# Planning and Costing Virtual Universities

*Professor Paul Bacsich,*
*Head of the Virtual Campus Programme,[*]*
*Sheffield Hallam University, UK*

Paper presented at the Euro-Med Conference on Technology in Learning Environments; held between 25th - 27th October 1999 at <u>The Open University of Israel</u>, in Tel Aviv.

## Acknowledgements

## Introduction

The phrase "Virtual University", now so ubiquitous, is in fact only around three years old in its current usage. At a workshop on this topic at the EdMedia/EdTelecom conference in Boston in June 1996, organised at short notice by myself and Dr Robin Mason of the Open University, the room was packed out. There was a workshop on Virtual Universities at Online Educa at Berlin in November 1996 and the topic featured largely in the Sheffield conference "Flexible Learning on the Information SuperHighway" in May 1997. Since then the topic has exploded with conferences around the world featuring the concept, sometimes to the exclusion of anything else.

Recent Web searches on the phrases "Virtual University" and "Virtual Campus" generated the following numbers of hits (always treat these numbers with scepticism).

*Table 1. Popularity of "Virtual" phrases*

| Engine | Virtual university | Virtual campus |
|---|---|---|
| Alta Vista | 13,483 | 7,904 |
| Excite | 4,290 | 3,180 |
| Infoseek | 8,469 | 3,914 |
| Lycos | 196,071 | 41,227 |
| Web Crawler | 320 | 119 |
| Yahoo! | 18 | 12 |

### *What are Virtual Universities?*

There are many questions that could be asked about virtual universities. Some, more or less cynical, put to me over the last few years, include:

- How do they differ from other plans to re-engineer universities - electronic universities, telematic universities, multimedia universities, multimedia Internet universities?

- Are they an attempt by traditional campus universities to give themselves a face-lift without really changing anything?

- Or an equally feeble attempt by correspondence-based distance teaching universities to modernise their image?

- Are they the latest strategy by national governments and international agencies to avoid paying real money to solve real problems? "Never mind - you won't get a campus for the University of Loamshire - but we'll give you a Virtual Campus. Our online learning experts say that's just as good nowadays!"

- Are they just the latest hype by academics trying to justify their commitment to teaching? "I'm not just running an online course - it's part of a new Virtual University!"

- Are they a way of university vice-chancellors paying lip-service to governmental drives towards collaboration while not doing any?

- Are they a ploy by various kinds of "arriviste" colleges to bypass the normal lengthy procedures to become universities?

- In short, are they just a con-trick?

### *Examples*

There are now many examples of projects which call themselves Virtual Universities with some plausibility.

### *A few world-wide examples*

- Phoenix is perhaps the best known: http://www.phoenixonline.com/

- Spectrum Virtual University offers a wide range of courses on the Internet: http://www.vu.org/

- So does Virtual Online University: http://www.athena.edu/

- The state governors of several of the USA's Western States set up the Western Virtual University to help solve their states' industrial retraining problems: http://www.acpe.asu.edu/VirtualU/

- CyberEd is the online distance learning programme at the University of Massachusetts Dartmouth. For details see: http://www3.umassd.edu/

- CU-Online is the Online courses division of the University of Colorado: http://www.cuonline.edu/netindex.real
  They have generated a massive amount of interest in the distance learning community, in part by unequivocally describing themselves as the "world's first complete online university". They offer more than 20 courses offered in their entirety over the Internet and describe themselves as the Virtual Campus of the University of Colorado.

- Athabasca University is a "traditional" distance teaching university in Canada that has started substantial online activity: http://www.athabascau.ca/

- The World Bank have suggested an African Virtual University as the solution to Africa's higher education problems: http://www.worldbank.org/afr/connect/

## European (non-UK) examples

- The EuroPACE consortium has set up VIRTUE - a Virtual University for Europe: http://www.europace.be/report1/virtue/

- Most of the existing European open universities are beginning to go down the path of online activity. The FernUniversität has a Virtual Campus and the Dutch Open universiteit is positioning itself for the online era

- The Global Learning Network of Deutsche Telekom has for some time planned to offer university-level courses.

