



2012 Uganda e-Government Master Plan



nipa National IT Industry Promotion Agency

Abbreviations and Acronyms

Abbreviation	Definition
AfDB	African Development Bank
B2B	Business to Business
BAI	The Board of Audit and Inspection in Korea
BOE	Barrels of Oil Equivalent
BPO	Business Process Outsourcing
BPR	Business Process Reengineering
BRM	Business Reference Model
CIO	Chief Information Officer
CIR	Critical Information Requirement
CRM	Customer Relationship Management
CSF	Critical Success Factor
DB	Data Base
DBMS	Data Base Management System
DWDM	Dense Wavelength Division Multiplexing
EDCF	Economic Development Cooperation Fund
EFT	Electronic Fund Transfer
e-GAT	e-Government Assessment Tool
EGI	Electronic Government Infrastructure
ERP	Enterprise Resource Planning
FDI	Foreign Direct Investment
G/W	Groupware
G2B	Government to Business
G2G	Government to Government
G4C	Government for Citizens
Gov.	Government
HM Government	Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland
HR	Human Resource
HRD	Human Resource Development
IBRD	International Bank for Reconstruction and Development
ICT	Information, Communication and Technology
IDA	International Development Association
IDI	ICT Development Index
IFMS	Information Finance Management System
IMS	Information Management System

Infra	Infrastructure
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
ISP	Information Strategy Planning
ITU	International Telecommunication Union
JBIC	Japan Bank for International Cooperation
KAIST	Korea Advanced Institute of Science and Technology
KM	Knowledge Management
LAN	Local Area Network
LGs	Local Governments
MCST	Ministry of Culture, Sports and Tourism in Korea
MDAs	Ministries, Departments, and Agencies
MDGs	Millennium Development Goals
MEST	Ministry of Education, Science and Technology in Korea
MKE	Ministry of Knowledge and Economy in Korea
MLTM	Ministry of Land, Transport and Maritime affairs in Korea
MOEL	Ministry of Employment and Labor in Korea
MOGE	Ministry of Gender Equality in Korea
MoICT	Ministry of Information and Communications Technology in Uganda
MOJ	Ministry of Justice in Korea
MOLEG	Ministry of Government Legislation in Korea
MOPAS	Ministry of Public Administration and Security in Korea
MOSF	Ministry of Strategy and Finance in Korea
MSPP	Multi Service Provisioning platform
MSPP	Multi Service Provisioning Platform
MW	Ministry of Health and Welfare in Korea
NA	National Assembly in Korea
NAADS	National Agricultural Advisory Services
NAFIS	National Finance Information System
NAS	The National Assembly Secretariat in Korea
NBI	National Backbone Infrastructure
NDP	National Development Plan
NEMA	National Emergency Management Agency in Korea
NGO	Non-Government Organization
NIA	National Information Society Agency in Korea
N-ID	National Identification
NIPA	National IT Promotion Agency of Korea
NITA-U	National Information Technology Authority-Uganda
NRI	Network Readiness Index

NRM	National Resistance Movement
NSSF	National Social Security Fund
NTS	National Tax Service in Korea
OAG	Office of the Auditor General
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
OECF	Overseas Economic Cooperation Fund
PEST Analysis	Policy, Economical, Social and Technical Analysis
PKI	Public Key Infrastructure
PPDA	Public Procurement and Disposal of Public Assets Authority
PPS	Public Procurement Service in Korea
PSC	Public Service Commission
R&D	Research & Development
Rep.	Republic
ROK	Republic of Korea
SWOBS	Single Window for Online Business Service
SWOT	Strength, Weakness, Opportunity, Threat
TBD	To Be Determined
TFT	Task Force Team
UBOS	Uganda Bureau Of Statistics
UCC	Uganda Communications Commission
UK	United Kingdom
UN	United Nations
UPF	Uganda Police Force
URA	Uganda Revenue Authority
URSB	Uganda Registration Service Bureau
USAID	U.S. Agency for International Development
VoIP	Voice over Internet Protocol
WEF	World Economic Forum
WLL	Wireless Local Loop

TABLE OF CONTENTS

I. PROJECT OVERVIEW	1
1. Project Background	1
2. Project Goal	2
3. Project Scope	2
4. Project Schedule.....	3
5. Project Team	4
6. Definition of e-Government	5
6.1 World Bank (www.worldbank.org)	5
6.2 United Nations (www.unpan.org).....	6
6.3 Global Business Dialogue on Electronic Commerce (GBDe) (www.gbde.org).....	6
6.4 Organization for Economic Co-operation and Development (www.oecd.org)	6
II. RESEARCH & ANALYSIS.....	7
1. Overview	7
2. Environmental Analysis	8
2.1 General Information.....	8
2.1.1 Geography.....	9
2.1.2 History.....	11
2.2 Policy Analysis	12
2.2.1 National ICT Policy Direction	12
2.2.2 NRM regime's ICT Manifesto.....	15
2.2.3 The direction of the Ministry of ICT Policy	17
2.3 Economic Environment Analysis.....	24
2.3.1 Government Role in Business Sector.....	24
2.3.2 Foreign Direct Investment (FDI)	24
2.3.3 Exports & Imports.....	25
2.3.4 Economic Growth	27
2.3.5 Industry	28
2.3.6 Business Environment and Competiveness	32
2.4 Social Environment Analysis.....	33
2.4.1 Population	33
2.4.2 Ethnicity	35
2.4.3 Education	35
2.4.4 Health.....	36
2.4.5 Major Social Issues	37
2.4.6 Social Infrastructure.....	38
2.5 Technical Environment Analysis	42
2.5.1 Current Status of ICT Development	42
2.5.2 Fixed/Mobile Communication.....	43
2.5.3 Internet	44
2.5.4 Supply Status of PCs.....	47

2.5.5 ICT Market.....	48
2.6 Implications.....	49
3. Current Status of e-Government Analysis	51
3.1 e-Government Evaluation – UN e-Government Survey 2012	51
3.2 ICT Status of Departments.....	53
3.2.1 Online Service (Front-End) Status.....	53
3.2.2 System Status of Ministries.....	65
3.2.3 Implications.....	94
3.3 The summary of Interview.....	95
3.3.1 The list of Interviewee and Date	95
3.3.2 Interview Schedule.....	95
3.3.3 Interview Result Analysis	96
3.4 Requirement of Citizens & Business Enterprises	104
3.4.1 Overview	104
3.4.2 General Information.....	105
3.4.3 Requirement of Citizens	109
3.4.4 Requirement of Business Executives	110
3.4.5 Ernst & Young Result of Survey	112
3.5 e-GAT Analysis	114
3.5.1 Overview.....	114
3.5.2 Methodology	115
3.5.3 e-GAT Result.....	115
4. Legal Framework.....	119
4.1 Overview.....	119
4.2 Current Legal Framework in Uganda	119
4.3 Key Findings.....	123
5. Benchmarking Case Study	124
5.1 Overview.....	124
5.2 Korea's e-Government.....	124
5.2.1 Korea's Vision and Strategies.....	124
5.2.2 Korea's e-Government Organization Structure	124
5.2.3 Korean e-Government Development History	126
5.2.4 Korea's 11 Major e-Government Initiatives (1998-2002)	128
5.2.5 Korea's 31 Major e-Government Initiatives (2003-2007)	128
5.2.6 Korea's Major e-Government Initiatives (2008-Present).....	130
5.2.7 Assessment Result of Korea's e-Government	132
5.2.8 Korea's Major e-Government System	133
5.2.9 Korea's E-Government Act	146
5.3 United Kingdom (UK)'s e-Government	150
5.3.1 Key Milestones of e-Government Policy.....	150
5.3.2 The Government ICT Strategy 2011.....	152
5.3.3 Governance Structure.....	154
5.3.4 e-Government Legal Framework	155
5.3.5 e-Government Roadmap	158

5.3.6 e-Government Infrastructures and Services	164
6. Critical Success Factor (CSF)	169
6.1 GAP Analysis.....	169
6.2 SWOT Analysis	174
6.3 Identification of CSF(Critical Success Factor)	176
6.3.1 SO (Strength & Opportunity).....	176
6.3.2 WO (Weakness & Opportunity)	176
6.3.3 ST (Strength & Threat)	177
6.3.4 WT (Weakness & Threat)	177
6.3.5 Results of CSF Identification.....	177
7. Critical Information Requirement (CIR)	178
7.1 CIR – Implications of PEST Analysis	178
7.2 CIR – Implications of Interview Results.....	179
7.3 CIR – Implications of Questionnaire for Citizens.....	180
7.4 CIR – Implications of Questionnaire Survey for Business Executives.....	181
7.5 CIR - Future Model Direction Setting	182
III. VISION & STRATEGY	183
1. e-Government Vision & Mission	183
1.1 Overview.....	183
1.2 Vision.....	184
1.3 Mission.....	185
1.4 Future Model.....	186
2. Strategy & Initiatives.....	187
2.1 Overview.....	187
2.2 Goal & Strategies – G4C	187
2.3 Goal & Strategies – G2B	188
2.4 Goal & Strategies – G2G	188
2.5 Goal & Strategies – Infrastructure	189
3. Project Identification	190
3.1 G4C.....	190
3.1.1 Government Representative Portal	190
3.1.2 e-Learning	190
3.1.3. Recruitment and Employment Information System.....	190
3.1.4 National Medical and Health Information System.....	191
3.1.5 Online Citizen Participation Portal	191
3.1.6 Integrated Civil Service Call Center	191
3.1.7 Architectural Administration Information System.....	191
3.2 G2B	191
3.2.1 Single Window for Online Business Service	191
3.2.2 Customs Information System.....	191
3.2.3 National Integrated Logistics	192
3.2.4. Electronic International Trading System	192
3.2.5. Electronic Procurement System.....	192

3.3 G2G.....	192
3.3.1 Digital Archiving	192
3.3.2 National Identification (N-ID)	192
3.3.3 Groupware (e-Document, e-Approval, Knowledge Management System)	192
3.3.4 National Finance Information System (NAFIS)	192
3.3.5 Informatization of City/Province Administration	193
3.3.6 Government Work Management System	193
3.3.7 Government Business Reference Model (BRM)	193
3.3.8 e-Foreign Affairs.....	193
3.3.9 e-National Assembly.....	193
3.4 Infrastructure.....	194
3.4.1 Government Data Center	194
3.4.2 National IT Standard Framework	194
3.4.3 Administration Information Sharing Center	194
IV. IMPLEMENTATION STRATEGY	195
1. e-Government Road Map.....	195
1.1 Overview.....	195
1.2 e-Government Promotion Stage.....	196
1.3 e-Government Promotion Stage of Uganda	197
1.4 Method of Project Priority Evaluation	200
1.5. Result of Project Priority Evaluation	201
1.6 Portfolio Analysis	203
1.6.2 Project Portfolio Analysis – Feasibility	203
1.6.3 Project Portfolio Analysis – Final Analysis	204
1.7 Implementation Strategy of Project	207
1.8. e-Government Roadmap	208
2. Legal Framework.....	210
2.1 To-Be Model.....	210
2.1.1 Law on e-Government	211
2.1.2 Laws on National Informatization Promotion.....	212
2.1.3 Laws on ICT Infrastructure Establishment	212
2.1.4 Laws on ICT Industry Promotion	213
2.2 Prerequisite Laws.....	213
2.2.1 Law on e-Government details	214
2.2.2 Framework law on Informatization Promotion.....	215
2.2.3 Law on the Protection of Personal Information Maintained by Public Agencies	215
2.2.4 Law on Administrative Information Disclosure	216
2.2.5 Law on Resolution of Digital Divide	216
2.2.6 Role and Responsibility	216
3. Institutional Framework	217
3.1 Institutional Framework Model	217
3.2. Roles and Responsibilities	218
3.2.1. President.....	218
3.2.2. e-Government Presidential Committee	218

3.2.3. CIO Council	218
3.2.4. NITA-U	218
3.2.5. Ministries	219
4. Budget Planning	219
4.1 Method of securing ICT budget at the initial stage of developing Korea's e-Government	219
4.2 Domestic Efforts	220
4.2.1 Fund raising	220
4.2.2. Special Purpose Tax.....	220
4.3. ODA (Official Development Assistance)	221
4.3.1. Bilateral ODA	221
4.3.2 Multilateral ODA	223
5. Human Resource Development	225
5.1. Segmented Training by Role.....	227
5.1.1. Training for Policy Makers	227
5.1.2. Training for CIO's	228
5.1.3. Training for Specific Projects	228
5.1.4. Training for Civil Servants	229
6. Infrastructure	229
6.1. Expansion of National Backbone.....	229
6.2 Standardization	230
6.2.1 Introduction of Korea's e-Government Standard Framework	230
6.2.2 PKI(Public Key Infrastructure)	232
V. ACTION PLAN	234
1. Overview	234
2. National IT Standard Framework	236
2.1 Overview	236
2.2 Conceptual Image	236
2.3 Functions.....	236
2.4 Schedules	237
2.5 Budgets	237
2.6 Expected Benefits	237
3. National Identification.....	238
3.1 Overview.....	238
3.2 Conceptual Image	238
3.3 Functions.....	238
3.4 Schedules	239
3.5 Budgets	239
3.6 Expected Benefits	239
4. Government Information Data Center	240
4.1 Overview.....	240
4.2. Conceptual Image	240
4.3 Functions.....	240
4.4. Schedules	241

4.5 Budgets	241
4.6 Expected Benefits	241
5 Public Key Infrastructure	242
5.1 Overview	242
5.2 Conceptual Image	242
5.3 Functions	242
5.4 Schedules	243
5.5 Budgets	243
5.6 Expected Benefits	243
6. Administration Information Sharing Center	244
6.1 Overview	244
6.2 Conceptual Image	244
6.3 Functions	244
6.4. Schedules	245
6.5. Budgets	245
6.6. Expected Benefits	245
7. e-Procurement System	246
7.1 Overview	246
7.2 Conceptual Image	246
7.3 Functions	246
7.4 Schedules	247
7.5 Budgets	247
7.6 Expected Benefits	247
8. National Finance Information System (NAFIS)	248
8.1 Overview	248
8.2 Conceptual Image	248
8.3 Functions	248
8.4 Schedules	249
8.5 Budgets	249
8.6 Expected Benefits	249
9. Single Window for Online Business Service	250
9.1 Overview	250
9.2 Conceptual Image	250
9.3 Functions	250
9.4 Schedules	251
9.5 Budgets	251
9.6 Benefits	251
10. Government Representative Portal	252
10.1 Overview	252
10.2 Conceptual Image	252
10.3 Functions	252
10.4 Schedules	253
10.5 Budgets	253
10.6 Expected Benefits	253

11. Government Work Management System	254
11.1 Overview	254
11.2 Conceptual Image	254
11.3 Functions	254
11.4 Schedules	255
11.5 Budgets	255
11.6 Expected Benefits	255
12. Groupware (e-Document, e-Approval, Knowledge Management System)	256
12.1 Overview	256
12.2 Conceptual Image	256
12.3 Functions	256
12.4. Schedules	257
12.5 Budgets	257
12.6 Expected Benefits	257
13. Digital Archiving System.....	258
13.1 Overview	258
13.2 Conceptual Image – Digital Archiving System	258
13.3 Functions	258
13.4 Schedules	259
13.5 Budgets	259
13.6 Expected Benefits	259
14. Online Citizen Participation Portal.....	260
14.1 Overview	260
14.2 Conceptual Image	260
14.3 Functions	260
14.4 Schedules	261
14.5 Budgets	261
14.6 Expected Benefits	261
Bibliography	262
<Appendix 1> Survey for Technical Staff	263
<Appendix 2> Survey for Citizens	274
<Appendix 3> Survey for Business & Enterprises	281
<Appendix 4> Interview Survey for Ministry of Uganda	288

LIST OF TABLES

<Table 1: Paradigm Shift>.....	5
<Table 2: General Overview of Uganda>.....	8
<Table 3: ICT Main Objective of Uganda National Development Plan (2010/11~2014/15)>.....	12
<Table 4: Constraints of Telecommunication and IT & IMS Sub-Sectors>	13
<Table 5 Objective, Strategy, and Intervention of Telecommunication and IT & IMS>	14
<Table 6: The manifesto achievements in the last 5 years (2006~2011)>.....	15
<Table 7: Value of Trade Balance (1997~2007)>	26
<Table 8: 1998-2007 Composition of Exports by Value (%)>.....	26
<Table 9: Share of Selected Primary Growth Sectors in GDP and Growth Performance>	28
<Table 10: Agriculture Sector Allocations for 2012/13 (Unit: Shillings in Billion)>	29
<Table 11: Tourism Sector Allocations for 2012/13 (Unit: Shillings in Billion)>	29
<Table 12: ICT Development Sector Allocations for 2012/13 (Unit: Shillings in Billion)>	31
<Table 13: Population Estimates and Projections 1991-2015>	34
<Table 14: Education Percentage in Uganda>.....	36
<Table 15: Education Sector Allocations for 2012/13 (Unit: Shillings in Billion)>	36
<Table 16: Health Sector Allocations for 2012/13 (Unit: Shillings in Billion)>.....	37
<Table 17: ICT Development Sector Allocations for 2012/13 (Unit: Shilling in Billion)>	38
<Table 18: Installed Capacity and Actual Generation of the Power Connected to the National Grid 2010/11>	39
<Table 19: Electricity Generation Projections to Meet the Vision and NDP Targets 2010/11>	39
<Table 20: Works and Transport Sector Allocations for 2012/13 (Unit: Shillings in Billion)>	40
<Table 21: Land Sector Allocations for 2012/13 (Unit: Shillings in Billion)>	40
<Table 22: Comparison of Various ICT Index>	42
<Table 23: ICT Price Basket and Sub-baskets in 2010>	43
<Table 24: Number of Fixed Telephone/Mobile Cellular Subscriptions in Uganda>.....	43
<Table 25: Market Share of Mobile Telecommunication Companies in Uganda>	44
<Table 26: Internet Utilization of Uganda>.....	44
<Table 27: ISP Providers in Uganda>	45
<Table 28: Estimated market penetration rates in Uganda>.....	46
<Table 29: Estimated market penetration rates in Uganda's telecoms sector – end-2012>	46
<Table 30: ICT Market Volume of Uganda>	48
<Table 31: Ranking of e-Government>	51
<Table 32: Specific Ranking and Index in e-Government>	52
<Table 33: e-Participation Index>	53
<Table 34: Level and Indicators>	53
<Table 35: Analysis Result>.....	54
<Table 36: Online Service Status>	55
<Table 37: Project List>	66
<Table 38: Service List>.....	70
<Table 39: Resource Status>	73
<Table 40: Usage of IT Resource>.....	73
<Table 41: List of Planned Projects>.....	89



