Norway, and Institut de Formation International (IFI), France.

While this handbook is targeted at anyone interested in improving the quality and potential of European Business Education, it has a number of specific target groups including:

- Managers and Administrators of European Business schools
- European companies interested in improving the quality and potential of European Business Education
- Institutions and agencies representing the public sector including the European Commission
- Business students and teaching staff interested in taking part in a Virtual Internship

We define a Virtual Internship as one involving the use of an ICT supported environment, where students interact with each other and companies, independent of time and space, and across traditional geographical boundaries. The purpose of this interaction is to carry out an identifiable and meaningful work-based task, that fits within the student's compulsory educational curriculum. The pedagogical model upon which we base our work views the individual learning process as having two dimensions. First of all the difference between **tacit** knowledge i.e. knowledge that is personal and intuitive and **explicit** knowledge, i.e. knowledge that is meaningful and communicable. Secondly the dimensions of learning through **theory** versus learning through **practice**. We are not fixed on a specific and rigid ICT infrastructure, but chose tools and support mechanisms that implement cross-border communication, collaboration and knowledge sharing in the most user-friendly and cost-efficient manner possible.

During INTERN we organised 4 specific pilot Virtual Internships on which we base our guidelines and recommendations, they were:

1. An assignment led by Buskerud University College for a Norwegian SME, **Tronrud Engineering,** to research markets, exhibitions and fairs for one of their products in other countries. This Internship took place from September until December 2001 and involved students in Denmark, Norway and Finland.

2. As assignment led by IFI for a French company, **Kremlin, Inc**. a leading manufacturer of finishing equipment. The task was to find out more about the Danish market and the potential market for spray equipment. This Internship ran from January until May 2002 and involved students in Denmark and France.
3. An assignment led by Arcada for **ICL Invia**, which is a Nordic service provider and operator of advanced information systems. The objective of this Virtual Internship that ran from September until December 2001 was to investigate the use of Information Technology in Customer Relationship Management (CRM) for hotel chains and hotel marketing chains in Finland and Norway and involved students from Finland and Norway.
4. An assignment led by Tietgen for the Danish **DFDS Transportation Group,** who wanted to carry out a logistic survey of track and trace systems in Finland. This Internship ran from September until December 2001 and involved students in Finland.

Based on our experiences we make a number of suggestions:

Choose assignments from companies that involve useful work, where the project is well defined and achievable within the given time schedule. Try to ensure there is a written and explicit working agreement with the company, which explains the roles and responsibilities of everyone taking part. Choose students who are independent and able to work on their own initiative, and with the appropriate educational background. Involve academic and teaching staff who support the idea of learner-led activities and who are dynamic and open to new ideas. They should believe in the essential link between learning and the workplace, independent of time, schedule or distance constraints.

Choose an Information and Communications Technology (ICT) Infrastructure carefully and try to select tools that are generic, fit-for-purpose and user-friendly. The ICT infrastructure is particularly important as it supports a range of communication and collaboration activities, and is also part of the learning experience. Students and others will use the Virtual Internship to improve their skills in the use of tools like videoconferencing, collaborative workspaces and tools and content management systems.

Plan the Internship carefully, allowing enough time for familiarisation with the company, the commercial sector involved and the technology to be used. Make sure the task is shown to be serious work and introduced by a senior representative of the commissioning company

Right from the start, **make sure that students understand the company** and what it does. Company representatives should also be familiar with what it is that characterises the students, what is needed for their success, how they perceive instruction and what they expect. Make sure that everyone is equipped with the appropriate language skills and that inter-cultural communication is well supported.

During the Internship, **monitor progress carefully** to make sure everyone is meeting their responsibilities, including administrative staff in the educational institution(s) taking part. Virtual Internships can significantly improve students' overall project management and ICT skills, so try to ensure these aspects are highlighted and supported.

Finally, **evaluate and record** carefully. Not only does this provide necessary feedback about the current Virtual Internship, but it will also help you make improvements in the future.

In conclusion we recommend that

- Students must be competent, well-prepared and able to work independently
- Students and faculty must be prepared and committed to meet deadlines
- There must be a clear and transparent set of aims and conditions

- Students and faculty must be able to see the benefits of the Virtual Internship
- The Virtual Internship needs to be an integrated part of the curriculum
- The management at each institution taking part should support the project
- The company must be able to see the benefit of gaining new knowledge through cooperation
- The company needs to be prepared to meet its commitments
- The ICT infrastructure to be used needs to be user-friendly and appropriate to the project
- The task(s) to be completed need to be recognized as serious and meaningful work by all involved

We believe Virtual Internship to be a professional way to build partnerships between business life and the educational system, if you would like to download this report in English, please visit

1.2. Swedish Version

”Virtual Internships – Real Experience in a Virtual World” (Virtuell Praktik –verkliga erfarenheter i en virtuell värld) är en handbok för dem som är interesserade av konceptet Virtuell Praktik inom ekonomisk utbildning. Handboken bygger på erfarenheter inom INTERN projektet; ett europeiskt projekt understött av EU-komissionens Minerva-program.

Idén bakom INTERN var att undersöka i vilken utsträckning IT kan stöda ett system med virtuell praktik – så att studerande inom de ekonomiska disciplinerna kan delta i virtuella praktikperioder i företag, snarare än att rent fysiskt utföra praktik i företagets lokaliteter.

Deltagarna i INTERN är alla erfarna handelsskolor på högre nivå, vilka utnyttjade INTERN projektet till att testa den virtuella praktikformen och härigenom samla information för en framtida utveckling av denna typ av praktik.

Föjande skolor deltog i projektet:

- TietgenSkolen, Danmark
- ARCADA, Finland
- Högskolen i Buskerud, Norge
- IFI, Frankrike

Handboken riktar sig till alla som har intresse av att förbättra kvalitén och relevansen i europeisk ekonomisk utbildning, och speciellt till:

- Lärare och administratörer inom europeisk högskoleutbildning
- Europeiska företag med intresse att förbättra kvalitén och relevansen i europeisk ekonomisk utbildning
- Ministerier och andra offentliga institutioner, inkl. EU-kommissionen
- Studerande som är intresserade av att delta i virtuella praktikperioder

Vi har definerat begreppet virtuell praktik som en flexibel praktikform, där studerande – med hjälp av ny teknologi – arbetar tillsammans med andra studerande och företag över ländergränser och oberoende av tid och rum. Syftet med interaktionen är att utföra tydligt identifierade och meningsfulla arbetsuppgifter, vilka passar in i de studerandes obligatoriska läroplan. Den pedagogiska modell, på vilken vi baserar vårt arbete, utgår från att den individuella inlärningsprocessen har två dimensioner: Den första dimensionen visar på skillnaderna mellan **tyst (tacit)** och **artikulerad (explicit)** kunskap. Den tysta kunskapen är personlig och delvis intuitiv, medan den artikulerade mera explicit kan formuleras och förmedlas. Den andra dimensionen visar att inlärning kan ske dels genom **teori** och dels genom **praktik**.

IT-strukturen är inte låst vid en specifik och rigid form, utan istället flexibelt konstruerad, så att den på ett användarvänligt och ekonomiskt sätt understöder kommunikation, samarbete och kunskapsutveckling över ländergränser.

Under INTERN projektet genomförde vi 4 exempel på virtuell praktik. Vi har utarbetat handboken med utgångspunkt i dessa praktikuppdrag:

1. Ett virtuellt praktikuppdrag lett av Högskolan i Buskerud i samarbete med **Tronrud Engineering**. De studerande kom från Danmark, Norge och Finland. De undersökte marknaden samt företagets möjligheter att delta i utställningar och mässor med sin produkt (en väv) i de respektive länderna. Uppdraget genomfördes från september till december 2001.

2. Ett virtuellt praktikuppdrag lett av IFI för det franska företaget **Kremlin A/S**. Praktikuppdraget bestod i att finna information om den danska marknaden för utrustning för spraymålning. Deltagande studerande kom från Frankrike och Danmark. Projektet genomfördes under perioden januari till maj 2002.
3. Ett virtuellt praktikuppdrag lett av ARCADA i samarbete med ett nordiskt tjänsteföretag, IT-företaget **ICL Invia**. Projektet genomfördes under perioden september till december 2001 och hade som syfte att undersöka hur hotellkedjor i Finland och Norge använder IT i förbindelse med Customer Relationship Management (CRM). I uppdraget deltog studerande från Finland och Norge.
4. Ett virtuellt praktikuppdrag lett av TietgenSkolen i samarbete med **DFDS Transport** där studerande från Finland utarbetade en logistisk analys över användningen av Track and Trace system i Finland. Uppdraget genomfördes under perioden september till december 2001.

Baserat på erfarenheterna från dessa 4 pilotprojekt har vi följande rekommendationer till andra personer och institutioner som är interesserade av att inleda liknande virtuella praktikuppdrag:

Med hänsyn till deltagarna rekommenderar vi att **välja uppdrag** från företag, där uppdraget är väldefinierat och möjligt att genomföra inom de akademiska tidsramarna. Det är en god idé att utarbeta en tydlig skriftlig arbetsbeskrivning tillsammans med företaget. Arbetsbeskrivningen bör innehålla en klar definition på deltagarnas roller och ansvar. Studerande som deltar i uppdraget skall kunna arbeta självständigt och ha en tillräcklig teoretisk bakgrund för att kunna genomföra det. Från lärarnas och administrationens sida bör det väljas personer, som kan arbeta med flexibla inläringsmetoder och som är öppna för nya idéer. De bör tro på en pedagogik som bygger på ett grundläggande samarbete mellan högskolor och näringslivet, och där pedagogiken kan överbrygga begränsningar som tid, schema och avstånd.

Välj den **informations- och kommunikationsteknologiska (ICT) plattformen** med omsorg, och tillämpa sådana IT-verktyg som finns allmänt tillgängliga, är ändamålsenliga och användarvänliga. Plattformen spelar en väsentlig roll för att uppdraget skall bli framgångsrikt. Plattformen utgör inlärningsmiljön för praktikuppdragen och den bör därför kunna stöda kommunikationen och samarbetsrelationerna i projektet. Ytterligare skall IT-plattformen stöda de studerande vid inläringen av nya kompetensområden såsom videokonferenser, IT- baserade konferenssystem och Content Management system.

Planlägg de virtuella praktikuppdragen omsogsfullt och värna om att det finns tillräckligt med tid för deltagarna att lära känna företaget, branschen och den teknologi som skall tillämpas. Lägg vikt vid att praktikuppdraget tas seriöst och är meningsfullt, och att det gärna introduceras av en företagsrepresentant på ledarnivå.

Det är väsentligt att från första början vara uppmärksam på **att de studerande känner företaget och dess produkter** och likaså, att företaget har en klar bild av de studerandes kompetenser, vet vilka framgångskriterierna är, hur studenterna arbetar och vad de förväntar. Se till att alla deltagarna har de behövliga språkliga kompetenserna och att den interkulturella kommunikationen understöds.

Lägg vikt vid att projektet genomgående **följs upp,** och att alla deltagarna uppfyller sina förpliktelser; också skolornas administrativa personal. Det virtuella praktikuppdraget kan utveckla de studerandes projektlednings- och IT-kompetenser, så fäst särskild uppmärksamhet på dessa områden.

Utvärdera och dokumentera omsorgsfullt. Det både ger nödvändig feedback om det pågående projektet och skapar möjligheter för framtida förbättringar av virtuella praktikuppdrag.

Sammanfattningsvis rekommenderar vi att

- Studenterna bör vara kompetenta, väl förberedda och ha förmåga att arbeta självständigt
- Studenterna och lärarkåren bör vara förberedda på och kunna följa tidsramar
- Det bör finnas tydliga och transparenta mål och villkor
- Studenterna och lärarkåren bör kunna se fördelarna med virtuella praktikuppdrag
- Det virtuella praktikuppdraget bör vara en integrerad del av läroplanen
- Ledningen inom varje medverkande institution bör stöda projektet
- Företaget bör kunna se nyttan med att erhålla ny kunskap genom samarbetet
- Företaget bör vara inställt på att fullfölja sina åtaganden
- ICT- infrastrukturen bör vara användarvänlig och ändamålsenlig
- Samtliga parter i projektet bör uppleva det aktuella uppdraget som seriöst och meningsfullt

Vår övertygelse är, att ett virtuellt praktikuppdrag utgör ett professionellt sätt att utveckla partnerskap mellan utbildning och näringsliv.

