



An M-Learning Maturity Model for the Educational Sector

By:

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and

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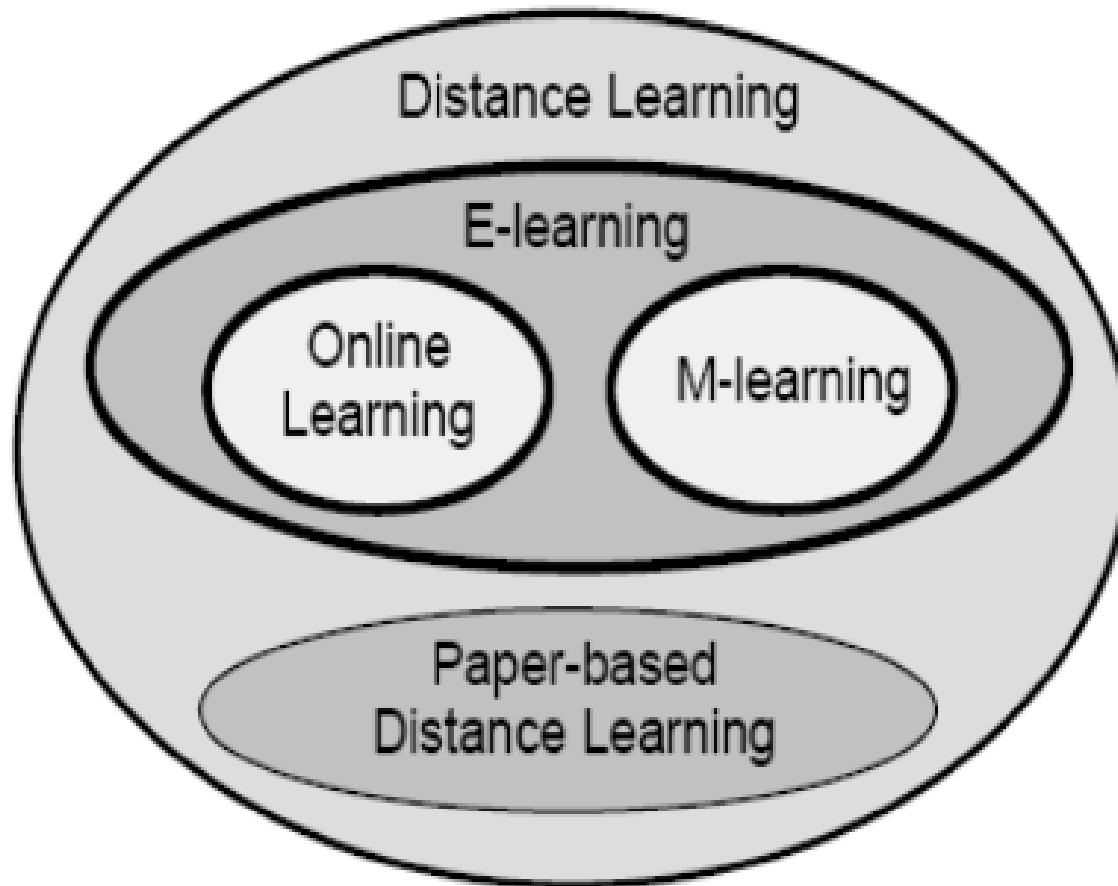
Outline

- Introduction
 - m-Learning
 - CMM
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 - e-Learning maturity models
- Research goals
- Proposed model
- Conclusion

Introduction

- Two popular views of the concept of m-Learning:
 - Refers to the mobility of the student (Kukulska-Hulme, 2007)
 - Refers to the mobile of the device itself (Traxler, 2005)
- Definition by UNESCO: “Mobile learning refers to learning that is possible anytime anywhere and involves the use of mobile technology either in stand-alone mode or in conjunction with any other ICT device.”

Introduction contd.



Introduction contd.