<Table 42: List of Interviewees>	95
<Table 43: General Finding Issues in Government Institutions >	100
<Table 44: Requirement Level of e-Government Services>	113
<Table 45: e-GAT Indicators>.....	114
<Table 46: Current Legal Framework in Uganda>.....	120
<Table 47: Korea's e-Government Development History>.....	126
<Table 48: 11 Major e-Government Initiatives >	128
<Table 49: 31 Major e-Government Initiatives >	129
<Table 50: Korea's Major e-Government Initiatives >	131
<Table 51: The Assessment Result of Korea e-Government >.....	132
<Table 52: e-Government Readiness Index Rankings>	133
<Table 53: Korea's E-Government Act Components>.....	146
<Table 54: Ranks of UK in the Evaluation Index>	150
<Table 55: UK Key Milestones of e-Government Policy>	150
<Table 56: Government ICT Strategy Actions mapped to delivery areas>.....	158
<Table 57: Main e-Government Infrastructure>.....	164
<Table 58: Main e-Government Services for Citizens>	165
<Table 59: Main e-Government Services for Business>	167
<Table 60: GAP Analysis>.....	169
<Table 61: SWOT Analysis>.....	175
<Table 62: e-Government Stage>	196
<Table 63: Promotion Model of Uganda's e-Government>	197
<Table 64: Criteria of Project Priority Evaluation>.....	200
<Table 65: Result of Evaluation>	202
<Table 66: Consolidated Project Priority Results>.....	206
<Table 67: Application of the PKI>	233
<Table 68: 25 Priority Project Overview>.....	234
<Table 85: Schedule – National IT standard Framework>.....	237
<Table 86: Expense – National IT standard Framework >	237
<Table 71: Schedule – National Identification>	239
<Table 72: Expense – Digital Archiving System>	239
<Table 75: Schedule - Government Data Center>.....	241
<Table 76: Expense - Government Data Center>.....	241
<Table 77: Schedule – Public Key Infrastructure>.....	243
<Table 78: Expense – Public Key Infrastructure>.....	243
<Table 83: Schedule – Administration Information Sharing Center>	245
<Table 84: Expense – Administration Information Sharing Center>	245
<Table 81: Schedule – e-Procurement System>	247
<Table 82: Expense – e-procurement>	247
<Table 73: Schedule – National Finance Information System>	249
<Table 74: Expense – National Finance Information System >	249
<Table 91: Schedule - Single Window for Online Business Service>	251
<Table 92: Expense - Single Window for Online Business Service>	251
<Table 87: Schedule - Government Representative Portal>.....	253

<Table 88: Expense - Government Representative Portal>	253
<Table 89: Schedule - Government Work Management System.....	255
<Table 90: Expense - Government Work Management System>	255
<Table 79: Schedule – Groupware>	257
<Table 80: Expense – Groupware>	257
<Table 69: Schedule – Digital Archiving>	259
<Table 70: Expense – Digital Archiving System.....	259
<Table 93: Schedule - Online Citizen Participation Portal>.....	261
<Table 94: Expense - Online Citizen Participation Portal>	261

LIST OF FIGURES

<Figure 1: Working Framework>	3
<Figure 2: Project Team Organization>	4
<Figure 3: Landscape>	9
<Figure 4: Alignment of National ICT Policy, NRM ICT Manifesto and MOICT/NITA-U Policies>	22
<Figure 5: Present Policy Framework and existing Gaps>	23
<Figure 6: Foreign Direct Investment, Net Inflows (% of GDP)>	25
<Figure 7: Value of Exports and Imports (1997~2007)>	26
<Figure 8: 2002-2010 GDP Growth (annual %)>	27
<Figure 9: Distribution of Minerals in Uganda>	30
<Figure 10: Problematic factors in Business Environment>	32
<Figure 11: Uganda's ethnic Distribution>	35
<Figure 12: 2010 Uganda Railways>	41
<Figure 13: Relative Street Cost of Internet Access>	45
<Figure 14: Penetration Status of Internet and Personal Computers (per 10,000 inhabitants)>	47
<Figure 15: Distribution of Internet Users>	47
<Figure 16: Main Purpose of e-Government Projects>	68
<Figure 17: System Configuration>	68
<Figure 18: Project Funded>	69
<Figure 19: OS Configuration>	74
<Figure 20: DBMS Configuration>	74
<Figure 21: Communication Channel>	75
<Figure 22: Status of submarine cable construction in Africa>	77
<Figure 23: Map of the Different Phases of the NBI>	78
<Figure 24: Status of NBI Project Phases>	79
<Figure 25: DWDM Equipment >	80
<Figure 26: Composition of Network >	80
<Figure 27: Overall Schematic Diagram >	81
<Figure 28: Composition of East Ring >	81
<Figure 29: Composition of WEST RING >	83
<Figure 30: STM-64 MSPP Equipment >	83
<Figure 31: STM-16 MSPP Equipment >	85
<Figure 32: Composition of Network >	85
<Figure 33: Schematic Diagram of MSPP >	85
<Figure 34: E-Government main equipment room>	87
<Figure 35: Main Purpose of Projects>	92
<Figure 36: Project Stage>	92
<Figure 37: System Configuration>	93
<Figure 38: Obstacle in Implementation>	93
<Figure 39: Facing Issue>	96
<Figure 40: Issues Facing in InterCollaboration>	97
<Figure 41: Reasons of Initiating e-Government>	98
<Figure 42: Key Factors for Success>	98

<Figure 43: Direction of e-Government>	99
<Figure 44: Primary Data (N-ID, LAND, Business) for e-Government >	103
<Figure 45: The Way of Data Processing >.....	103
<Figure 46: The way of Information Exchange>.....	104
<Figure 47: Improper Management of a Thermal-hygrostat and NBI Equipment Interruption>-.....	104
<Figure 48: Access to Information>	105
<Figure 49: Means of Internet Connection>	106
<Figure 50: ICT Education>	106
<Figure 51: ICT Education Needs>	107
<Figure 52: Civil Service Application>.....	107
<Figure 53: National IT Project Awareness>	108
<Figure 54: e-Government Priorities>	108
<Figure 55: The Most Important Information>	109
<Figure 56: Government Administrative Service Improvement>	109
<Figure 57: Government Administrative Service Priority>.....	110
<Figure 58: Computerized Business>.....	110
<Figure 59: Government Administrative Service Improvement>	111
<Figure 60: e-Government Priority>	111
<Figure 61: General Understanding of the term about E-Government>	112
<Figure 62 Awareness of Any e-Government Service>	112
<Figure 63: (G2G) Innovating the way the Government Works>.....	115
<Figure 64: (G4C) Innovating Citizen-Oriented Government Services>.....	116
<Figure 65: (G2B) Enhancing Government-led Business Competitiveness>	117
<Figure 66 1: Innovating Common e-Government Infrastructure>.....	118
<Figure 67: Korea's e-Government Organization Structure>	125
<Figure 68: Role of Organization>	125
<Figure 69: National Administrative Finance Information System>	135
<Figure 70: e-Document System>	136
<Figure 71: Local Government Administration Information System>.....	137
<Figure 72: Administrative Information Sharing System>	138
<Figure 73: Internet Civil Services>.....	139
<Figure 74: Consolidated Online Tax System>.....	140
<Figure 75: National Welfare Information System>	141
<Figure 76: National Emergency Management Information System>	142
<Figure 77: Single Window for Online Business Service>	143
<Figure 78: National Integrated Logistics Information Service>	144
<Figure 79: Government-wide Integrated Data Center>	145
<Figure 80: e-Government Development Direction in UK>	152
<Figure 81: The Government ICT Strategy	i
<Figure 82: New Governance Structure of UK in 2011>	i
<Figure 83: Interrelations of Key Words from G4C, G2B, G2G, and Infrastructure>.....	184
<Figure 84: Uganda's e-Government To-Be Model>.....	186
<Figure 85: Goal of Uganda's e-Government>	199
<Figure 86: Project Importance Evaluation>.....	203



<Figure 87: Project Feasibility Evaluation>	204
<Figure 88: Consolidated Project Priority Results>	205
<Figure 89: Process of Computerization>	207
<Figure 90: Roadmap of e-Government>	208
<Figure 91: Timeline for the Roadmap of e-Government>	209
<Figure 92: Ugandan Legal Framework for e-Government>	211
<Figure 93: Institutional Framework To-Be Structure>	217
<Figure 94: Loan Procedure Chart of EDCF>	222
<Figure 95: Project Cycle of OECF>	223
<Figure 104: National IT Standard Framework & Common Components>	236
<Figure 97: National Identification >	238
<Figure 99: Government Data Center>	240
<Figure 100: PKI>	242
<Figure 103: Administration Information Sharing Center>	244
<Figure 102: e-Procurement System>	246
<Figure 98: National Finance Information System>	248
<Figure 107: Single Window for Online Business Service>	250
<Figure 105: Government Representative Portal>	252
<Figure 106: Government Work Management System>	254
<Figure 101: Groupware (e-Document, e-Approval, KM)>	256
<Figure 96: Digital Archiving System>	258
<Figure 108: Online Citizen Participation Portal>	260

I. PROJECT OVERVIEW

1. Project Background

The rapid development of information communication and technology (ICT) is changing our way of life and creating new business opportunities, bringing about diverse and rapid changes. ICT has been a primer for innovation, and is becoming ubiquitous in many areas of our lives. Today, countries around the world are realizing the need to couple ICT with government administration to deliver services to both citizens and businesses while enhancing national administrative effectiveness. It is through this coupling that governments are able to provide administrative services in a prompt and convenient manner to their people and seek to enhance their national competitiveness. As such, the UN conducts surveys on the e-Government environment and services of each country and releases the e-Government Readiness Index. Based on this report, each country compares and analyzes the status of their e-Government project and makes complements for any shortcomings, and ultimately tries to enhance their global competitiveness.

To keep pace with this global trend, Uganda, a developing country, would broadly utilize ICT to solidify economic development, strengthen democratic norms and values, improve the quality of life, and thus reduce poverty. Moreover, with the expansion of the ICT infrastructure, the Uganda government expects to overcome its geographical adversities and achieve a new round of socio-economic development.

To reflect Uganda's commitment to advancing e-Government as an instrument for national development, multiple legal framework have been created between 2001 and 2011 in the areas of ICT, including *The Computer Misuse Act*, *The Electronic Transaction Act*, *The Electronic Signatures Act*, *The Access To Information Regulations*, and *etc.* However, many e-Government projects and plans have never reached realization.

Meanwhile, Korea started the development and expansion of ICT since the 1980s and achieved breathtaking developments in the ICT sector, ranking first place in the e-Government Readiness Index released by the UN in 2010. With such experience, Korea is committed to providing technical support in the establishment of e-Government in developing countries which created the basis for the current e-Government master plan.

The e-Government master plan and studies on successful cases of leading countries will enable to generate the most adequate e-Government model for the Ugandan government and help realize a leading e-Government country in African countries.

2. Project Goal

In order to realize e-Government, there are several things to be considered such as informatization (digitization of resources to allow electronic transactions and seamless information exchange), services needed by people and businesses, and efficient way of delivering such services. Also, all the details such as the ICT infrastructure, legal/institutional efficacy of digitalized documents and formation of task force team (TFT) should be reviewed and incorporated in the master plan.

The main goal of this project is to achieve good governance and social and economic development by establishing effective, systematic, and productive e-Government. The final report will comprise of the following four points to achieve the goal.

- Establishing the vision, strategy and framework
- Selecting quick win projects and drawing a long term roadmap
- Defining a governance framework to regulate and control e-Government initiatives
- Defining direction of restructuring legal framework

As the e-Government project is a government-wide initiative, their collective support, commitment and participation was absolutely essential for the success of the project. Prior to the current project, limited understanding of e-Government existed, although government entities like NITA-U had conducted workshops. Upon completion of the project, better understanding and realization of the benefits gained through e-Government is a subsequent goal that could impact the lives of citizens, public and private institutions of Uganda.

3. Project Scope

The project scope of the e-Government master plan is divided by large into; subject to be pursued; time period to execute those subjects; and activities to achieve those subjects.

Subject of this project is for the government to enhance productivity in its administrative services and make improvements in its services for the people and businesses entities.

Activities to achieve the subject include identifying the ICT status of Uganda through bibliographic study, questionnaire survey and interview. Also, benchmarking case studies and analysis of the ICT trend will be conducted to create a vision&strategy that fits the reality of Uganda, which will help to build a more efficient, productive, transparent and responsible government. Other activities include, defining strategies and tasks to achieve the goal, drawing up the project roadmap, selecting the priority project, and preparing a detailed action plan.

Establishing the e-Government master plan is a long term project, which requires more than a 10 year period. However, in order to reflect the dynamic development in the ICT sector and to establish a realistic plan, it is better to shorten the project period and to make periodic modifications to the plan to reflect new developments and trends in ICT. As such, the project period is set for five years, from 2012 to 2016.

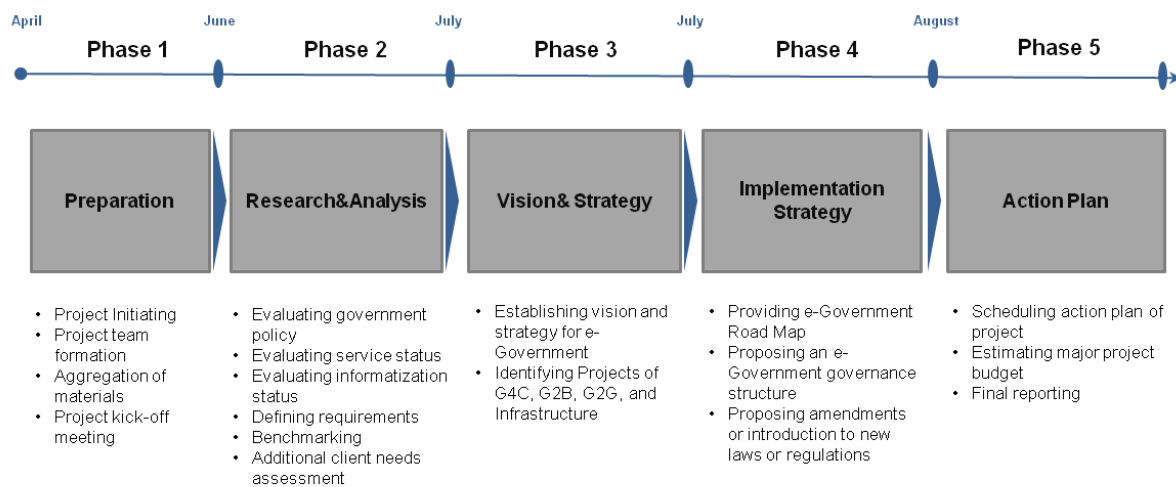
4. Project Schedule

The project schedule was divided into four major phases. First was the “Preparation Phase,” which was about initiating the project and making preparations. Second was the “Research&Analysis Phase” that involved collecting and analyzing data such as government law / policy / regulation, informatization status, requirement of citizens, business and civil servants, benchmarking, etc. Third was the “Vision&Strategy Phase,” where visions and strategies were set up based on data analyzed in the second phase. The fourth phase was the “Implementation Strategy Phase” where projects were selected and their priorities are identified. The last phase was the “Action Plan Phase” where the action plan for priority projects defined in the third phase was specified more in details.

The project took four months, from the preparation phase to the final action plan establishment phase. The PIP report was provided in preparation phase, and the Environment Analysis report was written at the beginning of the project. The interim report was prepared upon completion of the Research&Analysis, while executing the project. The final report was prepared at the end of the project.

