e-ECOSYSTEM DRIVEN e-LEARNING VS TECHNOLOGY DRIVEN e-LEARNING

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Abstract: e-Ecosystem is an innovative cross-media learning approach that goes beyond traditional web-based learning design strategies. The approach combines ready access to television and mobile technologies that are an integral part of a wide capacity, flexible Internet based e-learning system. (The R&D projects are identified under the acronyms ETM and eBig3). This integrated approach allows learners to use either a single learning delivery system (depending on users' available technology and personal preferences) or a complementary combination of two or three of the delivery systems; thus, supporting the anywhere, anytime — by any preference—learning paradigm. The innovative feature of the ETM/eBig3 learning solution is the complimentary integration of the cross-media learning content delivery system. Moreover, the approach incorporates pedagogical and usability principles based on studies of the target users learning needs and contexts.

1 INTRODUCTION

As e-learning technologies continue to grow, they have become more popular and more central to teaching and learning in higher education as well as lifelong learning programmes. Yet technology enhanced learning initiatives often mimic traditional education approaches where technology is regarded as a way of delivering traditional learning content. Individually, the available electronic learning devices are still limited and cannot perform as technologically enhanced learning promises.

As a solution, we are presenting a new trend in eLearning development that builds on the concept e-ecosystems. It is based on the integration of the three major e-learning technologies: internet, television and mobiles that we refer to as the eBig3. This integrated approach eases the digital divide because users usually feel comfortable with at least two of the three technologies that make-up the system. A number of factors still exacerbate the digital divide. Yet the place to start to remedy the problem is with the technologies that most engage the public that are also the ones that make up our learning system. All three technologies were initially designed for better transfer of information and proved so popular with the public that a demand was created that ensured their rapid deployment in just a few decades. Simultaneously, the increasing demand for lifelong learning (LLL) access created by rising student enrolments and needs of adult training programs produced many technologically driven LLL solutions.

The new technologically driven learning approaches seemed to offer a solution to the increased demand at comparatively low initial cost and many countries supported a wide array of e-learning solutions. Yet the impact of these e-learning strategies was lower than expected because of a high student drop-out rate. The cause for this phenomenon was quite apparent: there was insufficient learning support and a lack of understanding of pedagogic usability principles as applied to e-learning design.

2 OBJECTIVES

- To identify the key obstacles that impede the effective delivery of the ETM/eBig3 technologies to support LLL in popular media formats

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- To design a new LLL approach (eBig3/ETM) based on integrated applications of the three popular technologies: Internet, TV and mobile telephone for e-learning purposes;
- To design successful prototypes of the eBig3/ETM e-courses.

3 METHODOLOGY

Our approach to e-learning is an inclusive next generation e-ecosystem for LLL that integrates ETM/eBig technology design concepts and provides them with a wide-range of learning options in a guided, step-by-step approach to effectively exploiting available e-,t-, m-learning opportunities to suit their needs and interests, anytime, anyplace with any option. Our system proposes extending the meaning of the familiar and the new as an enlargement of the natural and logical knowledge users already possess. We feel the approach will do much to ease the digital divide.

The methodology of eBig3 approach is based on accessing the strengths and weaknesses of e-, t-, and m-technologies. In the following table we reviewed our experience in the application of e-, t-, and m-technologies as applied to LLL. The technologies were evaluated in relation on their applicability to:

- Ease of joining the course;
- Content delivery;
- Study support technology;
- Effective organisation of face-to-face seminars;
- Course completion awarded with a certificate.

Often E-, T-, M- components have been studied in isolation or as independent systems or joined together "mechanically", such as testing the transmission potential of t-content over mobile devices. Our approach, however, goes beyond these isolated experiments and proposes to integrate the eBig3/ETM popular technologies into a single synergetic system so that users may operate these applications interchangeably according to need and convenience (Figure 1).

Table 1: Applicability of Internet eLearning, TV learning, and mobile learning for an integrated LLL approach.