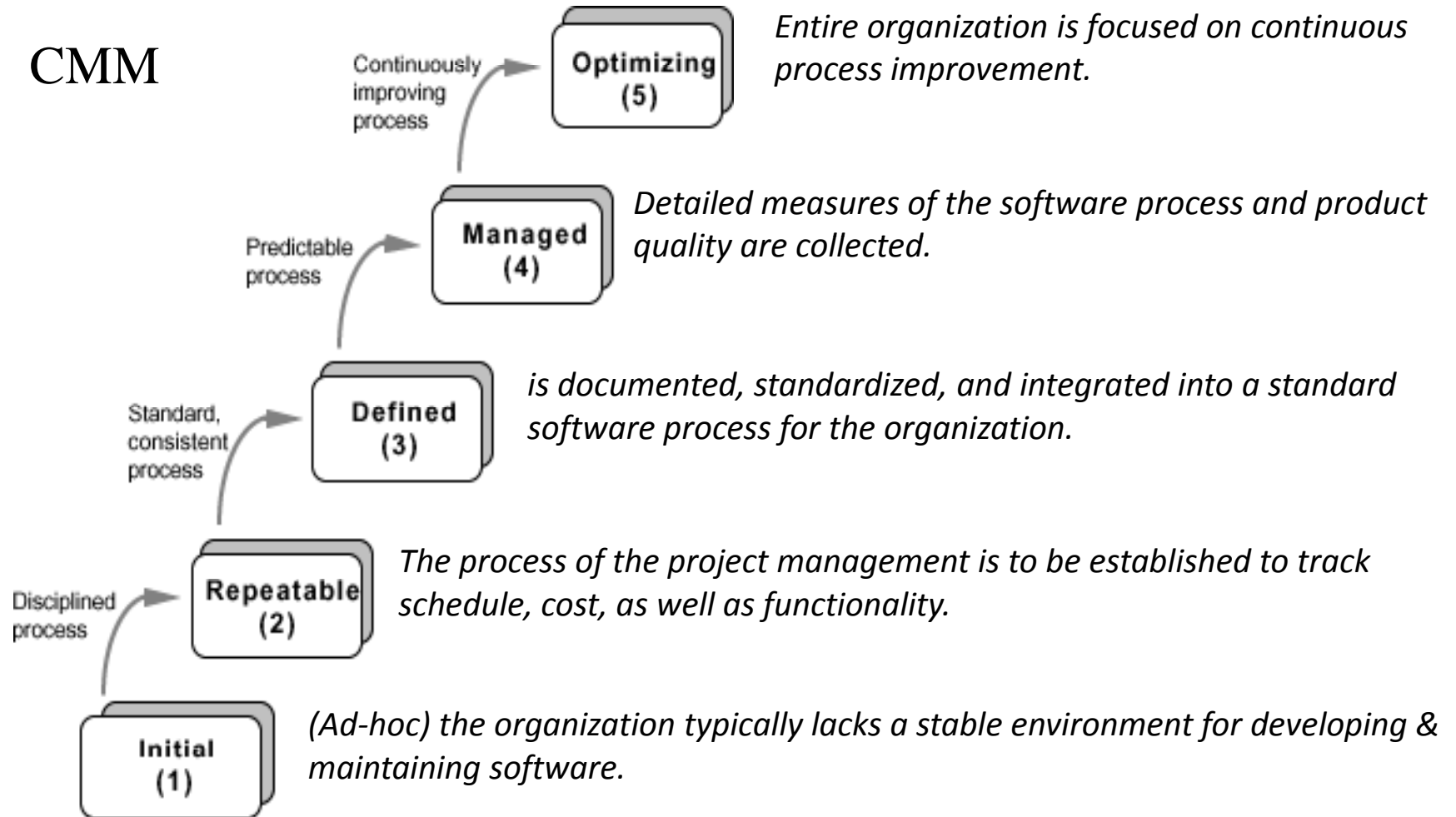
- Universities are increasingly getting convinced to adopt m-Learning due to:
 - Mobility, flexibility and demand by students
 - Competition from universities offering flexible study options to students
- Most of the frameworks to assess m-Learning have been borrowed from other areas
- Problem with adopted frameworks from other areas:
 - Limit m-Learning to just being a delivery method

Research goals and objectives

- **Research goals:**
 - Propose a maturity model for m-Learning
- **Research objectives:**
 - Assess the validity of applying CMM concepts to m-Learning
- **Research Question:**
 - Can we develop a methodology to assess the maturity level of m-Learning initiatives in universities?

Introduction contd.

CMM



Introduction contd.

USE OF CMM

- Used as a general model to aid in improving organizational business processes
- CMM model has been successfully modified and adapted to assess maturity in several domains.