## UK examples

- The Open University (of the UK) does not use the name Virtual University - but it has begun to use the phrase Virtual Campus (see later for more on this term).

- The vision of the University for Industry - http://www.ufiltd.co.uk/ - originally proposed by the UK Labour Party and developed by them in government, is clearly in my view a Virtual University, but the phrase is not used by them.

- The University of Highlands and Islands - http://www.uhi.ac.uk/ - has a vision of using telematics and multimedia in conjunction with existing campuses.

- Around Glasgow the Clyde Virtual University has been active for the last few years: http://cvu.strath.ac.uk/campus.html

## Models of Virtual Universities

I detect three distinct abstract types of Virtual University:

- A "green fields", that is, "new build" university which is virtual from the start. In their era, the "mega universities" (Daniel, 1996) might have been so described. More recently in the European theatre, the UK University for Industry is the best known example, provided one takes a wide enough definition of "university" since its courses are on the whole sub-degree courses oriented to industry.

- A virtual university consortium. This is where a number of universities get together in a more or less tight organisational framework to put a "skin" of virtuality around all of them. The European Commission has directly or indirectly fostered several of these, as have national funding agencies including in the UK. Examples include:

    - EuroPACE's VIRTUE

    - US Western Governors University

    - The Clyde Virtual University.

- A "skin" on a conventional university (campus-based or distance learning-based), like the rind on an orange. This is what I call the Virtual Campus model - a centrally directed online learning initiative. There are at least 100 North American examples, such as CU-ONLINE, and many more in other parts of the world. In the UK the main examples are:

    - The Virtual Campus Programme at Sheffield Hallam University: http://www.shu.ac.uk/virtual_campus/

    - The Electronic Campus at De Montfort University: http://dld.mk.dmu.ac.uk/frame/frameset.htm

    - University of Paisley Virtual Campus project: http://www-dlu.paisley.ac.uk/. They define Virtual Campus Community as "An electronic means of communication, for the students and tutors on Distance Learning Programmes. This active communication enables the creation of a 'Virtual Campus' environment, keeping the student in touch with other students on the same course and with administrative and teaching resources and staff at the university... effective wherever in the world the student is located."

    - The University of Huddersfield site is still being developed: http://virtual.hud.ac.uk/

    - Lancaster's Virtual Campus site is at: http://polo.lancs.ac.uk/campus/. Though seemingly at an early stage, it aims to be an environment where individuals can hold both formal and informal meetings and collaboratively collect and access information. The project will create services and tools to allow people to participate in a virtual campus, together with tools to design and host their own 'virtual campuses' across the Internet.

    - There are also the beginnings of centrally-directed or at least centrally-coordinated online learning activities in about 10 more UK universities. Note that most UK universities now have some form of online learning, but often just small pockets of activity run out of one or two departments by a few enthusiasts (Ash and Bacsich, 1999) - the analogy is more like pimples on an apple skin than a Jaffa orange rind.

    - Virtual Universities run by non-university organisations. This would require a separate paper to describe. One example will do:

    - The MODEM (Multimedia Optimisation and Demonstration for Education in Microelectronics) Virtual Campus: http://nmrc.ucc.ie/modem/. One objective of MODEM is to develop a European wide infrastructure and organisation, which will

support education and training in microelectronics:
http://nmrc.ucc.ie/modem/virtcamp.html. The MODEM delivery platform will support a very flexible organisation of distance and in-campus learning of different microelectronics courses.

In terms of operationally deployed Virtual Universities, they will not come from these four categories equally.

- There are not likely to be many new-build Virtual Universities in Europe. The age of new-build mega-universities is over (Daniel, 1996); the few examples like the UK University for Industry are much admired but little copied.

- University consortia seem to have inbuilt difficulties which militate against breakthrough. I feel that it helps if the consortium is led or extensively influenced by a telecom or major software supplier - such as the Global Learning Network may become under Deutsche Telekom's guidance. Microsoft have ambitions in this sector, while Sun, Oracle and Hewlett Packard have shown interest in it from time to time; and indeed Microsoft have just announced an interesting alliance with MIT.

