

Recommendations for robust and sustainable large-scale e-learning

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The following is a list of 34 recommendations for robust and sustainable provision of large-scale e-learning. This list of recommendations is based on:

1. The 25 factors proposed in the analyses of 26 megaproviders of e-learning in Europe
2. The two additional factors that were suggested by the analysis of the 26 megaproviders
3. The seven factors that were suggested through the analysis of the 10 e-learning initiatives that did not reach targeted goals

The recommendations are listed below and explained in more detail in the following.

Recommendations based on the 25 factors proposed in the analyses

1. Learn from institutions with a long history and tradition of dealing with distance education;
2. Build high competence and tradition in online education;
3. Focus on evolutionary step-by-step development and scalability;
4. Promote continuing research and evaluation related to online education;
5. Develop high competence in information and communication technology (ICT);
6. Use standard and widely-used technologies; widely-used technologies enable students to apply the software and hardware they have at their disposal with little need to buy and install additional equipment;
7. Acquire well integrated ICT systems that support online education;
8. Develop effective administrative systems;
9. Provide a wide range of subjects and levels that are attractive to students and lead to employment;
10. Select a wise choice of topics, courses, and programs that are onlineable;
11. Weigh the potential benefits of flexible start-up and progression against the advantages of being able to work with stable groups in virtual classrooms;
12. Focus on asynchronous communication. Students' time flexibility leads to asynchronous communication and little focus on synchronous communication technologies;
13. Make sure to receive support from top management;
14. Attract enthusiastic employees who believe in online education;
15. Develop strategies that support online education and make sure that the employees are loyal to the strategy;
16. Focus on quality;
17. Develop effective administrative routines;
18. Focus on predictable and manageable teacher workload;
19. Consider collaboration with other educational institutions;
20. Strive for high formal and informal credibility with the government and public administration;

21. Establish some sort of industrialization such as division of labour, systemization, automation, rationalization, and work flow management;
22. Focus on cost-effective courses that give much learning for the money;
23. Secure stable and predictable sources of income from operation of online education;
24. Utilize the pressure on the necessity to change as a means to be flexible, to stay in business and to adapt to the changing market;
25. Prefer contracts with part-time tutors and course developers that allow flexible employment and use of staff to adapt to changes in markets;

Recommendations based on additional factors

26. Develop high competence and good practice in marketing;
27. Treasure well known brand names;

Recommendations derived from discontinued initiatives

28. Realize that hard-nosed market research is essential for the success of any e-learning initiative;
29. Plan carefully for and control carefully the revenue and expenses. Seeding funding dries up quickly;
30. Choice of courses and their accreditation is crucial;
31. Define precisely the relationships of your initiative to existing providers and define precisely the institutional model you will adopt;
32. Plan carefully to manage both educational and business activities;
33. Avoid top-down political and boardroom initiatives;
34. Avoid consortia of institutions that compete with each other and the consortium.

Recommendations based on the 25 factors proposed in the analyses

The analyses confirmed that 23 of the 25 factors are important for the megaproviders. However, the analyses do not confirm that Factor 1: “Long history” and factor 11: “Flexible student start-up and progression” are important for the megaproviders. However, the factors are included but the corresponding recommendations are rephrased.

Robust, sustainable, large-scale e-learning should, when possible, be based on the following set of recommendations:

Institutional recommendations

Recommendation 1: Robust, sustainable, large-scale e-learning should, when possible, be based on learning from institutions with a long history and tradition of dealing with distance education.

The wording of recommendation 1 of the *Megatrends in e-learning provision* project had to be changed during the course of the project. The original wording ‘Robust, sustainable, large-scale e-learning should be based on a long history of online/ distance/ flexible education’ was not fully supported by the data collected during the project. The data collected during the project was grouped into three clusters: (i) Open universities and distance education institutions, (ii) Universities and colleges including consortia, (iii) Corporate training providers. The support for the original wording amongst (i) Open universities and distance education institutions, was good. Amongst (ii) Universities and colleges including consortia it was patchy as many face-to-face universities and colleges considered they had achieved the

status of Megaprovider of e-learning without passing through ‘a long history in distance education’. The original wording was not supported by (iii) Corporate training providers, most of whom, like Learn Direct and CrossKnowledge were recent foundations, founded specifically as e-learning specialists and had no distance education background. The new wording, as presented above, can be accepted by all. This is because there is a world of difference between traditional, conventional education and training provision in which students are educated in groups in school classrooms, university lecture rooms, laboratories or training centres, and distance education or e-learning in which the student is usually separated from the teacher, lecturer or trainer and also from the learning group. The skills and strategies for this form of provision were first worked out in the field of distance education and these decisions benefit the field of e-learning too.

