TABLE OF CONTENTS

VALIDITY SHEET i
ORIGINAL STATEMENT SHEET ii
ABSTRACT iii
PREFACE v
PRESENTATION SHEET vi
Table of Contents vii
List of Figures xii
List of Table xiv
List of appendix xvi
List of Terms xvii
Chapter I Introduction 18
I.1 Background 18
I.2 Problem statement 24
I.3 Research objectives 24
I.4 Research scopes 24
I.5 Research benefits 25
Chapter II LITERATURE REVIEW 26
II.1 Smart city 26
II.2 Smart village 28
II.3 Enterprise Architecture 29
II.4 TOGAF (The Open Group Architecture Framework) ADM 9.2 30
II.4.1 ADM (Architectur Development Model) 30
II.4.2 ADM Guidelines and Techniques 33

II.4.3 Architecture Content Framework 34
II.4.4 Enterprise Architecture Framework Comparison 35
II.5 Previous Research 36
Chapter III METHODS 39
III.1 Conceptual Model 39
III.2 Systematic problem solving 40
III.3 Data Collection 42
III.3.1 Data Resource 43
III.3.2 Data Collection Technique 43
III.4 Data Processing or Product / Artifact Development 44
III.5 Evaluation Method 46
III.5.1 Reason of Method Selection 46
Chapter IV PREPARATION AND IDENTIFICATION 47
IV.1 Identification Result 47
IV.2 Description of Research Object 49
IV.2.1 Organization Review 49
IV.2.2 Vision and Mission 50
IV.2.3 Sumur Bandung Sub-District Goals 50
IV.2.4 Organization Structure 51
IV.3 Plans and Strategies for Bandung sub-district 51
IV.4 Description of Existing Application Conditions 52
IV.5 Overview of Problems in Sumur Bandung Sub-district 54
Chapter V ANALYSIS AND PLANNING 58
V.1 Preliminary Phase 58
V.1.1 Principle Catalog 58

V.2 Architecture Vision 59
V.2.1 Stakeholder Map Matrix 60
V.2.2 Value Chain 61
V.2.3 Solution Concept Diagram 61
V.3 Business Architecture 62
V.3.1 Business Architecture Requirement 63
V.3.2 Business Footprint Diagram 63
V.3.3 Goal/Objective/Requirement Catalog 64
V.3.4 Business Interaction Matrix 65
V.3.5 Functional Decomposition Diagram 66
V.3.6 Business Service/Function Catalog 67
V.3.7 Organization/Actor Catalog 68
V.3.8 Role Catalog 69
V.3.9 Activity/Role Matrix 72
V.3.10 Business Process Existing 74
V.3.11 Business Process Targetting 84
V.3.12 Gap Analysis Business Architecture 88
V.4 Information System Architecture 92
V.5 Data Architecture 92
V.5.1 Data Architecture Requirement 92
V.5.2 Data Entity/Data Component Catalog 93
V.5.3 Data Entity/Business Function Matrix 94
V.5.4 Application/Data Matrix 97
V.5.5 Conceptual Data Diagram 98
V.5.6 Logical Data Diagram 98

V.5.7 Data Dissemination Diagram 101
V.5.8 Gap Analysis Data Architecture 102
V.6 Application Architecture 105
V.6.1 Application Architecture Requirements 105
V.6.2 Application Portfolio Catalog 105
V.6.3 Application/Organization Matrix 106
V.6.4 Application/Function Matrix 107
V.6.5 Application/Interraction Matrix 108
V.6.6 Application Communication Diagram 108
V.6.7 Application Use Case Diagram 109
V.6.8 Gap Analysis Application Architecture 112
V.7 Technology Architecture 115
V.7.1 Technology Architecture Requirement 116
V.7.2 Technology Standard Catalog 116
V.7.3 Technology Portofolio Catalog 117
V.7.4 Application/Technology Matrix 119
V.7.5 Environments and Locations Diagram 120
V.7.6 Platform Decomposition Diagram 120
V.7.7 GAP Analysis Technology Architecture 121
V.8 Opportunities and Solution 124
V.8.1 Implementation Factor Assessment and Deduction 124
V.8.2 Project Catalog 127
V.8.3 Benefit Diagram 127
V.9 Migration Planning 128
V.9.1 Estimate Value and Risk 128

V.9.2 Business Value Assessment 130
V.9.3 Project Development Priorities 131
V.9.4 IT Roadmap 131
Chapter VI CONCLUSION & SUGGESTION 132
VI.1 Conclusion 132
VI.2 Suggestion 133
REFERENCES 134
APPENDIX 136
Appendix A 136
Appendix B 137
Appendix C 145