Following are the steps that were taken in each phase:

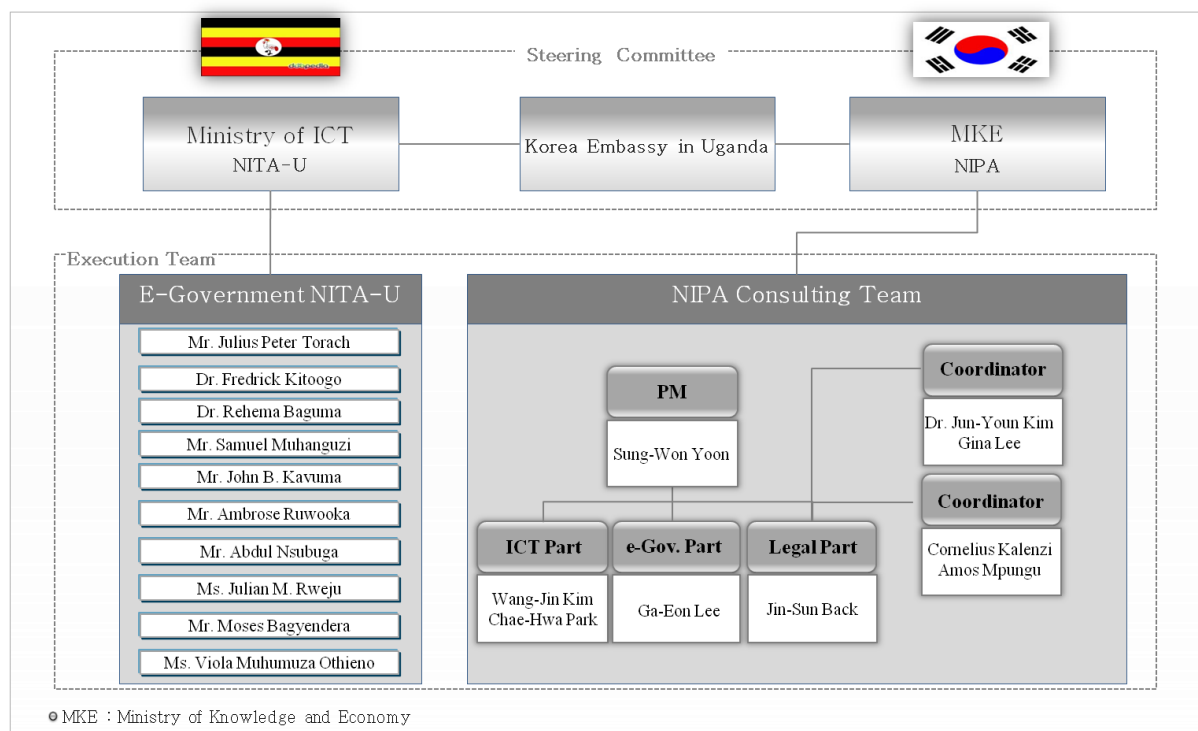
<Figure 1: Working Framework>



5. Project Team

The project team requested for a development of the Uganda e-Government master plan consisted of a steering committee and an e-Government task force team (TFT) from both Uganda and Korea respectively. Communication between both TFTs was conducted closely through meetings, e-mail exchanges and Skype calls.

<Figure 2: Project Team Organization>



The role of the Ugandan e-Government TFT was to provide information on the current status, provision of internal materials, arrangement, coordination and attendance of various activities including interviews, and workshops. Additionally, involvement in the visioning process and analysis of priority evaluations in relevance to the 5 year roadmap was their secondary role.

Finally, examination and overall approval of the implementation strategy created by the Korean consulting team was their last responsibility. The Korean consulting team was responsible for analysis of the current ICT status, including all the tasks involved: interviews, questionnaire surveys, workshops, establishing implementation strategy, and establishment of the action plan.

6. Definition of e-Government

With the rapid development and expansion of ICT, and in particular, with the fast spread of the Internet, administrative services by the government is also changing from its traditional, passive service led by the government to active and consolidated service led by the people. In line with such trend in ICT, governments around the world are aiming to establish the e-Government which can improve productivity in administrative services, realize a networked government, satisfy its people's demand in administrative services, and enhance the national competitiveness through proactive services.

To help understand the e-Government and its trend, definitions of e-Government by world-renowned institutions are prepared as following.

<Table 1: Paradigm Shift>

Category	Traditional Government	e-Government
Customer Service Expectation	<ul style="list-style-type: none"> • Government-driven • Cumbersome, many channels • Get in, get out 	<ul style="list-style-type: none"> • Customer-driven • Option for end-to-end self service • Enduring relationship
Staff	<ul style="list-style-type: none"> • Overworked or underutilized • Distant customer contact 	<ul style="list-style-type: none"> • Optimized effort-to-value ratio • Immediate customer service
Technology	<ul style="list-style-type: none"> • Silo-serving • Information center 	<ul style="list-style-type: none"> • Enterprise-serving • Intelligent reporter
Organizational Structure	<ul style="list-style-type: none"> • Process-based • Territorial • Outsource to meet today's need 	<ul style="list-style-type: none"> • Competency-based • Shared services • Partner for current and future

The following definitions come from a number of global sources, including the World Bank, United Nations, Global Business Dialogue on Electronic Commerce (GBDe) and OECD.

6.1 World Bank (www.worldbank.org)

e-Government refers to the use of information technologies by government agencies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with businesses and industries, citizen empowerment through access of information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.

6.2 United Nations (www.unpan.org)

e-Government is defined as utilizing the Internet and the world-wide-web for delivering government information and services to citizens.

6.3 Global Business Dialogue on Electronic Commerce (GBDe) (www.gbde.org)

Electronic government (hereafter e-Government) refers to a situation in which administrative, legislative and judicial agencies (including both central and local governments) digitize their internal and external operations and utilize networked systems efficiently to realize better quality in the provision of public services.

6.4 Organization for Economic Co-operation and Development (www.oecd.org)

e-Government:

- is more about government than about “e”
- improves efficiency
- improves services
- helps achieve specific outcomes
- can contribute to broad policy objectives
- can be a major contributor to reform
- can help build trust between governments and citizens
- can open up the policy process
- challenges existing ways of working
- seamless government services will drive agencies closer together

II. Research & Analysis

1. Overview

The purpose of the Research & Analysis is to derive the directions for the Strategy Development based on the implications from each of the studies on the environment, informatization status and requirements, and comparison with best practices (benchmarking).

The environmental analysis provides general information, such as the geography and history; the PEST analysis looks into the policy, economic, social and technical environment of Uganda; the policy analysis analyzes the national policy, agenda, issues, and policies related to e-Government such as the National Development Plan and National Information Technology Policy, Draft Information Management Services Policy, Electronic Waste Management Policy for Uganda, National Electronic Government Framework, ICT Function in MDAs/LGs, and The NITA-U Strategic Plan 2012~2017.

Also the analysis of the ICT sector in Uganda provides an overview of the overall e-Government status, national and government ICT infrastructure.

The e-Government requirement analysis provides information on the needs of government officials, citizens and business corporations. The requirements were drawn from surveys and interviews which were conducted over a period of 2012.06.11~2012.06.22.

The level of informatization is evaluated with the e-Government assessments tool (e-GAT) which is an informatization level evaluation tool.

The abovementioned analyses are compared to the benchmark cases of the Korean government, which is currently recognized by the UN as ranking 1st place in UN e-Government Maturity Index. Case study of UK is also provided for cross-comparison.

On the basis of the implications derived from each analysis, the Critical Success Factors (CSFs) were identified which will define the key improvement directions for Uganda's e-Government.

2. Environmental Analysis

The environmental analysis consists of general information and PEST (Policy, Economic, Social and Technical) analysis. The implication is derived based on the analysis.

2.1 General Information

<Table 2: General Overview of Uganda>

Category	Description
State Name	Republic of Uganda
Location	East-Central Africa, west of Kenya, east of the Democratic Republic of the Congo
Area	241,380 km ² (1.1times larger than the Korean Peninsula, Land: 199,710 km ² Water: 36,330 km ²)
Climate	tropical; generally rainy with two dry seasons (December to February, June to August); semiarid in northeast
Population	34.5million (2011 estimate)
Capital	Kampala
Ethnicity	Baganda 16.9%, Banyakole 9.5%, Basoga 8.4%, Bakiga 6.9%, Iteso 6.4%, Langi 6.1%, Acholi 4.7%, Bagisu 4.6%, Lugbara 4.2%, Bunyoro 2.7%, other 29.6%
Language	English (official), Swahill, Ganda , Luganda and other local languages
Religion	Roman Catholic 41.9%, Protestant 42%, Muslim 12.1%, traditional religions 1%, none 0.9%
Independence	October 9, 1962
Government	Presidential representative democratic republic (five-year term, allowed consecutive reelection)
President	Yoweri Kaguta Museveni
Congress	Unicameral (five-year term)
Political Parties	NRM: National Resistance Movement, FDC: Forum for Democratic Change, UPC: Ugandan People's Congress, DP: Democratic Party, CP: Conservative Party, JEEMA: Justice Forum, PPP: Peoples Progressive Party
GDP	\$17.703 billion (2010 estimate)
Currency	Uganda Shilling(UGX)
Major Exports	coffee, fish and fish products, tea, cotton, flowers, horticultural products; gold
Major Imports	capital equipment, vehicles, petroleum, medical supplies; cereals

2.1.1 Geography

To figure out the characteristics of Uganda's geography, there are two things to consider such as landscape and climate.

2.1.1.1 Landscape

The country is located on the East African plateau, lying mostly between latitudes 4°N and 2°S (a small area is north of 4°), and longitudes 29° and 35°E. It averages about 1,100 meters (3,609 ft) above sea level, and the slope is going downwards very steadily to the Sudanese Plain to the north.

However, much of the south is poorly drained, while the centre is dominated by Lake Kyoga, which is also surrounded by extensive marshy areas. Uganda lies almost completely within the Nile basin. The Victoria Nile drains from the lake into Lake Kyoga and thence into Lake Albert on the Congolese border. It then runs northwards into South Sudan. One small area on the eastern edge of Uganda is drained by the Turkwel River, part of the internal drainage basin of Lake Turkana.

Although landlocked, Uganda contains many large lakes; besides Lake Victoria and Lake Kyoga, there are Lake Albert, Lake Edward and the smaller Lake George.

<Figure 3: Landscape>



2.1.1.2 Climate

Although generally equatorial, the climate is not uniform as the altitude modifies the climate.

Southern Uganda is wetter with rain generally spread throughout the year. At Entebbe on the northern shore of Lake Victoria, most rain falls from March to June and in the November/December period. Further to the north a dry season gradually emerges; at Gulu about 120 km from the South Sudanese border, November to February is much drier than the rest of the year.

The northeastern Karamoja region has the driest climate and is prone to droughts in some years. Rwenzori, a snowy peaked mountainous region on the southwest border with Congo (DRC), receives heavy rain all year round and is the source of the Nile.

The south of the country is heavily influenced by one of the world's biggest lakes, Lake Victoria, which contains many islands. It prevents temperatures from varying significantly and increases cloudiness and rainfall. Most important cities are located in the south, near Lake Victoria, including the capital Kampala and the nearby city of Entebbe.

2.1.2 History

About 500 B.C. Bantu-speaking people migrated to the area now called Uganda. By the 14th century, three kingdoms dominated, Buganda (meaning "state of the Gandas"), Bunyoro, and Ankole. Uganda was first explored by Europeans as well as Arab traders in 1844. An Anglo-German agreement of 1890 declared it to be in the British sphere of influence in Africa, and the Imperial British East Africa Company was chartered to develop the area. The company did not prosper financially, and in 1894 a British protectorate was proclaimed. Few Europeans permanently settled in Uganda, but it attracted many Indians, who became important players in Ugandan commerce.

Uganda became independent on Oct. 9, 1962. Sir Edward Mutesa, the king of Buganda (Mutesa II), was elected the first president, and Milton Obote the first prime minister, of the newly independent country. With the help of a young army officer, Col. Idi Amin, Prime Minister Obote seized control of the government from President Mutesa four years later.

Uganda's president, Yoweri Museveni, and the National Resistance Movement (NRM) seized power in 1986, following a protracted armed struggle. Mr. Museveni won presidential elections in 1996 and 2001 by large margins. Under pressure from donors, the country opened up the political scene to a multiparty democracy. The transition also involved amending the constitution to permit Mr. Museveni to stand for president for a third term and to lead a "reformed" Movement, transformed into a political party, in elections in February 2006. Despite the political transition, the outcome was the same, with victory for Mr. Museveni and the NRM, who continue to dominate the political scene.

The president, Yoweri Museveni, and his ruling NRM party strengthened their grip on power in February 2011, with overwhelming victories in the presidential and parliamentary elections.

2.2 Policy Analysis

In terms of Policy, the external environment is analyzed and subsequent policy implications focusing on Uganda's e-Government. The policy analysis consists of four main aspects namely: ICT policy direction, NRM regime's ICT Manifesto, the direction of the Ministry of ICT, and e-Government laws and regulations.

2.2.1 National ICT Policy Direction

The 2010/11-2014/15 *National Development Plan* (NDP) sets the Country's medium term strategic direction, development priorities and implementation strategies. It details Uganda's current development status, challenges and opportunities. The theme of this National Development Plan is "Growth, Employment and Socio-Economic Transformation for Prosperity." The thrust is to accelerate socio-economic transformation to achieve the National Vision of a transformed Ugandan society from a peasant to a modern and prosperous country within 30 years.

ICT is included in the eight main objectives and Primary Growth Sector in the *National Development Plan* (2010/11~2014/15). It means that ICTs have been identified as a core sector in the NDP.

<Table 3: ICT Main Objective of Uganda National Development Plan (2010/11~2014/15)>

Objective	Promoting science, technology, innovation and ICT to enhance competitiveness
Assessment	Assessment of this objective will be based on the share of exports with high technology content in total exports; strengthened institutional capacity and the status of science and technology; increased capacity for R&D and innovation; increased capacity, access and use of ICT; and increased number of S&T and ICT professionals
Development Indicators	<ul style="list-style-type: none"> • Proportion of budget dedicated for promoting STI and ICT • Level of development of the industrial sector
Specific Indicators	<ul style="list-style-type: none"> ○ To increase ratio of national budget allocated STI(R&D) and ICT by 0.6% by 2014/15 ○ To reach ratio of S&T to Art Graduates to 1:3 (2014/15) ○ ICT sector share of GDP ○ Proportion of schools with internet ○ Proportion of urban centres with public internet access ○ Proportion of manufactured exports to total exports(%) ○ Ratio of manufactured exports to GDP

In the NDP, ICT sector is divided into telecommunication sub-sector, information technology (IT) and information management services (IMS) sub-sector, broadcasting sub-sector, library and information

services sub-sector, and postal sub-sector. These sub-sectors have each constraints, objectives, strategies, and interventions.

Among sub-sectors, a closer look at telecommunications and information technology and information management services sub-sectors related to the e-Government are as follows.

<Table 4: Constraints of Telecommunication and IT & IMS Sub-Sectors>

Sub-Sector	Constraints
Telecommunication	<ul style="list-style-type: none"> i. Infrastructure gaps in the delivery of broadband ii. High dependence on satellite bandwidth for the provision of internet services iii. High costs of internet services iv. Limited access to the electricity grid in most parts of the country v. High usage taxes in the telephony sub-sector vi. Generally low income levels especially in the rural areas vii. Low ICT integration in government as well as business processes resulting in low demand for internet viii. A largely illiterate consumer mass unaware of its rights, benefits and opportunities
IT and IMS	<ul style="list-style-type: none"> i. Low levels of awareness by the public on the role IT can play in socio-economic transformation ii. Lack of IT skills and knowledge by the population especially blue color jobs and below in towns and rural areas iii. High cost of IT equipment and soft ware iv. Increase in cyber crime (electronic fraud, computer misuse) and growing insecurity in the use of IT equipment and software v. High level of digital marginalization (digital and gender divide), especially in rural communities vi. Expensive internet connectivity costs due to limited connection to the submarine cable system vii. Lack of sufficient IT skills at managerial level viii. Insufficient local content ix. Lack of relevant IT business-driven applications x. Lack of an appropriate legal and regulatory framework for the IT sub-sector xi. Lack of standards in hardware manufacturing and software development

To sum up above constraints, lack of Infrastructure and human resources with IT skills and knowledge is most problems to grow e-Government in Uganda. In order to overcome these constraints, Uganda government has planned objective, strategy, and intervention in the telecommunication and IT & IMS sub sector as below:

<Table 5 Objective, Strategy, and Intervention of Telecommunication and IT & IMS>

Sub-Sectors	Objective	Strategy	Intervention
IT and IMS	I. Enhance access to quality, affordable and equitable ICT services country wide	1. Develop ICT infrastructure	<ul style="list-style-type: none"> i. Roll out the National fibre optic cables to cover all districts ii. Construct Information Technology(IT) Business Parks iii. Support Public Private Partnership(PPP) arrangements to extend fibre optic cable to production centres and institutions
	II. Enhance the use and application of ICT services in business and service delivery	1. Promote the use of ICT in business and service operations (e-commerce and e-Government)	<ul style="list-style-type: none"> i. Enact and operationalise the Cyber Laws ii. Popularize Tele-Business Information Centres and Payphone services iii. Increase the computerization of service delivery functions in Government iv. Develop relevant local internet content and translation in local language for business, and science and technology v. Collect, preserve and disseminate documented information for present and future use
		2. Build competent human resource capacity in the sector	<ul style="list-style-type: none"> i. Provide requisite ICT skills ii. Accredite ICT courses and training institutions iii. Incorporate ICT into education curricula
		3. Develop and implement a policy, legal and regulatory framework for systematic sector development	<ul style="list-style-type: none"> i. Make operational cyber laws to facilitate e-commerce
		4. Promote utilization of ICT as a business	<ul style="list-style-type: none"> i. Support Business Process Outsourcing(BPO) Services ii. Support initial operations of the Information Technology Business Parks iii. Promote hardware assembly and software development as an investment opportunity to potential local and foreign investors

2.2.2 NRM regime's ICT Manifesto

The ICT sector under the guidance of NRM government has seen tremendous positive growth since the late nineties to date. The liberalization of the telecommunications sector and formation of the Ministry of ICT has greatly guided the sector into the leading contributor to the country's GDP.

The effective dualuse of ICT has become a very critical factor for rapid economic growth and wealth creation, and for improving the livelihoods of the world's poor. In Uganda, in addition to ICT being taken as an enabler or tool in the service sector and executing government programs and projects, it has also been recognized as an industry that can significantly contribute to socio-economic transformation of a nation.

It is against this background that the NRM listed ICT as one of the key priorities to be implemented by government to enhance developmental transformation of the country in the last 5 years (2006~2011). Therefore, NRM government has achieved ICT manifesto by 10 programs.