- The orange skin model is the most likely, with activity coming from two subsectors but not on the whole coming from a third:

    - The stronger and/or more far-seeing of the open universities who see their traditional market slipping away - examples include Open University, Athabasca, and perhaps the FernUniversität.

    - Mid-level but reasonably wealthy state (US) or city (UK) universities with a strong interest and capability in data communications - it is in that sense no surprise that the University of Colorado has made a strong showing.

    - The research-led universities (Russell Group, Coimbra Group, Universitas 21) are in my view unlikely to make a serious showing in the short term:

        - They are not hungry enough.

        - They are too oriented to research rather than teaching.

        - They do not understand that research (exciting) is not needed, whereas implementation (boring) is; and how little money (relatively speaking in terms of a large university budget) is required to make a splash.

## *Dimensions of Virtuality*

Virtuality in a university is in my view a matter of degree, not kind. At the EdMedia workshop in Summer 1996 in Boston I proposed "five dimensions of virtuality", and to these five I more recently added a sixth (at Online Educa 96):

- To what extent are students not physically present on campus?

- To what extent are staff used in non-conventional modes and contracts? (Part-timers, consultants, teleworkers, etc.)

- To what extent is computer and network support out-sourced?

- To what extent has physical infrastructure begun to be reduced?

- To what extent has the legal and institutional strength been reduced? (By use of devolution, consortia, ad-hoc collaborations, etc.)

- To what extent has the degree structure begun to dissolve into ever-smaller modules studied in an ever more flexible pattern?

In the spirit of modern physics, each of these dimensions has its own sub-dimensions. So for example, dimension 2 might split into the areas of teaching staff, administrative staff and research staff. In The Open University, teaching staff are considerably outsourced, administrative staff hardly at all.

Dimension 3 splits neatly into computer and network support - and network support sub-splits into Local Area and Wide Area. In most universities in Europe, Wide Area Network support is outsourced largely to the national academic Internet provider. The Open University is unique in having its own dial-up national network. (But in the US, this is more common.) Computing support in UK universities is often outsourced at the hardware maintenance level but not (yet) for the other sub-sub-dimension of software support.

The other dimensions could also be split up.

It is an interesting exercise to classify some of the institutions referred to earlier in terms of the dimensions of virtuality. These scores below were done in November 1996 by participants at Online Educa - it will be an interesting exercise to see whether my audience here feels that the indicators have changed.

*Table 2. Dimensions of Virtuality*

| Name | Students | Staff | Network | Buildings | Legal | Modules |
|---|---|---|---|---|---|---|
| Sheffield Hallam Univ. | 2 | 2 | 6 | 1 | 1 | 7 |
| Open University (UK) | 9 | 6 | 4 | 5 | 2 | 7 |
| Dutch OU | 9 | 7 | 5 | 3 | 3 | 7 |
| FernUniversitat | 9 | 8 | 4 | 4 | 3 | 7 |
| African Virtual Univ. | 5 | 5 | 7 | 5 | 7 | 3 |
| Univ. of Highlands & Islands | 5 | 5 | 7 | 5 | 7 | 7 |
| Virtual Online Univ. | 10 | 7 | 9 | 9 | 1 | 8 |
| CyberEd | 10 | 3 | 9 | 9 | 4 | 7 |
| CU-Online | 10 | 3 | 9 | 9 | 4 | 7 |
| Global Learning Network | 9 | 9 | 4 | 7 | 7 | 5 |
| Athabasca Univ. | 9 | 6 | 9 | 9 | 2 | 7 |

Remember that a high score means "very virtual", a low score means "very concrete". Thus at my own university, Sheffield Hallam University, most students are campus-based, but a significant percentage (40% in my Faculty, less in others) are not.