Recommendation 2: Robust, sustainable, large-scale e-learning should, when possible, be based on building high competence and tradition in online education.

This criterion was established from the responses of the Megaproviders to the question ‘how has competence in e-learning developed in your institution and how has it contributed to your success?’

Competence in online education is a fundamental prerequisite for success in e-learning. It is not a characteristic that would have been prevalent in universities as recently as 20 years ago, although, at that time, many universities were leaders in the use of educational technology. For e-learning, competence is required in the educational use of the internet and, more specifically the World Wide Web. Skills in the design of learning materials for the World Wide Web have to be learned, strategies for the mentoring and tutoring of students via the internet have to be developed, the usage of Learning Management Systems (LMSs) or Virtual Learning Environments (VLEs) has to be mastered. Nine different strategies for developing competence in e-learning can be identified amongst the Megaproviders. These are:

- The creation of an expert centre to develop institutional competence
- Uneven development with some departments leading others
- Research and development in the field of e-learning
- Hiring of e-learning experts
- Adapting distance education competence to e-learning
- The influence of a few keen advocates
- Competence developed on the job, by doing it
- Funding internal e-learning projects
- Assistance of technical professionals and provision of courses for staff.

Recommendation 3: Robust, sustainable, large-scale e-learning should, when possible, be based on focusing on evolutionary step-by-step development and scalability.

This criterion was built up by the Megaproviders’ answers to the question: ‘has the development of e-learning competence in your institution been abrupt or would you describe it more as a gradual step-by-step process?’ Nearly all the institutions accept this criterion and promote the concept that successful e-learning provision, that is robust and sustainable, is the result of evolutionary development. The main objector is CrossKnowledge, which went abruptly from 0 to 250.000 students in 5 years. Development at Learn Direct, which today has 500.000 students, must also have been rapid. Again four different patterns in dealing with this criterion can be identified:

- Development of competence in e-learning has been gradual and step-by-step (70 % of institutions)
- Development of competence in e-learning was gradual but accelerated by executive decisions and official documents (2 institutions)
- Special developments (2 institutions)
- Development has been abrupt (2 institutions).

Recommendation 4: Robust, sustainable, large-scale e-learning should, when possible, be based on promoting continuing research and evaluation related to online education.

It is clear that all the Megaproviders have developed policies and procedures for the evaluation of their e-learning processes, their e-learning course materials, their e-learning enrolments and their e-learning success. E-learning research and the publication of e-learning research are less well developed in some institutions.

The replies are mixed and can be grouped in 5 categories:

- Solid research and publishing (5 institutions)
- Mainly evaluation (11 institutions)
- External evaluation (1 institution)
- Evaluation without research (1 institution)
- No link between e-learning practice and research practice (1 institution).

Technical recommendations

Recommendation 5: Develop high competence in information and communication technology (ICT).

ICT competence is important for the megaproviders, but obviously, the ICT competence varies among different groups of staff. Tartu and UKOU for example distinguish between tutor competence and staff competence. The rating does however indicate that the perceived ICT competence is regarded as higher in the Distance Education institutions (4.3) and the corporate training providers (4.4) than in the universities, colleges and consortia (3.8).

The distance education providers report that they have technical staff with high ICT competence. Other groups of staff have the competence they need to conduct their work. NKI, UOC, OUNL and OUUK seem to have especially high ICT competence, which may be due to much internal development of ICT systems for e-learning.

Among the universities, colleges and consortia HiST, BI and ULPG seem to have relatively high ICT competence related to e-learning. The consortia are special since they draw on the cumulative ICT competence of its member universities. The remaining institutions seem to be rather vague regarding ICT competence, which may indicate that e-learning is just one of many issues related to ICT competencies in several of these institutions.

All corporate training providers report that they have high competence in ICT. Learn Direct has 100 people with high expertise in ICT. CrossKnowledge brings together a strong blend of competences in order to address the whole e-learning value chain and integrate the different IT components. At EDHE, there is an ICT culture that is spread by the e-learning courses and

services. ELOGOS has solid experience in the use of technology, and Hungarian Telecom has an E-Team with very high ICT competence.

Recommendation 6: Use standard and widely-used technologies; widely-used technologies enable students to apply the software and hardware they have at their disposal with little need to buy and install additional equipment.

The institutions seem to agree that it is important to apply widely used technology as far as possible. Standard PC equipment with an Internet connection and a browser seem to be a common requirement. Some courses or applications (such as for example video conferencing) may however require broadband access and special software to be installed on the PC.

All the distance education providers clearly state that they rely on widely used technologies that students can use without buying additional hardware and software. However, some of the institutions report that in certain specific courses, special software is necessary, and some experiments with the newest technologies are made.