<Table 6: The manifesto achievements in the last 5 years (2006~2011)>

No.	Programs	Achievements
1.	Increase of Telephone subscriber base in the country	<ul style="list-style-type: none"> Telecom sector fully liberalized and opened up as a result more private telecom companies licensed hence reduction in communication costs and increase in subscriber base of over 11 million from 2.2 million in 2006
2.	Increase of ICT services coverage	<ul style="list-style-type: none"> All districts & major trading centres are covered in terms of voice and data connectivity Provision of Internet Points of Presence (POP) & district websites in over 80 districts Equipped 198 secondary schools with computer laboratories, and 300 more planned for this FY 2010/2011 Established ICT learning centres for children (Hall-in-the-Wall) Pan-African e-network at Makerere University and Mulago Hospital operationalised. More than 500 students and medical professionals have been trained through this network in the last one year alone, by leading Indian institutions
3.	Integrating all ICT activities under one political leadership	<ul style="list-style-type: none"> Ministry of ICT fully established with the following agencies: Uganda Communications Commission, Broadcasting Council, Posta Uganda, Uganda Institute of Information and Communications Technology and the National Information Technology Authority
4.	Development of ICT infrastructure to enhance voice and data communications	<ul style="list-style-type: none"> National Data Transmission Backbone and e-Government Infrastructure to provide broadband connectivity was built. This links all government ministries and departments The infrastructure has been extended to most districts and the borders with the neighbouring countries to link with the international Sub-Marine optic fibre cable system

		<ul style="list-style-type: none"> Private operators have also been issued with a new licensing scheme that enhances infrastructure provision
5.	Support of outsourcing services (Call Centres)	<ul style="list-style-type: none"> A unit to focus on Business Process Outsourcing (BPO)/ Call Centres was set up under the ICT Ministry BPO strategy developed in conjunction with private players and being implemented to stimulate job creation and employment for the youth
6.	Integration of ICTs into the National Planning Framework	<ul style="list-style-type: none"> ICTs have been identified as a core sector in the NDP
7.	Development of e-Government	<ul style="list-style-type: none"> e-Government infrastructure developed connecting all ministries in Kampala and Entebbe e-Government framework to operationalise the infrastructure has been developed Directorate of e-Government services has been established under NITA-U to oversee the implementation
8.	Review of sector policies	<ul style="list-style-type: none"> ICT policy harmonized within the East African Community Framework; Telecom policy 2006 updated Information technology policy Postal policy Digital broadcasting migration policy Electronic waste management policy Rural communications development policy Internet protocol version 6 migration policy National information security strategy
9.	Review of laws for protecting intellectual property	<ul style="list-style-type: none"> Cyber laws (Computer Misuse, Electronic Transactions, Electronic signatures) were passed by parliament
10.	Providing connectivity to rural areas	<ul style="list-style-type: none"> Modern communications services including internet provided in rural areas in partnership with licensed private operators through the Rural Communications Development Fund; District business information centres establishment Multi-purpose community tele-centers rolled out in rural areas

And, there are 12 ways forward that the NRM shall undertake the following in the next five years (2011~2016):

- i. Operationalisation and commercialization of the National Fibre Backbone and e-Government infrastructure to enhance service delivery;
- ii. Extend the National Fibre Backbone to reach all district headquarters;
- iii. Promote and market Business Process Outsourcing (Call Centres) industry to stimulate job creation and employment for the youth;
- iv. Develop human capital and critical mass of ICT skills to compete in the global market;
- v. Develop a Telecommunication Resources Management Policy;
- vi. Develop a National Postcode and Addressing System;

- vii. Establish Information Technology parks for promoting the ICT software and hardware development industry;
- viii. Institutionalize the ICT function in government by establishing ICT units in ministries, departments, agencies and local governments, and create common ICT cadre to enhance service delivery
- ix. Operationalize the migration of Analogue to Digital Television broadcasting;
- x. Extend Television and Radio signals to all districts;
- xi. Promote electronic Commerce and online services delivery to ensure efficiency, cost effectiveness, transparency and accountability;
- xii. Operationalize the National Information Security framework to protect national resources and systems from potential cyber attacks and associated risks such as cyber terrorism

2.2.3 The direction of the Ministry of ICT Policy

In Uganda, there are six documents related to e-Government which include three policies, one policy framework, one report, and one strategic plan. These are: The National Information Technology Policy, Draft Information Management Services Policy, Electronic Waste Management Policy for Uganda, National Electronic Government Framework, ICT Function in MDAs/LGs, and The NITA-U Strategic Plan 2012~2017. ICT Policy Framework (2003) has been used as a basis for the finalization of the National ICT Policy. The National ICT Policy is under development and is the overarching Policy to encapsulate the other already existing Policies [ie. IT Policy, Telecom Policy, etc.]

2.2.3.1 National Information Technology Policy (Final Draft, February 2010 by MoICT)

The intention of the government of Uganda is to consolidate its efforts and focus its energies to leverage the potential of IT for the benefit of its people. Therefore, this comprehensive 'National IT Policy' will guide and direct IT development.

- **Vision:** A knowledge-based economy where national development and governance are effectively enhanced by harnessing and adoption of IT-led economic transformation.
- **Mission:** To promote the efficient utilization of Information Technology in transforming Uganda's economy
- **Policy Goal:** To guide the optimal development and utilization of IT in the country
- **Policy Guiding Principles:** Universal Access, Importance of e-services, Globalization, Community mobilization, and Public Private Partnership
- **Policy Objectives:** The National IT Policy shall have 10 objectives:
 - i. To develop a harmonized national IT infrastructure that provides equitable access to foreign and local markets
 - ii. To provide leadership direction and vision to guide IT industry development
 - iii. To develop a critical mass of educated IT human resource at all levels to meet the local and export requirements
 - iv. To stimulate and support research and design in IT
 - v. To promote widespread use of IT applications in both public and private sectors to enhance efficiency and effectiveness in service delivery

- vi. To develop national and adopt international standards and guidelines to support growth of IT industry in Uganda
- vii. To develop an enabling legal and regulatory framework
- viii. To establish incentives for both local and foreign investors to foster the development of the IT sector (hardware, software and service industry)
- ix. Promote use of IT systems in all government MDAs and LGs and businesses to usher I efficiency and effectiveness in-service delivery
- x. To mobilize and sensitize the communities on availability of IT services

2.2.3.2 Information Management Services Policy (Draft V.8, February 2011 by MoICT)

It is the intention of the government of Uganda to consolidate its efforts and focus its energies to harness the vast information resources to facilitate improved service delivery provision and ease of access to information by the citizenry.

- **Vision:** A knowledge-based economy where national development and governance are achieved through effective utilization of Information Management services
- **Mission:** To provide efficient and effective management on information resources to fundamentally transform public service delivery
- **Policy Goal:** To guide the effective use of IMS in all Ministries, Departments and Agencies
- **Policy Guiding Principles:** Access to and protection of well managed information, Globalization, Community mobilization, Availability, Public Private Partnership
- **Policy Objectives:** The National IT Policy shall have 13 objectives:
 - i. To develop an enabling legal framework for IMS
 - ii. To harness the value of the information and knowledge held within Government
 - iii. To build an information management and knowledge-sharing culture with Government
 - iv. To provide for the use of common information management standards and secure access, storage and archival within Government
 - v. To develop a security framework for IMS
 - vi. To put in place the requisite infrastructure for IMS
 - vii. To transform the public service to attain world class standards in IMS
 - viii. To provide leadership with modern IMS tools for improved and quicker decision making
 - ix. To increase budgetary allocations to ICT Initiatives in all MDAs under which IMS will be catered for
 - x. To improve the country's global competitiveness
 - xi. To attract Business Process Outsourcing (BPO) investment into the country
 - xii. To engage leadership to manage the transformation of the attitude and behavior of personnel
 - xiii. To put in place an effective communication strategy

2.2.3.3 Electronic Waste Management Policy for Uganda (Final Draft, June 2010 by MoICT)

It is the intention of the government of Uganda to consolidate its efforts and focus its energies to protect the health of its citizens and environment against the hazards of e-waste.

- **Vision:** Sustainable e-waste management for a healthy environment and nation
- **Mission:** To have an e-waste knowledgeable nation through promotion of efficient handling and sustainable management of e-waste, hence safeguarding the country's human life and environment
- **Policy Goal:** To ensure the safe management of e-waste in Uganda
- **Policy Guiding Principles:** Human life and environment protection, Globalization, Community participation, Public Private Partnership
- **Policy Objectives:** The National IT Policy shall have 8 objectives:
 - i. To provide for establishment of e-waste management facilities in the country
 - ii. To mobilize and sensitize the Government, private sector and the communities on the proper management and handling of e-waste on a sustainable basis
 - iii. To provide specific e-waste regulation (legal and regulatory) from the acquisition, handling to the final disposal processes
 - iv. To develop a critical human resource base knowledgeable in handling e-waste
 - v. To provide for resource mobilization for efficient management and disposal of e-waste
 - vi. To provide guidance on the standards of electronic equipment that is imported in the country
 - vii. To incentivize investments in e-waste refurbishment facilities
 - viii. To engage in regional and international efforts seeking for transnational and global solutions

2.2.3.4 National Electronic Government Framework (Draft Final, June 2011 by MoICT)

The government of Uganda recognizes the role of ICT in fostering economic development and is taking steps to adopt the emerging new technologies in order to modernize service delivery. It is also the belief of the government of Uganda that ICT should be utilized to move into the era of e-Government that is aimed at demystifying the role of government, simplifying procedures, bringing transparency, accountability, and making credible timely information available to all citizens and at the same time providing all services in an efficient and cost-effective manner.

To efficiently use ICT in public administration in order to improve public service delivery and democratic processes, enhance the attainment of the Millennium Development Goals (MDGs) and other international obligations.

- **Vision:** Ensure online accessibility of all government services and opportunities for community participation in a friendly, transparent and efficient manner for all sections of the society
- **Mission:** Enhance and promote the efficiency and transparency in the functioning of government through the increased use of ICT for online service delivery to citizens and business

- **The Strategic e-Government Objective:** The main strategic objective of this programme is to continuously improve the efficiency of, and access to government information and services:
 - i. To continuously improve the efficiency of, and access to government information and services to meet citizen's expectations
 - ii. To use the successful development of the e-Government initiative to promote Uganda, as an Information Technology centre for excellence in Africa
 - iii. To establish leadership and partnerships that advance e-Government services
 - iv. To develop and maintain a secure seamless and comprehensive e-Government interface (one-stop centre integrated service delivery mechanisms)
 - v. To manage the cost of e-Government implementation through effective use of technology
 - vi. To institutionalize the use of e-Government information and services through the adoption of appropriate organizational models

2.2.3.5 Report on the Institutionalization of ICT Function in MDAs/LGs (Draft Final, March 2011 by MoICT)

The creation of the Ministry of ICT was intended to promote and ensure ubiquitous ICTS usage in the public and private sectors, as well as the entire country. MoICT is accordingly mandated and required to provide strategic and tactical leadership and direction on all matters regarding ICT, which include issues of policy, laws, regulations as well as standards. It is therefore expected to spearhead, promote, support and accelerate the advancement of e-Government and provision of e-public services.

This exercise has covered all the Government Ministries and some Departments. It aimed at providing structures to all the Ministries and a few specified Departments and Agencies (refer to appended list) as well as identifying the key issues in the current ICT related operations. The study was also extended to cover some Districts for the purpose of establishing the status on ICT staffing and the facilities as well as the related operation and management, based on the sample study of selected Local Governments.

The objectives of the study were to:

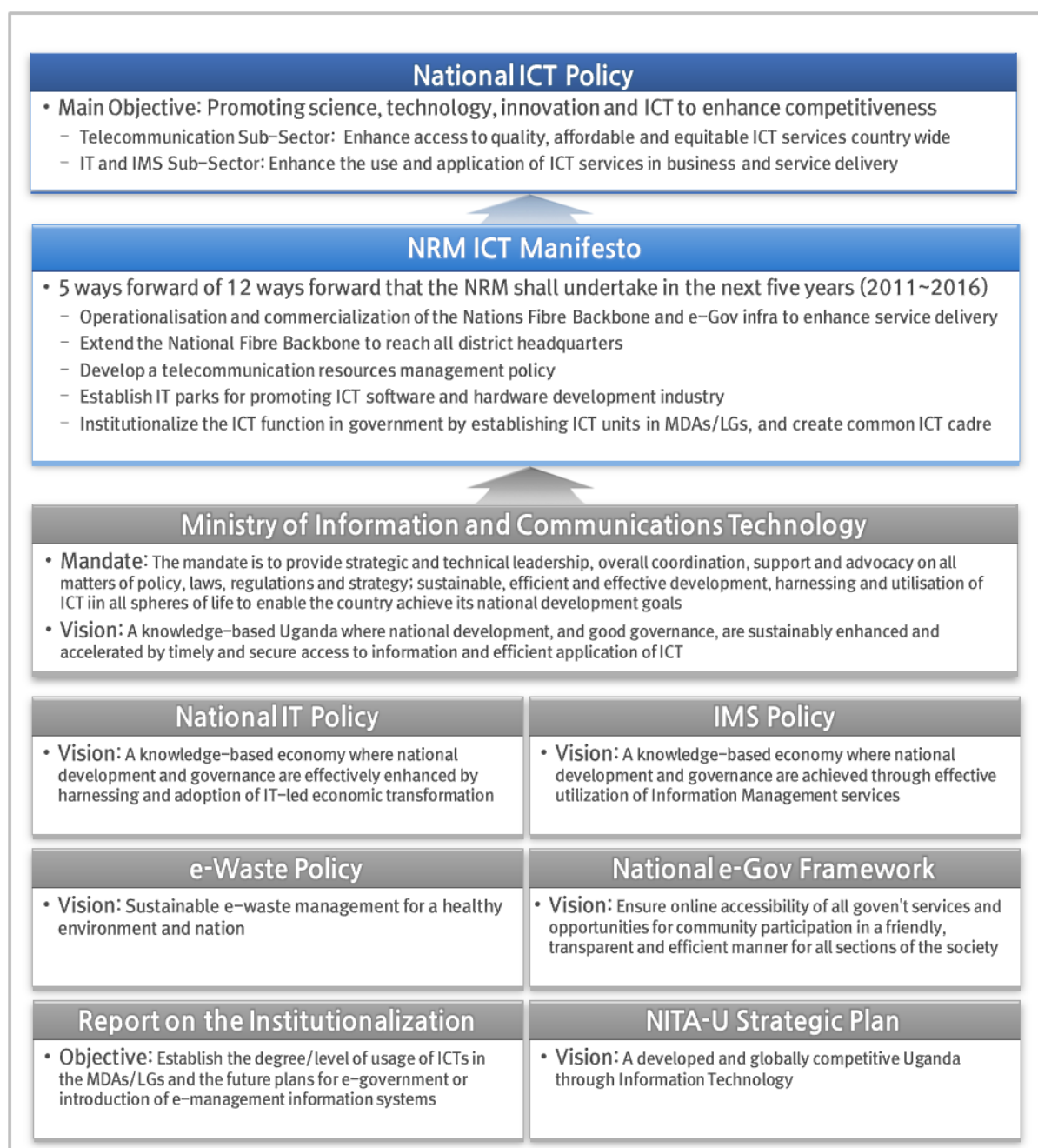
- Establish the degree/level of usage of ICTs in the MDAs/LGs and the future plans for e-Government or introduction of e-management information systems.
- Establish the current existing staffing and capacity for managing the ICT function and services as well as identifying the gaps.
- Recommend the appropriate structure and staffing norms for effective execution of the ICT; communication and Information management functions.
- Identify other related communication functions and recommend how they can be reorganized to achieve synergy with clearly defined roles and functions.

2.2.3.6 The NITA-U Strategic Plan 2012~2017

The National Information Technology Authority – Uganda (NITA-U) Strategic Plan 2012-2017 is developed in the quest to provide quality national ICT services and development, promote sector growth as mandated in the National Information Technology Authority Act, 2008. The NITA-U strategic plan is situated within the national, regional and global trends in the socio-economic and political environment that impact the ICT Sector. Specific emphasis has been made to the key competencies within NITA-U and the external environment with reference to the globalization, the demand for efficient and effective services by the citizens and national challenges and opportunities, population growth and the overarching government policies as outlined in the National Development plan.

