(Technical) Development of E-learning Systems

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Abstract – The experience with e-learning modules, maybe in business or private, gets more important than ever. But not everyone knows the historical development of these systems. Especially the early beginning and the present are one of the most interesting parts in e-learning history. As quick as it all began as quick it went down to reach a new high period - like a roller coaster travel.

E-learning is a difficult instrument which has to be learned with the right methods.

I. THE BEGINNING OF “E-LEARNING”  
(1960 – 1980)

In the 60’s the first types of teaching machines were developed while instructional film became more creative and broadened its reach to children in school. Everything that technology allowed was brought to film – a kind of e-learning was born.

The slow development really began with some computer based trainings in the early 70s limited on drill-and-practice methods with only a few application types. But one of the main problems was the lack of motivation of students because it was a new way of learning without trainers or teachers and the technical equipment at this time wasn’t highly developed. Computers and Internet were standing in child-shoes and at that time nobody had any idea of virtual group-working, interactive multimedia-tools or applications to communicate all over the world.

Here we stand at the problem, how to motivate people to use such programs and methods and make it more interesting and rentable for them.
To sell film as an e-learning method couldn’t be the perfect solution. Students may see the way to a result of an exercise but there is no possibility to try it out in an interactive way. Something else has to be developed.

II. FIRST REAL E-LEARNING STEPS  
(1980 – 2000)

A. Television as a part of e-learning

Until the 1980s computers and learning machines weren’t cheap yet. Only some institutes or organizations had some of these instruments and enough money to purchase them. In the early 80’s – the beginning of constructionalistic thoughts – the experiments with e-learning modules became more attractive. Although films aren’t the best way for e-learning, television came as a learning delivery method again. There wasn’t an (cheap) alternative. Many schools invested much money in learning-video-tapes, a kind of self-study mechanism which was used until the middle of the 90s! Children sat in classrooms while looking some – for a part – boring documentation films. It was the interactive part that was missing and made it boring.

Because the expense was too great and the delivery of the information too dry, there were only a few successes. Television as an technical instrument for e-learning is a good addition to other methods but not suitable as a stand-alone-product.

B. Computer Based Training

In the middle of the 80s the computer industry was developed so far, that first customer-computers were profitable and shipped to the “common citizens”.

It was the learners’ need for interactivity that steered learning professionals towards computer-based-training (CBT).

The increase of computers in home and business use opened a new world of learning methods. And in the 90’s of the last century the technical development was at a point where first multimedia learning tools were ready for customers and internet began its conquest course around the world.

E-learning modules, as we know them today, were developed in the beginning of the 90’s. It was the time where Internet began to reach people all over the world.

Mainly Drill-and-Practice Programs for basic-knowledge of languages, simulations for learning of some special practices or interactive learning-tools for
self-study were part of these new e-learning modules. The Graphical User Interface made it more interesting and more varied and Internet reachable to all parts in the world for the first time. The industry noticed quick that internet will be the easiest and most efficient way to offer e-learning.

C. Internet – the new media

Millions were invested in creating content for online delivery and hundreds of e-learning related companies were formed - a new market gap was seen. The main thought was that people get detailed step-by-step instructions and support as they attempt to perform a task in the simulation of their live system or learning content. The result should be faster learning and a higher level of retention and confidence in the end-users' ability. But one thought wasn’t considered by these companies – “how can we make our e-learning methods interesting and useful for customers?”

That’s why numerous e-learning providers have gone out of business, consolidated or radically changed their business direction. In fact e-learning has almost become a dirty word, an unmentionable associated with lost investments, lost companies and lost jobs. [3]

There are several reasons for the crash of e-learning and the missing usage of the content: [4]

1. People didn’t use it
   People have missed to accept the new way of learning and there was too much – maybe too uninteresting – offer
   Especially older people have no purchase to e-learning.

2. People didn’t learn from it
   e-learning often was miss-interpreted. It was online-text or online-documents. Just the fact that it is “online” it doesn’t make it an e-learning content

3. “IT” was overpriced
   Organizations saw very little return of their investments why changing contents often was very expensive.
   Not to forget that many people can not afford personal computers that have the technical requirements to use the e-learning material.

4. it was over-hyped
   nearly every organization and institution “must have” a kind of e-learning function.

There is a really interesting figure that shows the “e-learning hype cycle” from the mid-nineties to the present day (Fig. 1) [4]

![E-Learning Hype Cycle](http://www.e-learningguru.com/articles/hype1_1.htm)
III. E-LEARNING NOW (2000 -)

"The next big killer application for the Internet is going to be education. Education over the Internet is going to be so big it is going to make e-mail look like a rounding error" (Chambers¹ 2000). [5]

As we have seen, the meaning and usability of e-learning was highly overrated and it was missed to make this new media more attractive for customers. That’s the reason why something must happened.

In the beginning of the new century the consideration goes that way that e-learning content should take another course – rentable, useful and easy to handle – like community-oriented learning-arrangements where students are divided in teams – away from online documents or drill and practice methods. To realize such e-learning modules we need one or more teachers or tutors, students, who are willing to learn with this medium and a suitable learning-platform.

Today we have some guidelines of building successful e-learning content and a few really high frequented platforms. Some of them are free of charge like “moodle” [6] and others are connected with costs like “bitmedia” [7].

Nearly each customer fulfils the technical requirements for usage which makes e-learning a little bit more attractive and the prognoses show that our time gets more hectically and computer-oriented why e-learning will become a new and much more important issue in our lives.

IV. FUTURE

E-learning will replace common learning-methods. It is pre-programmed that computers and internet become a higher value in our lives and people will have the suitable hardware and connection-method always with them. The best example is the rapid development of mobile phones. A few years ago this things were limited to two functions: Telephone and SMS. But now mobile phones are smart computers. You can access internet, write emails, see live video streams, send pictures or videos just taken before, and so on.

E-Learning has another good aspect: You are independent and you can use time much more effective.

¹ Director and chief executive officer of Cisco Systems, Inc.
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