### Why go virtual?

The main reason for a university to start going down the "virtual path" is to respond to a set of challenges facing many universities in the developed world. These challenges include:

- a decrease in government grants

- increased competition - from other universities, from non-university colleges, and in the distance teaching sector, from universities outside the home country

- a perceived reduction in the relative value of the qualifications

- a desire to escape from the restrictions of the undergraduate programme into new markets

- an alleviation to staff morale problems by giving staff a new challenge.

One of the prime motivators is the desire to escape into new markets. These markets fall into four categories:

- Masters degrees are increasingly popular, because fees can be more realistic - not just the MBA and in computer science, but in a wide range of areas including the topic of distance education itself.

- Non-degree courses for local firms are of interest, although in some universities there is a degree of snobbery about such courses.

- Distance education is spreading fast - open universities face competition in many areas from other universities, many of whom can take a more minimalist and pragmatic approach than the (by now) "traditional" open universities can.

- World-wide education is the dream of several organisations, but remains hard to achieve in reality; forays into Europe from the US have been less successful than expected - cultural and language barriers are still strong - but the rate of attack is increasing. Several of these market sectors can be attacked only by going virtual, others can be facilitated by going virtual.

In my view, the main reason to go virtual should not be to cut costs - cutting costs is necessary but it should be a consequence of re-engineering the process of teaching in universities, not its prime focus.

### Should all universities go virtual?

Going virtual (or a little bit virtual) is a logical consequence of re-engineering the teaching process. In such a re-engineering it is more than likely that elements of outsourcing, de-layering and the other normal consequences of re-engineering will take place. Thus I think that all universities will go some way along the virtual dimensions. Those interested in world-wide presence will go further along the dimensions - in some cases much further. For more

information on implementing virtual universities see for example (Bacsich, 1998) but that is not the subject of this paper.

## Costing of virtual universities

Recently we have completed a 6-month UK study funded by JISC investigating the Costs of Networked Learning, with specific focus on "Hidden Costs". The aim was to produce a planning document and financial schema which would accurately record the costs of Online Learning and aid the planning of such courses. In this paper we adapt the model to the case of Virtual Universities. The main adaptation is that Virtual Universities and Virtual Campuses are *large-scale centrally-directed* implementations of Online Learning.

This work builds on many strands of earlier work including work for the EU under a CCAM study in the early 1990s. For more details on this work, especially the methodology, see the Web site: http://www.shu.ac.uk/virtual_campus/cnl/

## Financial Schema

Our report proposed (Bacsich et al, 1999) a Financial Schema as follows:

- It can operate at the level of a whole university; a department or faculty; a course; or a unit (module) within a course.

- It takes account of the costs incurred (or saved) by the additional stakeholders in the learning process other than the university - in other words, it does not treat the university as a closed system. The three Primary Stakeholders are the University, Staff and Students.

- It is based on Activity Based Costing, now increasingly common in industry (Cokins, 1996). Our approach follows KPMG (1997) work, with modifications in the light of Flashlight (Ehrmann Delinger et al, 1999) and the distance education theorists, especially Rumble (1997).

- It takes account of the division of academic time into Research, Teaching and Other (including administration). There are some detailed issues on classification but in general terms we recommend following the guidelines from KPMG (1997) and JCPSG (1999b).

- It takes account of the Activities *within* the course development process and proposes a model for these, the 3-three-phase model, if there is no existing model relevant. The 3-three-phase Course Life Cycle model involves all stakeholders. (See the next section for this.)

- It is flexible in terms of allocation of overheads, with an orientation to overheads based on actual usage rather than estimation.

- It requires some kind of recording of academic effort spent on activities. JCPSG (1999b) and the results of our survey outline some of the problems with this.

## The Course Life Cycle model

A Virtual University will be running, sooner or later, a large number of online learning courses. We believe that in order to cost and plan these, a uniform course life cycle model is needed. We recommend the adoption of the following 3-three-phase model:

- Planning & Development

- Production & Delivery

- Maintenance & Evaluation.

This model evolved after much hard work and discussion on the number and sub-components of phases. It has been checked against the educational literature including Bates (1995) and Daniel (1996) and some test scenarios. It follows classic course planning frameworks from the distance education sector but also incorporates in a more visible way than usual in such literature the need for Quality Assurance and Course Maintenance.