1.3. Danish Version

"Virtual Internships – Real Experience in a Virtual World" (Virtuel Praktik virkelige erfaringer fra en virtuel verden) er en håndbog for de, der er interesserede i Virtuel praktik konceptet i økonomiske uddannelser. Håndbogen er baseret på erfaringer indhentet i INTERN projektet, som var et Europæisk projekt støttet af EU – Kommissionens Minerva program.

Ideen bag INTERN var at undersøge i hvor høj udstrækning IT kunne understøtte et virtuelt praktik system – hvor studerende fra de økonomiske studieområder kan deltage i virtuelle praktik forløb i virksomheder.

Deltagerne i INTERN er alle videregående uddannelsesinstitutioner inden for det økonomiske fagområde. Uddannelsesinstitutionerne brugte INTERN projektet til at afprøve virtuelle praktikforløb og derigennem indsamle informationer til fremtidig videreudvikling af sådanne praktik forløb.

Følgende videregående uddannelsesinstitutioner deltog i projektet:

- TietgenSkolen, Danmark
- ARCADA, Finland
- Högskolen i Buskerud, Norge
- IFI, Frankrig

Denne håndbog er udarbejdet til brug for alle, der er interesserede i at forbedre kvaliteten i og relevansen af europæisk økonomisk uddannelse og målgruppen er derfor:

- Lærere og administratorer i europæiske videregående uddannelsesinstitutioner
- Europæiske virksomheder, som er interesserede i at forbedre kvaliteten og relevansen af europæiske økonomisk uddannelse
- Ministerier og andre offentlige institutioner herunder EU Kommissionen
- Studerende, som er interesserede i at deltage i virtuelle praktik forløb

Vi har defineret et virtuelt praktik forløb, som et fleksibelt praktik forløb, hvor studerende - ved hjælp af ny teknologi - arbejder sammen med andre studerende og virksomheder på tværs af landegrænser. Forløbet er designet således, at det er uafhængigt af tid og sted.

I det virtuelle praktik forløb forgår der en effektiv kommunikation mellem studerende, lærere og repræsentanter fra virksomhederne om at løse den opgave som virksomheden har stillet. Opgaven er integreret i den studerendes obligatoriske uddannelsesforløb.

Den pædagogiske model for arbejdet har 2 dimensioner:

- indforstået viden versus åben viden
- indlæring gennem teori versus indlæring via praksis

IT strukturen er opbygget således, at den understøtter kommunikation, samarbejde og videngenerering på den mest brugervenlige og økonomiske måde.

I INTERN projektet gennemførtes 4 eksempler på virtuel praktik. Vi har udarbejdet denne håndbog med udgangspunkt i disse:

5. Et virtuelt praktik forløb ledet af Högskolen i Buskerud i samarbejde med Tronrud Engineering. De studerende der deltog kom fra Danmark, Norge og Finland. I dette forløb undersøgte de studerende markedet, udstillings- og messe muligheder for et af virksomhedens produkter (en væv) i deres respektive lande. Forløbet blev gennemført fra september til december 2001.
6. Et virtuelt praktik forløb ledet af IFI for den franske virksomhed Kremlin A/S. Praktikopgaven bestod i at finde information om det danske marked for spray maling udstyr. De studerende der deltog i projektet kom fra Frankrig og Danmark. Projektet blev gennemført i perioden januar til maj 2002.
7. Et virtuelt praktik forløb ledet af ARCADA i samarbejde med IT-virksomheden ICL, som er en nordisk udbyder af avancerede IT systemer. Projektet blev gennemført i perioden september til december 2001 og havde til formål at undersøge hotelkæder i Finland og Norges anvendelse af IT i forbindelse med Customer Relation Management (CRM). I forløbet deltog studerende fra Finland og Norge.
8. Et virtuelt praktik forløb ledet af TietgenSkolen i samarbejde med DFDS transport hvor studerende fra Finland udarbejdede en logistik analyse over anvendelsen af Track og Trace systemer i Finland. Forløbet blev gennemført i perioden september til december 2001

Baseret på de indhøstede erfaringer med disse 4 pilotprojekter har vi følgende anbefalinger til andre, der er interesserede i at påbegynde lignende virtuelle praktikforløb:

Med hensyn til **deltagerne** kan vi anbefale at vælge opgaver fra virksomheder, hvor opgaven er veldefineret og mulig at gennemføre inden for de akademiske tidsfrister. Det er en god ide at udarbejde en klar arbejdsbeskrivelse i forhold til virksomheden. Arbejdsbeskrivelsen skal indeholde en klar definition af deltagernes roller og ansvar. De studerende der indgår i disse forløb skal være istand til at arbejde selvstændigt og have tilstrækkelig teoretisk viden til at kunne gennemføre forløbet. For lærernes vedkommende bør der vælges lærere, der kan arbejde efter konsulentrollen, som er åbne for nye ideer, og som kan arbejde med fleksible læringsmetoder .

Planlæg de virtuelle praktikforløb omhyggeligt og sørg for at sikre, at der er nok tid til at deltagerne bliver fortrolige med virksomheden, branchen og den teknologi, der skal anvendes. Vær omhyggelig med at vælge **IT platformen** for forløbet. Denne platform spiller en væsentlig rolle for et succesfuldt forløb, idet den er læringsrummet for praktik forløbene og skal understøtte kommunikationen og samarbejdsrelationerne i forløbet. Endvidere skal IT platformen understøtte de studerendes indlæring af nye kompetencer som videokonference, IT- baserede konferencesystemer og Content Management systemer. Vælg derfor en fælles platform, som er egnet til formålet, og som er brugervenlig.

Kom godt fra start sørg for at de studerende forstår virksomheden og dens produkter og sørg for, at virksomheden får et klart indtryk af de studerendes kompetencer, hvad de har som succeskriterium, hvordan de arbejder og hvad de forventer. Sørg for at alle deltagerne har de fornødne sprogkompetencer og sørg for at den interkulturelle kommunikation bliver understøttet. Sørg for at den opgave, der skal løses i forløbet, bliver taget seriøst og er meningsfyldt og gerne introduceret af en ledelsesrepræsentant fra virksomheden.

Sørg omhyggeligt for gennem **råd og vejledning** i selve forløbet, at deltagerne opfylder deres forpligtelser. Det virtuelle praktikforløb kan udvikle de studerendes projektleder og IT kompetencer så sæt særlig fokus på disse områder.

Endelig **evaluer og dokumenter** omhyggeligt såvel processen som produktet i praktik forløbene, idet en omhyggelig evaluering sikrer mulighed for fremtidig forbedring og videreudvikling af virtuelle praktik forløb.

Vi anbefaler:

- At de studerende er fagligt kompetente inden for praktik forløbets tema, velforberedte til forløbet og kan arbejde selvstændigt
- At de studerende og lærerne er forberedte og engagerede i at overholde deadlines
- At der er klare og synlige mål og betingelser for forløbet
- At de studerende og lærerne skal være i stand til at se fordelene ved det virtuelle praktik forløb
- At det virtuelle praktik forløb planlægges som en integreret del af studieforløbet
- At ledelsen ved de deltagende institutioner støtter projektet
- At virksomheden er i stand til at se fordelene ved denne måde at erhverve ny viden gennem samarbejde med en uddannelsesinstitution
- At virksomheden skal være parat til at overholde dens forpligtelser
- At IT strukturen for forløbet er sammensat på en brugervenlig og hensigtsmæssig måde
- At praktikopgaven opfattes som en meningsfyldt og seriøs opgave af alle involverede

Vi tror på at Virtuelle praktik forløb er en professionel måde at udvikle partnerskaber mellem uddannelse og erhvervsliv og håber, at du vil finde ideen og indholdet af denne publikation spændende og lærerigt.

1.4. Finnish Version

”Virtual Internships – Real Experience in a Virtual World” (Virtuaalinen harjoittelu - todellisia kokemuksia virtuaalisessa maailmassa) on käsikirja kaikille jotka ovat kiinnostuneita kaupallisen koulutuksen puitteissa tapahtuvasta virtuaalisesta harjoittelusta. Käsikirja perustuu INTERN projektista saatuihin kokemuksiin. Projektia on rahoitettu EU-komission Minerva-ohjelman kautta.

INTERN projektin kantavana ajatuksena oli tutkia missä mittakaavassa tietotekniikka voi tukea virtuaalista harjoittelua – niin että kaupallisen alan opiskelijat osallistuvat virtuaalisiin harjoittelujaksoihin yrityksissä, sen sijaan että fyysisesti olisivat läsnä yrityksen tiloissa harjoittelua suorittamassa.

INTERN projektiin osallistuvat koulut olivat kaikki korkeamman asteen kaupallisia kouluja. Koulut kokeilivat käytännössä INTERN projektin avulla virtuaalisen harjoittelun ominaisuuksia sekä keräsivät informaatiota tämän harjoittelumuodon edelleen kehittämistä varten.

Seuraavat koulut osallistuivat projektiin:

- TietgenSkolen, Tanska
- ARCADA, Suomi
- Högskolen i Buskerud, Norja
- IFI, Ranska

Käsikirja on tarkoitettu kaikille jotka ovat kiinnostuneita eurooppalaisen kaupallisen koulutuksen laadun ja asianmukaisuuden parantamisesta ja erityisesti seuraaville ryhmille:

- Euurooppalaisen korkeakoulutuksen parissa toimiville opettajille ja hanllintohenkilöstölle
- Eurooppalaisille yrityksille jotka ovat kiinnostuneita eurooppalaisen kaupallisen koulutuksen laadun ja asianmukaisuuden parantamisesta
- Ministeriöille ja muille julkisen hallinnon instituutioille, EU-komissio mukaan lukien
- Virtuaalisesta harjoittelusta kiinnostuneille opiskelijoille

Olemme määritelleet käsitteen virtuaalinen harjoittelu merkitsemään joustavaa harjoittelumuotoa, jossa opiskelijat – uuden teknologian avulla – työskentelevät yhdessä muiden opiskelijoiden ja yritysten kanssa, ylitse maan rajojen sekä ajasta ja paikasta riippumatta. Vuorovaikutuksen tarkoituksena on suorittaa selvästi määriteltyjä sekä tarkoituksenmukaisia tehtäviä jotka sopivat opiskelijoiden pakolliseen opetussuunnitelmaan. Työmme pedagogisena perustana on malli mikä kuvaa henkilökohtaista oppimisprosessia kahden dimension avulla: Ensimmäinen dimensio kuvaa **hiljaisen (tacit)** ja **julkaistun (explicit)** tiedon eroja. Hiljainen tieto on henkilökohtainen ja osittain intuitiivinen, kun taas julkaistua tietoa selvemmin voidaan kuvata ja välittää. Toinen dimensio osoittaa oppimisen voivan tapahtua toisaalta **teorian** ja toisaalta **käytännön** kautta.

IT-infrastruktuuri ei ole sidottu mihinkään erityiseen eikä jäykkään muotoon, vaan on sen sijaan joustavasti rakennettu. Täten se käyttäjäystävällisesti ja taloudellisesti voi tukea rajojen yli tapahtuvaa kommunikatiota, yhteistyötä sekä tiedonkehittämistä.

INTERN projektin aikana toteutimme 4 esimerkkiä virtuaalisesta harjoittelusta. Olemme luoneet käsikirjan näiden esimerkkien avulla:

9. Virtuaalinen harjoittelu josta vastuussa oli Högskolan i Buskerud ja yhteistyöyrityksenä **Tronrud Engineering**. Opiskelijat olivat Tanskasta, Norjasta ja Suomesta. Opiskelijat

tutkivat omissa maissaan yrityksen potentiaalisia markkinoita sekä yrityksen mahdollisuuksia tuotteineen (kutomakone) osallistua näyttelyihin ja messuihin. Tehtävä suoritettiin syyskuusta joulukuuhun 2001.

10. Virtuaalinen harjoittelu josta vastuussa oli IFI ja yhteistöyrityksenä **Kremlin A/S**. Tehtävänä oli tutkia tanskalaista markkinpotentiaalia yrityksen tuotteille; varusteita ruiskemaalausta varten. Opiskelijat tulivat Ranskasta ja Tanskasta. Tehtävä suoritettiin tammikuusta toukokuuhun 2002.
11. Virtuaalinen harjoittelu josta vastuussa oli ARCADA ja yhteistyöyrityksenä pohjoismaalainen IT-alaa edustava **ICL Invia**. Projekti suoritettiin syyskuusta joulukuuhun 2001, ja sen tarkoituksena oli tutkia millä lailla suomalaiset ja norjalaiset hotelliketjut hödyntävät informaatioteknologiaa alueella Customer Relationship Management (CRM). Opiskelijat olivat Suomesta ja Norjasta.
12. Virtuaalinen harjoittelu josta vastuussa oli TietgenSkolen ja yhteistyöyrityksenä **DFDS Transport**. Tehtävä annettiin suomalaisille opiskelijoille, ja sen päämääränä oli logistinen tutkimus siitä, miten Track and Trace systeemejä Suomessa hyödynnetään. Tehtävä suoritettiin syyskuusta joulukuuhun 2001.

