

Important Factors for Robustness and Sustainability in Online Education

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October 2006

Successful online education should be robust and sustainable. It is therefore of great concern that too much of the online education that has been offered so far has been transient, unsuccessful and far from sustainable. Several examples of online education initiatives that have not been robust and sustainable are described in the article *Online Education Obituaries* (Paulsen 2003a). The examples are organized according to the following statements:

1. Many governmental online education initiatives have not been sustainable
2. Online education consortia are often not sustainable
3. Many commercial and investor-driven online education initiatives have failed
4. Boardroom initiatives often fail
5. Several high profile international ventures have been discontinued because of an unhealthy economy

The Megatrends project took its name from the article *A Personal View on Future Online Education* (Paulsen 2003c). This article argues that the current megatrend shows clearly that online education is shifting from small-scale experiments to large-scale, mainstream operation.

Online education initiatives that are not robust and sustainable might be acceptable in small-scale experiments, but not in large-scale mainstream operations. Therefore, it is important to identify factors that contribute to robustness and sustainability in online education.

The author's first attempt to identify some factors of robustness and sustainability was through case studies of NKI Distance Education (Paulsen and Rekkedal 2001, Paulsen 2003b). In these case studies, the following twelve reasons for the NKI Success were suggested.

1. NKI is an institution with high competence in both distance education and information technology. Both competencies have been pivotal for the development of online education.
2. Some NKI enthusiasts have always believed in online education and over many years made invaluable contributions to the Internet College.
3. NKI has been careful to only adopt standard and widely-used technology. This practice enables students to apply the software and hardware they have at their disposal with little need to buy additional equipment.
4. Students' time flexibility has always been a focal point for NKI. It has been committed to asynchronous communication and deliberately avoided synchronous communication technologies. Communication should take place when it suits the student, not the institution.
5. After some years experience with paced courses starting twice a year, NKI made a strategic choice to focus on individual start-up and progression. The choice was based on student surveys, much internal discussion, and pilot courses that showed increasing

enrollment. Hence, NKI students may start a course whenever they want and follow their individual pace of progression.

6. Tuition fees pay for development and operation of NKI courses, so NKI has to provide cost-effective courses. The focus is on much learning for the money.
7. The Department of Research and Development has conducted continuous research and evaluation of online education, and has accumulated knowledge and competence in online education. In addition, the Department has conducted or participated in a number of R&D projects financed externally by Norwegian and European governmental sources.
8. NKI is flexible, with little rigidity compared to public colleges. It has a number of times shown that it is capable of rapid adjustment. The employees have shown the ability to detect new trends and adapt to the changing market. This may be due to the fact that NKI has continuous enrollment and therefore experiences changes in market demands earlier than institutions that offer enrolment only once or twice a year.
9. NKI covers a wide range of subjects and levels. It is not dependent on having in-house competence in all subject areas; it has a long tradition of collaboration with other educational institutions and engaging faculty from other institutions to participate in the development and teaching of courses.
10. NKI has over many years developed high credibility with the government and public administration. It has been committed to achieving approval for public credits, certificates, and student loans.
11. NKI has chosen not to separate the Internet College from the Department of Distance Education. It has deliberately chosen to gradually enhance the online education competence for all employees in the Distance Education Department.
12. NKI has continuously focused on evolutionary development of the Internet College and the administrative systems that support it. Consequently, NKI has had more effective administrative systems than its competitors and at the same time people with high competence on these systems.

The hypothesis of the Megatrends project is that it is possible to detect specific conditions that increase the possibility of success and sustainability of e-learning programmes. Sustainability is defined as programmes being offered on a continuous basis and not phased out after a defined project period or after specific subsidies are terminated. The work undertaken within the partnership in the project application hence suggested that important factors for robustness and sustainability were:

1. high competence in both distance education and information technology;
2. enthusiastic employees who believe firmly in online education;
3. standard and widely-used technologies;
4. widely-used technologies enable students to apply the software and hardware they have at their disposal with little need to buy additional equipment;
5. individual student start-up and progression;
6. cost-effective courses (much learning for the money);
7. continuous research and evaluation;
8. flexibility to adapt to the changing market;
9. wide range of subjects and levels;
10. collaboration with other educational institutions;
11. high credibility with the government and public administration;
12. evolutionary development and effective administrative systems.

These factors were discussed and refined at the Megatrends project partner meeting in Barcelona, April 19 2006 and finalized at the project partner meeting in Budapest, September 26 2006, according to the experiences with the first case studies.

The final list of factors is sorted so that related factors are grouped together as 5 contextual and 25 institutional factors. The institutional factors are further organized under the following headings:

- Historical factors
- Technical issues
- Course issues
- Management, strategy and attitudes
- Economy issues

The project partners expected that the factors could be hard to measure. They were therefore transformed to a set of interview questions that is being used as a template interview guide. In that way, the list of factors will be used in the interview guide and as hypotheses in the further analyses of the mega providers.