Table 3 gives an example of the model as it applies to a Virtual Campus course. The scenario is taken from the project's Final Report (Bacsich et al, 1999).

*Table 3. Sensing a gap in the market, now that many Arts graduates (e.g. at the BBC) have PCs and are on the Internet, Dr Carter at the University of Rother Bridge has got approval to mount a totally online course on Post-Deconstructionism as part of her new distance learning MA on "Radical Philosophies".*

| Phase | Types of task |
| --- | --- |
| Planning & Development | Read the latest works on the topic, listen to a new radio series, create lecture notes, set essay topics. Adapt her own research articles on "deconstructing gender - where next?" to be suitable to final year students. Put all this on the course Web site. Ask the Computing Service to set up a Bulletin Board System. (They want to charge for doing this. She refuses, citing the departmental overhead.) |
| Production & Delivery | Make more material available on Web, such as topical items on Philosophy, moderate discussion groups online, receive and mark essays sent in by email. Set up "real" office hours for those students who live nearby. |
| Maintenance & Evaluation | Students want some "synchronous" online events; so must get technician to find out about RealAudio and record some lectures for next year. Also worried about the new OU global course in this area; how can she differentiate her course? (What about her students at the BBC?) Can she write something about this in a journal and count it for the next RAE? |

### The Planning Process

Our planning process for Virtual Universities starts not from the distance education literature but from a literature strand thought mainly oriented to planning university buildings! HEFCE (1999) has recently looked again at the planning process, in the HEFCE Guide 99/21 of March 1999, "Appraising Investment Decisions". The key to its wider applicability is in a quote from the introduction to the document:

It sets out a framework for the appraisal process which institutions can use for all kinds of decision making. The details may vary but the same principles apply across a whole range of

decisions. They are as valid for a decision about setting up a new course as for one about property options, and institutions can tailor the process to suit their individual circumstances.

What the HEFCE document lacks is the *educational* framework. We recommend that this is added from the authoritative ACTIONS methodological work of Bates (199x1995).

To summarise, instead of trying, as several have done, to rewrite educators' attempts at course planning in planners' language, we propose to rewrite planners' attempts at planning in educators' language. This has the additional advantage in that as decisions about Networked Learning begin to impact on the Estates Strategy (e.g. by substituting home-based learning for lecturing or by providing video lecturing to remote sites), at least both sides of the debate will speak the same language.

## *HEFCE planning with educational modifications*

In the next few paragraphs we outline our approach.

The following steps are the main steps in the appraisal process.

- Define the objectives.

- Consider the options.

- Identify, quantify and where possible value the costs, benefits, risks and uncertainties associated with each option.

- Analyse the information.

- Present the results.

This process should be done at least twice: first for an outline business case, then refining the most plausible of the options into a full business case.

Establishing the outline business case is broken down as follows. After each point we make some brief remarks which are our interpretations of the key points to consider - for these we follow the Bates approach.

**Define the objectives**:

*Identify the need or problem.*
What is the learning need? Where can it be satisfied (campus, home, workplace)?

*Consider the strategic context.*
Consider the CIT strategy, Technology Strategy, the **T**eaching and Learning strategy, the Estates strategy (especially if there is a move to reduce or change the type of accommodation needed for teaching), and other relevant policy documents.

*Decide objectives.*
What is the *content* - learning activities which the course will be expected to provide, and the *context* - the facilities or services needed to carry out these activities? What are the time, cost and quality aspects? Do not over-specify these (with CIT).

**Identify the options**.
Consider a wide range of options, including the "do nothing" option. Be open-minded and rethink university teaching (Laurillard, 1993), change organisational aspects (Bates, 1995), or even re-engineer (Bacsich, 1998).

**Assess outline costs and benefits**.
This is the point to consider the other stakeholders. What are the costs to students? Are you making assumptions about staff overtime or staff use of their own equipment? The Institution may be getting funds for the course from an outside agency - what are their views?