The universities, colleges and consortia also clearly state that it is important that e-learning is based on widely used technologies. Several of them emphasize that the solutions do not require any additional expenses for the students. HiST states that the software used in the courses can be downloaded from the Internet for free.

The corporate training providers also state that their courses are based on open standards and that the students don't need to purchase any specific hardware or software.

Recommendation 7: Acquire well integrated ICT systems that support online education.

The integration between the learning management system and the student administration system seems to be a crucial issue. The integration with other systems is also significant. The answers confirm that well integrated ICT systems are important for the institutions success, and that many institutions want better integration.

The distance education providers NKI, UOC and UNED claim to have well integrated ICT systems and that this has been a critical factor for the success of the online courses. It is especially interesting to note that NKI and UOC in more detail have described the integration of their internally developed online education solutions. The remaining distance education institutions report that they want better integrated ICT systems to become more effective and efficient.

Among the universities, colleges and consortia, the University of Ulster, ULPGC and BI report that they have well integrated systems. The remaining institutions indicate that the systems can be better integrated and provides various examples of this. The two consortia rely on each individual member's ICT systems and do not provide any central integration.

The corporate training providers CrossKnowledge and Hungarian Telecom report to have well integrated systems. Learn Direct states that integration is good, but that they focus more on robustness and scalability.

Recommendation 8: Develop effective administrative systems.

The rating indicates that the corporate training providers (4.0) and the distance education institutions (3.8) have better administrative systems for e-learning than the universities, colleges and consortia (3.1).

The main technical issues related to the administrative systems seem to be how well they are integrated and how efficient they are. All types of institutions seem to focus on the necessity of systems integration and many of the institutions want improved systems integration.

The distance education providers seem to be most satisfied with the systems integration, and the corporate training providers seem to have the clearest focus on effective systems that are highly automated and deliver new courses quickly and efficiently.

The universities and colleges seem to have a special challenge since their administrative systems and routines often depend on systems that first of all have to suit the universities' traditional students. This is well illustrated by this statement from HiST when it had to adapt to the university system:

Integrated technical systems allowed the institution to run operations with a high degree of efficiency and this was an important factor for sustainability. Now the institution is experiencing the flip side of this. The integrated systems have been abandoned and replaced with less efficient (and not integrated) systems designed for on campus operations. This has led to loss of efficiency and may threaten survival of the large scale operations.

The consortia have a special challenge related to systems integrations since the member institutions often depend on their own systems and are not interested in integration with an consortium system.

Course recommendations

Recommendation 9: Provide a wide range of subjects and levels that are attractive to students and lead to employment.

The results of the survey do not permit any strong statement being drawn about the importance of a wide range of subjects and levels offered to the students. Those megaproviders that do offer a wide range of subjects consider it as an important factor – score of 4.0. Those that do not offer an expansive range of different subjects only give an average score of 2.6 to this factor. In both cases we are talking about successful large-scale e-learning initiatives.

The clear common ground that can be found among most of the interviewed institutions is the convenience to choose subjects and levels according to existing market demands and popularity. Therefore it is recommendable that subjects and levels should be chosen after a thorough analysis of the educational needs of the society, the possibility of attracting a large number of clients and clear opportunities of knowledge transfer into the labour market.

Recommendation 10: Select a wise choice of topics, courses and programs that are onlineable.

The analysis has shown that there is no common understanding about the onlineability of topics. Rather, we can observe a very particular view of the institution regarding the possibilities and limitations virtuality gives, depending on the specific context they are operating in. Put in another way, we can say that the online character of education does not have a clear influence on the choice of subjects or topics. Or even in a more drastic way: The concept of “onlineability” turned out to be quite subjective and its interpretation depends on the experiences, competences and expertise of each institution.

Therefore the recommendation would be to choose those topics, courses and programs the institution feels comfortable enough with to face all the possible problems that can arise while offering them online under reasonable parameters of quality. Consider adapting the pedagogical approach to the special requirements of every subject and even consider forms of blended learning if face-to-face episodes do not seem to be avoidable.

Recommendation 11: Weigh the potential benefits of flexible start-up and progression against the advantages of being able to work with stable groups in virtual classrooms.

The results of the survey show that flexibility in start-up and progression is not considered a key concept in e-learning provision. In fact, the factor received the lowest score of all 25 factors. It became clear that fixed timetables and dates, apart from being compulsory in many institutions and countries and closely linked to university organisation and policies, seem to contribute a better learning management by the students and to better possibilities of organising group work, collaboration and social learning. The concept of flexibility is widely seen in a different way: it is the independence of space and concrete timetables of physical attendance that seems to be a much more important factor than the absence of fixed starting dates and a generally structured progression. It is therefore recommendable to weigh the potential benefits of flexible start-up and progression, and the advantages being able to work with stable groups in virtual classrooms.