- **Vision:** A developed and globally competitive Uganda through Information Technology
- **Mission:** To integrate information technology (IT) into national programs by focusing on the establishment of coordinated and harmonized National IT systems
- **Strategic Goal:** Harmonized IT services in government that are effective, efficient and coordinated
- **Core Values:** Integrity, Innovation, Team work, Customer centricity
- **Lines of Business:** NITA-U over the next five years is going to focus on the following lines of business;
 - i. Co-ordinate, supervise and monitor the utilization of the information technology in the public and private sectors
 - ii. Identify and advise Government on all matters of information technology development, utilization and deployment
 - iii. Set, monitor, and regulate standards for information technology planning, acquisition, implementation, delivery, support, organization, sustenance, disposal, risks management, data protection, security and contingency planning
 - iv. Regulate and enforce standards for information technology hardware and software equipment procurement in all Government ministries, departments, agencies and parastatals
 - v. Provide first-level technical support and advice for critical Government information technology systems

<Figure 4: Alignment of National ICT Policy, NRM ICT Manifesto and MOICT/NITA-U Policies>

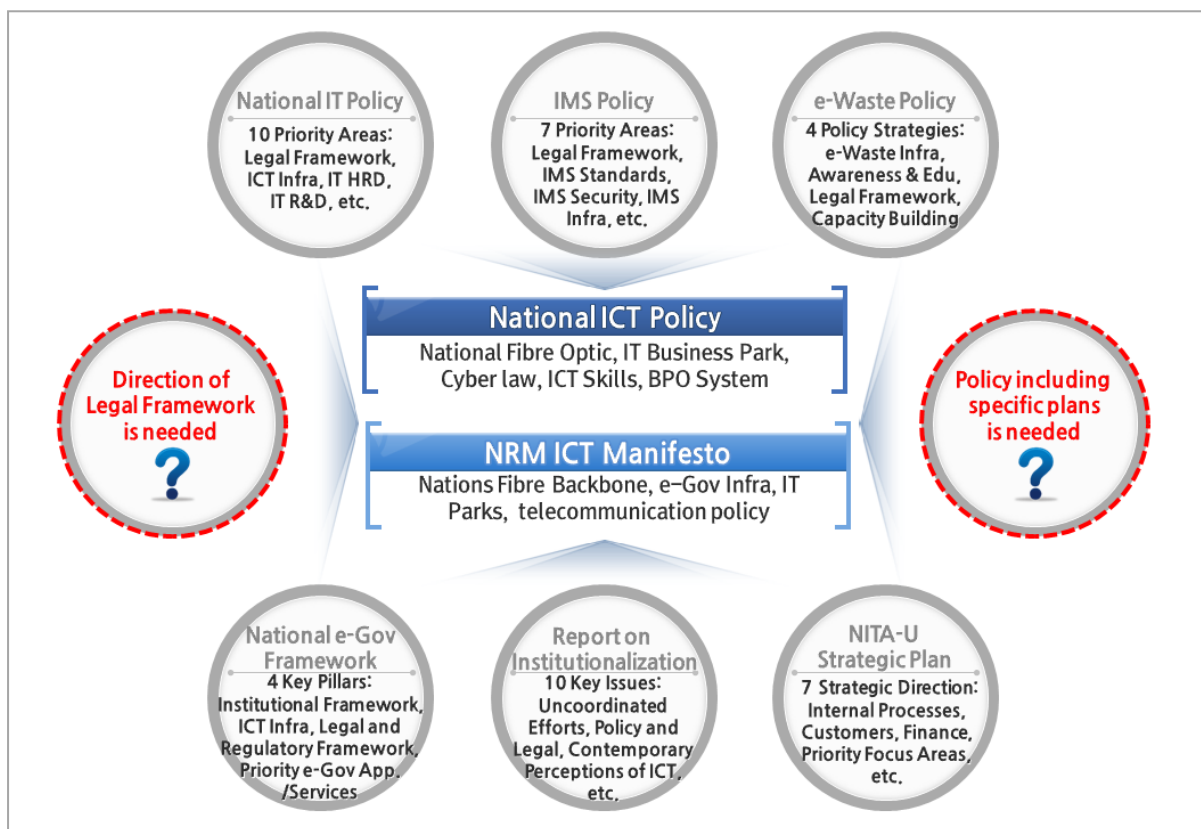


In Uganda's National ICT Policy, NRM's Manifesto, and Policies related to e-Government, national ICT infrastructure development, IT human capacity building, and legal & regulatory framework is selected for key issues.

There is an awareness of importance of ICT Sector at the level of national, present government, and Ministry of ICT.

Uganda nation, present government, and ministry of ICT have recognized the importance of ICT sector and identified present key issues, but there are no specific action plans to solve these key issues. In the NDP, there are only objectives, strategies, and intervention descriptions of ICT sector. There are no specific action plans. As well as Manifesto, IT policy, IMS policy, etc. don't have specific action plans (NITA-U have been preparing action plans, but not completed). This is due to the lack of legal framework and the difficulty of planning a specific policy. In order to make specific action plans related to e-Government, the legal framework which defines scope, organization, budget planning, etc. for promoting project should be prepared beforehand. Therefore, it is very difficult to make the specific policy including action plans without the legal framework.

<Figure 5: Present Policy Framework and existing Gaps>



2.3 Economic Environment Analysis

The economy of Uganda is influenced by internal and external factors. Even though there were political upheavals and economic downturn since independence in 1962, Uganda has regained political stability and made economic progress since the mid 1980s. However again, the global, regional, and domestic economic slow-down has constrained economic growth in 2011/12 and has affected macroeconomic stability. Government's vision and theme for the 2012/13 budget is "Priorities for Renewed Economic Growth and Development." The government has allocated resources and budgets on programmes and projects that have the highest impact on socio-economic transformation as identified in NDP, such as, e-Government.

2.3.1 Government Role in Business Sector

The role of the Uganda government is for ensuring a basic framework of legality, rights and freedom and intervening in the economy to promote economic development and growth. The main objectives of state interventions are:

- **To promote the right incentives**
- **To encourage efficient private production**
- **To ensure public goods are supplied**
- **To correct market failures**
- **To reduce inequality**

2.3.2 Foreign Direct Investment (FDI)

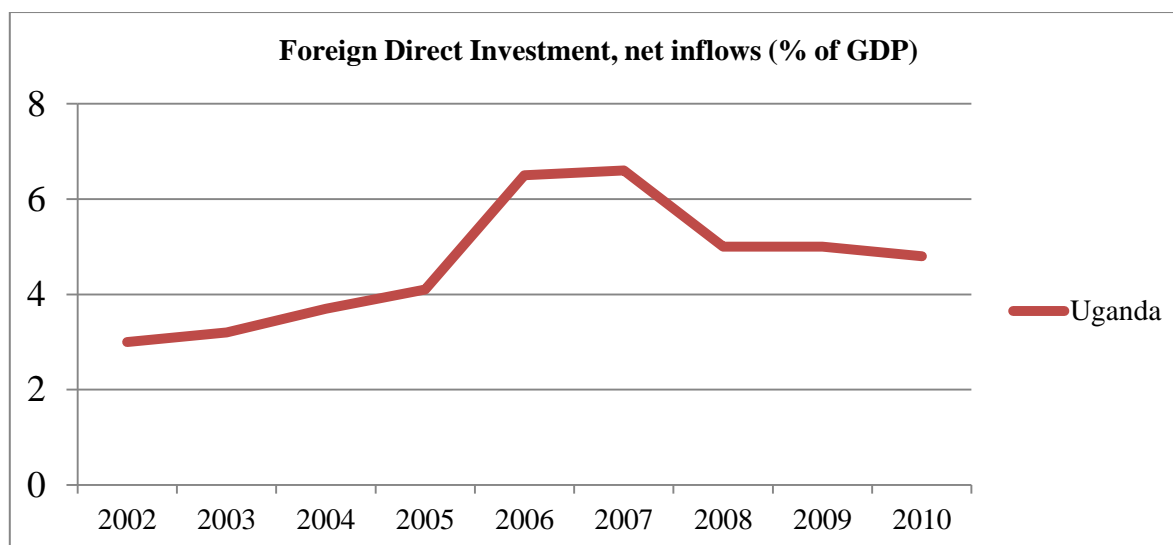
Uganda's FDI has dropped from 5.3 percent of GDP in 2007/08 to 4.6 percent of GDP in 2008/09 and it is further remained slow in 2009/10. The reasons of the low rate for FDI is due to high transport costs, lack of a policy framework for private-public partnerships, poor urban planning, and limited market size. In addition to these internal reasons, external reasons include, such as, the potential effects of the financial crisis in many countries and the world economic downturn reducing FDI.

However, the liberalization process of the national ICT sector has increased competition in the global markets started in 1994 with introduction of competition in the telecommunications industry while liberalization of broadcasting services was effected in 2000. Therefore, FDI has been increased between 2003 and 2008. Due to the investment, communication sector alone raised annual average investment from USD 43 million in 2003 to USD 150 million in 2007.

Ugandan government generally seeks the way to attract Foreign Direct Investment (FDI). In addition, in the short to medium term, government will continue to seek foreign assistance and will continue to attract Official Development Assistance (ODA) in form of grants and loans.

The government of Uganda believes FDI do play a significant role in the industrialization process of Uganda. For instance, enhancing productivity by introducing foreign technology and innovative methods and improve managerial and technical capabilities. In the financial year of 2011/12, FDI is amounting to \$834 million and portfolio flow is amounting to \$274million in the nation.

<Figure 6: Foreign Direct Investment, Net Inflows (% of GDP)>



<Source: The World Bank, 2012>

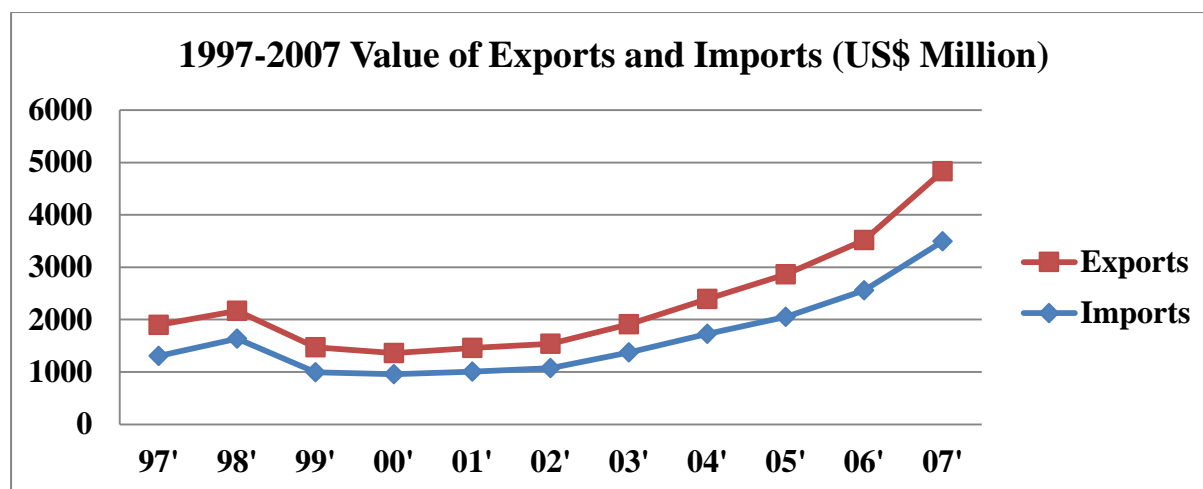
2.3.3 Exports & Imports

Exports and imports development is crucial in the creation and diversification of markets, and expansion of the export based and export markets. The export has been increased from 2.5 percent (2001) to 24.1 percent (2005), but dropped to 18.4 percent in 2006. However overall, imports have been increasing faster than exports due to inadequate transport and infrastructure available in the country and wider trade imbalance.

Uganda is Africa's second-largest producer of coffee, which accounted for about 17% of the country's exports in 2009 and 2010. Exports of nontraditional products, including apparel, hides, skins, vanilla, vegetables, fruits, cut flowers, and fish, are growing, while traditional exports such as cotton, tea, and tobacco continue to be mainstays.

Exports of goods and services during 2011/12 totaled \$4.1 billion compared to \$5.31 billion of import of goods. The government is working on to reduce the gap between exports and imports which has been widening over the years.

<Figure 7: Value of Exports and Imports (1997~2007)>



<Source: UBOS, Statistical Abstracts>

<Table 7: Value of Trade Balance (1997~2007)>

Trade Balance of Imports and Exports 1997-2007										
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
712.9	1,096.9	515.5	556.9	554.9	606.1	841.0	1,061.1	1,241.2	1,595.1	2,158.7

<Table 8: 1998-2007 Composition of Exports by Value (%)>

Compositions of Exports and By Value (Percentage %)										
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Traditional Exports	65.9	71.3	52.6	38.3	39.1	37.3	36.8	32.9	29.9	29.9
Non-Traditional Exports	34.1	28.7	47.4	61.7	60.9	62.7	63.2	67.1	70.1	70.1

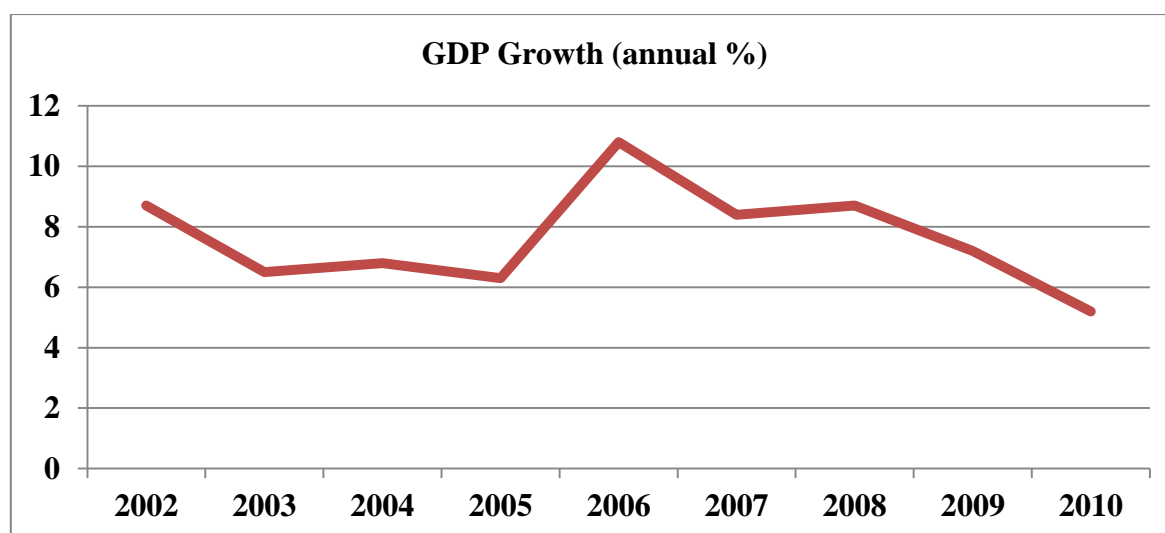
<Source: UBOS, Statistical Abstracts>

2.3.4 Economic Growth

During the past 20 years, Uganda has achieved remarkable economic growth. After severe political unrest and civil wars, Uganda has achieved 7 percent of annual economic growth in 1986. By the late 1980s, the economy developed through the recovery and reconstruction after the civil war. By the early 1990s, economic development has been achieved through the overall macroeconomic and government structural adjustment.

However, the growth rate slowed to 6.8 percent between 2000 and 2003 but regained remarkable growth to 8 percent over the period 2005 to 2006. The impressive GDP growth performance is due to a significant reduction in poverty levels. As a result of the global recession, Uganda's GDP growth declined slightly over the period 2008 with 8.7% to 2009 with 7.2% which was the cause of the reduced demand of Uganda's exports to Europe and America and it had been remained continuously slow until 2010. Government of Uganda has been working on growth in GDP by changes in its broad sectoral composition, such as, to reflect structural transformation in the economy.

<Figure 8: 2002-2010 GDP Growth (annual %)>



<Source: The World Bank, 2012>

Uganda has faced global, regional, and domestic economic challenges in 2011/12. Real GDP growth was estimated at 3.2 percent in the last fiscal year of 2011/12 from an average growth rate of 5.4 percent the past four years. This was due to the drought, weaker demand of its exports, high international fuel prices, imported inflation coupled with the weak shilling and strong dollar in global, and slowdown of the global and spillover effects of the Eurozone crisis. The macroeconomic objective of the Government in 2012/13 is to recover economic growth to achieve at least 7 percent in the medium term, the return to single digit inflation rates and the return to a stable and more competitive exchange rate. Uganda in the last year (2011/12) had depreciating shilling, but in recent months the shilling has found some stability. The financial strategy of Uganda for the national budget is themed as, “Priorities for Renewed Economic Growth and Development.”

2.3.5 Industry

The primary growth industry sectors in Uganda include agriculture development, forestry, manufacturing, tourism, mining, oil and gas, ICT and housing development. The performance of these sectors has been varying.

<Table 9: Share of Selected Primary Growth Sectors in GDP and Growth Performance>

Primary Growth Sectors	Percentage Share in GDP (Current Prices)					Growth Performance (Percent)				
	1998	1997	2004	2007	2008	1988- 1997	1998- 2002	2004- 2008	2007	2008
Agriculture	51.1	33.1	17.3	14.5	15.4	3.9	5.4	1.1	1.7	2.2
Forestry	2.2	1.7	3.3	3.5	3.4	4.7	7	3.9	2.2	4.2
Manufacturing	5.9	8.4	7.0	6.9	7.2	13.2	7.2	6.3	7.6	6.7
Hotels&Restaurant (Tourism)	1.1	1.9	4.0	4.1	4.1	13.1	3.8	9.6	9.2	12.5
Mining	0.1	0.6	0.3	0.3	0.4	34.6	8	13	5	10.4
Post&Telecommunications(ICT)	0.2	0.6	2.0	3.0	3.4	10.1	22.8	26.2	16.1	39.6
Construction	4.1	6.5	11.9	12.2	12.2	6.5	6.3	6.3	4.8	5.8

<Source: UBOS, Statistical Abstracts>

2.3.5.1 Agricultural Development

The share of agriculture in GDP was 33.1 percent in 1997 and declined to 15.4 percent in 2008. The sharp decline in the share of agriculture in GDP represents significant structural transformation in the economy.

Much of the industrial activities in the nation is agro-based. Even though there has been declining its share of GDP, agriculture remains crucial since it provides basis for growth in other sectors such as manufacturing and services and the largest job opportunities. Agricultural exports accounted for 47 percent of total exports in 2007.

Agricultural production is diverse and covers coffee, tea, cotton, potatoes, corn, bananas, goat meat, milk, and etc. The sector has been rehabilitated and resumed production of building and construction materials, such as cement, reinforcing rods, corrugated roofing sheets, and paint. Domestically-produced consumer goods include plastics, soap, cork, beer, and soft drinks.

The government will help to improve farm inputs, support the seed industry and complete ongoing rehabilitation of irrigation schemes to increase agricultural productivity. The government is happy about the agricultural sector which has performed much better during 2011/12, recording annual growth of 3 percent. The government is expected to perform better given its climate advantage in the next financial year of 2012/13. The government also has an intention to promote agricultural sector to increase export revenue in the financial year of 2012/13.

The agricultural sector takes an important role in the economic transformation in Uganda in terms of job and wealth creation. Therefore the government has increased its budget allocation of this sector in 2012/13. The government considers agriculture and tourism are the critical sectors in which the economy aimed to generate job creation and increase production in the nation.

<Table 10: Agriculture Sector Allocations for 2012/13 (Unit: Shillings in Billion)>

Rank	Sector	2011/12	%of Total	Rank	Sector	2012/13 10.2	% of Total
9	Agriculture	434.1	4.7	8	Agriculture	585.3	5.74

<Source: Budget Framework Paper 2012/13>

2.3.5.2 Forestry

The share of the forestry sector in GDP was 1.7 percent in 1997 and rose to 3.4 percent in 2008. However, the improvement in the contribution of forestry has been characterized by recent declining performance. For instance, between 2004 and 2008, the sector only grew by 3.9 percent per year and this is due to decreased in forests from 4,933,746 hectares in 1990 to 3,604,176 hectares in 2005.