Näiden neljän piloottiprojektin antamien kokemuksten pohjalla olemme luoneet seuraavat suositukset muille virtuaalisesta harjoittelusta kiinnostuneille henkilöille ja organisaatioille:

Opiskelijoita ajatellen suosittelemme valittavan **sellainen tehtävä**, mikä on selvästi määritelty ja mahdollinen suorittaa akateemisen ajankehyksen puitteissa. On hyvä luoda selvä kirjallinen työnkuvaus yrityksen kanssa. Työnkuvauksen tulee selvästi määritellä osallistujien roolit ja vastuut. Osallistuvien opiskelijoiden tulee pystyä itsenäiseen työsketelyyn ja heillä on myös oltava riittävä teoreettinen tausta tetävän suorittamiseksi. Opettajien ja hallinnon edustajiksi tulee valita uusille ideoille avoimia henkilöitä, jotka kykenevät työskentelemään joustavien oppimismenetelmien parissa. Heidän tulee luottaa sellaiseen pedagogiikkaan, joka perustuu yhteistyöhön korkeakoulujen ja elinkeinoelämän välillä; vapaana ajan, lukujärjestyksen sekä paikan luomista rajoituksista.

Valitse **informaatio- ja kommunikaatioteknologinen (IKT)** alusta huolella, ja suosi yleisesti käytössä olevaa, käyttäjäystävällistä tietotekniikkaa. Alustalla on ratkaiseva vaikutus projektin onnistumiseen. Se muodostaa harjoitelutehtävien suorittamis- ja oppimisympäristön sekä tukee projektin eri kommunikaatio- ja yhteistyötoimintoja. Opiskelijat käyttävät myös alustaa oppiakseen uusia työvälineitä; niiden joukossa videokonferenssit, verkkopohjaiset konferenssisysteemit sekä Content Management systeemit.

Suunnittele virtuaalista harjoittelutehtävää huolellisesti, sekä varaa riittävästi aikaa osallistujille, jotta he oppisivat tuntemaan yrityksen, alan sekä tutustuisivat sovellettavaan teknologiaan. Huolehdi myös siitä, että harjoittelutehtävään suhtaudutaan tosissaan. Olisi suositeltavaa, että yrityksen johtotasolla toimiva henkilö perehdyttäisi harjoittelutehtävään.

Varmista heti tehtävän alussa että **opiskelijat tuntevat yrityksen tuotteineen**. On myös varmistettava että yrityksellä on selvä kuva opiskelijoiden kyvyistä, projektin menestymiskriteereistä, sekä opiskelijoiden työskentelytavoista ja odotuksista. Kaikilla osallistujilla tulisi olla vaadittavat kielelliset pätevyydet, ja kultturien välistä kommunikaatiota on tuettava.

Projektin aikana tulisi myös **seurata edistymistä huolellisesti** sekä valvoa että kaikki osallistujat suorittavat tehtävänsä, myös koulujen hallintohenkilöstö. Virtuaalinen harjoittelu voi huomattavasti kehittää osallistujien projektinjohtamis- ja tietoteknikkaosaamista, joten kiinnitä erityistä huomiota näihin alueisiin.

Suorita huolellista arviointia sekä tietojen tallentamista. Tällä tavoin saat tarpeellista palautetta meneillään olevasta projektista sekä voit edelleen kehittää tulevia virtuaalisia harjoittelutehtäviä.

Yhteenvetona suosittelemme seuraavaa

- Opiskelijoiden tulee olla päteviä, hyvin valmistautuneita sekä kykeneviä itsenäiseen työskentelyyn
- Opiskelijoiden sekä opettajakunnan tulee olla tietoisia määräajoista sekä kykeneviä seuraamaan niitä
- On oltava selkeät ja läpinäkyvät tavoitteet ja ehdot
- Opiskelijoiden sekä opettajakunnan tulee nähdä virtuaalisen harjoittelun edut
- Virtuaalinen harjoittelu tulee olla integroitu osa opetussuunnitelmaa
- Jokaisen osallistuvan organisaation johdon tulee tukea projektia
- Yrityksen tulee nähdä yhteistyön mahdollistama uusi tieto hyödyllisenä
- Yrityksen on oltava valmis omien sitoutumistensa täyttämiseen
- IKT- infrastruktuurin on oltava kättäjäystävällinen ja tarkoituksenmukainen
- Kaikkien projektin osapuolten on koettava tehtävä tärkeänä sekä tarkoituksellisena

Vakaumuksemme on, että virtuaalinen harjoittelu on pätevä tapa kehittää kumppanuussuhteita koulutuksen ja elinkeinoelämän välillä.

2. Introduction

Welcome to "Virtual Internships – Real Experience in a Virtual World" a Best Practice Handbook for those interested in the concept of Virtual Internships in Business Education. It is based on the experiences of the INTERN project, which was supported by the European Commission's Minerva[1] programme, and ran from September 2000 to September 2002. The idea behind INTERN was to explore the extent to which Information and Communication Technologies (ICTs) could support a system of Virtual Internships – where European business students take part in company placements of various types, supported by ICT rather than by physically re-locating to the company premises.

2.1. The INTERN Partnership

The colleges taking part in INTERN are all experienced business schools, which used the INTERN project as a way to support a series of pilot Virtual Internships to test the approach, and to gather information about how such Internships might be improved in the future. The Colleges taking part were Tietgen Business College Denmark[2], Arcada Polytechnic Finland[3], Buskerud University College Norway[4], and Institut de Formation International (IFI) France[5].

Tietgen Business College is a Danish government supported, self-governing, educational institution in the field of business studies, computer science and agricultural studies. In 1998 The Danish Ministry of Education nominated Tietgen Business College as the Frontrunner for Danish Business colleges in the field of finding new ways for National competence development, through intensive co-operation between business life and education.

Arcada Polytechnic is owned by a private foundation and provides higher education in the fields of Technology, Health Care and Social Work, and Business and Services. The degree programmes offered at Arcada provide the graduates with a Bachelor's degree. Arcada is fully accredited and financially supported by the Finnish Ministry of Education. It has a particular interest in Open and Distance Learning (ODL) and its practical implementation. Arcada has a dedicated team devoted to IT-infrastructure, multimedia and video production, ODL tools, and pedagogical questions related to virtual learning environments.

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[1] European Commission Minerva Programme: http://europa.eu.int/comm/education/socrates/minerva/ind1a.html

[2] http://www.tietgen.dk

[3] http://www.arcada.fi

[4] http://www.hibu.no

[5] http://www.ifi-rouen.com

BUSKERUD
University College

Buskerud University College is a national state college with three faculties: the Faculty of Education in Business Administration, the Faculty of Engineering and the Faculty of Health. The Faculty of Education in Business Administration is committed to developing new teaching methods for business education and has done extensive research in the field of IT as an integrated part of course development.

IFI was established by Chambre de Commerce et d'Industrie de Rouen in 1986 as part of "Le Groupe ESC" consisting of: Ecole Supérieure de Commerce de Rouen, IFI (Institut de Formation International) and Ecole Supérieure d'Ingénieurs en Génie Electrique. IFI offers a Diploma in Advanced Studies in International Commerce. Since 1986 IFI has been involved in organising international work placements for students. At the end of 3rd year, IFI students must complete a 6-month work placement in a non-francophone company abroad.

2.1.1. Purpose and layout of this handbook

The idea behind this handbook is to provide you, the reader, with a comprehensive overview of what we define as Virtual Internships, to explain the pedagogical approach underpinning what we have done and the kind of technical infrastructure we have used to support our work. We will describe the pilot internship activities that we have set up and managed during INTERN. Finally we will offer a distillation of our main recommendations and suggestions about how to make the most out of Virtual Internships, should you choose to set in place a similar system.

We have tried to keep this handbook as straight-forward as possible, offering web-sites for further information where appropriate and providing a short list of contact points at the end should you wish to find out more about INTERN and Virtual Internships. We have also included, as far as possible, information about some of the challenges we have faced, as we believe that telling you something about the problems we encountered is just as useful as telling you about what has gone well. While we are enthusiastically committed to the concept of Virtual Internships, believing that they offer fantastic opportunities to anyone involved with business education, we are also realists and know that it is impossible for everything to go always according to plan.

This handbook is in essence a project "deliverable" as defined by the European Commission and is a clear manifestation of the basic philosophy behind a great deal of the research and development work funded by the European Commission, in that its purpose is to gather the experience of the project and make it available for Higher Educational Institutions and other stakeholders in Europe. Furthermore, it aims to provide, in a concise and readable manner, information about setting up similar links between business students and European Industry. It includes tips and ideas for projects as well as advice and information about some of the

issues and challenges involved. It is based on real life experiences gathered during the pilot projects and focuses on providing practical help and suggestions, in an overall bid to promote and stimulate the acceptance of Virtual Internships within companies and other educational institutions.

It is important to state our belief that taking part in the INTERN project, and publishing this handbook, does not mean that we believe Virtual Internships are the only option for students to gather workplace experience. Within our institutions, traditional Internships are still very much the accepted norm. However we do believe that properly set up and managed, Virtual Internships have an important role to play in the overall range of educational options and experiences a high-quality business school has on offer, in the increasingly competitive and complex world of Business Education.

2.2. Target readers

While our handbook is targeted at all those genuinely interested in improving the quality and relevance of European Business Education, it has a number of specific target groups. These include Managers and Administrators of European Business schools that are interested in finding new ways to support the needs of students seeking useful and meaningful internship placements with companies as part of their mainstream education. Many of these people need to provide an *International* learning experience for all their students and also to find new ways to integrate ICTs in their work. Virtual Internships may provide one way of meeting these needs.

We also target European companies interested in improving the quality and relevance of European Business Education, who work with Business Schools and Colleges and who are interested in improving students' work-place experience and competence in the field of International relations and Information and Communications Technologies. Many European companies participate in Internship programmes of one kind or another, for some this is somewhat philanthropic and part of their overall commitment to supporting the educational process. For others it is an opportunity to access useful skills and services with the back up of experienced and highly qualified academic staff in a cost-effective way. In most cases such relationships are essentially 'win/win' for both the students taking part and thereby their colleges and the companies supporting the scheme. By targeting such companies in our handbook, we aim to provide ideas and suggestions as to how they can take part in Virtual Internships with an equally satisfying 'win/win' outcome.

In addition the social partners, including government and trade union representatives, have a vested interest in improving European Business Education. This is partially due to pressure on resources and a desire to provide a more relevant and higher quality education in general. On top of this, students and employers are on the lookout for international experience as European Industry increasingly operates across borders. The use of ICT is also on the increase, with many skills previously characterised as being specialist now regarded as rudimentary.

Last, and by no means least, we target teachers and academics working directly with business students who are interested in taking part in Virtual Internships. Members of this group are the real users of this handbook in that the background and suggestions we provide are intended to improve the quality of the Virtual Internship experience for students. We understand that for many students, such an Internship will require a great deal of effort and commitment, and can form an important part of the educational experience. Such experiences can have a fundamental effect on the way students plan their career, and so we are mindful of the responsibility we have undertaken in carrying out this project, and in publishing this handbook, and hope that it will prove to be a valuable resource.

2.3. The European Dimension

The INTERN activities are supported by the European Commission through the Minerva initiative of the Socrates Programme[6] (Directorate General Education and Culture) and it is important to state at the beginning how our work fits into the overall objectives of the European Commission. Of the four activities supported by Minerva, INTERN is probably most closely aligned to Activity 2. *Designing, developing and testing new methods and educational resources* given that the "new method" is the concept of Virtual Internship. Virtual Internships are clearly generic and can be adopted by Higher Educational Institutions concerned with business education throughout Europe.

There are also elements of Activity 1, *Understanding Innovation*, in INTERN, in that the pilot activities involved in the project allowed for action-research. Therefore those involved are able to have a better understanding of the impact of ICT on the organisation of business learning when compared with traditional internships as typically organised by Higher Educational Institutions.

Through our dissemination activities, and through publication of this Handbook in particular, we are confident that INTERN is also playing an important role in disseminating information about successfully organising Virtual Internships and so is also addressing Activity 3, Providing Access and Supporting Dissemination.