Related Work

Existing Work

Current m-Learning evaluation frameworks

- (3M) Framework used by Vavoula and Sharples (2009)
- m-Learning assessment proposed by Seipold and Pachler (2011)
- Framework by Parson and Ryu (2006)

e-Learning maturity models

- Marshall & Mitchell (2002, 2003, 2004) - E-Learning Maturity Model
- Neuhauser (2004) - OCDMM (Online Course Design Maturity Model)
- Zhou (2012) - ePCMM (e-Learning Process Capability Maturity Model)

Shortcomings

- No generalization of this framework
- Socio-cultural aspect only
- Focus on quality aspect only

- The model design is unsuitable to evaluate m-Learning
- For course-level implementation / not m-Learning setting
- Not yet validated

Related Work

- Lack of comprehensive assessment for m-Learning
- To the best of our knowledge, no capability maturity model has been created for m-Learning

Proposed maturity model for m-Learning

Level	Stage name	Illustration
Level 1	Preliminary	<p><u>Characteristics of the Level</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Reactive and experimental stage <input type="checkbox"/> Educational institutes recognize the need to improve education process by including m-Learning platform <input type="checkbox"/> Primary motivations for institutions to adopt the m-Learning. <p><u>Key Processes</u></p> <ul style="list-style-type: none"> ▪ Pilot program for implementation but there is a lack of a vision to guide the implementation. ▪ This is done experimentally. ▪ Institution might not have the ability to facilitate effective implementation. ▪ In the preliminary stage, most of the universities do not have clear m-Learning policies and defined objectives to guide mobile learning.

Proposed maturity model for m-Learning

Level	Stage name	Illustration
Level 2	Establishment	<p><u>Characteristics of the Level</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Based on the recognition of the opportunity provided by mobile devices in the education system. <input type="checkbox"/> Results in the investment of m-Learning technologies to realize the opportunities provided. <p><u>Key Processes</u></p> <ul style="list-style-type: none"> ▪ In this stage, learning institutions formulate clear objectives to guide m-Learning implementation. ▪ Institutions do not have m-Learning mechanisms to evaluate their systems. ▪ There is a need for improvements in the existing and implemented pilot prototypes. ▪ Programmers develop tailored systems to facilitate the use of mobile learning in .

Proposed maturity model for m-Learning

Level	Stage name	Illustration
<p style="text-align: center;">Level 3</p>	<p style="text-align: center;">Defined</p>	<p><u>Characteristics of the Level</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> The model of mobile learning environment has been developed to measure the quality of m-Learning systems. <input type="checkbox"/> The focus on learning mobile systems by institutions features to offer the most mobile platforms. <p><u>Key Processes</u></p> <ul style="list-style-type: none"> ▪ The mobile device is considered as a critical tool in the interaction between students, instructors and administrative staff. ▪ Institutions link their m-Learning strategies with core and technical visions ▪ Institutions invest heavily in this type of systems to achieve success. ▪ In addition to financial investment, institutions must also develop clear guidelines, in order to achieve success .

Proposed maturity model for m-Learning

Level	Stage name	Illustration
<p style="text-align: center;">Level 4</p>	<p style="text-align: center;">Structured</p>	<p><u>Characteristics of the Level</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> m-Learning is characterized by optimization and innovation. <input type="checkbox"/> The optimization results in a rich, dynamic, and flawless experience for students and tutors in the use of the m-Learning. <input type="checkbox"/> The best practices have been defined and implemented <p><u>Key Processes</u></p> <ul style="list-style-type: none"> ▪ Institutions develop and measure to ensure a real time student engagement and context awareness. ▪ Institutions also develop systems to be used in different mobile devices. ▪ Institutions learn to refine and improve procedures and policies to control any changes experienced in mobile changes.

Proposed maturity model for m-Learning

Level	Stage name	Illustration
Level 5	Continuous improvement	<p><u>Characteristics of the Level</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> In this stage mobile offering has already been accepted as the best approach to provide knowledge and exchange of information between students and instructors. <p><u>Key Processes</u></p> <ul style="list-style-type: none"> ▪ Institutions are constantly evaluating themselves to ensure continuous improvement and optimization. This helps identify any changes that occur that might limit or change the manner in which mobile learning is used

Conclusion

- **Core objective** – Design m-Learning maturity model
- The primary purpose of the framework is to provide an indicative list of stages and processes within each stage
- Not an exhaustive study, the framework still provides key understanding of the process and potential stages
- We expect to formulate an empirical model with a further possibility of statistically evaluating and simplifying the model

Thank you

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