Recommendation 12: Focus on asynchronous communication. Students’ time flexibility leads to asynchronous communication and little focus on synchronous communication technologies.

The findings indicate that the vast majority of institutions consider asynchronous communication to be the best way of providing significant and effective learning scenarios in a virtual environment. The new ICT have made distance education communicative in the sense that fluent collaboration and social learning is possible. The recommendation is to take advantage of these new possibilities and this clear improvement in distance education. Asynchronicity allows for communication without being tied to fixed time schedules as with synchronous communication that forces students to commit to be present at certain times in chats or similar environments. The recommendation is to offer flexibility within the possibility of communicating and collaborating with peers.

It is also a recommendation not to rely on the apparent attraction of synchronous communication tools. What seems to be an opportunity of reproducing face-to-face dynamics in a virtual environment (questioned by many, anyway), does not seem to find the support amongst the students themselves. Many of the interviewed institutions claimed that, even

when offered, synchronous communication environments were rarely frequented by the users, whom clearly favoured the possibilities of communicating in an asynchronous way.

Management, strategy and attitude recommendations

Recommendation 13: Robust, sustainable and large-scale e-learning initiatives should make sure to receive support from their top management.

This factor has received the highest scores for being important in the consideration of the institution's success in management, and second most important factor overall. In the discontinued activities this factor did not seem to be so important. Where the management support was lacking and the success of e-learning megaprovision was the result of the teachers' and students' efforts (a more bottom-up approach), it was clearly indicated that the leadership's support would have strengthened or accelerated the process of online education development. Where managerial support was present, its role and importance was firmly reflected in the answers.

There is a considerable difference between the managerial attitudes at institutions that were transferring their former traditional education to online and those who already had distance educational experience (either as their main profile or just on course- or educational module level). The top management seemed much more reserved from and critical about e-learning at institutions that did not have practice in any form of open, flexible and distance education. The ones that already had know-how about distance teaching, were not so dubious about the potentials of online education

Private institutions are much more autonomic in decision making; therefore the support coming from the leadership was usually more positive and more common in this cluster. Public institutions, even if they are well known and successful, tend to be less independent and more bureaucratic in managerial decision making.

Recommendation 14: Enthusiastic employees who believe in online education are key robustness and sustainability factors of successful large-scale e-learning initiatives.

One of the predictable results of our survey was the nature and extent of competences of different groups of successful e-learning megaproviders' staff. It has been noted repeatedly how important an overall positive attitude is and that is often subject to appropriate competences and at least some basic knowledge about e-learning. Without these the practice of online education may suffer serious consequences. If the teachers were reluctant to follow ICT development and use modern technology in their teaching, this would be just as detrimental as the lack of technological or managerial support.

Here as well, we can see different general phenomena at traditional-to-online and distance-to-online educational institutions. Usually, when the transition is from traditional to online, staff training and development is a must. Traditional teachers are often resistant to integrate ICT use into their educational practice and have difficulties adapting to the new requirements of their institutions. In case this inability manifests in negative teacher attitudes, the institution has to provide motivation for the teachers to change or – in the worst case – replace them with competent and more enthusiastic employees in order to safeguard the institution's route towards successful e-learning (mega)provision, as several interviewees suggest.

Recommendation 15: Robust and sustainable e-learning initiatives should have strategies that support online education to be and remain successful.

This factor was one of the bottlenecks, and reached high rank in importance both at successful institutions and at discontinued activities, as many of the interviewees, especially those who were rather involved with teaching or technological support, could not always tell much about overall institutional strategies. Even if they existed, sometimes they have not been read thoroughly or the documents were confidential, or recently released. However, those circa 8 strategies that are introduced in more detail have provided us with useful information and, we believe, they could serve as good benchmarks for institutions willing to improve their online education by introducing new strategy elements.

The most highlighted aspects of the online education strategies in most cases are:

- the digitalization of course material,
- the development of standardized LMSs and administrative systems,
- provision of suitable technological support and maintenance of ICT infrastructure,
- the ideal combination of learner centred, teacher (or institution) centred and technology centred models,
- supply education on demand and just in time and
- cost efficiency.

Recommendation 16: Focus on quality.

Quality is one of the most important key considerations for success in all types of education, let it be traditional, distance or online. Perhaps that is the reason why this was the survey's most unanimously answered question. Apart from one negative answer, stating that success is not measurable by quality assessment, every institution listed several practical ways of their evaluation procedures.

Quality may apply to education in many ways. It can mean the quality of course content and its delivery, the competences of the teaching staff or the quality of learning administration systems. The responses suggest that the longer the history, the more hands-on experience the institutions have.