Finally, due to our strong links with the network of Higher Educational Institutions through our membership of organisations like SIEC (Société Internationale Pour L'Enseignement Commercial)[7], EAIE (European Association in International Education)[8], EFVET (European Forum of Technical and Vocational Education and Training)[9] and EDEN (European Distance Education Network)[10], the partners in INTERN are also facilitating Activity 4 to some extent, *Supporting the exchange of ideas and experience relating to ODL and the use of ICT in education*, by presenting the project and it's outcomes at relevant conferences and other channels.

2.4. Thanks

INTERN was carried out with the support of the European Community for which we are grateful. Although the content of this Handbook does not necessarily reflect the position of the European Community, nor does it involve any responsibility on the part of the European Community, we are aware that it would not have been possible without the support of the

[6] DGEAC; http://europa.eu.int/comm/dgs/education_culture/index_en.htm

[7] more information from http://www.siec-isbe.org

[8] more information from http://www.eaie.nl/

[9] more information from http://www.efvet.org/

[10] more information from http://www.eden.bme.hu/

Commission. We are mindful of the many European Projects that seek funding and are not accepted, and so are conscious of the responsibility such funding brings and hope that it lives up to such responsibility.

Taking part in projects like INTERN makes enormous demands on all those involved and we are grateful to our colleagues and the management of our institutions for their generosity and help in making this project successful.

3. Virtual Internships

In this chapter we will present some of our basic ideas about the Virtual Internship concept. Although we are familiar with the fact that many schools and colleges are using Information and Communications Technologies to support their Internship activities, as far as we are aware the institutions taking part in INTERN, led by Tietgen Business College in Odense, Denmark were the first to really put this idea into practice in a structured fashion and to define and analyse the Virtual Internship concept. So, while we acknowledge that there are never rigid rules about such ideas and working concepts, we do feel that it is important to define and describe our definition of this approach, in order to clarify the work we have undertaken and the results we have achieved.

3.1. Background

Many Higher Educational Institutions report a significantly increased demand, from both students and companies, for some form of international internship within courses established as full time study programmes. Such internships can make an important contribution towards an improvement in the quality and relevance of a student's business education. However, access to such internships requires flexibility, and the allocation of considerable resources, by Higher Educational Institutions, companies and, in particular, students. This means that only a limited number of students can avail themselves of such opportunities. We therefore have to find new ways to meet demands for Internships. The purpose and primary objective of INTERN was to explore the extent to which Information and Communication Technologies (ICTs) could support a system of Virtual Internship.

The concept of Virtual Internships explored during INTERN came into being through the combined experiences of the project partners in various ICT cross-cultural and cross-disciplinary projects. In particular, the experience gained by the Tietgen Business College in creating Virtual Internships has been instrumental to the design of the activities. Our idea was that through Virtual Internships, students in Higher Educational Institutions in different countries could work together, solving problems and carrying out work for companies based in other European countries in a supervised and relevant environment.

3.2. Understanding Virtual Internships

The INTERN team has defined a Virtual Internship as follows:

A Virtual Internship involves the use of an Information and Communication Technology supported environment, where students interact with each other, and companies, independent of time and space and across traditional geographical boundaries. In this environment, effective communications are created between students, faculty and company representatives, in order to carry out a specific and meaningful work-based activity that fits within the student's compulsory educational curriculum

Virtual Internship activities enable students in the institutions to participate in virtual internship projects for international companies. It also provides the opportunity for close co-operation with companies and students from Higher Educational Institutions in other European countries.

It is important to state at the outset that we do not consider Virtual Internships as role-plays, although we do not dismiss role-plays in business education where they obviously fulfil

an important educational need. However, the very nature of a fully functional Virtual Internship is that everyone needs to agree beforehand that the work undertaken by the students is real and valuable. A student doing a traditional Internship is usually part of the company staff for the duration of their Internship with responsibility for specific tasks. In the same way, the student taking part in a Virtual Internship needs to know that the work they are doing is of value to the company for its own sake and not simply as a way for the student to gain experience by simply passing time in a real-life working environment.

Although the choice of technology support is important, and will be dealt with at various stages throughout this handbook, we do not agree that there is a rigid set of technologies that should be put in place. We are involved with the replacement of traditional face-to-face activities by those supported by Information and Communications Technologies. Therefore we replace face-to-face meetings with synchronous video and audio conferencing and asynchronous, one-to-one or one-to-many, electronic messaging. Reports and documents that are prepared either individually or collaboratively are created and distributed electronically and research is conducted not only through traditional routes, but also through extensive web searches.

It is also important to state at the outset that we do not discount the idea of face-to-face contact between the various players. Some of our most successful Virtual Internship activities have involved some degree of face-to-face contact between the company representatives and the students taking part, and, in this respect, we fully agree with a so-called *multimodal* learning approach.

3.2.1. Some Examples of Virtual Internships

There are many examples of Virtual Internships that we have used, and quite a few that we have yet to try out. Given that the sector in which we work is business education, the following list will give you an idea of the type of activity we have in mind.

- **Marketing surveys for companies in other countries using information technology e.g.: Students from Germany and Ireland conduct a marketing survey for an Irish company situated in Belgium which wants to export to Germany**
- **Research activities, e.g. store checks where students from Sweden and Denmark work together on a store check in the two countries for a French company**
- **Product impact studies where students in the UK investigate the way a product is marketed in the UK for the production company in Italy**
- **Students from France and Norway work together on logistical research in their two countries for a Norwegian company.**

3.2.2. Why Virtual Internships are a good idea

Having access to International experience is becoming vital for business students as the economy becomes increasingly global. Many Business Colleges offer students the opportunity to have placements abroad and the business of actually studying abroad is increasingly the norm, supported through, for example, the European Erasmus programme[11]. But what possibilities do students have who find it difficult to re-locate to another country for a

[11] more information from http://europa.eu.int/comm/education/erasmus.html

significant period of time? The idea of using ICT to support some form of Virtual Internship with a foreign company is particularly suitable for these students.

Virtual Internships also provide a practical preparation for new ways of working like tele-working and where companies organise themselves in smaller independent units spread across a wider region. In these situations, the use of tools like videoconferencing, and collaborative workspaces will be commonplace.

Through Virtual Internships, students can also be prepared for various developments in the labour market and learn how to solve work assignments in connection with a company in another country. Through this experience they gain practical knowledge in a cost efficient way.

Companies involved in a Virtual Internship provide important feedback to the Educational Institution regarding the curriculum and approach taken, and its relevance to the current business environment. This has advantages for both the Educational institution and to for the company, whereby they each come to understand the other's needs.

3.3. Pedagogical approach

Right from the beginning of our work with Virtual Internships, we have been careful to define our pedagogical approach that is focused on the idea of *Action Learning*. In essence this means for us that:

- **The learning process is organised collectively and involves or integrates peer-learning**
- **The learning process takes place in multicultural settings**
- **A conscious synergetic process takes place**
- **Interpersonal communication is emphasised**
- **Students learn from one other as well as the teacher**
- **Students learn from real business life experiences**
- **Teachers learn from real business life experiences**
- **Companies provide feed-back directly to the educational system**

The theoretical foundation of the INTERN project is in the field of Knowledge Management and in theories of knowledge development and distribution. Several authors argue that knowledge creation is interplay between tacit knowledge (embodied personal skills) and explicit knowledge (articulated and transmitted information). This process can take place within communities of interaction that cross intra- and inter-organisational levels and boundaries [12] The interaction of both tacit and explicit knowledge is seen to lead to dynamic knowledge creation and timely development of new products and services. Virtual Internships can provide support for this interplay between companies and educational institutions using ICT in an international environment. Participating actors can communicate on different inter-organisational levels and in cross-cultural business settings.

We believe that the learning outcome for students in the context of Virtual Internships is best described as the acquisition of work-based competence, since both practical and theoretical learning is emphasized in this particular learning process. In general, the work-

[12] Nona, 1994; Headland, 1994; Nona and Takeuchi, 1995

based competence that students acquire is composed of a range of skills, and abilities such as:

- **To cooperate and work as part of a team.**
- **To generate new approaches to the same problem.**
- **To integrate theory into real life.**
- **To seek quality.**
- **To be results-oriented.**
- **To utilise ICT to coordinate work processes.**
- **To act as a co-worker in a cross-cultural project team.**

The principle of "Flexible Learning" implies a multidimensional approach to learning. Practicing a multidimensional approach to learning means including both theoretical and practical elements in the learning process. To illustrate such an approach to learning we used *A Model of Work-based Learning* by Raelin (1997)[13] as a theoretical framework. This model views the individual learning process as having two dimensions - (1) knowing as explicit versus tacit experience, and (2) learning through theory versus practice.

Tacit knowledge is clearly personal and context-specific and sometimes hard to verbally describe. It consists of e.g. intuition, unarticulated mental models and embodied technical skills. *Explicit* knowledge refers to knowledge that can be coded and verbally transmitted. It consists of e.g. a meaningful set of numbers or diagrams or databases in text form. Organizational knowledge is seen as created through a *knowledge spiral* where tacit and explicit knowledge is combined.

The knowledge necessary to perform useful work generally has both theoretical and practical dimensions. Conventional learning methods tend to be classroom based, where explicit knowledge plays a dominant role. Since our work combines experience from both educational institutions and companies, a new approach is required. In Virtual Internships, knowledge is acquired through virtual practice resulting in new intersections between tacit and explicit knowledge. This means that we have had to elaborate upon Raelin's model as a starting point for our work.

The crux of the model is that work-based learning must blend theory and action - "*Theory makes sense only through practice, but practice makes sense only through reflection as enhanced by theory*." (Raelin 1997). However, both theory and practice may be composed of explicit and tacit knowledge as shown in Figure 1.

	Explicit	**Tacit**
Theory	**Conceptualisation**	**Experimentation**
Practice	**Reflection**	**Experience**

[13] Raelin, J (1997): A model of work-based learning. *Organizational Science*. Vol.8. No.6. November-December 1997

Figure 1: A model of work-based learning at the individual level

Theoretical conceptualisation, which usually is technical knowledge, gives the students the means to tackle the problems assigned by the companies. Theory also allows experimentation, where the conceptual knowledge becomes grounded. In Virtual Internships, online collaboration allows for experimentation and therefore contributes to the student's learning experience.

New knowledge from **practical** business life is thereafter introduced into the project area. This is taking place in Virtual Internships, when the company representatives share their tacit knowledge with the students. Through assignments from the participating companies, students gain knowledge both from the contact persons in the firms and through their own work contributions. This experience is required to apply the tacit knowledge acquired in experimentation and the students will further learn by doing.

Reflection upon the results, as well as reporting findings to the partner companies and e.g. to students in other countries, brings the inherent tacit knowledge to the surface. The circle is thereafter completed when the students move from reflection back to conceptualisation. By then, the Virtual Internship has hopefully contributed to new knowledge.

3.4. Technology Platform

Each of the Business Schools and Colleges taking part in INTERN uses a relatively sophisticated ICT infrastructure. They all use electronic communications extensively and students are familiar with using the World Wide Web for research purposes. Students follow regular courses in basic ICT and are all expected to have achieved a reasonable level of digital literacy as part of their studies. The implementation of successful Virtual Internships has meant that those taking part have had to agree about a basic and common technical specification for communication and collaboration purposes. They wanted to use a platform that allowed them exchange documents and take part in one-to-one as well as one-to-many communications. In addition they wanted to be able to use videoconferencing for synchronous meetings.

3.4.1. Collaborative Tool

Although each College taking part in INTERN uses a different communication and collaboration platform including proprietary as well as off-the-shelf products like Blackboard[14], the INTERN team decided to create a purpose-built collaborative platform. This platform involves a web-interface with a database for assignments and classrooms for each partner institution taking part in the Project[15]. The idea was that this platform would allow the possibility for collaborative learning. Collaborative learning is potentially very powerful: a group of students can trigger each other's ideas and stimulate lateral thinking. Such communication could be facilitated by the INTERN platform and can also offer "micro worlds" within which the collaborative activity would be undertaken. The platform that was created looked like this:

[14] more information from http://www.blackboard.com/

[15] can be viewed at http://www.intern-network.org

One of the main findings, which we will discuss, further in Chapter 5, is that those taking part clearly found that such a platform was not necessary and that other factors need to be taken into account when deciding upon the ICT infrastructure to be used during a Virtual Internship. These include what is being used in the rest of the institution as well as the reliability, openness and user-friendliness of the chosen platform or tool. It is also important to investigate issues to do with company and institutional security.

Many institutions now have fire-walls in place which can mean that participants are unable to access important documentation and services at key moments during a Virtual Internship programme.