2.3.5.3 Manufacturing

The share of the manufacturing sector in GDP was 8.4 percent in 1997 and declined to 7.2 percent in 2008. Between 1988 and 1997, the sector grew at 13.2 percent per year and recorded the highest growth of 18.3 percent in 1995. However, the labor force employed in the sector decreased from 0.29 percent in 2002/03 to 0.14 percent in 2005/06.

2.3.5.4 Tourism

The share of tourism in GDP, measured by the share of hotels and restaurants in GDP, was 1.9 percent in 1997 and increased to 4 percent in 2008. The sharp shift in the share of tourism in GDP represents a significant structural transformation in the economy. In the fiscal year of 2012/13, the government has increased the allocation from Shs53.1billion to Shs65.1 billion, which accounts 0.64 percent of the total budget for the tourism sector.

<Table 11: Tourism Sector Allocations for 2012/13 (Unit: Shillings in Billion)>

Rank	Sector	2011/12	%of Total	Rank	Sector	2012/13 10.2	% of Total
14	Tourism	53.1	0.57	14	Tourism	65.1	0.64

<Source: Budget Framework Paper 2012/13>

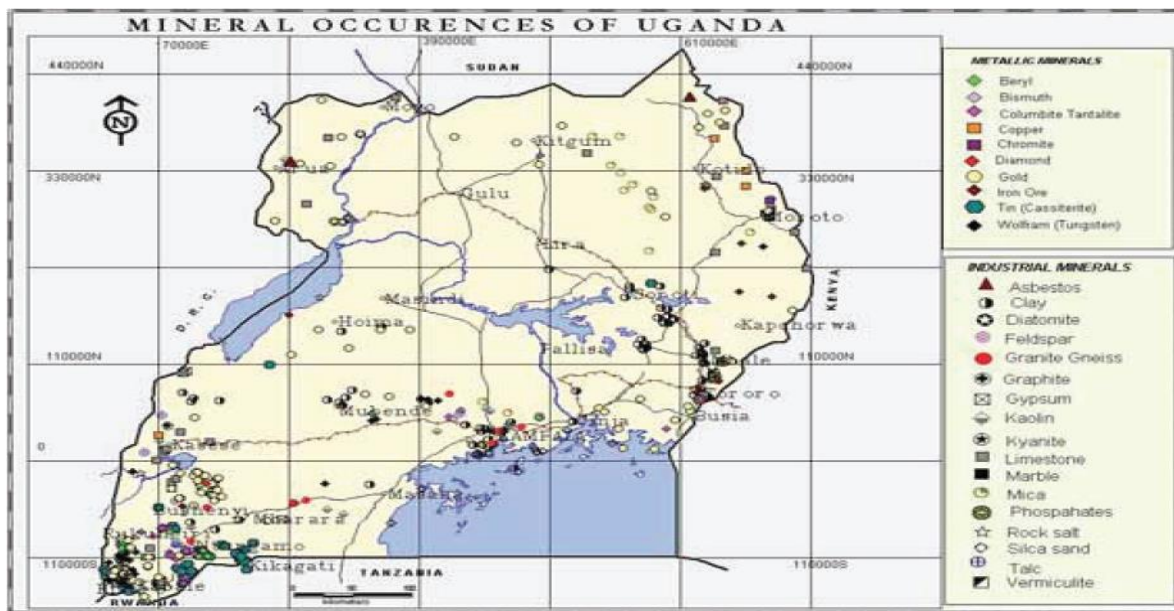
2.3.5.5 Mining

Uganda is endowed with a variety of mineral deposits. Mineral and mining exploration and processing have occurred since the colonial times. In 1960s, mining was ranking the top economic activities in Uganda, however, the contribution of mining to GDP declined significantly in 1970s due to political and economic stability.

The share of mining in GDP was 0.6 percent in 1997 and declined to 0.3 percent in 2008. Between 1998 and 2002, the sector grew by 8 percent per year and 13 percent between 2004 and 2008. The labor force employed in the sector slightly increased from 0.93 percent (2002/03) to 1.0 percent (2005/06).

Over the past six years, the government has implemented a *Comprehensive Mineral Sector Reform Programme* with a goal of harmonizing the legal, policy and institutional framework within the sector.

<Figure 9: Distribution of Minerals in Uganda>



<Source: United Nations 2003>

2.3.5.6 Construction

The share of construction in GDP, measured by housing performance, was 6.5 percent in 1997 and increased to 11.9 percent in 2008. Between 1998 and 2002 the sector grew at 6.3 percent, and from 2004 to 2008, the performance of the sector was 6.3 percent.

2.3.5.7 ICT Development Sector

The share of ICT in GDP, measured by the share of posts and telecommunications, was 0.6 percent in 1997 and increased to 3.8 percent in 2008. Between 1998 and 2002 the sector grew at 22.8 percent, and from 2004 to 2008 the sector was 26.2 percent. The number of fixed and mobile lines per 100 people increased from 0.24 and 0.02 in 1996 to 0.56 and 27.68 in 2008, respectively. Internet usage has been slowed due to the lack of internet support infrastructure of the country and the low rate of computer literacy in Uganda.

A budget allocation to ICT has reduced from Shs12.1billion in 2011/12 to Shs12 billion in 2012/13. The ICT sector remains the least funded with a mere 0.2 percent and 0.1 percent of the country's total resource envelope in 2011/12 and 2012/13. However, telecoms are the biggest tax payers in the country and several ICT projects are recently going on, for instance, e-governance, e-education, e-health. Therefore, these come to the fact that ICT sector has a substantial potential to be a growth leader both in terms of revenue and GDP contribution to government.

<Table 12: ICT Development Sector Allocations for 2012/13 (Unit: Shillings in Billion)>

Rank	Sector	2011/12	%of Total	Rank	Sector	2012/13 10.2	% of Total
16	ICT	12.1	0.13	16	ICT	12.2	0.1

<Source: Budget Framework Paper 2012/13>

2.3.5.8 Oil and Gas

The oil and gas is relatively new sector, but it has a huge potential. The oil and gas in Uganda reserves are estimated at 2 billion Barrels of Oil Equivalent (BOE). To expand and exploit these resources, the country is required for large investments for further development.

2.3.6 Business Environment and Competitiveness

The business climate in Uganda has significant impediments as indicated in the *World Economic Forum's Country Competitiveness Index 2009*. Uganda ranks 108 out of 133 countries and many other African countries rank better due to the better investment and business environments. The countries are as follows.

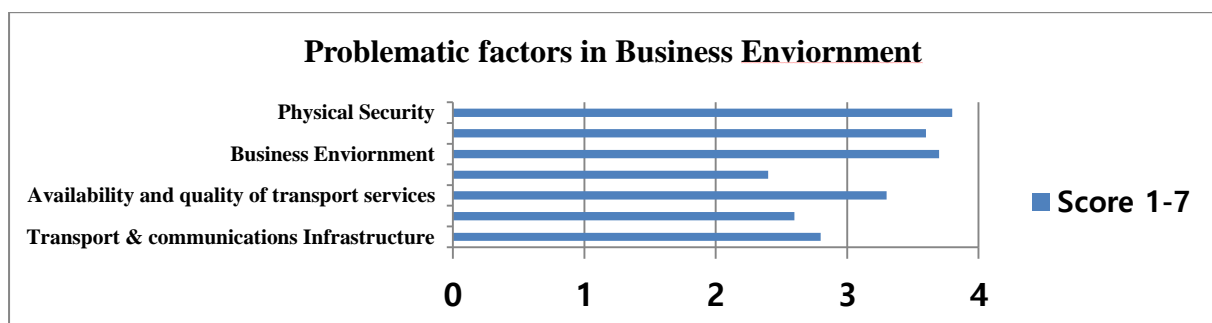
- Tanzania - 100th
- Kenya - 98th
- Namibia - 74th
- Botswana - 66th
- South Africa - 45th

Uganda needs to perform well in areas of health, primary education, higher education, training, infrastructure, institutions, and technological readiness to support the primary growth sectors of the nation.

The international *Doing Business Survey 2010* reported, Uganda ranks 112nd out of 183 countries. Problems identified in areas of particularly for accessing finance, corruption, infrastructure, tax administration, work ethics and government bureaucracy.

Uganda Government will focus its resources to improve the business climate, agricultural climate, a young adaptable workforce, and truly undergo a structural change for economic transformation. The government will leverage its resources to support private sectors to grow and lower the cost of doing business in Uganda. Due to its geographical location and favorable climate, Uganda is capable of becoming a distribution hub of the region. Uganda will concentrate on producing food security and exporting staple crops to diversify its market and to increase inter-regional trade with its neighboring countries.

<Figure 10: Problematic factors in Business Environment>



<Source: World Economic Forum- World Competitiveness Index 2012>

2.4 Social Environment Analysis

Uganda is a multi-ethnic country and the largest ethnic group is Baganda which comprises approximately 17% of the total population. Many people are living in poverty line with less than \$2 a day. However, there is a recent progress in economic development and industrialization due to the government's action towards the economic situation, such as, to combat education, health, and unemployment issues.

The ethnic diversity has been viewed both positively and negatively in different social contexts. While trying to maintain one's ethnic roots, conflicts arise in both values and integration in the mainstream society. While diversity means there is a highly segmented population each with their human need to be heard and represented, occasionally, it may lead to tension, dissatisfaction, jealousy, intolerance, and even hatred. On the other hand, preservation of Uganda's unique culture differences fosters the nation's perspective of unity through diversity, understanding, and acceptance.

Employment rate is an increasing issue in Uganda due to the several factors. Low enrollment and facilities available in secondary-education, as well as limited health budget, lack of medical expertise and facilities all play a factor in the nation's low employment rate. Government intervention through various action plans has been initiated to combat these issues to realize the social development.

The government is trying to complete ongoing rehabilitation of irrigation schemes and increase the provision of water for irrigation by partnering with the private sector. Also, the government is trying to extend services, road and electricity infrastructure and financial services.

2.4.1 Population

The population growth rate is relatively high at 3.2% in 2010 compared with the world's average at 1.2%, but a high proportion of the population is young. In the last financial year of 2011/12, the rate of population growth in Uganda was 3.5%. Among the total population in Uganda, there is 51.8% (2010) for population ages of 0-14, and 46.8% for population ages of 15-64.

The average life span is continuously rising and is approximately 53.6 years in 2010 (was 47.5 years in 2002), this trend is likely to continue. However, according to UN's 2009 *Human Development Report*, there is more than a half of the population under the age of 18 and this is due to the high proportion of adult mortality rate from aids, malaria, tuberculosis and others.

<Table 13: Population Estimates and Projections 1991-2015>

	'91	'95	'00	'02	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15
Total Population (million)	16.67	19.50	22.87	24.23	26.74	27.63	28.58	29.59	30.66	31.78	32.94	34.13	35.36	36.62	37.91
Male population (million)	8.19	9.57	11.12	11.82	12.94	13.39	13.87	14.38	14.93	15.52	16.12	16.74	17.38	18.04	18.72
Female Population (million)	8.49	9.93	11.75	12.40	13.80	14.24	14.71	15.21	15.73	16.27	16.82	17.39	17.97	18.57	19.19
Percent with age 0-4 years (%)	18.92	20.61	21.04	18.7	20.8	20.7	20.7	20.6	20.6	20.6	20.6	20.6	20.5	20.4	20.2
Percent with age 5-14 years (%)	28.4	28.51	30.13	30.6	31.5	31.8	31.7	31.6	31.4	31.2	31.0	30.9	30.8	30.7	30.7
Percent with age 15-49 years (%)	43.5	43.56	42.41	42.8	42.2	42.2	42.5	42.8	43.1	43.4	43.6	43.9	44.1	44.3	44.6
Percent with age 15-64 (%)	49.5	48.7	47.06	47.6	46.2	46.0	46.2	46.4	46.6	46.8	47.0	47.3	47.5	47.7	47.9
Percent with 65 and over years	3.3	2.17	1.77	3.1	1.6	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.2
Percent of females with age 15-49 (%)	44.5	43.75	42.96	43.7	42.7	42.6	42.8	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.0
Sex ratio	96.5	96.43	94.64	95.3	93.8	94.0	94.2	94.6	95.0	95.4	95.8	96.3	96.7	97.2	97.6
Dependency ratio	102.5	1.05	1.12	110.2	1.17	1.18	1.16	1.15	1.15	1.14	1.13	1.12	1.11	1.1	1.09
Median age	16.5	15	15	15.3	14	14	14	14	14	14	14	14	14	14	15
Urban Population (million)	1.89			2.98	3.95	4.08	4.22	4.37	4.52	4.69	4.89	5.03	5.21	5.39	5.57
Rural Population (million)	14.78			21.25	22.79	23.55	24.36	25.22	26.14	27.09	28.05	29.10	30.15	31.23	32.34
Percent urban	11.34			12.30	14.77	14.77	14.76	14.77	14.74	14.76	14.85	14.74	14.74	14.72	14.69
Percent rural	88.66			87.70	85.23	85.23	85.24	85.23	85.26	85.24	85.15	85.26	85.26	85.28	85.31

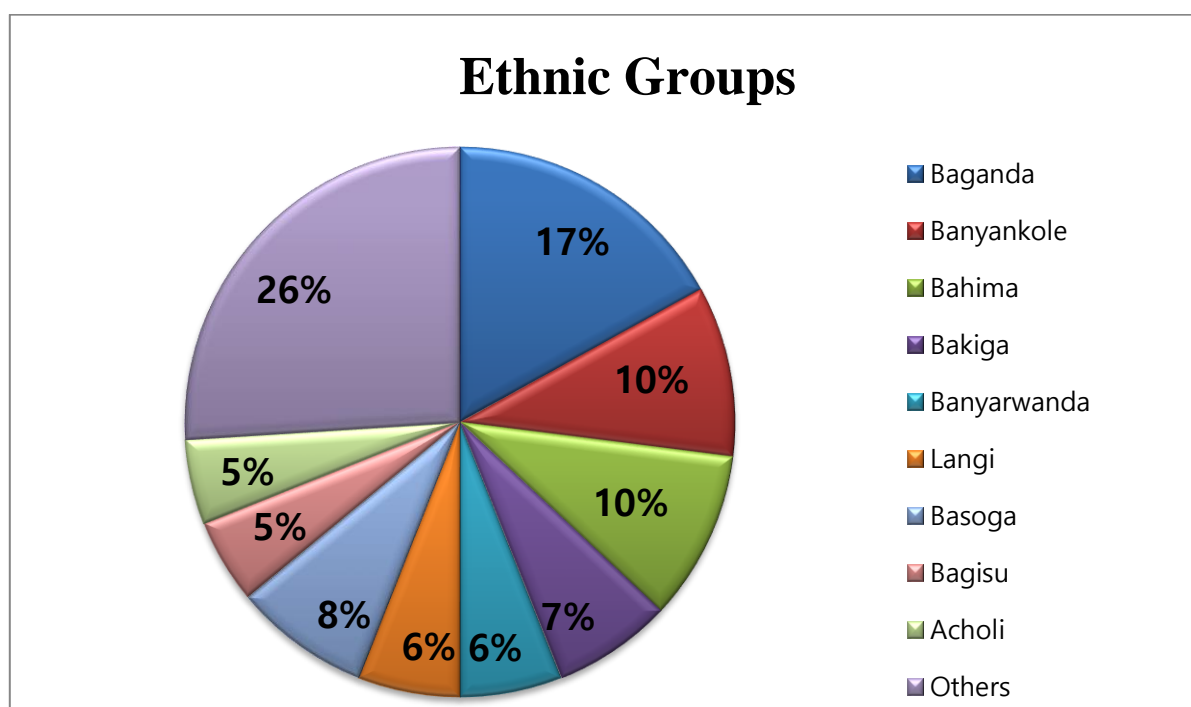
<Source: National Development Plan 2010/11-2014/15>

2.4.2 Ethnicity

Uganda is a multi-ethnic country that consists of different ethnicities. There are Baganda, Banyankole, Bahima, Bakiga, Banyarwanda, Bunyoro, Batoro, Langi, Acholi, Lugbara, Karamojong, Basoga, Bagisu, and other diverse ethnicities in Uganda.

The largest ethnic group in Uganda is Baganda which comprises approximately 17% of the population. Ethnic groups in the southwest include the Banyankole and Bahima (10%), the Bakiga (7%), the Banyarwanda (6%), the Bunyoro (3%), and the Batoro (3%). Ethnicities of the north include the Langi (6%) and the Acholi (5%). In the northwest are the Lugbara (4%). The Karamojong (2%) occupy the considerably drier, largely pastoral territory in the northeast. Ethnic groups in the east include the Basoga (8%) and the Bagisu (5%).

<Figure 11: Uganda's ethnic Distribution>



<Source: U.S. Department of State 2012>

2.4.3 Education

The rate of illiteracy rate in Uganda has continuously decreased due to the rising public spending on education. The Government of Uganda has committed to achieving the Millennium Development

Goal(MDGs) by 2015 in regards to education and health. In recent year, a substantial percentage of government resource allocation for education is spent on primary education and adult literacy, thereby increasing national literacy rate for adult. At the secondary level, it is estimated that there are about 840 government aided schools in 760 sub counties. However, Secondary education is not widely

available throughout the whole nation. It is estimated that about half of the sub-counties in the rural areas do not have access to secondary education.

<Table 14: Education Percentage in Uganda>

Category	Percentage
2009 Public Expenditure for Primary education	57%
2010 Children Enrolled for Primary Education	90.9%
2010 National Literacy Rate for Adult (People ages 15 and above)	73.2 %
2004 Children Enrolled for Secondary Education	15.5%

The government will allocate sh290b for salary raises of primary school teachers and post-O'level science teachers, therefore primary school teachers can expect a pay rise.