Recommendation 17: Effectiveness of administrative routines is a key success factor for e-learning providers.

The importance of this question is over average, in the combined analysis of success, and for discontinued activities it is the third most important factor.

Looking at the issue in greater detail it can be seen that institutions which are dedicated to DE, organisations that are either public or private, are stating that effective administration is very important. In these two segments the questions are mostly answered and the responses provide professional evidence for the differences between the two institution types. Detailed answers suggest that in case of dedicated DE institutions effective administration means effective and integrated LMS systems with well defined workflow. This system is designed and built to the purpose, and institutions allocate important resources to it. It is also observable, that those systems are constantly maintained, analysed and monitored by the management. In other terms: student administration, in case of corporate on-line training

providers and dedicated on-line providers, must have been a new and challenging task in the organisation and all who are successful nowadays have done it well, using much effort in time, energy and finance. We may look at effective administration as a very important factor to success.

Recommendation 18: Robust and sustainable e-learning initiatives should be able to predict and manage teacher/tutor workloads.

This factor was important to megaproviders, but did not reach the top categories. The answers were quite homogeneous; however we may observe some differences. Institutions answered differently to questions according to their background. Having analysed this, we observed that teacher workload may be considered on both the course design and on the tuition side. Those institutions, at which these procedures are separated, answered in a different way while higher educational institutions may have combined the two in their answers. Some respondents interpreted the question only by the first or the second possible type of workload.

Looking at the institution types, DE institutions ranked the importance of workload the highest, as in their routine no other type of activity can balance the possible overload of teachers. We may observe that at this type of institution the activities are treated by clearly separating the different types of workload and look at different tasks as designed and observable activities.

Recommendation 19: Collaboration with other educational institutions can safeguard the success and sustainability of e-learning providers' initiatives.

Collaboration seems an important factor for megaprovision, however, it is not the hottest issue in the average of all types of institutions. This moderate figure can be split into two categories: Dedicated distance educational institutions and traditional higher education institutions rated the importance to the success as near average, while private e-learning providers ranked this factor as very important to reach success.

In private organizations, collaboration is ranked much more important for the business success. Cooperation is vital for private institutions to reach the market through traditional brands, and “labels” so that they may offer blended learning as well. Cooperation is also an element for sharing experiences and to become global. Private institutions see important human resources in collaboration. This is the only cost effective way for them to access the appropriate number and quality of training and teaching staff. This fact can be derived from their business models: Most of them specialize to develop and offer only a part of the course where staff has to be employed full time, e.g. course design, interactive course material and LMS software. Other parts in e-learning provision, e.g. academic input and delivery of human support must be outsourced, for example via institutional cooperation with traditional teaching and training bodies. This element is reinforced by the fact that e-learning models shift slowly from pure online access to more substantial human support services under the umbrella term: blended learning. Another important element of cooperation for private institutions, apart from fund raising, is capital accumulation (joint ventures).

Recommendation 20: High credibility with the government can often be a success factor for sustainable and robust e-learning provision.

Credibility is clearly one of the most important factors among the 25 success factors. Government credibility is one of the top five factors, and this is not segmented in the three types of institutions, however the real reasons for that are slightly different. On the other hand this factor was not of great importance in most of the discontinued activities.

In many cases the respondents did not distinguish between credibility and governmental funding. In those cases, low level of funding or other administrative issues indicated to respondents a lower level of importance in credibility. In other cases credibility was clearly distinguished from administrative and funding issues.

As the education system in the EU is mainly the responsibility of governments, most of the respondents reported the importance of credibility to government as high. This may have related directly in case of public institutions or indirectly by private institutions. In case of private institutions, respondents related business or market success not only as credibility to customers, but also as credibility to governments. In many cases, the market itself is also financed and influenced by governments.

Recommendation 21: Some sort of industrialization is important to consider for successful e-learning provision.

This factor showed a very similar pattern (concerning success factors) of importance rate as factor number 17: Effective administrative routines. This may suggest that the interpretation was common of the two questions, however this latter contrasted more the differences.

The pattern showed that for traditional universities industrialisation is not vital, however important. In handling large numbers they see a large number of tools to handle the problem. HE institutions, where tuition is delivered in several forms and models, industrialisation seems to play a less important role than at DE and private institutions.

DE and private megaproviders ranked industrialisation as a very important element of their success and it was more explicit as the above mentioned “Effective administrative routines”. This formulation of the question caused less confusion and reached the “ring the bell” effect. All private institutions ranked this factor very high and the most common element was the robust LMS and IT system background. At this segment of providers industrialisation and engineering is rather a positive label, while at HE those two factors tends to be negative.

Economical recommendations

Recommendation 22: Focus on cost-effective courses that give much learning for the money.