3.4.2. Videoconferencing

Three out of the four business schools and colleges taking part in INTERN were regular users of videoconferencing before the INTERN project and, as such, were pioneers in the use of this technology for teaching and learning purposes. During the early stages of the project, a specification for the use of videoconferencing was agreed by everyone taking part, as follows:

- **Room-based system suitable for large group use with a high-quality system compliant with the H320 standard**
- **Well-equipped facility to support multiple cameras and microphones as well as full audiovisual functionality for display of overheads, etc.**
- **Communications via ISDN, minimum bandwidth 384kbit/s**

The INTERN team strongly believe in the importance of training with this kind of technology and so recommended the use of the SAVIE[16] training materials for all participants and provided training themselves along similar lines to everyone taking part.

During the pilot work there was some experimentation with web-cams over the Internet, however all participants felt that such conferencing is really only suitable for occasional social use and the quality is not sufficient for operational or mission-critical communications.

3.5. Various models

Although, as we have already said, there is no rigid structure recommended for a successful Virtual Internship, there are a number of models that we have found useful that describe the various alternatives. These models consider there to be three different sets of participants. First of all the students taking part (ST), secondly the academic or teaching staff (AT) and thirdly the Company representatives (CR). There are various different ways in which Virtual Internships can be organized around these players, depending upon the different requirements and particularities of the specific Virtual Internship.

For example, where a company in one country contacts a Business School in the same country, and looks for work to be done by students in another country, as part of a Virtual Internship where these students are supported by the academic or teaching staff from their own business school, we could describe it as follows

[16] more information from http://www.savie.com

Country A	Country B
AT CR	AT ST

In a different Virtual Internship, where the students from the country where the company is based are also taking part, along with students and Academic Teaching staff from a third institution in another country, it might look like this:

Country A	Country B	Country C
AT CR	AT ST	AT ST

In yet another scenario, where a company wishes to work with students from its own country alongside company representatives already based in a second country, the structure might look like this:

Country A	Country B
AT CR ST	AT ST CR

All kinds of different combinations are possible, however each brings its own complexities and makes demands on the organisational and management structure. A clear communications policy and a transparent understanding of one another's roles and responsibilities are really important and we will get back to this point in Chapter 5. In the meantime it is worth thinking about the various Virtual Internship models that you have in mind, and mapping them onto this simple model, as it will help when you come to making the first stages of a plan. In the following chapter, where we will describe the various pilot Virtual Internship activities we carried out during INTERN, we will describe them according to this model.

4. Virtual Internship Case Studies

In this chapter we will describe the various Virtual Internships set up and managed by the INTERN team during the project. We hope that they will provide you with a better understanding of how Virtual Internships can be put in place in a very practical way. Given the fact that they took place in reality they are far from perfect, however we hope that you will find them useful and that they will illustrate the extent to which Virtual Internships can be put in place. The way in which these specific Internships were chosen is a combination of the INTERN team drawing upon their collective contacts and experiences and the pure serendipity that often operates in these matters. They do however provide an illustration of just some of the experiences that are possible through Virtual Internships.

Each Virtual Internship organised within INTERN was different in terms of participation and activities however they shared a common aim, which was to improve the quality and relevance of the students' business education. The students were expected to 'learn by doing' in an environment rich in practical experience and yet backed up by the theoretical know-how and experience located within the participating educational Institutions. All activities were to be supported by Information and Communication Technologies.

4.1. Tronrud Engineering

Tronrud Engineering[17] 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 focuses on innovative solutions for highly specialised machinery applications. One of these innovative products is the 'Thread Controller TC-1' loom, which reproduces digitised motifs where every thread is electronically controlled via a PC. This loom, including the electronics and software, was the focus of the INTERN Virtual Internship.

Tronrud Engineering has worked with Buskerud in the past on various work assignments and projects. However this was the first time they worked with a group of foreign students through the INTERN project organised by Buskerud. The project was about researching markets, exhibitions and fairs in other countries with a view to TC-1's market expansion. The company was also interested in having recommendations about marketing in different cultural settings.

4.1.1. Virtual Internship project

This project, which took place from September until December 2001 involved various groups of students. They included 30 first year students from the Global Communications Programme at Tietgen Business College in Denmark, 9 students at different levels taking a year's course in English at Buskerud in Norway and 7 students from Arcada in Finland. This Virtual Internship was led by Julie Ann Svenkerud from Buskerud.

[17] http://www.tronrud.no/

The Danish students were divided into 5 groups and each group was given a specific task that was integrated into their curriculum as an independent study.

The Norwegian students who functioned as one group took part on the basis that this was a cross-cultural, cross-disciplinary project. They were carefully monitored by their teacher, with obligatory group sessions to make sure they were on the right path. Part of their role was to present the company and organise the assignment plan for the Danish students.

At Arcada, the Tronrud project formed a fully integrated part of a course in project management (Multi-professionnal Teams and Trends), and comprised 4.5. ECTS[18].

The specific work to be completed, as set by Buskerud in collaboration with Tronrud Engineering, was the following:

- Preparation of a company profile
- Analysis of potential customers for Tronrud Engineering's digital weaver
- Location of possible trade fairs in Denmark where Tronrud Engineering could market their product
- Preparation of a list of competitors in Denmark
- Description of how these competitors market their products at trade fairs in Denmark
- Preparation of suggestions on how Tronrud Engineering could best be represented on the Danish market.
- Report main findings to partner companies and to students in other countries

Each group had to work together on responding to the lessons set by Buskerud and gathering information. One group volunteered to be responsible for the videoconference presentation. The rest of the students prepared individual 1-2 page reports based on the information gathered in their respective groups that were to be used in the videoconferences and written recommendations.

One of the objectives of this project was to give the participants the opportunity to work as a "market analyst/research consultant" and carry out an actual market research project in Denmark for a foreign company. Another aim was to give the participants 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 to the participating company. Furthermore, the idea was that participants would receive practical cultural understanding.

The presentation and written reports counted as one of the five required written assignments in Tietgen's Global Communication course for the autumn semester and so counted towards student's overall assessment ratings for the year. At Buskerud,

[18] ECTS credits are a value allocated to course units to describe the student workload required to complete them. They reflect the quantity of work each course requires in relation to the total quantity of work required to complete a full year of academic study at the institution, that is, lectures, practical work, seminars, private work -- in the laboratory, library or at home -- and examinations or other assessment activities, for more information: http://europa.eu.int/comm/education/socrates/ects.html

INTERN was an obligatory project, which the students had to evaluate in order to complete requirements for the course.

4.1.2. Technology infrastructure

The collaborative workspace that was especially developed for the INTERN project provided the main communication and collaboration tool for the students, teachers and company representatives that were involved. The students received the necessary information concerning the product and the project in the form of a power point presentation. The students from Arcada and Tietgen were encouraged to contact the company and teachers and students from Buskerud.

Audio and videoconferencing was also used during this Pilot Virtual Internship. The videoconferences took place on October 1, 2001 and on December 10, 2001. The first conference was an introductory session where the students presented themselves, the company, their product and the project schedule. Arcada, Tietgen and Buskerud participated as well as Tronrud Engineering Company. The second conference was the presentation of student findings and feedback from Tronrud Engineering. Buskerud and Tietgen Business College participated.

4.1.3. Model

Three groups of students were involved in this Virtual Internship: Buskerud acting as the coordinating group setting out the lesson plan and having direct contact with Tronrud Engineering. Tietgen acting as the research group, following the lesson plan and guidance of Buskerud and Arcada. So using our earlier model, this Virtual Internship looked like this:

Norway	Denmark	Finland
AT CR ST	AT ST	AT ST

4.1.4. Conclusions and Recommendations

The participants rated the use of tools including the INTERN collaborative workspace, email, telephone, and videoconferencing highly and 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 team made a number of recommendations as regards this specific Virtual Internship:

- It is important to provide clear information to all parties involved
- The technology should work well, without any bugs
- The delegation of responsibility should be clearly delineated

- There should also be a possibility for the students to meet face-to-face at some stage.

4.2. KREMLIN

KREMLIN, Inc.,[19] 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 for the extrusion and spraying of paints, varnishes, adhesives and other coatings. 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.

As part of a strategic review of their activities in Scandinavia, KREMLIN approached the Intitut de Formation Internationale (IFI) in Rouen, France to ask for help in carrying out a market research study in Denmark. IFI in turn enlisted the help of Tietgen Business School, whose students developed and managed the field research, and prepared a comprehensive report in English during the two-month period January- February 2002. This was presented in English, via videoconference, to three senior executives from KREMLIN. During the project, the Danish students went on a business visit to KREMLIN and IFI in France.

In the 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. The final presentation of the report was done on May 3rd.

The project involved 5 second-year students of Careers in International Business at the Tietgen Business School in Denmark and 4 third-year students of Business Administration at IFI in France. Both in IFI, as in Tietgen, the project replaced the students' normal Marketing class assignment and the IFI students were allowed to miss selected classes to make visits to KREMLIN and its retailers and distributors in France. The project was supported by academics in Tietgen (Michael Tommerup, Kathy Tommerup and Helle Andersen) and IFI (Ewan Ormiston). The person with overall responsibility was Ewan Ormiston from IFI.

The work related to this project has been the following:

- Week 2: Start-up activities containing a briefing of the Danish students by Kremlin and a field visit by the Danish students to a Danish Furniture Factory.
- Week 3: Initial Planning activities by Tietgen, such as the preparation of the research proposal, desk research and a seminar in Tietgen about French business culture.
- Week 4: Tietgen Business trip to France
- Week 5–8: Collection of data and writing of the report by Tietgen

[19] http://www.kremlin.com/

- Week 6: Discussion of findings between Tietgen students and KREMLIN management via videoconference
- Week 9: Preparation of the Final Report and videoconference presentation by Tietgen and hand-over of the work to IFI
- Week 10: IFI visit to KREMLIN
- Week 11-17: IFI continued working on desk research, visits to French customers and distributors, preparation of the final presentation, writing an executive summary of the market research and producing the business plan and recommendations
- Week 18: Presentation to KREMLIN
- November 2002: Follow-up activities including feedback from KREMLIN on actions taken as a result of the recommendations and success to date.

4.2.1. Technology infrastructure

Various communication channels were used. Two videoconferences were set-up between IFI and Tietgen. E-mail was the main communication tool between the students and KREMLIN. Fax and telephone were used to gather information from the companies questioned in the market research. Market research recruitment, additional communication with KREMLIN and between the two student groups was by telephone.

4.2.2. Model

In this Virtual Internship there were two groups of students involved: IFI in France and Tietgen in Denmark. The company involved, namely KREMLIN, had direct contact during the duration of the project with both student groups. According to the outline model we have used, the Kremlin Internship looks like this:

France	Denmark
AT CR ST	AT ST

4.2.3. Conclusions and Recommendations

The students were delighted to have been selected for this special project and displayed a level of diligence and professionalism that is sometimes difficult to achieve in the artificial context of traditional case-study work. The project provided them with a unique opportunity of working with professional managers and the potential to influence the decision making process within the company, which is considered a very satisfying result of the project. Also the collaboration between the two student groups was both pleasant and efficient in the sense that the timeframe was strictly observed.

From KREMLIN's point of view, the project was a success and they have indicated their interest in a follow-up project at a later date.

According to the faculty member responsible for the project, the "real" nature of the project and the desire to cooperate across cultural and geographical borders led to a high level of professionalism from both the French and the Danish students. Any communications problems were in most cases resolved by the students themselves, which in turn boosted their confidence and their will to succeed.

The recommendations that were made concern 7 areas: the project set-up; the student characteristics; motivational factors; the timeframe; operational factors; pedagogical factors; and the technology.

With regards to the set-up, the students recommended that work should be carried out in small groups (maximum 10 participants), supported by a teacher when needed. A workplace with facilities such as Internet, e-mail, fax and phone should also be available to the students.

As far as the student characteristics are involved it is recommended that the students selected should be between the average and the top percentile of the class, highly motivated and willing to accept responsibility for the outcome of the project. Also very important is the ability to work within a group structure and accept differences within the group.

The fact that the students are in control of the project, but have access to support from teachers when required, is a key motivational factor.

A suggested improvement concerning the timeframe would be to let the students start working earlier in the process and for a longer period.

Operational factors to consider include the fact that the students really appreciated meeting each other early in the process and having the opportunity to visit the company together. It is also important at the outset to clarify with the company the students' specific objectives and responsibilities, and obtain company commitment to honour appointments, supply promised information etc.