Education accounts the biggest chunk of the nation budget in 2012/13. It is allocated Shs1,669 trillion from the government. This also shows an increase compared from the last financial year.

<Table 15: Education Sector Allocations for 2012/13 (Unit: Shillings in Billion)>

Rank	Sector	2011/12	%of Total	Rank	Sector	2012/13 10.2	% of Total
1	Education	1.4 Trillion	15.2	1	Education	1.669 Trillion	16.36

<Source: Budget Framework Paper 2012/13>

2.4.4 Health

Many citizens are exposed to disease due to limited health budget, lack of medical expertise, and facilities.

- The government expenditure on Health had been decreased from 2002 (29.5%) to 2008 (17.2%). But since then it has been increased to 21.7% (2010) with the government's efforts. The government set *Poverty Eradication Action Plan 2004/5–2007/8* and fully addressed social issues, such as education, health, water and sanitation and other social services
- However, medical facilities in Uganda, including Kampala (capital) is limited and not equipped to handle most emergencies, especially those requiring surgery
- In December 2010, seven districts in northern Uganda reported occurrences of yellow fever (characterized by fever, vomiting and bleeding). But medical equipment and medicines were often in short supply or unavailable

In the year of 2011/12, there were only 260,000 HIV/AIDS patients who received ARVs under the Government's support, but this only represents about 50 percent of the patients who need ARVs. In

the following year of 2012/13, the government has announced to undertake 100,000 HIV/AIDS patients on anti-retroviral treatment. In addition, the government has allocated Shs752.5 billion, which accounts 7.38 percent of the total resource envelope in 2012/13.

<Table 16: Health Sector Allocations for 2012/13 (Unit: Shillings in Billion)>

Rank	Sector	2011/12	%of Total	Rank	Sector	2012/13 10.2	% of Total
6	Health	804.7	8.75	5	Health	752.5	7.38

<Source: Budget Framework Paper 2012/13>

2.4.5 Major Social Issues

- Unemployment has become a major social issue in Uganda and the government is trying to reduce the unemployment rate among the youth
 - The unemployment rate has been increased since 2005 (2% of total labor force) to 2009 (4.2% of total labor force)
 - Uganda is one of the countries of the high rate of unemployment in the World. According to the *2011 Global International Labor Organization Report*, it is indicated that the youth unemployment in Uganda hit 83%, ranking second after Niger among the countries with the highest unemployment
 - According to the Ministry of labor statistics, out of the 390,000 youth who enter the labor market every year, only 130,000 get employed, leaving over 260,000 jobless annually
- In Uganda, the *Poverty Eradication Action Plan 2004/2005 – 2007/2008* recognizes that a healthy and well-educated population is a necessary condition for the national development. However,
 - 38% of the population living on less than \$1.25 a day in 2009 (at 2005 international prices)
 - 64.7% of the population living on less than \$2 a day in 2009 (at 2005 international prices)
- Crimes such as pick pocketing, purse snatching, and thefts from hotels and parked vehicles or vehicles stalled in traffic jams are common
 - Pick pocketing and the theft of purses and bags is very common on public transportation
 - Armed robberies of pedestrians also occur, sometimes during daylight hours and in public places
 - In April 2008, the Ugandan police reported that an increase in armed robberies in the Kampala neighborhoods of Bukoto, Kisaasi, Kiwatule, Naalya, Najera, and Ntinda
- Unemployment is one of the major social issues in Uganda. The high rate of unemployment could cause many social crimes and increase the poverty level in the nation.

2.4.6 Social Infrastructure

Between 1971 and 1986, Uganda's economy was seriously damaged and the economic production decreased dramatically. The country's infrastructure, notably its transportation and communications systems that were destroyed by war and neglect is being rebuilt by the government of Uganda. The condition of Uganda's infrastructure is poor, including Kampala, the capital, due to the years of underinvestment in transport and electricity supply networks which remained obstacles to the industrial development. For e-Government or telecommunication infrastructure, even though there is a substantial amount of investments, the application or usage of e-Government infrastructure is still limited.

2.4.6.1 ICT Infrastructure

In the last five years, development of ICT infrastructure to enhance voice and data communications has been achieved due to the efforts of the Uganda government:

- Built National Data Transmission Backbone and e-Government Infrastructure to provide broadband connectivity which helped to link most Government Ministries and Departments.
- Infrastructure has been extended to most districts in Uganda and to the neighboring countries with the international sub-marine optic fire cable system.

The national budget has been allocated in ICT sector for 12.2 billion shillings in 2012/13, which accounts 0.1percentage out of the total budget envelope.

<Table 17: ICT Development Sector Allocations for 2012/13 (Unit: Shilling in Billion)>

Rank	Sector	2011/12	%of Total	Rank	Sector	2012/13 10.2	% of Total
16	ICT	12.1	0.13	16	ICT	12.2	0.1

<Source: Budget Framework Paper 2012/13>

2.4.6.2 Electricity

The electricity supply network is one of the urgent tasks to improve infrastructure of Uganda. The lack of power supplies slows down the economic and social-transformation. The low consumption per capita in the nation has largely contributed to the slow economic transformation and limited industrialization. Only 9% of the total population had access to electricity in 2009. Due to the fast growing economic development in the country, the electricity demand of the population growing around 6% in each year exceeds the maximum amount of electricity production for more than 50%. The poor condition of the electricity supply network is remaining one of the obstacles to the industrial development.

The electricity in Uganda is used for industrial and commercial production. The electricity consumption of 2008 was 29.3 percent for residential activities, 13.2 percent for commercial, and 57.5

percent for industrial. Currently installed power generation capacity is 595.84 MW, however, actual power generation throughout the nation is only about 380 MW.

Installed capacity is expected to be increased with the construction on 600MW Karuma Dam, and preliminary designs for the 600MW in Ayago and 140 MW in Islamic Dams. In addition, funds will be set aside for financial support to mini-hydro projects which total of 145MW.

<Table 18: Installed Capacity and Actual Generation of the Power Connected to the National Grid 2010/11>

Installed Capacity and Actual Generation of the Power Connected to the National Grid			
Type of Power	Installed Power Capacity	Actual Power Generation	Remarks
Hydro Power	409 MW	140-200 MW	180 MW (Nalubaale HPP)
			200 MW (Kiira HPP)
			28.84 MW (Mini-HPP)
Biomass Power Potential	26 MW (17MW connected to Grid)	26 MW (17MW connected to the Grid)	Kakira (18MW) but to Grid 12MW Kinyara (8MW) but to Grid 5MW
Thermal Power	170 MW	170 MW	Namanve (50MW), Mutundwe (50MW), kiira (50MW) and Tororo (20MW)

<Source: Uganda National Development Plan 2010/11 – 2014/15>

<Table 19: Electricity Generation Projections to Meet the Vision and NDP Targets 2010/11>

Electricity Generation Projections to Meet the Vision and NDP Targets							
Year	2010	2015	2020	2025	2030	2035	2040
Consumption (kWh/capita)	75	674	1273	1872	2470	3069	3668
Capacity (MW)	425	3,885	8,601	14,670	22,222	31,252	41,738

<Source: Uganda National Development Plan 2010/11 – 2014/15>

2.4.6.3 Transport

For the diversification of its market and the increase in inter-regional trade with its neighbors will benefit from cheaper transport. The rehabilitation and expansion of road and electricity infrastructure will help to reduce transport costs. The work and transport took the second largest percentage of government budget in 2012/13 after the education sector which is 1.4 trillion Shillings, accounts for 13.72 percentage out of the total allocations. Currently, more than 90% of logistics are transported by roads and rail networks, therefore transportation and freight cost are much higher than neighboring countries which decreases price competitiveness of export items.

According to the government of Uganda, the national budgets have been allocated especially to roads renovation and construction. Through removing constraints of developing infrastructure in transport and energy, the government is expected to reduce the cost of transport and increase in doing business in Uganda.

<Table 20: Works and Transport Sector Allocations for 2012/13 (Unit: Shillings in Billion)>

Rank	Sector	2011/12	%of Total	Rank	Sector	2012/13 10.2	% of Total
3	Works and Transport	1.2 Trillion	13.04	2	Works and Transport	1.4 Trillion	13.72

<Source: Budget Framework Paper 2012/13>

2.4.6.4 Road Infrastructure

Roads are the most commonly used transportation infrastructure in Uganda, accounting for more than 90% of cargo freight and passenger transportation. In 2012, Uganda has about 78,100 kilometers (48,529 mi.) of roads. Only 3,000 kilometers (1,864 mi.) are paved and the most of them are at Kampala.

The national budget in 2012/13 has been allocated for the continuation on 1,563km of road works around the country and will be additionally allocated to begin construction on the Kampala-Entebbe expressway for 302km. The government will allocate Shs22.2 billion for Land sector which accounts 0.22% out of the total resource envelope in 2012/13.

Roads that are going to be renovated including:

- Fort-Portal –Bundibugyo
- Busega-Ma-saka
- Nyakahita-Kazo-Kamwenge
- Kawempe-Kafu
- Malaba/Busia-Bu-giri
- Kampala-Entebbe Expressway and others

<Table 21: Land Sector Allocations for 2012/13 (Unit: Shillings in Billion)>

Rank	Sector	2011/12	%of Total	Rank	Sector	2012/13 10.2	% of Total
15	Lands	32.4	0.35	15	Land	22.2	0.22

<Source: Budget Framework Paper 2012/13>

2.4.6.5 Railway Infrastructure

The country has a 321 kilometer (200 mi.) rail network, much of which is not currently in use. Uganda's road and rail links to Mombasa serve some of the transportation needs of the neighboring countries of Rwanda, Burundi, and parts of D.R.C. and Sudan.

Railway is allocated an amount of budgets for designing and building of:

- Gulu-Atiak-Nimule Railway
- Construction of a railway line from Tanga – New Kampala Port

The transport sector has been allocated an amount of the national budget such as in roads and railways in the country, but unlike the other subsector, airport transport has remained silent.

<Figure 12: 2010 Uganda Railways>



<Source: Railway Gazette 2010>

According to the Government, six key service delivery sectors to the citizens include agriculture, roads, energy, health, education and water infrastructure. These sectors share a substantial amount of budget in the fiscal year of 2012/13 and also are the focus on the National Development Plan (NDP).

2.5 Technical Environment Analysis

2.5.1 Current Status of ICT Development

The main categories of ICT infrastructure in Uganda are fixed telephone, mobile cellular and broadband internet, among which mobile communication infra/market is well developed compared to the others owing to the physiographic features and government's investment

ICT industry has shown rapid growth in line with economic growth which led to increase of service demand, competition among telecommunication companies, investment on the ICT infrastructure.

Uganda is behind of Kenya and Tanzania in terms of ICT Development Index (IDI), Networked Readiness Index (NRI) and e-Government Rank, and it is inferior to the other advanced African IT countries. However, one of the most noticeable aspect is that recently Uganda cuts a fine figure in development of various ICT fields such as Internet, telecommunication, etc.

<Table 22: Comparison of Various ICT Index>

Country	ICT Development Index (IDI), 2010	Networked Readiness Index (NRI), 2012	e-Government Rank, 2012
Rep. of Korea	1/152	12/142	1/190
Uganda	140/152	110/142	143/190
Kenya	115/152	93/142	119/190
Tanzania	138/152	123/142	139/190

<Source: ITU(2011), WEF, UN e-Government Survey 2012>

Although the government of Uganda has paid close attention to ICT continuously, national level of informatization is still low compared to the neighboring countries, owing to the satellite-based internet service and wireless network.

Also, there exist elements that hinder ICT industry's development such as lack of ICT infrastructure, weak industrial base in software, manpower shortage in ICT field, etc.

<Table 23: ICT Price Basket and Sub-baskets in 2010>

Country	ICT Price Basket Value	Sub-baskets (% of GNI Per Capita)		
		Fixed - telephone	Mobile - cellular	Fixed – Broadband Internet
Korea(Rep.)	0.9	0.3	0.9	1.5
Uganda	30.2	22.8	31.8	35.9
Kenya	33.1	22.4	17.0	59.9
Tanzania	31.4	21.1	23.2	50.0

<Source: ITU, 2011>

2.5.2 Fixed/Mobile Communication

Uganda's national telecommunication network is ISDN and MTN, one of the telecommunication operators in Uganda, is providing 3.5G service by adopting the technology of Huawei Technologies, a Chinese multinational networking and telecommunications equipment and services company. However, the main stream of mobile communication is still 2G.

Mobile data and 3G broadband services as well as mobile money transfer and m-banking services are at the forefront of this development in a country where less than 20% of the population currently has Internet access or holds bank accounts.

As of 2010, the number of fixed telephone subscriptions is more than three hundred thousand, while that of mobile cellular is around thirteen million, which means mobile service is dominant. Furthermore, the average annual growth of mobile service is 10% while that of fixed service is 0.2%.

Penetration is low in this sector but has seen a renaissance recently on the back of wireless local loop (WLL) network rollouts, prepaid services and an increasing demand for broadband access. 3% of fixed lines are using fiber for the last mile.

<Table 24: Number of Fixed Telephone/Mobile Cellular Subscriptions in Uganda>

Category	2008	2009	2010
Fixed telephone subscriptions	168,481	233,533	327,114
Fixed-telephone subscriptions per 100 inhabitants	0.56	0.72	0.98
Mobile cellular subscriptions	8,554,864	9,383,734	12,828,264
Mobile-cellular subscriptions per 100 inhabitants	27.68	28.99	38.38

<Source: ITU, 2011>

Mobile cellular subscribers are estimated at 12,828 thousand as of 2010 and the penetration rate is 38.38%, its market is now entering into expansion stage.

The reason why Pre-paid phone type is more than post-paid type is that individual NIDs(National ID) are not managed and tracing someone who moves to another region is very difficult.

MTN also competes with Uganda Telecom in the fixed-line market.

<Table 25: Market Share of Mobile Telecommunication Companies in Uganda>

Category	Subscribers (thousand)	Market Share (%)
MTN	5,823.3	50.00%
UTL(Uganda Telecom)	931.8	8.00%
Bharti Airtel (Zain, Celtel)	4,309.2	37.00%
Warid	582.3	5.00%
Total	11,646	100%

<Source: Investor Presentation, Zain (Sep. 30, 2009)>

2.5.3 Internet

Internet subscriptions in Uganda have shown a sharp increase since 2009. The number of internet users increased from 2,475,812 in 2008 to 4,178,085 in 2010 (168% of growth).

The percentage of internet user is still low (12.5%), but its average annual growth rate is 2%.

It seems that the fixed and mobile infrastructures are insufficient for data service (Table 25, Figure 11).

<Table 26: Internet Utilization of Uganda>

Category		2008	2009	2010
Internet Subscribers (thousand)	Total	195.2	269.5	515.9
	Mobile	26.7	36.0	188.8
	Fixed	168.5	233.5	327.1
Internet users in Uganda		2,475,812	3,165,581.5	4,178,085.38
Internet users (per 100 people)		7.9	9.78	12.50
Secure Internet servers (per 1 million people)		0.2	0.31	0.87

Secure Internet servers	7	10	29
International Internet bandwidth(Mbps)	369.0	-	-
Bits/s per Internet user	149	-	822

<Source: ITU, 2011>

There is a deviation in internet users from region to region: 85% of the population lives in rural area while 80% of the internet users are urban residents.

<Table 27: ISP Providers in Uganda>

(Unit: US\$/Month)

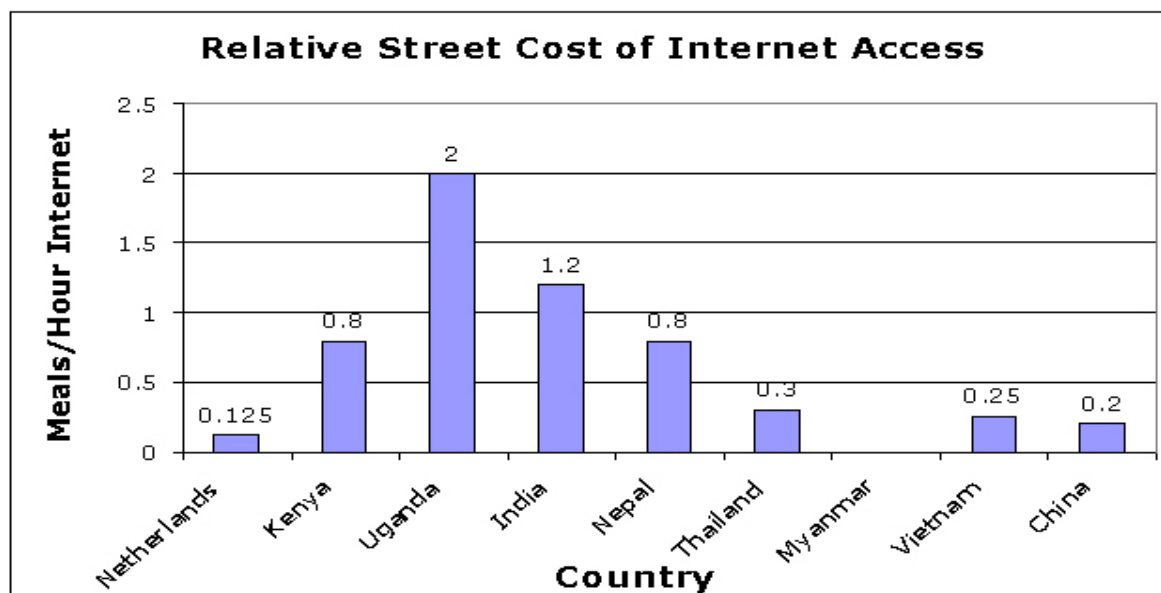
	Orange	UTL	Foris	BroadBand
Visitors	47%	28%	9%	8%

18 ISP licenses have been granted and currently there are nine actively operating ISPs in Uganda.

These are Infocom, Afsat, One2Net, Dehezi, SpaceNet, Bushnet, Africa Online, MTN, and UTL. Due to the relatively high cost of bandwidth that the ISPs must buy from UTL, the ISP business is not currently considered financially attractive.