**Analyse the information**:

*Select a preferred solution.*
Make sure that it is viable - there is no point in recommending the "best of a bad lot".

*Initial assessment of affordability.*
The preferred solution may be unaffordable, and the second-best should be considered.

**Present the results**.
Each Institution has its own procedure for "signing off" a course.

Developing a full business case involves the following additional aspects:

- *Confirm assumptions of outline business case.*
  The parameters might have changed just because of the passage of time. In particular, many more students might now have Internet access.

- *Consider procurement routes.*
  It may be that consultant writers should be hired or specialist content bought in, rather than just hiring more academic staff.

- *Assess financing options.*
  This is especially important if the expenditure reaches a "risky" fraction of the departmental budget.

- *Reassess and select preferred solution.*
  Risk and uncertainty analysis should be carried out, especially if **N**ovelty of technology is an issue (Bates).

## *Valuing risk and handling uncertainty*

Risk analysis can be handled by standard techniques. Uncertainty analysis is also crucial - one should test the effects of altering key assumptions by sensitivity analysis. There are many obscurities in the educational process. Some topical examples under the Bates themes are:

- **A**ccess - how many students have good Internet connections?

- **C**osts - What would you like to write in here??

- **T**eaching and Learning - how effective, in detail, are new methods? (The literature is full of controversy - the "no significant difference" issue.)

- **I**nteraction - how well will students learn a new Web-based email system?

- **O**rganisational - can our Computing Service really move to 24x7 working to support students in all time zones for a global course?

- **N**ovelty - is streaming video really going to work well enough to be educationally effective?

- **S**peed - and how soon will it work, soon enough for our course to thrive financially as well as educationally?

### An appraisal checklist

We have reworked Annex C of the HEFCE report into the language of teaching and learning as follows:

*Specifying the objectives*

- How does this appraisal relate to the strategic aims of the department?

- Is the teaching and learning requirement clearly defined?

- Are the objectives supported by a strategic plan?

*Identifying the options*

- Has a sufficiently wide range of options been considered?

- Has the 'do nothing' or 'do minimum' option been explicitly considered?

- Have all realistic procurement options been appraised (including innovative forms of procurement such as buy-in of content, use of consultant writers)?

*Valuing costs, benefits, timing, risks and uncertainties*

- Has account been taken of all the direct costs and benefits accruing to the department?

- Are there any wider considerations?

- Have all relevant costs, income streams and benefits (over the life of the project) been included?

- Has allowance been made for running costs over the life of the course?

- In particular, have course maintenance (including running update) costs over the life of the course been taken into account?

- Does the appraisal take account of assets that are already owned (opportunity costs)?

- Is there any double-counting of costs and benefits?

- What allowance has been made for non-financial aspects?

- Have uncertainties in key assumptions been identified and tested?

- Have risks been assessed and valued?

*Assessing affordability*

- Has the impact on the department's overall financial position been assessed?

- Can the department accept the best and worst case scenarios?

*Presentation of results*

- How does the chosen option compare with the alternatives?

- Are the results set out clearly, in an appraisal report, in a logical order and with all relevant assumptions made clear?

- Are tables available showing the details of costs and benefits for all options?

- Do they show the effects of risks?

- Do they show the influence of sensitivities?

- Is the overall financial impact clear?

*Monitoring and evaluation*

- Is provision made for monitoring project performance?

- Are proposals included in the appraisal report for evaluating the project and its performance once implemented?

- Is the timescale for evaluation defined?

## A worked example on planning a Virtual University programme

In the interests of space, we have given this worked example in narrative form - however, it covers most of the issues raised by our Planning Framework.

---

The University of Rother Bridge is concerned to ensure that it makes a good impact on its local region. Regional development is now high on the local agenda. The University has a thriving Department of Regional Development, but most of its work has been done in far-away regions including outside the UK. The local region has identified a shortage of regional development experts.

**Idea: Develop a Masters programme in Regional Development!**

---

*Define the objectives*

To teach a Masters Programme in Regional Development oriented to students in the region. The strategic context is clear: this is consistent with university and departmental strategy. The department has the expertise.