Cost-effectiveness is the single most important factor in the combined analysis for both successful megaproviders and discontinued initiatives. On the other hand, this does not prevent an institution from being a large-scale e-learning provider by putting less emphasis on this issue. However, it must be noted that the latter applies to large universities which do not depend on profit from its online initiatives. It appears that the key aspect here is to aim towards keeping the running costs of the courses as low as possible and at the same time strive for maximum number of students attending each course.

Recommendation 23: Secure stable and predictable sources of income from operation of online education.

This factor rated as the second most essential in the analysis. The importance is more evident with distance teaching institutions and corporate training providers, but not so much with universities and colleges. The main recommendations here are to foresee and react quickly to possible changes in the market needs and have a large variety of courses on offer in different subject fields. However, external variables that are more difficult to identify and influence can have a stronger impact on this factor. These include, for example, possible policy changes at the governmental level.

Recommendation 24: Utilize the pressure on the necessity to change as a mean to be flexible, to stay in business and to adapt to the changing market.

The importance of this factor is relatively high when it comes to successful institutions, but is rated significantly lower regarding discontinued initiatives. Megaproviders have definitely experienced at least some sort of market pressure as opposed to failures that in some cases did not even reach the implementation phase. Evidently, two main aspects are identified. Firstly, optimal flexibility can be achieved by paying attention to technical issues: scalability of systems and ability to adapt to fast and extensive changes. Secondly, the swiftness of organisational procedures and decision-making processes in regard to management, communication, roles and responsibilities.

Recommendation 25: Prefer contracts with part-time tutors and course developers that allow flexible employment and use of staff to adapt to changes in markets.

Flexible employment of staff ranked as the fourth important factor in the combined analysis for both successful megaproviders and discontinued initiatives. However, the term “flexible employment” has several different interpretations. Full-time contracts for 2-3 years are deemed flexible by a number of traditional universities, as opposed to employing staff only for particular programmes. One common recommendation deriving from the analysis is to strive towards flexible employment schemes, increasing the number of part-time personnel and being able to scale the number of employees up or down quickly depending on the actual need and popularity of different programmes that are offered.

Recommendations based on additional factors

The analysis implies that additional factors are not without importance for the larger picture. For some of the institutions, the additional factors are also listed among the five most important factors. For these institutions, the additional factors are clearly more important than many of the 25 hypothesised factors. However, it should be noted that most of the factors are mentioned by only one institution. Therefore, it is not possible with the present data to evaluate whether the additional factors are generally more important than many of the originally postulated factors, or whether this is limited to a small number of the institutions that have been examined.

Marketing and branding were additional factors which were identified as important for several of the megaproviders. This leads to the following two additional recommendations:

Recommendation 26: Develop high competence and good practice in marketing.

Marketing is emphasised as an additional success factor by NKS and Learn Direct. NKS states that good marketing is clearly vital for student recruitment. NKS therefore continuously work with marketing strategy, in particular searching for the best media to advertise in and claims that this has changed substantially during recent years. Learn Direct explains that it advertises online, on news programmes and TV.

Recommendation 27: Treasure well known brand names.

The importance of branding is highlighted by Learn Direct, BI, and Scuola. Learn Direct perceives its brand as vital for success, and its marketing people are retail brand people. BI has a well known brand in Norway and many of the students are adults who know the institution well. Scuola also believe that its mother institution's prestige and good reputation has contributed strongly to its success.

Recommendations derived from discontinued initiatives

Recommendation 28: Hard-nosed market research is essential for the success of any e-learning initiative.

This criterion was built up from the 10 case studies of e-learning initiatives which failed to reach targeted goals. It is, nevertheless, applicable to all e-learning initiatives. Totally unrealistic enrolment projections characterise nearly all the initiatives which failed to reach targeted goals. Many of these initiatives were promoted by institutions of the highest prestige. The British Government put up €93.000.000 for the UKeU, but hard-nosed market research was conspicuously lacking. Enrolment targets of 500.000 were bandied about for initiatives that in fact enrolled only a few thousand students at most. This applies to the Alliance for Lifelong Learning sponsored by Stanford, Oxford, Yale and Princeton Universities. It applies to the Scottish Interactive University, sponsored by the Government of Scotland and Heriot-Watt University. The case study presented in the Megatrends project of the British initiative Learn Direct (sic) shows that an e-learning institution can, in fact, enrol 500.000 students. This case study should be analysed with precision by all those contemplating the foundation of an e-learning initiative.

Recommendation 29: E-learning initiatives should plan carefully for and control carefully their revenue and expenses. Seeding funding dries up quickly.