Pedagogical recommendations are that the project should be broadened to include other professional disciplines (e.g. Finance) and faculty members. For each area specific objectives should be set, and the vital link between academic theory and practical application should be demonstrated to the students. In addition, a follow-up session, 6-12 months after the project, is considered useful to monitor the effectiveness of the recommendations.

One of the major technology aspects to consider is the sound and vision quality of the videoconferencing equipment, which in this project was considered substandard. Another remark with regards to the technology is that the level of IT skills of all the participants should be checked and, if necessary, additional training should be given.

4.3. ICL Invia

ICL Invia which became Fujitsu Invia on 1 April 2002 [20]is a Nordic service provider and operator of advanced information systems. This company develops and

[20] http://fi.services.fujitsu.com/

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 Virtual Internship project was to investigate the use of Information Technology for customer relationship management (CRM) in Finnish and Norwegian hotel chains.

4.3.1. Virtual Internship Task

This Internship, which took place from October 2001 until December 2001, involved 10 students from Arcada and nine students from Buskerud. For the Finnish students, it was an integrated part of a 5-course unit (7.5 ECTS) course in project management for 3rd year students. In Buskerud the students who participated were part of a one-year course in English studies including global communication (worth 15 ECTS). This was an obligatory part of the course. The entire class in Buskerud was involved with certain students having primary responsibility for implementing the assignment. Four out of fifteen had former experience of ICT based learning.

The project was related to the use of information technology in customer relationship management (CRM). There were two different assignments running at Arcada, and one in Buskerud. The assignment of the first group in Arcada was as follows: to find out how CRM is carried out in a hotel chain (Restel) and to establish to what extent the hotel management was aware of IT based CRM systems and what kind of information they missed from the systems currently in use. The second group from Arcada had the same assignment as the first except that they had to find out how well IT based CRM was integrated in a hotel marketing chain (Finlandia Hotels) in Finland. The group of Buskerud student's in Norway had the same assignment as the first group of Arcada, to find out how well CRM is carried out in a hotel chain in Norway.

This project was led by Susanna Fabricius from Arcada.

Part of the structure of the Internship was to encourage students from Finland and Norway to work together. The students interviewed directors and marketing management of the hotel/marketing chain. They also carried out a survey of chain and private hotels based on a form they created themselves.

In Arcada the students had weekly meetings with their teacher where the students presented their progress and the results of the market survey. The project leader was also in contact with the Buskerud group via the collaborative workspace. The students were expected to communicate with each other about the survey using this workspace, although this didn't happen. Final results were reported by the Arcada and Buskerud students in a videoconference, which involved a representative from ICL Invia in Finland. During this videoconference he provided the students with some immediate feedback. In addition to the Finnish and Norwegian students tasking an active role in this Virtual Internship, students from Tietgen Business College also took part in the two videoconferences, albeit in a somewhat passive role.

- Week 1-4: General introduction of the projects to Arcada and Buskerud students, Small group meetings to discuss the project plan in each institution and IT training on how to do a videoconference and on how to use the project home page in each institution
- Week 5: Presentation of the company and of CRM software by ICL Invia in a multipoint videoconference

- Week 6-11: Market research in Finland and in Norway
- Week 12: Presentation of final results in a multipoint videoconferencing

4.3.2. Technology Infrastructure

The students were expected to use the Internet collaborative workspace for document exchange, collaboration and communications, (one-to-one and one-to-many), the WWW for research purposes, email and telephone, and videoconferencing for group synchronous meetings.

4.3.3. Model

2 student groups played an active role from Arcada and Buskerud, 1 Company (ICL Invia), and teachers from at Arcada and Buskerud.

Norway	Finland
AT CR ST	AT CR ST

4.3.4. Conclusions and Recommendations

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. The size of the group seemed appropriate in each institution. The 10 Arcada students found the visit to the ICL Invia headquarters in Helsinki useful.

ICL Invia also benefited from the project as it provided them with information that they considered valuable for their own purposes.

Both videoconferences were considered successful and the final reports were good. However there was a difference in the final reports produced by Arcada and Buskerud. Although Buskerud's was considered to be good, both students and staff agreed that it focused too much on computer based booking systems used in different hotel chains rather than on IT based CRM systems.

There were some problems regarding communication between participants, given that one of the objectives was to encourage the students from Norway and Finland to work together through the INTERN Interactive platform and this simply did not happen. The students did not try to communicate with each other; neither did the teachers of the two colleges. As a result, both groups felt that they had too little contact with each other.

In addition, the Buskerud participants did not fully understand the roles of the Ardada project leader and the ICL Invia representative.

There are some points that should be taken into consideration for a next project. First of all the project leader should make sure that everyone really understands what the task is about, in order to avoid future mistakes.

The concept of CRM was not very clear to the group of Buskerud in Norway, as they had no preparatory information about the topic beforehand. Therefore the participants recommended it would have been useful to organise a videoconference about CRM for all participants in the project, to provide everyone with the same background information right from the beginning.

In Arcada the project follow-up went well but the Finnish project leader had no idea how the Norwegian group was progressing. Next time it is recommended that the teachers in Norway and in Finland have more contact with each other, in order to make sure the project is running as it should be.

Another recommendation to improve communication is to "force" students to work in mixed groups with students from different countries, instead of students from the same institution. In that way each participant would have contributed something to the project collaborative workspace.

It would also have been useful to have organised a mid project videoconferencing session for all groups to discuss the survey.

An important recommendation with regards to the company involved is that there should be a model for companies to be used in projects like this. Most business companies do not have pedagogically educated people themselves, so they need more guidance to be able to work with the students.

4.4. DFDS

The Danish DFDS Transportation Group[21] 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 this Virtual Internship as it was interested in having a logistic survey of track and trace systems in Finland.

4.4.1. Virtual Internship Task

The faculty of Tietgen Business College made the initial contact with DFDS in Denmark. Together with the representative from DFDS Denmark, Tietgen Business College developed the assignment for the Arcada students and hosted the company during the videoconferences.

This project for DFDS was offered to INTERN partners from September to December 2001. 10 students from Arcada took part and 3 faculty members from Tietgen Business College.

For the Finnish students, this project was an integrated part of a course in MPPT (Multi-professional Teams and Trends), a course that is offered to all third year students. The MPTT course started with a compulsory course in project management

[21] http://www.dfds.com/

(which was worth 3 ECTS). After taking this theoretical course, the students were expected to take part in a piece of related practical work. For some of the students this practical aspect was a Virtual Internship with DFDS, which was worth 4.5 ECTS in assessment terms. All students from Arcada were taking part in the Programme in Bachelor of Business Administration and had participated in IT-courses during their studies. In Tietgen Business College, the 3 people teachers taking part made the company contact, developed the tasks for the Finnish students and set up the lessons in the INTERN interactive platform as well as managing the videoconference with the Arcada students.

To succeed in meeting the project goals the 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 the virtual classrooms, which were hosted on the INTERN collaborative workspace, the students were less dependent on set timings and locations. Furthermore the companies could access the information whenever they wanted through the INTERN collaborative workspace. However the company did not use the homepage but preferred to use e-mail instead except for the final evaluation of the students' work. The videoconferences were useful in the sense that they made direct feedback possible from the company and required the students to carry out thorough preparation work.

- Introduction to using videoconferencing and the project's homepage.
- Guest Lecture by a lecturer from the University of Skövde
- Presentation of the topic of research by DFDS
- Presentation of the ICT-structure
- Company visit by Arcada to DFDS Finland
- Perform the work on the homepage

This Virtual Internship ran according to the following timetable:

- Week 1: Videoconference with DFDS transport who presented the company and gave an introduction to the assignment
- Week 1-11: Students worked on the assignment. Reported to DFDS transport in week 11
- Week 12: Students discussed their findings with the representative from DFDS transport via videoconference

Both 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 email and telephone calls.

4.4.2. Model

The model used for this Internship can be represented as follows:

Finland	Denmark
AT CR ST	AT CR

4.4.3. Conclusions and Recommendations

In general the company involved was pleased by the professional report the students had written. They found that it contained some very interesting and useful observations. The results from the project were considered valuable enough to use.

From the point of view of the students, the Faculty and the management, videoconferencing appeared to be a useful tool. Furthermore, multicultural learning was facilitated by the use of ICT. Local group/tutoring was also considered to be of high value.

There were however also 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 the Faculty and the management the videoconferences weren't sufficiently prepared by the students. They also found the assignment somewhat too technical in nature.

Everyone involved recommended continuing the co-operation with international companies, but in the future the roles of the different actors should be clarified. Another remark concerned the fact that the evaluation should start from the beginning, and not when the project is already finished. Another important lesson for the future concerns the co-operation between the students, which should be enhanced.

5. Best practice, Guidelines and Recommendations

This chapter will contain recommendations and guidelines for people interested in setting up their own Virtual Internship activities. These recommendations are based on the experiences gained during the INTERN project, as a result of the extensive evaluation that was carried out during and after the pilot activities.

5.1. Planning a Virtual Internship

5.1.1. Selecting Companies

When it comes to selecting companies to take part in Virtual Internships, the most obvious place to start is amongst the College or school's network of contacts in the business world in their own country. Most educational institutions will already have contacts with commercial companies, with whom they regularly collaborate in regard to traditional student internships, placements and study visits of one type or another. In addition, they will also have guest lectures and other types of input into the curriculum from leading business figures, with whom they have built-up a good relationship. It is also important to include the alumni of each school or college, who will also form an important link and network within the business community, and can be used by colleges when they need to find places for students to do some form of workplace placement.

Selecting companies to take part in Virtual Internships with students from another country will involve eliciting possible project work from these companies, and then beginning to match these with the expectations and interests of the college with whom you are working in another country. You may need to begin by circulating the possibilities offered by Virtual Internships to companies within your own network. How you do this will obviously depend upon the way you normally work with such companies, but such notification should, as a minimum, explain the following:

- Description of a Virtual Internship including examples to fire the imagination of the companies you are contacting
- Describe the role of the company, supportive, supervisory, etc….
- Elaborate the time-scale and how the Virtual Internship fits into the student's course
- Describe the advantages and value to the company taking part

Once you have made your short list of possible projects and companies, make your selection based on criteria like your previous working relationships with the targeted companies, the expectations of both students and the companies involved and the level of resource expected on all sides. You may also wish to investigate how necessary the work to be done is to the company, and make sure that matches with what you and your students expect. Choose companies where the project is well

defined and achievable within the given time schedule. It is also very important to make sure that you have an identifiable contact person within the company, who is unlikely to change position within the lifetime of the Virtual Internship. You may also wish to take account the language skills necessary and available of everyone taking part.

Once you have made your choice, it is of paramount importance to create an explicit and detailed working agreement with the company. We have already mentioned the need, and value, of having a contract signed between companies and colleges working together in a Virtual Internship and, while we agree that a formal contract is probably neither practical nor realistic, some form of written agreement is vital. Such an agreement allows everyone taking part to give a clear commitment to the Virtual Internship being put in place, and allows for a clear understanding of everyone's role and responsibility. It also indicates the seriousness with which such Internships are being taken on all sides, and provides some guarantee as to the quality of what the students taking part will undergo. The creation of a written agreement is also particularly important in a context where people are working in a second, or even third language, in order to avoid misunderstandings.

Such a contract should contain, at a minimum, the following:

- A simple description of the project work or task
- A detailed time schedule, indicating when various materials or documents should be produced and by whom
- A description of the input being made by both sides, including the language of communication.
- An agreement regarding the ICT infrastructure being used and who is responsible for technical back-up and support
- An agreement regarding the working relationship between all members of the project team, made up of the Company representatives, the teaching and academic support staff and the students
- The names of everyone involved and their specific role

5.1.2. Selecting Students

Selecting the most appropriate students to take part in Virtual Internships is equally important. Although Virtual Internships can have a number of added advantages for students particularly where their home circumstances do not allow for an international internship experience in any other way, they do not suit all students. Students taking part need to be somewhat independent and able to work on their own initiative. While they will most probably have access to college teaching staff during such an Internship, their access to the company will, by definition, be limited to mostly ICT mediated contact. There is a danger that Virtual Internships may be seen as a 'poor relative' to traditional internships and the way in which they are introduced and explained to the students is very important. We have found that if the project or task is introduced and explained formally, by someone perceived to be a senior staff member from the commissioning company, students take the Virtual Internship task more seriously than if it is introduced by other students or even academic staff.

One of the most essential criteria for success in Virtual Internships is the student's educational background. Generally, the more prior education, the greater the chances for completion. This has been born out in our evaluation of the INTERN Virtual Internship pilots. We also found that more mature students were able to successfully apply theory to practice and understand the advantages of doing this through Virtual Internships more than students at an earlier stage in their studies.

