
Contents

1	Introduction and Motivation for the Topic	1
1.1	Background and Initial Situation	1
1.2	Problem Formulation and Motivation	2
1.3	Objective and Research Question	4
1.4	Structure of the Dissertation	4
2	Research Design	7
2.1	Research Design and Methodological Approach	7
2.2	Design Science	9
2.3	Design Science Research Method	10
2.4	Three Cycle view of Design Science Research	11
2.5	Design Science Research in the Context of this Dissertation	14
3	Environment	17
3.1	Context of the Company Leica Geosystems AG	17
3.2	Requirements of the Company	18
3.3	Introduction SAP S/4 HANA	20
3.4	The core of SAP S/4 HANA and fulfilment of modern requirements	21
3.5	Integration of Business Processes and New Features in SAP S/4 HANA	25
3.5.1	Process of Idea to Market	25
3.5.2	Process of Source to Pay	28
3.5.3	Process of Plan to Fulfil	32
3.5.4	Process of Lead to Cash	36
3.5.5	Process of Recruit to Retire	38
3.5.6	Process of Acquire to Decommission	42

3.5.7	Process of Governance	45
3.5.8	Process of Finance	49
4	Knowledge Base	53
4.1	Learning and Didactic Theories	53
4.1.1	Learning and Didactic Theories. A Frame Comparison	53
4.1.2	General Didactic and Subject-Related Didactic	56
4.2	Didactic Theories and Models to Develop a E-learning Artefact for an Integrated Business Process Software	57
4.3	Didactic Theories and Didactic Models	57
4.3.1	Didactic Models of the Educational Theories, Learning Theories, Constructive Theories, and Other Relevant Didactic Approaches	58
4.3.1.1	Didactic of the Educational Theory	59
4.3.1.1.1	Didactic Model of the Didactic Analysis	59
4.3.1.1.2	Critical-constructive Didactic	61
4.3.2	Didactic Models of the Learning Theory	62
4.3.2.1	The Berliner Didactic Model	63
4.3.2.2	The Hamburger Didactic Model	65
4.3.3	Constructivist Didactic	67
4.3.4	Other Relevant Didactic Models	69
4.3.4.1	Didactic of the Learning-Goal-orientated Teaching	69
4.3.4.2	Critical and Communicative Didactic	70
4.3.4.3	Cybernetic and Information Didactic	71
4.3.4.4	Action-orientated Teaching	72
4.3.5	Subject-didactic for Business Processes in Information Technology	74
4.4	Requirements for an E-learning Artefact	76
4.5	Expositional Methods	81
5	Design Cycle and Operationalisation of Design Science Research	85
5.1	Awareness of the Problem	85
5.2	Suggestion. Didactic Methodical Concept, Requirements, and Expositional Presentation for Teaching an Integrated Business Process Software like SAP S/4 HANA	103
5.3	Development	118

5.4	Empirical Design and Evaluation Concept	127
5.4.1	Hypothesis, Variables and Indicators	127
5.4.2	Experimental Research Design	130
6	Evaluation of the Artefact	135
6.1	Efficiency Related Results	136
6.2	Effectiveness Related Results	141
6.2.1	Create a Billing and Post the Billing	145
6.2.2	Create New Sales Order and Change the Price	147
6.2.3	Non Dropouts and Time	148
6.2.4	Regression Analysis and Differences	152
6.2.5	Conclusion of the Evaluation Results	156
7	Design Guideline for the Conceptualisation and Implementation of an E-Learning Artefact for SAP S/4 HANA	159
7.1	Preparation	159
7.2	Execution	161
7.3	Monitoring	164
7.4	Adaptation	164
8	Conclusion	167
9	Limitations and Future Research	169
	Literature	171