The evidence from the case studies is that few, if any, of the initiatives that failed to reach targeted goals, controlled carefully their revenue and expenses. Most of them underestimated the costs of producing quality e-learning materials, most of them failed to budget for the costs of updating the e-learning materials on a regular basis, most of them failed accurately to count the costs of servicing the students enrolled in their programmes. A worrying pattern emerges from nearly all the case studies presented with regard to seeding funding. Stage 1 is that seeding funding, often generous, is provided by government, sponsors or industry. Stage 2 is that the seeding funding is quickly used up. Stage 3 is that further seeding funding is applied for. Stage 4 is that this further funding is refused. Stage 5 is that the institution is closed down; demonstrating graphically that the institution had not planned carefully to control revenue and expenses.

Recommendation 30: Choice of courses and their accreditation is crucial.

The choice of courses for an e-learning initiative needs to be made with care. The Alliance for Lifelong Learning was refused the prestigious degrees of Stanford, Oxford, Princeton and Yale for their clientele and collapsed and failed as a result. Its offering of general interest courses like 'The poetry of World War I' was also a failure and demonstrated that there was no market for such offerings. The Næringslivets Kompetansenett (NKN) failure demonstrated that citizens are not students, and that workers are not students, and that the Norwegian government's ideal of developing competence throughout society by e-learning was not shared by workers. In general, the choice of courses for these systems needs to focus on qualifications which enable a worker to progress to the next level of his or her profession, or to focus on a qualification that is essential for a worker to hold on to his or her job, and not face retrenchment. The accreditation of courseware for e-learning is also crucial and should not be taken for granted, especially if the courses are to be offered overseas. The Open University of the United Kingdom was rightly proud of its distance education degrees and of the courseware for these degrees which was admired worldwide. It failed, however, to get these courses accredited at university level in the United States of America for its United States Open University, which was therefore closed down before the lengthy application period for accreditation was completed.

Recommendation 31: It is important that those planning e-learning initiatives should define precisely the relationships of their initiative to existing providers and define precisely the institutional model they will adopt.

It has been pointed out a number of times in the *Megatrends* studies that a number of the initiatives which failed to reach targeted goals were competitors for enrolments with existing providers and, in some cases, were even competitors for enrolments with their own sponsoring institutions. The UKeU was a competitor for students with the Open University of the United Kingdom and with other British universities who had worked hard at building up distance education clienteles overseas. The Bedriftsuniversitetet in Norway was in competition for students with the powerful Norwegian institutions that founded it. The institutional model of the California Virtual University was unstable, as the consortia establishing it refused to release to it sufficient educational roles to make it viable. The 21 universities and colleges who founded and managed Scottish Knowledge again created an unviable institutional structure.

Recommendation 32: E-learning initiatives should plan carefully to manage both their educational and business activities.

E-learning initiatives should plan carefully for both their educational and business activities and adopt a management structure which allows both to be managed successfully. Bacsich has said that an e-university must be both a university and a business and that it is difficult to do both well. The British Government Parliamentary Committee criticised the management of the UkeU for behaving like a business and not like an educational management team. ITFK was criticised by Norwegian educationists as being redundant to educational needs and founded by businessmen who knew little about education. In all the case studies presented by the *Megatrends* project on e-learning initiatives which failed to reach targeted goals, one can see evidence of failure of educational management or business management or both.

Recommendation 33: Avoid top-down political and boardroom initiatives.

Many governmental online education initiatives have not been sustainable. These initiatives are often very visible and expensive. One reason for the problems might be inconsistent policy due to changing governments and political disagreements. Compromises and lack of market knowledge may also contribute to sub-optimal decisions as indicated in these examples described by Paulsen (2003a):

Winix was an LMS system that the Norwegian Ministry of Education initiated in 1988. According to a 1994 article in *Computerworld Norway*⁴, the Office of the Auditor General (*Riksrevisjonen*) showed that the project spent more than € 10 million in the nineties. In 1992, it was clear that the project had failed. The software was not finished on time, and several companies that depended on *Winix* lost much money.

The Danish Ministries of Education and Research initiated a *Danish Virtual University* in a mission statement on March 27, 2000. The € 5 million budget for the period 2000-2003 was intended to support the development of Web-based courses and provide information about the courses. The next government shut down the initiative, partly as a result of lacking support from the affected institutions. The only remaining result seems to be a portal providing information about further and continuing education (www.unev.dk) that was initiated by the *Danish University Rectors' Conference* and scheduled to open in August 2003.

The Megatrends project has studied some political initiatives in more detail. A short introduction of them is provided in the following:

The UK e-University was launched in February 2000 by the Secretary of State for Education who appointed the UK Government's Higher Education Funding Council for England to take charge of the project. The project was effectively wound up in 2005 after spending £50 million of public money but having succeeded only in attracting 900 students.