There are a number of other factors that should be taken into account when it comes to selecting students, they can be summarised as follows:

- Students need to be somewhat confident and able to initiate activities.
- Persistence, determination and motivation are important success factors.
- Several other factors, such as occupation, job; workload, family relations, health, and interests all have an influence on success. For example, encouragement from fellow students, friends and family is important, while the lack of support from these groups can have an adverse effect.
- Degree of comfort with ICT generally can also have a bearing and so should be investigated when it comes to choosing students to take part in Virtual Internships
- It is always better, as in every such activity, if the decision to take part in a Virtual Internship is the student's own rather than that of the educational institution so choose if you can from students who *want* to take part rather than those who are told they *have* to take part.

We didn't find that the country of origin, or the gender of the students taking part, had any significant influence on the Virtual Internship experience for students, however there is no doubt that both language and culture are significant factors when it comes to running successful projects, an aspect we will elaborate later. However when selecting students to take part it is obviously important to consider the language skills that are required and provide adequate back up and support in this area where necessary.

5.1.3. Selecting Academic and Teaching Staff

Not all academics and teaching staff will be attracted to the idea of Virtual Internships. For some, the dependence in ICT support, and the very remoteness of the company taking part, will cause anxieties. It is therefore really important to choose staff carefully, as the role of the teaching staff in all institutions taking part is of paramount importance. In the INTERN experience, students taking part recorded the importance of the feedback and support given by the teaching staff in their own institution, which was far more important that the feedback and support given by the companies taking part. Teaching staff who like strict curricula and rigid project planning are probably the least suitable, as well as those who resist the idea of learner-led activities.

Teaching staff may be resistant to the use of ICT, which is why planning needs to take into account the setting up of workshops, or other training activities, to familiarise everyone with the tools that are to be used. This is particularly important

in the use of videoconferencing in our experience where clear guidelines and training in the successful operation of this kind of equipment should be given so the technology itself does not become a barrier in any way. Academic staff are particularly vulnerable to the danger of 'losing face' with their students, and so you may need to resolve this kind of difficulty sensitively, in order not to de-motivate staff in any way. A couple of suggestions:

- Allow staff plenty of time to practice with the chosen ICT infrastructure away from students, in order to allow them build-up competence BEFORE beginning your Virtual Internship activity
- Provide samples and examples of electronic searches, moderated online discussions, videoconference presentations and discussions for staff to go through so they know what to expect
- Provide a well serviced help-desk sufficiently in advance of the Virtual Internship, so all initial problems can be ironed out immediately they occur
- Provide suitable experienced mentors for academic staff working in this way for the first time

Try not to be too rigid regarding roles, in some cases teaching staff will involve themselves both as the teacher/mentor (lead academic support), as well as the helper/facilitator (secondary academic support). When it comes to choosing staff for the job, decide on the role first and then match staff accordingly, rather than the other way round. However, in all circumstances we believe that the teacher is primarily the mediator and inspirer, prime mover and consultant.

When it comes to planning the Virtual Internship activity, the teaching staff chosen may need support in helping them make the shift from classroom teaching to the tutoring role required by Virtual Internships. The transition from prioritising activities beyond the classroom will be difficult for some teachers, particularly those who traditionally have been used to meticulous daily monitoring of individuals in classroom situations.

Virtual Internship tutoring should focus on:

- Independent reading
- Student research
- Preparation of assignments
- Groups studies
- Group discussions without the teacher
- Knowledge gathering
- Critical reflections on own learning, self-assessment

All in all, when it comes to selecting teaching staff to take part in Virtual Internships, we have found that the most successful choices are those which involve staff who are really committed to concepts like Lifelong Learning, and who believe in the essential link between on-going learning and the workplace, independent of time, schedule or distance constraints. The realities of current teaching practice, with

increasing pressure on resources, the surplus of information, the emphasis upon collaboration and cross-curriculum learning, and the increasing dependence on Information and Communication Technologies, have made many teachers unsuitable for this kind of work.

5.1.4. Organising the timetable

A virtual internship can be planned in many ways, but when planning you have to make sure that the institution involved can integrate the internship into their formal teaching programme, so that it gets high priority with teachers as well as with students.

You also have to make sure that the students are prepared for the project, so that they have the right competencies in the subject area covered in the internship, in the use of ICTs, languages and presentation skills.

As an example, this is how a typical Virtual Internship was planned to carry out a market Research Project in Denmark for a Foreign Company

The Process:

The project should be carried out with a high degree of participant control, combined with some strictly enforced deadlines. Furthermore, counselling/professional advice will be included in the project in the form of a series of seminars of 4-8 hours in length, where the group will be presented with relevant issues or the group will work on concrete relevant assignments.

The Timetable:

Week 1:

- Seminar with students to review project management, the work of the consultant, review market research with an optional guest speaker
- Briefing from the French company via videoconferencing, to include a presentation of the company and the company's briefing for the market research project
- Organisation of the group (e.g. selection of a "project leader" within the group)

Week 2:

- Student group's initial planning of the assignment
- The group's proposal for how to carry out this project (hypotheses/information need/method)
- Seminar: The French business culture

Week 3:

- Trip to France for Company visit presentation /discussion of the group's proposal.
- Lecture, possibly in combination with a visit to another company
- Group work at Local participating business College
- If necessary, the group can contact the company before leaving France, for clarification of any questions that have arisen during their group work

Weeks 4-8:

- Collection of Information and the preparation of the report
- Possibility of contact via Internet/video-conferencing equipment with the company if necessary**.**
- Weekly status meetings with faculty in local institution (including a review and discussion of the group's log book).
- Advice or counselling concerning the actual writing of the report will be provided if necessary
- Advice or counselling concerning other aspects of the project are planned by the students and the relevant teachers when necessary;

Week 6:

- Orientation concerning the videoconferencing equipment

Week 7:

- Practice the actual presentation

Week 9: Final Report

- Final written report is sent (electronically)
- Seminar via videoconference to make presentation of the written report

5.1.5. Selecting the ICT Infrastructure

We found during INTERN, and in our other work in this area, that the choice of ICT infrastructure to be used during a Virtual Internship is really important. A successful approach is based upon a realistic analysis of what the Virtual Internship requires in terms of communications and activity support, in light of what is in use and available within the organisations taking part. The role of Information and Communication Technologies within a Virtual Internship is two-fold. First of all we see ICT as playing a *supportive* role, it needs to be used to facilitate the kind of activity in which we are engaged. In other words, we replace traditional face-to-face activities by those supported by Information and Communications Technologies. In practical terms this means that we replace or complement traditional face-to-face meetings with synchronous video and audio conferencing and asynchronous one-to-one, or one-to-many, electronic messaging. In terms of content development, reports and documents that are prepared either individually or collaboratively can be created and distributed using digital means. Research is conducted not only through traditional routes, but also through extensive web searches.

Secondly, ICT within Virtual Internships offer an important *learning* opportunity for students and Academic and Teaching staff alike. Using ICT in a real-life context will certainly improve competence and increase skills, in an environment where ICT is increasingly important for everyday work. The level of basic ICT competence expected within the work force is on the increase, and a well-operated Virtual Internship can certainly increase competence in this area. In the Virtual Internship projects carried out during INTERN this was one of the most important outcomes as reported throughout the evaluation, students and staff alike appreciated the opportunity to increase their ICT competence through Virtual Internships. This means that the infrastructure chosen needs to be sufficiently challenging, fit-for-purpose, user-friendly and generic to meet the needs of all involved.

We have created a short list of do's and don'ts based on our experience that you might find useful

Do	**Don't**
Choose a technical infrastructure that fits the activity you want to do,	Force the use of a platform or tool which is only to be used for a single application
Use common and standardized versions of all software	Depend on complicated propriety software and solutions
Make explicit the specific infrastructure to be used	Use low-quality solutions that are unlikely to be fit-for-purpose, e.g. videoconferencing via the Internet for important meetings
Opt for simple 'lowest common denominator' solutions	
Provide sufficient training and orientation for everyone involved BEFORE they begin to use the tool or infrastructure for real during the Internship	Choose your infrastructure before you decide on the work to be undertaken during the Virtual Internship – match the structure to your needs instead.

Make sure there is a suitable help-desk facility available for everyone who needs it Keep records, reports and evaluations of all ICT used for future demonstration and evaluation purposes	Underestimate the importance of having a fully functioning ICT infrastructure in place – small bugs and problems can have a devastating effect on the success of your initiative!

In our experience of managing various Virtual Internships, we found videoconferencing to be the most useful, and a dedicated proprietary collaborative workspace platform to be the least useful, tool.

Videoconferencing allowed for very effective synchronous communications amongst groups working at a distance. It was used for group meetings and presentations at various times during the Internship, and fulfilled the two important challenges inherent in the use of ICT in Virtual Internships. It both supported and replaced face-to-face communication, and secondly it fulfilled an important pedagogical function, i.e. students and teaching staff improved their videoconferencing skills in a typical 'learning-by-doing' manner. Videoconferencing was useful, in that it supported collaborative problem solving by adding the non-verbal elements of facial expression, eye contact and gesture, which would have been missing in most other forms of ICT supported communications. However, we also concluded that training in its use is really important for everyone involved. The entire system should be very well set up, using appropriate technology and a sufficiently fast ISDN connection so as to be really effective.

The dedicated proprietary platform proved to be too cumbersome for really effective use, and many people went back to using simple emails with attachments, and simple group communications applications, to do the same thing. It is also an expense that may not be justifiable in the long term, given the increasing availability of such off-the-shelf systems. We conclude that given the fact that most Virtual Internship activities, by their very nature, will involve a group of people from different institutions, it is unlikely that a dedicated platform will have any real value, and emphasis should be on using existing tools that provide the same functionalities.

5.2. The First Steps in a Virtual Internship

There are a number of points worth remembering from the start. First of all, we have found that students need to really understand the company in which they are going to work, and what it currently does. This needs to be more than a simple understanding of products and services offered, but also an understanding of the overall sector and market in which the company operates. It is worthwhile putting in some effort and time making sure that this is clearly understood. We have been surprised by the number of times we thought that students were completely familiar with the company and what it did, when in fact they did not. At the same time, it is necessary for everyone involved in Virtual Internships to understand what it is that characterises the students, what is needed for their success, how they perceive instruction and what they expect. So take some time in the early stages to make sure everyone involved is fully informed.

Many of the students taking part in Virtual Internships are in fact adult learners who differ from traditional younger students, and so this needs to be taken into account from the start. Adult learners are characterised as follows:

- Adult students want to be involved in defining the course content and make demands regarding relevance
- Adult students are more responsible
- Adult students can draw upon personal experience and expect to be able to use it as a learning resource
- Adult students want to decide what they should learn, when, where and how
- Adult students look upon learning as a necessity right now and not as a long term investment
- Adult students have inner motivation

The actual cost for adult students is not money, but time and effort. Most students enrol in a Virtual Internship programme for very specific and clear reasons. Thus, they are generally highly motivated and results oriented. Many want to learn more about something related to their studies, some enrol to compensate for the lack of opportunities to participate in traineeships abroad. Topics are manifold and cover a wide area.

Most adult students are afraid that they cannot live up to demands; partly the external demands but also their own demands and expectations. This fear is often concentrated on the first assignment or on the first videoconference. Therefore it is important that the teacher quickly dispel fears.

Something that may be useful from the very beginning is to prepare a set of 'What If...' scenarios in order to try to predict the kinds of problems that may occur during the Virtual Internship.

Examples of "What if" scenarios include the following:

- What if the student finds materials presented by the company to be of poor translation quality – should he/she provide improved translation themselves?
- What if the company fails to abide by its own deadlines and timetables, should the student complain and if so to whom?
- What if the company makes suggestions as to people the student(s) should contact, how should this be done?
- What if the students are unable to complete the assignment on time, should the academic staff member be expected to contribute?
- What if the student runs into unforeseen expenses in the completion of the assignment, can this be claimed from the company?
- What if key people taking part in the Internship have to withdraw?
- What if the ICT infrastructure fails to perform as predicted?
- What if the students find difficulty in finding the right tone or register for communication purposes, e.g. over-familiarity as perceived by the company representative?

5.3. Culture and Language

Virtual Internships step, by their very nature, into the minefield of European cultures and languages. Taking students from one country and asking them to co-operate with a company operating in another opens up not only terrific opportunities for learning but also dangerous risks. While the college can prepare the student through

extensive language preparation, there is not a lot they can do to equip the student with all the skills he or she will need, in order to understand the cultural differences that will occur. While it is our belief that a great deal of cultural clichés and myths exist in this area, there is no doubt that company cultures differ a great deal from country to country, and region to region. Preparation in the form of intercultural awareness raising and the provision of as much back up as possible will help. It will in fact strengthen the learning experience if handled well.