*Consider the options*

The crucial option choice is: Full-time or part-time?

*Identify, quantify and where possible value the costs, benefits, risks and uncertainties associated with each option*

The following conclusions come from market research with current employers. Students going straight from a first degree through a full-time Masters will be regarded in the region as "wet behind the ears". Releasing existing regional development staff for a 1-year full-time course is unfeasible - there are already staff shortages in the region. Thus it must be a part-time course. Employers will pay, something, towards a suitable course for their staff.

*Analyse the information*

Find out the numbers of potential students in the region. Is it as high as regional enthusiasts say it is?

*Present the results*

The outline business plan recommends a part-time Masters course oriented to staff currently in employment in the region. Doing nothing is not an option - there is a high risk that the university in the adjacent region will fulfil the need.

*Full business case*

The sub-options to consider are the *mode* of part-time course. These include:

- Day-release

- Evening class

- Weekend courses

- Distance learning, workplace-based

- Distance learning, home-based.

Mode 1 is a non-starter. Mode 5 seems boring - they have too many books and reports to read already. Mode 2 looks promising until department staff analyse the lifestyle of potential students - the region is too dispersed and potential students have too much travel in the week and too many late meetings. Modes 3 and 4 look the best. Mode 4 fits the EU agenda; but starts to fall foul of the chaotic and stressful nature of office life and PC usage in the typical regional development department. Mode 3 seems the best choice but is not popular with the students or their families (they want to relax at the weekends). Mode 3 is not popular with the academic staff until they realise that a suitable package can be negotiated for weekend working including the

feature that teaching hours can be "burned off" quickly, leaving more weeks free for research. Mode 5 is revisited - a pedagogic expert is brought in and suggests that the course is constructed to be experience- and evidence-based, concentrating on the kind of books and reports that such staff have to master anyway, and using online group discussion over the Internet.

In the end, for pedagogic reasons, the course is articulated as mixed mode (Modes 5 and 3) - with minor elements of Mode 4 added for political reasons (including attracting funding).

Market research establishes that many potential students, including those most interested in the course, have PC and Internet at home - some for family reasons, others because they use them for work. It is decided that such a constituency will form the initial basis for the course. (It was accepted with reluctance that some students would thus be left out, at least initially.) There was some student reluctance to use the Internet even more than they do already. (There was no cable operator in the region offering really cheap Internet telephone calls.) However, it was pointed out that unlike many other students doing distance education, students on this course would not incur any travel costs or travel time, other than for the occasional weekend events. Unusually, quite a lot of the online learning work is planned to be oriented to the weekends, rather than the evenings (due to the lifestyle of potential students).

There was a brief flurry of technology-driven interest in using videoconferencing on the course, which died away when market research showed that none of the main employers for potential students had videoconferencing systems.

The staff position is considered. Is the course likely to impact on staff own time and resources? The time element at weekends has been negotiated - but it is realised that staff will have to teach online in the evenings and this is added to contact hours allocations in the work plan (Rother Bridge is a post-1992 university).

The staff *resource* element has so far been ignored (not unusually). It is agreed that the core staff teaching on-line on the course will be loaned a PC to use at home, or a laptop to use while travelling (if they have a PC at home). Since laptops have been in traditional short supply in the department, this scheme seems to motivate staff.

The debate now moves to the amount of online material that must be created. Is the course to be in the popular Open University tradition of being resource-rich, allowing less online teaching? Or will it be teaching-rich? Lobbying from the Multimedia Centre is resisted, on the grounds that the development costs for multimedia material would be a large fraction of the departmental non-staff budget - too risky. There is also the **S**peed issue to be considered - multimedia is felt to take too long to develop and this course has to be delivered soon to hit the EU regional agenda. The compromise chosen is to make the course material Web-based, professionally but not over-excitingly designed. Staff hours to develop content are allocated, on a "pseudo-contact hours" basis (using a tradition taken from some other departments at Rother Bridge who have developed print-based distance learning for some years).