	Internet eLearning	**TV learning**	**Mobile learning**	**ETM/eBig3 approach**
Ease of joining the course	With university registrar or through an open courseware without registration.	No need to sign-up, just watch us on TV learning channels	With university registrar or through open courseware without registration	TV has central role attracting to course – viewers send SMS to ETM/eBig3 management service
Content delivery	Over PC learning portal	Over TV channel	With a mobile device	Mostly Over PC learning portal
Learning conditions	Individualized learning with PC	In relaxing set-tings among TV viewers	Small screen with limited navigation	Individualized learning with PC, limited content delivery over phone
Study support availability	Possible over internet, but limited to when the computer is in use; e-mail, skype, chat	Very limited on broadcast TV; available only in the case of interactive Television systems.	Over the phone, but limited by a voice and small screen	Over the phone, also SMS, over internet, Face-to-face-seminars
Face-to-face seminars	2 to 3 course seminars when following a blended learning approach	No place for seminars for TV watchers	Limited amount of content does not require face-to-face seminars with mobile device	2 to 3 course seminars when following a blended learning approach
Course completion certificate	For registered users participating in face-to-face seminars	Not possible for TV viewers.	Limited amount of content insufficient certificate	For registered users participating in face-to-face seminars

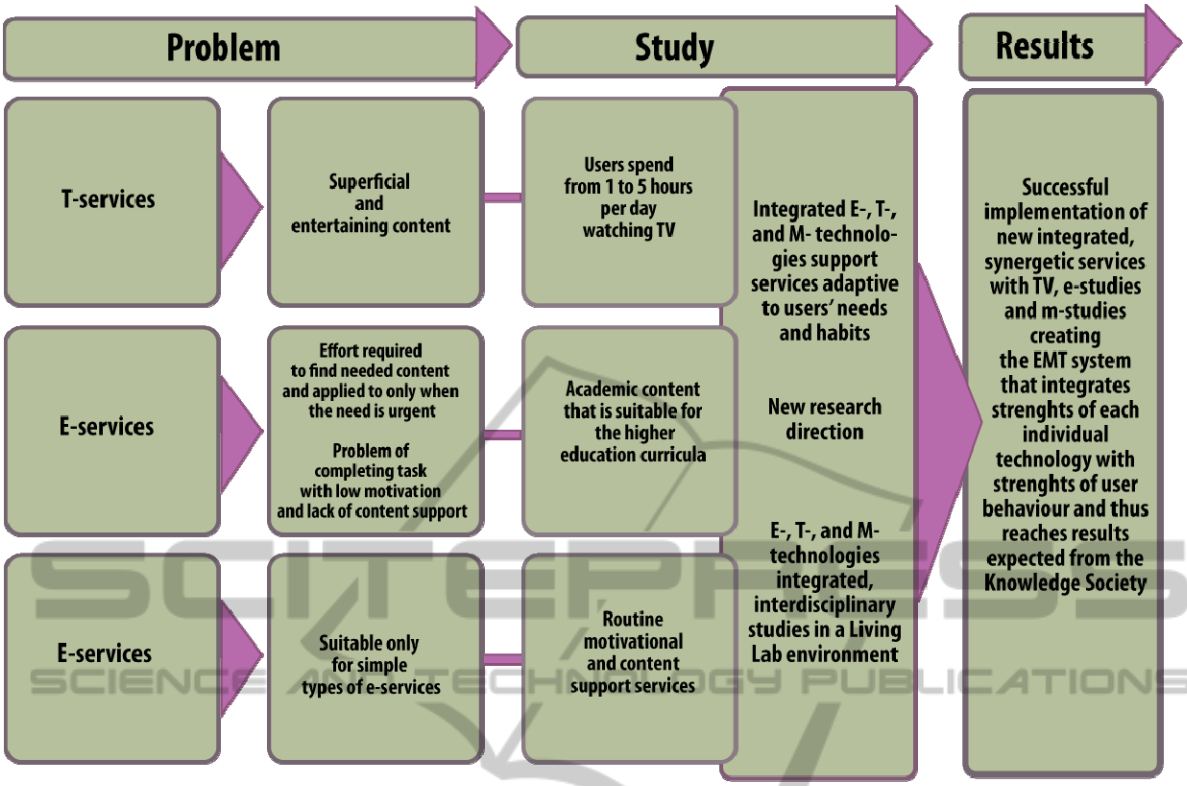

Figure 1: eBig3/ETM approach development.

4 CONCLUSIONS

1. The project ETM has created new opportunities to design innovative, more efficient approaches to e-learning for the next generation Life Long Learners.
2. The new eBig3/ETM approach eases the digital divide by extending the use of familiar technologies and extending their use by introducing new combinations.
3. The produced eBig3/ETM pilot courses open new areas of research that combine existing, familiar technologies and opens new directions in the development of integrated learning solutions.

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