Students and others generally find working in a multicultural atmosphere to be highly motivating and so it is important to highlight this aspect as much as possible in your initial descriptions of the Virtual Internship opportunities you are offering.

5.4. Roles and Responsibilities

Who does what during a Virtual Internship is obviously important and in this section we will try to outline how we view the various roles and responsibilities based on both the INTERN experience, and also other related work we have done.

5.4.1. The Role of Faculty

As with all such activities, the creation of successful Virtual Internships requires a clearly identified Project leader. In most cases this will be a member of Faculty at one of the Teaching institutions taking part. In addition there will also be support faculty who will play the following roles, or a combination of the following:

- Facilitator, who ensures that the Virtual Internship is fully operational, and brings together the technical and other staff required
- Tutor, who acts as the 'guide on the side' for the students involved, providing timely and necessary support
- Content provider, who will facilitate the provision of whatever theoretical input is required, including access to library and other content resources, including lectures

A couple of suggestions about the role of faculty in a Virtual Internship

- Sufficient time and resources need to be made available for staff to do a good job, Virtual Internships should never be added 'on top' of a busy schedule
- Balance inexperience with experience, if the project leader is managing a Virtual Internship for the first time, provide a good back-up mentor in the same institution if possible
- Involve the project leader and all key academic staff at every stage of decision-making regarding the Virtual Internship and, in particular, regarding the choice of company taking part
- Tempting as it may be, the role of faculty in a Virtual Internship is to guide and not to lead, and so every effort should be made to ensure that the finished assignment is very much the work of the students supported by faculty, and not the other way round.

5.4.2. The Role of Students

Students do the actual work of the Virtual Internship, and so need to be responsible and dedicated to the given assignments for the duration of the Internship. They will

usually work in groups and within these groups take on various roles and responsibilities. They need to be provided appropriate resources for their work, and in some cases this may need to have access to a suitable office or working space. In many of our INTERN Virtual Internships we found that this was important, and temporary resources needed to be found, as well as suitable ICT infrastructure and other tools. Students need to work in a business-like manner and be able to present themselves to potential assignment collaborators in an appropriate way, so they should be equipped with suitable letters of introduction, or other forms of introduction, from the company and their own institution in order to complete their side of the assignment.

Working effectively in groups brings its own challenges. While academic and teaching staff have an important role to play here, it is important that as far as possible groups are self-organising and self-aware. Team assessment is important and should form part of the overall evaluation of success. How well an individual works in a work-team, how various responsibilities are undertaken and managed, these are all important aspects of a Virtual Internship that need to be considered.

5.4.3. The Role of Company Representatives

Each Virtual Internship will involve one or more Company Representatives and it is worth providing some short input as to the role they should play. First of all, there should be a clear division of responsibilities amongst those involved from the company side and such division needs to be communicated to the rest of the Virtual Internship team taking part. Should the leading Company Representative have a personal assistant for example, are the students carrying out assignments in a position to ask this person for help and support? The leading Company representative does just that – they represent the company, and are the company, as far as the students and faculty taking part are concerned, and so should have cleared the necessary permissions to fulfil this role within their own internal administration. Their position is generally first of all to *define* the task to be done, providing the necessary rationale and impetus for the assessment that forms the basis of the Virtual Internship. Secondly they need to *contextualise* the assignment, placing it in the concept of their business sector and the overall commercial environment in which they work. They also need to *guide* students to a certain extent, and suggest suitable and useful pointers for the students work. They then need to *support* the student's assignment along the lines agreed in the initial Internship working agreement. Finally they need to *evaluate* and *respond* to the work carried out by the students, providing appropriate quality control and feedback to the students and faculty taking part.

5.4.4. The Role of the Administrator

It is obviously important that the administration and management of the educational institution taking part supports the idea of Virtual Internships. Having a 'champion' at senior managerial level will obviously enhance the project considerably. This will also help when it comes to dealing with administrative staff. Educational administrators are faced with a whole new situation in connection with Virtual Internships, because they may find themselves without traditional personal contact with the students and the company. This makes great demands on written communication, combined with the need for very clear procedural descriptions and the need for ensuring

comprehensive documentation for each part of the programme, which contains the Virtual Internship element.

Within INTERN we found communication between the various interested parties to be a particular administrative challenge. Issues that may have been easy to resolve where those involved worked together in the same organisation were exacerbated by distance and the lack of face-to-face communication. There is a need to ensure that clear and detailed descriptions of structure and content for the Virtual Internships are in place in connection with curricula and course descriptions Standards and requirements should be set in developing each new Internship. A teacher team, consisting of specialists, should approve any new course before it is offered. Before the start of any new course containing such Internships, structured teaching material should be prepared. In order to assure support from the educational institution, this should include a clear strategy description, as well as a very detailed description of the pedagogical strategy and where the Virtual Internship fits in. There should also be very detailed descriptions of how external sources such as access to libraries and databases can be used, as well as how they are to be financed.

The administrator is also responsible for ensuring that the necessary technology is available for the Virtual Internship project, and that the students have access to relevant software, so that the teaching process can fulfil the conditions for effective use of the system.

It is vital that extra quality control is exercised in connection with this type of teaching. This may include a sort of "shadowing" system, where someone besides the teacher has access to monitor each project and see all correspondence between students, the company and the teacher without interfering with the project. This also provides a situation where students may contact someone besides the lead teacher to lodge complaints or make suggestions for improvements.

Another important job for the administrator is to ensure that the necessary pedagogical resources are available according to a Just-in-Time principle. This can be a problem for educational systems where the teacher's position is typically divided into two parts, namely preparation and teaching. With Virtual Internships, it may be necessary to adjust this pay system and instead work according to more flexible arrangements, since a substantial part of the teacher's work would take place prior to the start of the project. During the teaching process the teacher's role will be more as consultant, according to the individual student's needs. In regard to this, it is essential that the administrator have a clear set of rules for the kind of support that students can expect from a teacher. These rules should be clearly stated at the beginning of the programme, in order to minimise any frustrations that may arise for either student or teacher.

The administrator will also be confronted with changes in the financial administration of the educational concept, since there will be a change in the cost structure. In connection with introducing the Virtual Internship concept, the most substantial part of the costs will be tied to the investments made in technological solutions. Another considerable fixed cost will be development expenditures in connection with teaching material, documentation, new review systems, changes in administrative procedures and development of new pay systems for the teachers involved.

5.5. Success Factors

We have found a number of important success factors with regard to Virtual Internships that are worth mentioning.

5.5.1. Nature of the work to be done

Every effort needs to be made to indicate how the work being undertaken is of relevance to studies, future jobs and personal interests. The degree of difficulty of the task is also important and you need to find the right balance here. Choose tasks that are achievable within the given time frame and given the allocated resources, but which also 'stretch' students' skills and abilities. How the task is introduced and explained is also important, make sure the task is shown to be serious and meaningful work and students will respond in a far more professional manner. Students are more in danger of dropping out if they perceive the content of Virtual Internship as irrelevant, or of little value in relation to their studies or personal interests. Students will also abandon the task if it is too difficult and takes too much, time or if they become frustrated trying to meet the administrative requirements; if they do not receive sufficient help or counselling, or if they do not get any feedback on their work.

One of the real success factors we identified was that students were happy that taking part in Virtual Internships generally improved their overall project management skills, they learnt about dealing with teams, meeting deadlines, activity and resource planning and generally felt more confident about the business of running clearly identifiable projects having completed their assignments. We therefore recommend that you reinforce this aspect by identifying it as a skill that can be evaluated, and improved upon, over the course of an assignment.

5.5.2. Support from Academic and Teaching Staff

Support from teachers and administration is also extremely important and we found that this aspect of a Virtual Internship was of high value to the students taking part. Finding the right level of feedback can be difficult, particularly the first time everyone takes part in such an Internship. Unlike traditional placements or Internships, where students are physically present in the company and at a distance from their educational institution, in a Virtual Internship they are usually in far more regular contact with teaching and academic staff, and so there is a temptation to support them a great deal, so try to be aware of this and find an appropriate level.

5.5.3. ICT Infrastructure

Lack of familiarity with ICT generally can limit the success of Virtual Internships and so care needs to be taken to ensure all the necessary skills are in place before the Internship begins. Each element in the recommended infrastructure needs to be of intrinsic value. For example, it is a well known that providing online chat rooms for inconsequential conversations amongst groups of people working together across borders is somewhat time–wasting, particularly if the participants haven't met each other face-to-face. So, if a tool is put in place, make sure that its use is built into the core activities of the project and not simply a 'nice-to-have' add-on. Keep the infrastructure simple and use standardised and off-the-shelf tools. It is always worth checking what the common standards are in the country with which you plan

collaborating before you begin, as there are often differences in what is considered common ICT infrastructure from country to country.

5.5.4. Intercultural opportunities

Our research has clearly shown that students identify the opportunity to work and collaborate across borders as being a very important advantage of taking part in Virtual Internships, and so the degree to which this is facilitated and encouraged can have an important influence upon the success of your Virtual Internship work. Provide plenty of support to students with regard to developing not only the language, but also the intercultural skills necessary for overcoming cross-cultural barriers, particularly where these are exacerbated by the use of ICT and your chances of success are far higher.

5.5.5. Size of Group

One very regular piece of feedback we received during the INTERN project was that the size of the group of students taking part in each Virtual Internship had a significant influence on the way the various assignments were conducted. Very often in the teaching situation, the number of students in a group has less to do with an optimum group size, as befits the task, and has more to do with other factors, like the original size of the class. As a general rule, groups should normally be between 5 and 10 students. We are convinced that it is really important to ensure that groups are not too big and that each person in a group has a clear and distinct role to play. Unlike in the Nativity Play where any amount of angels or shepherds can take part, a dedicated Virtual Internship group needs to be kept to a minimum and necessary size!

5.6. Evaluation

Virtual Internship activities need to be evaluated. Not only do you need to evaluate the performance of students taking part, but you also need to assess the overall process, with a view to making improvements to the approach for future Internships of a similar type.

The following areas ought to be covered in any process evaluation:

- Partners' skills, competencies and experiences
- Partners common values and vision about the project
- The trans-national collaborative model used in the project
- Pedagogical, organisational, and technological factors
- The relationships built up among the partners
- Structure and function of the Virtual Internship
- The quality of any Face-to-face meetings
- The quality of the Virtual meetings
- The quality of the pilot projects
- Difficulties encountered in the partnership

Evaluation might be done by a small, designated, internal evaluation group, who can be appointed by the partner institutions. The members should not be directly involved in the Virtual Internship, and should work independently of the project management group. The responsibilities of this team should be to carry out the evaluation activities, and report directly to the management team at regular intervals.

Evaluation could depend largely upon two key activities:

Firstly, decide on the distribution, collection and analysis of questionnaires that can be used to gather quantifiable information concerning the project. A questionnaire can be used at the beginning of the project to gather factual information about, for example, experience of trans-national collaboration amongst the national co-ordinators.

Secondly, interviews with key personnel can be carried out to gather information of a more qualifiable nature, e.g. the project manager can be interviewed to collect information on organisational and institutional issues.

The evaluation team should also try to record as many of the activities taking place as possible. This includes recording any audio or videoconferencing meetings to provide evaluation feedback at a later stage.

The following evaluation criteria ought to be evaluated:

- Rate of success in relation to the main objectives and targets;
- Conceptual coherence and organisational effectiveness of partnership, in particular, the partner involvement and co-operation;
- Rate of success with regard to the virtual internships including technical effectiveness and pedagogical approach

5.7. Summary

Based on our experience within INTERN, we would summarise the success factors as follows:

- Students must be competent, well-prepared and able to work independently
- Students and faculty must be prepared and committed to meet deadlines
- There must be a clear and transparent set of aims and conditions
- Students and faculty must be able to see the benefits of the Virtual Internship
- The Virtual Internship needs to be an integrated part of the curriculum
- The management at each institution taking part should support the project
- The company must be able to see the benefit of gaining new knowledge through cooperation
- The company needs to be prepared to meet its commitments
- The ICT infrastructure to be used needs to be user-friendly and appropriate to the project
- The task(s) to be completed need to be recognized as serious and meaningful work by all involved

If you, your students and partner company can fulfil these criteria you are ready for a Virtual Internship project! – Good luck!

6. Further Contacts

If you would like to know more about INTERN and Virtual Internships in general, please contact one of the following:

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