The project aims at writing about 25 cases studies of European Megaproviders of online education based on the interview guide. The project partners then intend to analyse the case studies according to the matrix model presented below. One side of the matrix is institutional clusters and the other factors from the interview guide

	Distance education	Higher education - traditional	Vocational training
Historical context			
Technical issues			
Course issues			
Management etc			
Economy issues			

The remaining part of this document presents the complete list of criteria and the corresponding list of questions for the interview guide.

Criteria and Interview Guide for Case Descriptions

Contextual factors

1. Market size (depending on country population, language used)
2. Market readiness (penetration, technology infrastructure, broadband availability) to use online technology (differences between countries)
3. Target group acceptance of e-learning (preference, reputation, legislation?)
4. Digital literacy in population
5. National policy (national funding schemes)

Institutional factors

Historical context

1. long history (tradition) of dealing with distance education
2. high competence (tradition) in distance education,
3. evolutionary (step-by-step) development (scalability)
4. continuing research and evaluation related to online education;

Technical issues

5. high competence (qualitative appraisal) in information and communication technology (ICT);
6. based on standard and widely-used technologies; widely-used technologies enables students to apply the software and hardware they have at their disposal with little need to buy and install additional equipment;
7. well integrated ICT systems that support online education;
8. effective administrative systems

Course issues

9. wide range of subjects and levels (attractive to students and lead to employment);
10. wise choice of topics, courses, and programs that are onlineable.
11. flexible student start-up and progression (needs to be explained) (individual start up not permitted if you want a degree in some countries);
12. students' time flexibility leads to asynchronous communication and little focus on synchronous communication technologies;

Management, strategy and attitudes

13. support from top management;
14. enthusiastic employees who believe in online education (little resistance);
15. strategies that support online education and employees that are loyal to the strategy;
16. focus (strategy, control, management) on quality;
17. effective administrative routines;
18. focus on predictable and manageable teacher workload;
19. collaboration with other educational institutions;

20. high credibility (formal and informal) with the government and public administration;
21. some sort of industrialization (division of labour, systemization, automation, rationalization, work flow management, check Otto Peters descriptors).

Economy issues

22. cost-effective courses (much learning for the money);
23. stable and predictable sources of income from operation of online education;
24. pressure on the necessity to change to stay in business and flexibility to adapt to the changing market;
25. contracts with part-time tutors and course developers (Better wording: flexible employment and use of staff to adapt to changes in markets);

Interview guide for case studies in the Megatrends project

In this interview guide the terms “e-learning” and “online education” is used interchangeably.

Contextual factors

Please provide relevant information about:

1. Market size (depending on country population, language used)
2. Market readiness (penetration, technology infrastructure, broadband availability) to use online technology (differences between countries)
3. Target group acceptance of online education (preference, reputation, legislation?)
4. Digital literacy in population
5. National policy (national funding schemes)

Institutional factors

Historical context

1. How would you describe the history of online education in your institution?
2. How has competence in online education developed in your institution and how has it contributed to your success?
3. Has this development been abrupt or would you describe it more as a gradual step-by-step process)?
4. How has online education been followed up by evaluation and research and how has this contributed to your success?

Technical issues

5. How would you describe competence in information and communication technology in your institution?
6. To which extent are e-learning courses in your institution based on widely used technologies that can be taken into use by students without requiring them to buy additional hardware or software? (in addition to what they have from before)
7. How would you describe the integration between different IT-systems that are involved in e-learning in your institution? How has this contributed to your success?
8. What are the strengths and weaknesses of your e-learning administrative systems (from enrolment through delivery to certification)?

Course issues

9. Which types of subjects are covered by online education in your institution and what is the relative importance of different subjects?
10. How would you describe the “onlineability” of the subjects your institution has chosen for e-learning?
11. Do the online courses provided by your institution have flexible start-up and progression?
12. What is the role or importance of synchronous and asynchronous communication between students and teachers and among students themselves?

Management, strategy and attitudes

13. How would you describe involvement from the institution leadership in terms of being supportive, and how has this been important for success?
14. How would you describe the attitudes of the different groups of staff towards online teaching? How has this affected your success?
15. Does your institution have a strategy for online education? If yes, what is (briefly) the content of the strategy and how is it followed up by employees in your organisation?
16. How does your institution deal with quality issues related to online education and has quality contributed to success?
17. How would you describe the effectiveness of your administrative routines in online education?
18. To which extent do teachers involved in online education have predictable and manageable workloads?
19. To which extent does your institution collaborate with other educational institutions and how has this affected success?
20. How would you describe the credibility of your institution (both formal and informal) with the government and public administration and how has this been an important criterion for success?
21. How are you able to handle the large number of online courses and students?

Economy issues

22. How would you describe the cost-effectiveness of online education in your institution? How has cost-effectiveness affected success?
23. To which extent is income from operation of online education stable and predictable?
24. To which extent does your institution experience pressure to be flexible to be able to adapt to a changing market?
25. To which extent does your institution apply a strategy of flexible employment and use staff to adapt to changes in markets?

Additional factors

26. What other factors have contributed to sustainability, robustness and the achievement of critical mass in your institution?

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