An argument builds up about teaching hours. One of the staff works part-time for the Open University and is aware of the issue that online teaching is said to take more time than face to face. The Head of Department agrees to put in a "fudge factor" of 1.2 compared with the face to face system (staff asked for 1.5). This is easily covered from the income projections for the course.

The plan also assumes external consultants are brought in to do the course Web design and to train staff to teach online. This is the first course that the Department has taught online, so this is regarded as an acceptable once-off cost. Provided that the course enrolments are as predicted (40 in the first year), this start-up cost can be absorbed.

There are some other minor costs for software licenses but not significant in the business plan. There is an argument with the Computer Centre over what exactly the departmental overhead charged by them entitles the department to.

Endless discussions take place about whether subsidies to students should be built into the business plan. (EU funding rules allow a course oriented to "minorities" to attract subsidies in some cases.) In the end it is decided to ignore such subsidies for the purposes of the business plan, thus regarding any such subsidy as a bonus.

The initial budget for the course assumed that the course would run unchanged for 5 years. After consulting with potential students and their employers, it became clear that the course material would go out of date much more quickly - thus the final budget assumed that 25% of the course material would be rewritten each year.

Non-financial benefits of the course are seen as:

- Contributing to the university's involvement with the region.

- Pushing forward the university's lifelong learning agenda (while quietly making an operating surplus on the course).

- Protecting the university's reputation as an innovator.

- Maintaining the university's reputation for *relevant* research since the department's research results can now be deployed in service of the region.

The presentation of the results is written up in the approved format. Spreadsheets are included but are not allowed to dominate the report. A PowerPoint presentation of the business and educational case is also produced by the course team for use at course planning and regional meetings.

## *Conclusions*

In the first half of this paper I have described, with examples, the concept of Virtual University and the related concept of Virtual Campus, and given some means of analysing such systems. The second half of paper describes how to plan and manage the costings aspects of a Virtual University.

## *References*

Ash, C. and Bacsich, P. (1999), **UK Higher Education Institutions - How Flexible, How Virtual, How Soon?**, Paper presented at Online Educa 1999.

Bacsich, P. (1998), **Re-Engineering the Campus - the view after one year. Did the theory work?**, Proceedings of the 4th Hong Kong Web symposium.

Bacsich, P., Ash, C., Boniwell, K., Kaplan, L., Mardell, J., and Caven-Atack, A. (1999), **The Costs of Networked Learning**, Sheffield: Sheffield Hallam University.[†]

Bates, A.W. (1995), **Technology, Open Learning and Distance Education**, New York: Routledge.

Cokins, G. (1996), **Activity-Based Cost Management - Making it Work**, New York: McGraw-Hill.

Daniel, J.S. (1996), **Mega-Universities and Knowledge Media - Technology Strategies for Higher Education**, London: Kogan Page.

Delinger, L., Ehrmann, S.C., Delinger, L., and Milam, J.H. (1999), **Flashlight Cost Analysis Handbook Version 1.0: Modeling Resource Use in Teaching and Learning with Technology**, Washington: AAHE.

HEFCE (1999), **Appraising Investment Decisions**, HEFCE Guide 99/21, March 1999, Bristol: HEFCE.

JCPSG (1999a), **Costing and Pricing for Decision Makers in Higher Education: User Guide**, Bristol: HEFCE.

JCPSG (1999b), **Transparency Review of Research**, July 1999, Bristol: HEFCE.

JISC (1999), **Costs of Networked Learning**, Bristol: JISC.

KPMG Management Consulting and Joint Funding Councils (1997), **Management Information for Decision Making: Costing Guidelines for Higher Education Institutions**, Bristol: HEFCE.

Laurillard, D. (1993), **Rethinking University Teaching: A framework for the effective use of educational technology**, London: Routledge.

Rumble, G. (1997), **The Costs and Economics of Open and Distance Learning**, London: Kogan Page.

---

[*] (Added in 2022) Paul is now Managing Director of Matic Media Ltd and CEO of Dualversity, an alliance of e-learning consultants

[†] (Added in 2022) Paul Bacsich can be contacted at paul@matic-media.co.uk