UNIVERSITI TEKNOLOGI MARA

MODELING THE HUMAN CENTERED DESIGN THROUGH HCI CAPABILITY

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ABSTRACT

The Human Centered Design (HCD) approach rooted in the semi-scientific field of ergonomics was introduced into the software development process to increase the software usability and quality by focusing on the software use and applying human factors/ergonomics and usability knowledge and techniques. In the progress the Human Centered Software Engineering (HCSE) was developed more than a decade ago. HCSE is the framework for integrating the human centered design philosophy and usability engineering into traditional systems development method. Despite its importance, HCD adoption among software practitioners remains low, as reflected in the result of the preliminary study conducted among the Malaysian software development organizations. This research argues that to encourage the HCD adoption among software practitioners a path for HCD adoption needs to be prescribed. This research also argues that an organizational approach and not individual advocates of human-centered design must be used to facilitate the adoption of HCD in systems development. Following this argument of this research embarks on the strategizing of HCD adoption through the development of an adoption model that can inform the readiness of adopting HCD based on technological and organizational capability. The research was carried out in three phases. In the first phase a comprehensive literature analysis on HCD was conducted and the conceptual model has been developed. By integrating HCD from management perspectives into the conceptual model has contributed to the development of an initial model for HCD adoption. This initial model was used as a probe to elicit knowledge of its correctness and suitability with two renown academic experts in HCI. In the next phase the initial model was revised. The integration of the feedback obtained from the first phase with the constructs obtained from adoption and capability maturity models, the HCD Adoption Model has been developed. The HCD Adoption Model prescribes five levels of adoption and the related key processes of each level. This new adoption model later verified through expert reviews with two HCI academic experts and five software development practitioners in the last phase. The novelty of this research lies on its strategy of taking an organizational and managerial perspective of HCD. The main contribution of this research is a new HCD Adoption Model. This new model contributes to the theoretical knowledge of the managerial aspects of HCI. In terms of practical contribution, the HCD Adoption Model will be a useful tool to inform the readiness for adopting HCD in the software development organization.

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TABLE OF CONTENT

		Page	
CON	CONFIRMATION BY PANEL OF EXAMINERS		
AUT	AUTHOR'S DECLARATION		
ABS	ABSTRACT ACKNOWLEDGEMENT TABLE OF CONTENT		
ACŀ			
TAE			
LIST	Г OF TABLES	xii	
LIST	Γ OF FIGURES	xiii	
LIST	Γ OF ABBREVIATIONS	XV	
CHA	APTER ONE: INRODUCTION		
1.1	Background of the Problem	1	
1.2	Preliminary Study	3	
1.3	Problem Statement	6	
1.4	Research Question	7	
1.5	Research Objectives	7	
1.6	Research Approach and Design	7	
1.7	Scope and Limitation	9	
1.8	Research Contribution	10	
1.9	Organization of the Thesis	11	
CHA	APTER TWO: LITERATURE REVIEW		
2.1	Introduction	14	
2.2	Issues of Software Design and Development	14	
	2.2.1 User Frustration on Software Usage	14	
	2.2.2 User Involvement Issues	16	
	2.2.3 Information Technology (IT) Project Management issues	18	
	2.2.4 Software Engineering (SE) Issues	19	
	2.2.5 Information System (IS) Issues	19	

	2.2.6 Software Development Methodology issues	22
	2.2.7 Software Development life Cycle (SDLC)	23
2.3	HCI Research in Software Development	27
2.4	Prior HCI Study in Malaysia	28
2.5	Usability Practice In Software Development	30
2.6	HCD As An Approach to Support User Involvement	32
2.7	Research in HCD	34
2.8	Maturity Models	36
2.9	Quality Models of the Software	38
2.10	Acceptance and Adoption Model	39
2.11	Qualitative Research Methods	41
2.12	Conclusion	42

CHAPTER THREE: RESEARCH APPROACH AND METHDOLOGIES

3.1	Introduction	44
3.2	Research Paradigm	44
	3.2.1 Constructivist	44
	3.2.2 Justification of Selected Research Paradigm	45
3.3	Research Framework	47
3.4	Phase I: The Development of HCD Initial Model	49
	3.4.1 Theoretical Lens	49
	3.4.2 The Development of the Conceptual Model of HCD	50
	3.4.3 The Development of the Initial Model of HCD	51
	3.4.4 Evaluation of Initial HCD Adoption Model	52
3.5	Phase II: The Refinement of Initial HCD Adoption Model	52
	3.5.1 HCD Adoption Model Development	52
3.6	Phase III: Verification of HCD Adoption Model	53
3.7	Conclusion	54
CHA CON	APTER FOUR: THE DEVELOPMENT OF THE HCDAM NCEPTUAL MODEL	

4.1	Introduction	55
4.2	The HCD Conceptual Model Development	55
	4.2.1 Theoretical Lens	55