IT Fornebu Knowation was a result of the controversial political decision to establish a world-class research and development center for information and communication technology when the old Oslo International Airport was shut down in 1998. The project was the subject of continual political and bureaucratic quarrelling. Some critics claimed that the project's main objective was to secure valuable real estate properties in an attractive area. The center needed educational enterprises and IT Fornebu Knowation was a key player to attract educational activity. A number of video-conference studios were located and planned around the country. The opponents of the project claimed that the selected technology and locations were chosen to get the necessary support from local members of parliament. The company experienced a difficult economic situation, and has more or less disappeared after several reorganizations and mergers.

The Competence Network of Norwegian Business and Industry (Næringslivets Kompetansenett (NKN)). NKN (www.nkn.no) was a commercial company established in August 2000. It was owned by the Confederation of Norwegian Business and Industry (www.nho.no), the Norwegian Confederation of Trade Unions, and Telenor, which is the largest telecommunication company in Norway. The powerful owner institutions wanted to show their vigour and dedication to supporting further and continuing education in the workforce. The dot-com hype also helped the initiation of NKN. It was primarily a provider of LMS services to companies (customers) in collaboration with course and content providers (partners). But NKN was never able to cover its costs and the shareholders lost nearly € 10

million. To avoid the bad publicity of a bankruptcy, the owners decided to pay off the creditors with about € 1 million and to sell NKN to the CEO for a symbolic sum in 2002.

The Scottish Interactive University was started in Scotland on 15 October 2002 and was closed four years later on 17 April 2007. It was born as Scottish Knowledge collapsed, and Heriot-Watt University and the Scottish Enterprise development agency of the Government of Scotland were the major promoters of this consortium of Scottish universities.

Recommendation 34: Avoid consortia of institutions that compete with each other and the consortium.

Online education consortia are often not sustainable. It is easy to find good reasons for collaboration between educational institutions, but in real life individuals and institutions usually are much more committed to themselves than to the consortium. In general, one may suspect that a consortium of prestigious institutions hardly can be whole-hearted. A relatively weak external consortium secretariat could easily be overlooked or opposed by powerful factions within the institutions. There is also a chance that individual institutes, departments, and even institutions could compete with the consortium in bids for external contracts. This is obviously not a viable environment for a consortium.

The following consortia are studied in the project:

The Alliance for Lifelong Learning was established on 28 September 2000. It was founded by the four prestigious universities: Stanford University from California, USA, Oxford University from Oxford, England, Yale University of New Haven, Connecticut, USA and Princeton University of New Jersey, USA. Princeton withdrew after a few months. The alliance ceased activities in late 2005 and was officially closed in March 2006. The budget was \$12M, and it is clear that the initiative failed since only 600 enrolled.

Bedriftsuniversitetet (www.bedriftsuniversitetet.no) was a consortium established as a company in 2000 by four prestigious Norwegian institutions: the University of Oslo, Norwegian University of Science and Technology, Norwegian School of Management, and the SINTEF research institute. The aim was to offer both traditional education and e-learning to corporations and organizations. In April 2003, the general assembly decided to shut down the operation. A message posted at Bedriftsuniversitetet's homepage referred to a decreasing market for tailor-made competency building at the college and university level, and stated that there was no basis for continuation of a company at the costs a consortium requires.

California Virtual University (CVU) was a high profile venture with a dismal history. It was launched in April 1997 as a joint project of the University of California, California State University, California Community Colleges and the Association of Independent California Colleges and Universities. In April 1999, Stephen Downes wrote an interesting analysis claiming that the CVU dream lay in ruins. In his analysis¹, he stated: "While on the one hand this is just another story of an unprofitable enterprise biting the dust, on the other hand it is a story of wider impact because CVU was seen in some quarters as a model for the future. The failure will affect online learning in general, and the reasons for the collapse attributed to weaknesses in the medium as a whole".

¹ www.newstrolls.com/news/dev/downes/column041499.htm

Scottish Knowledge was a short-lived partnership between Scotland's 21 higher education colleges and universities which offered online courses and distance education courses to students around the world. It was founded in 1997 and closed in 2002. It had offices in the United Arab Emirates, Malaysia, the USA and in Edinburgh, Scotland.

Additional comments on selection of courses

Going through the list of recommendations, one may argue that four of the recommendations are related to making wise decisions about which courses to provide. These recommendations are:

9: Provide a wide range of subjects and levels that are attractive to students and lead to employment.

10: Select a wise choice of topics, courses and programs that are onlineable.

28: Hard-nosed market research is essential for the success of any e-learning initiative.

30: Choice of courses and their accreditation is crucial.

This may imply that it is especially important to pay extra attention to which courses that should be offered as e-learning.