Many of the ISPs use VSAT technology to reach their customers in remote locations.

<Figure 13: Relative Street Cost of Internet Access>



<Source: The Information Divide in the Climate Sciences, 2003>

Higher costs are often associated with slower access speeds (note the speed and cost in China and Uganda on either ends of the scale).

The internet speed in Uganda is considerably low and the cost is high considering its poor quality.

Being landlocked, the country depended entirely on satellites for its international Internet connectivity until 2009, when several international submarine fiber optic cables landed on the African east coast, to which Uganda is now connected via a national fiber backbone extending to its borders.

By 2012, prices for international bandwidth had plummeted to a fraction of their original cost. In parallel, wireless technologies such as WiMAX and 3G mobile services have brought the Internet within reach of a much wider part of the population than the limited fixed-line DSL services ever have.

<Table 28: Estimated market penetration rates in Uganda>

Ranking	Market	Penetration rate
93	Availability of latest technologies	4.4
104	Firm-level technology absorption	4.3
130	Number of active fixed telephone lines per 100 population	0.7%
129	Number of mobile cellular telephone subscriptions per 100 population	28.7%
104	Number of estimated Internet users per 100 population	9.8%
131	Number of fixed broadband Internet subscriptions per 100 population	0.0%
115	International Internet bandwidth (Mb/s) per 10,000 population	0.4(Mb/s)

<Source: The Global Competitiveness Report, World Economic Forum 2010–2011>

<Table 29: Estimated market penetration rates in Uganda's telecoms sector – end-2012>

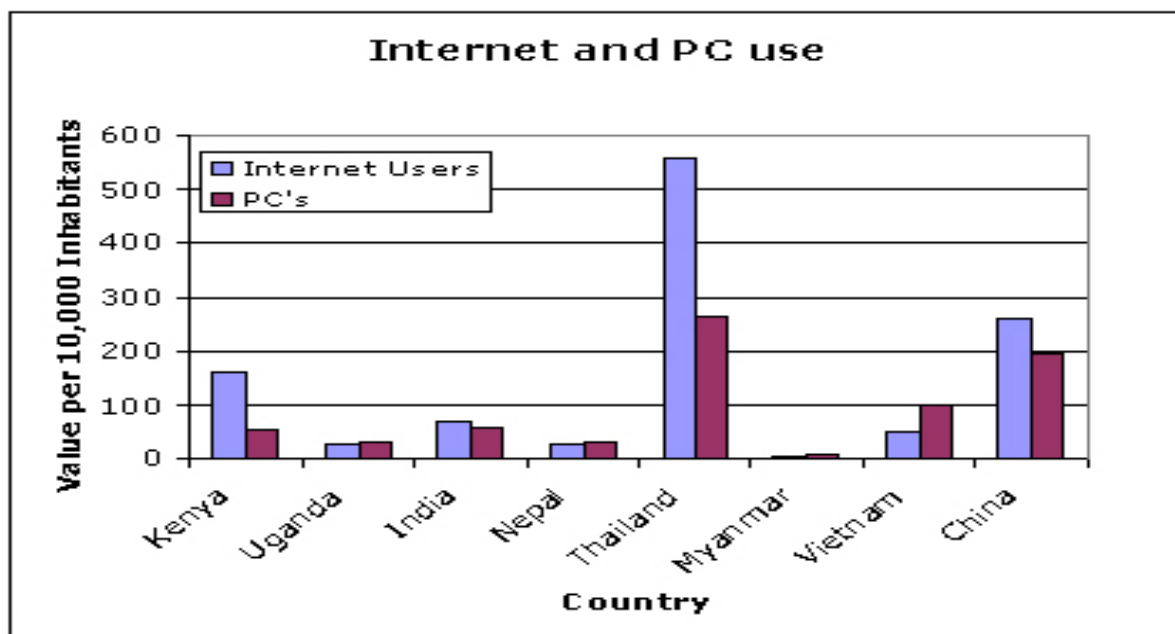
Market	Penetration rate
Mobile	55%
Fixed	1%
Internet	16%

<Source: BuddeComm based on various sources>

2.5.4 Supply Status of PCs

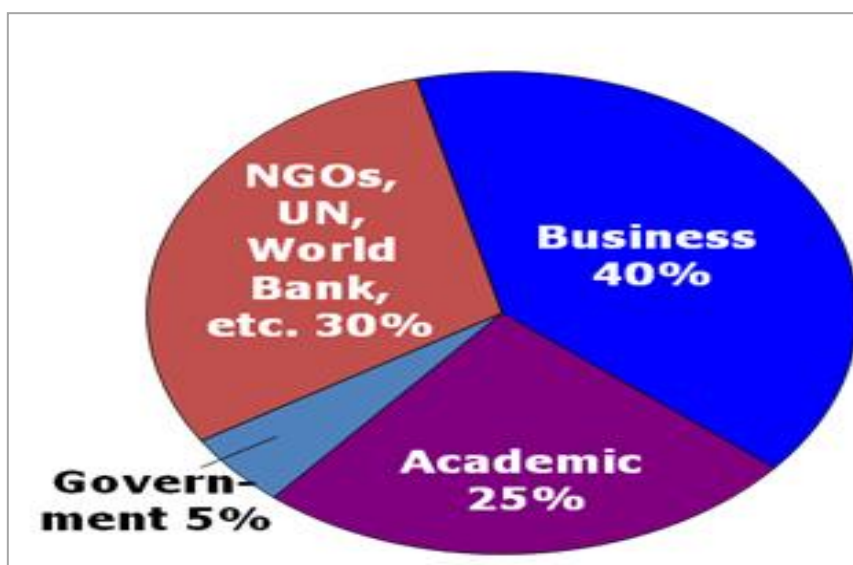
The penetration of personal computers (PCs) in Uganda is fairly low.

<Figure 14: Penetration Status of Internet and Personal Computers (per 10,000 inhabitants)>



<Source: The Information Divide in the Climate Sciences, 2003>

<Figure 15: Distribution of Internet Users>



<Source: Charles Musisi>

2.5.5 ICT Market

The volume of ICT export grows bigger every year and the following <Table 7> is showing the gradual growth of export volume which reached 68,461,692 USD as of 2010 despite the depression of global ICT market.

<Table 30: ICT Market Volume of Uganda>

	2007	2008	2009	2010
ICT goods exports (% of total goods exports)	6.9	4.9	-	-
ICT goods imports (% total goods imports)	10	9.3	-	-
ICT service exports (BoP; US dollar)	36,605,692	56,091,107	58,652,172	68,461,692
ICT service exports (% of service exports; BoP)	6.2	7	6.07	5.23

<Source : ITU, Internet>

2.6 Implications

Political Implication

- High internet usage fee effect on establishment of e-Government as a inhibitors of penetration and effectiveness of e-Government
- Supporting e-Government is undoubtable based on a strong belief and efforts to promote development of the ICT sector for the national development. Therefore, there is a need for direction of legal framework, policy including specific plans, and action plan

Economic Implication

- FDI do play a significant role in the national development of Uganda. Through FDI, Uganda could enhance productivity by introducing foreign technology, innovative methods, and improve managerial and technical capabilities. The government is, therefore, necessary to find out a solution to deal with the internal and external factors which hamper the economic development.
- In the past years (in early 2000s), there was an impressive GDP growth performance because of the reduction in poverty levels. However, due to the global recession, weak Shilling and strong Dollar in global have slowed down the economic growth. Therefore, it is necessary for the government to expand export markets, find some stability in Shillings, and reflect structural transformation in the economy.
- The business environment in Uganda has significant impediments (such as transport & comm. Infrastructure) and ranks relatively low compared to other African countries. Uganda is capable of becoming a distribution hub of the region and increase inter-regional trade with its neighboring countries. Through the advantage of geographical location and favorable climate, Uganda could expand export market in global by leveraging its resources to develop infrastructure of the nation.

Social Implication

- In Uganda, many people are suffering from diseases due to the limited health budget, lack of medical expertise, and facilities of the nation. Therefore, the government is required to invest heavily on health sector to increase the rate of life expectancy, and develop highly skilled human resources which would helped to decrease the rate of social crimes and reduce the poverty rate of the nation
- The lack of power supply, the lack of infrastructure of roads and transport will hamper business environment of the nation. Therefore, the government needs to expand power supplies and develop infrastructure for overall social-economic development of the nation

Technology Implication

- There are four ISP providers in Uganda with the low speed, high cost, and the low quality. The internet is accessible only in certain areas (mostly in urban areas), therefore it is necessary to find a way to increase the internet penetration across all the nation
- It is hard to manage post-paid type due to the absence of National ID(NID) of the nation, therefore pre-paid phone type is more widely used
- The number of fixed and mobile users has been increased over the past years. However, internet usage has been slowed due to the inadequate internet support infrastructure of the nation. This could increase the rate of computer illiteracy, therefore, the government should increase the willingness and support to implement ICT related programmes or projects in order to develop ICT in the country.

3. Current Status of e-Government Analysis

3.1 e-Government Evaluation – UN e-Government Survey 2012

UN issued the “UN Global e-Government Readiness Report” which shows a country's level of e-Government development among a total of 195 countries by comparing their e-Government readiness and online participation levels. The e-Government Readiness Index is important for countries in the early stages of e-Government in order to receive funding for e-Government initiatives. However, it should be recognized that the Ugandan Rankings in terms of e-Government might not necessarily be correct, because there is currently no deliberate initiative by the Ministry of ICT/ NITA-U or other government institutions to handle this. It is necessary to have the initiative of reporting on Uganda's e-Government Rankings as a matter of Strategy.

- According to the UN e-Government Development Survey 2012, Uganda fell down from 142th (2010) to 143th (2012) and ranked 8th among the East Africa countries (1st: Seycelles, 2nd : Mauritius, 3rd : Kenya, 2012)
- The average of East Africa is 0.3011 out of 1.000, but Uganda scored 0.3185 which is upper than African country's average and lower than the world average (0.4882)

<Table 31: Ranking of e-Government>

Rank	Country	Index
1	Republic of Korea	0.9283
2	Netherlands	0.9125
3	United Kingdom	0.8960
4	Denmark	0.8889
5	United States	0.8687
...
143	Uganda	0.3185
144	Swaziland	0.3179
145	Ghana	0.3159
146	Marshall Islands	0.3129
147	Cameroon	0.3070
148	Madagascar	0.3054

Map Key	e-Gov. Development Index		World e-Gov. Development Ranking	
	2012	2010	2012	2010
Seycelles	0.5192	0.4179	84	104
Mauritius	0.5066	0.4645	93	77
Kenya	0.4212	0.3338	119	124
Zimbabwe	0.3583	0.323	133	129
United Rep. of Tanzania	0.3311	0.2926	139	137
Rwanda	0.3291	0.2749	140	148
Uganda	0.3185	0.2812	143	142
Madagascar	0.3054	0.2890	148	139
Zambia	0.2910	0.2810	154	143
Mozambique	0.2786	0.2288	158	161
Malawi	0.2740	0.2357	159	159

...	...	...	Comoros	0.2358	0.2327	171	160
	East American Average	0.3011	...	...	...	...	...

<Source: United Nations E-Government Survey, 2012>

e-Government in Uganda is still in the first stage and ranks relatively low in all e-Government related areas – Web Measurement: 138nd, ICT Infrastructure: 150th, Human Capital: 145th

<Table 32: Specific Ranking and Index in e-Government>

Online Service			ICT Infrastructure			Human Capital		
Rank	Country	Index	Rank	Country	Index	Rank	Country	Rank
1	Rep. Korea	1.0000	1	Liechtenstein	1.0000	1	Australia	1.0000
1	United States	1.0000	2	Monaco	0.9370	2	New Zealand	0.9982
1	Singapore	1.0000	3	Switzerland	0.8782	3	Cuba	0.9684
4	United Kingdom	0.9739	4	Iceland	0.8772	4	Dem. People's Rep. of Korea	0.9560
5	Netherlands	0.9608	5	Luxembourg	0.8644	5	Ireland	0.9560
...
138	Uganda	0.2941	150	Uganda	0.0732	145	Uganda	0.5883
139	Kyrgyzstan	0.3175	151	South Sudan	0.0725	146	Rwanda	0.5861
140	Montenegro	0.3143	152	Sudan	0.0725	147	Comoros	0.5853
141	Saudi Arabia	0.3111	153	Cuba	0.0709	148	Solomon Islands	0.5743
142	Albania	0.3111	154	Haiti	0.0698	149	Malawi	0.5741
143	South Africa	0.3079	155	Cameroon	0.0649	150	Vietnam	0.8098
...
Africa Average		0.2567	Africa Average		0.1094	Africa Average		0.5034

<Source: United Nations E-Government Survey, 2012>

In the aspect of e-Participation Index, Uganda ranks 29th (0.0789 out of 1.0000) with Belarus, Cyprus, Romania, Seychelles, Sri Lanka. However it is lower than expected with consideration to overall economic level and ICT development.

<Table 33: e-Participation Index>

Rank	Country	e-Participation Index
1	Republic of Korea	1.0000
1	Netherlands	1.0000
2	Kazakhstan	0.9474
2	Singapore	0.9474
3	United Kingdom	0.9211
...
29	Belarus, Cyprus, Romania, Seycells, Sri Lanka, Uganda	0.0789
30	Algeria	0.0526
...
	Africa Average	0.2418

<Source: United Nations E-Government Survey, 2012>

3.2 ICT Status of Departments

3.2.1 Online Service (Front-End) Status

- View Point – Evaluating Front Office Service Level with UN Web Measurement Index
 - Level Analysis and Core Indicators

<Table 34: Level and Indicators>

Level	Description and Indicators
Level 1 Emerging	<ul style="list-style-type: none"> - Provides policy, law, document information to public via web (one-way) - Supports link with other department, organization and subsidiary - Provides news and information list of departments
Level 2 Enhanced	<ul style="list-style-type: none"> - Provides advanced one-way and basic two-way service to public - Provides downloadable forms, audio & video service and multilingual service - Accepts civil administrative request via online

Level 3 Transactional	<ul style="list-style-type: none"> - Supports two-way service that allows citizen to request government policy, program, law via web - Uses e-Certification system for online service - Enables e-Voting, form downloading & uploading, e-Taxation - Provides e-Transaction service with government based on secured network
Level 4 Connected	<ul style="list-style-type: none"> - Active communication with public through Web 2.0 and other communication tools - Provides customized service based on citizen life cycle - Integration of departments - Provides online environment so that citizen can present their opinions on policy

- Front Office Service Level Analysis Result
 - Analyzed front office service status of 39 government institutions based on UN e-Government Evaluation Standard (2012)
 - Most government institutions were Level 1~2

<Table 35: Analysis Result>

Level	Public Institutions
Level -	- 3 institutions including Ministry of Energy & Mineral Development, National Social Security Fund, and The Directorate of Public Prosecutions (SERVER DEFAULT PAGE, DOWN FOR MAINTENANCE)
Level 1 (Emerging)	- 23 institutions including Ministry of Finance, Ministry of ICT etc.
Level 2 (Enhanced)	- 12 institutions including Ministry of Internal Affairs, NITA-U etc.
Level 3 (Transactional)	- 1 institution, Uganda Revenue Authority
Level 4 (Connected)	- None

<Table 36: Online Service Status>

No.	Ministry	Services	Level	Website
1	Ministry of Finance	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Providing web link to related institutions • Main Content <ul style="list-style-type: none"> - Information of National Budget, Economic Performance, Funding Releases, Key Legislation 	Level 1	http://www.finance.go.ug/
2	Ministry of Public Service	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Providing web link to related institutions • Main Content • Information of publications, Archive, PSRP, Departments 	Level 1	http://publicservice.go.ug
3	Ministry of ICT	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Providing web link to related institutions • Main Content <ul style="list-style-type: none"> - Information of policies/Resource Center 	Level 1	http://www.ict.go.ug/
4	Ministry of Foreign Affairs	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Introduction of Ministry - Operation Blog, • Main Content <ul style="list-style-type: none"> - Information of Embassies in Uganda and Ugandan Embassies - Offering economic news 	Level 1	http://www.mofa.go.ug/
5	Ministry of Internal Affairs	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Introduction of Ministry - Downloadable Immigration & Application form • Main Contents <ul style="list-style-type: none"> - Directorate of citizenship and Immigration Control, National Community, Finance and 	Level 2	http://www.mia.go.ug

Uganda's e-Government Master Plan

		administration, National Focal point		
6	Ministry of Education and Sports	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Introduction of Ministry - Having lots of Error page • Main Contents <ul style="list-style-type: none"> - Main-Page is working, others pages are not working 	Level 1	http://www.education.go.ug/
7	Ministry of Health	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Provides health information, Annual health reports - YouTube Video Links - KM Portal(e-Library), HMIS/DHIS2, HRIS • Main Content <ul style="list-style-type: none"> - Health system assessment report, health sector investment plan - Uganda Health Policy 	Level 1	http://www.health.go.ug/
8	Ministry of Local Government	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Provides ministry information and publications - Ministry Blog (No information) • Main Content <ul style="list-style-type: none"> - Provides information of Ministry projects, Ministerial Policy Statements - Monthly updated news & events information 	Level 1	http://molg.go.ug/
9	Ministry of Trade Industry &Co-operatives	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - General links to affiliated institutions - Provide Statistics, webmail system, and reports - Downloads in PDF form • Main Contents <ul style="list-style-type: none"> - Provide trade laws, strategic plan for statistics, statistics abstract, survey reports - Provide Ministry Projects & Programmes 	Level 1	http://www.mti.go.ug/
10	Ministry of Energy &	<ul style="list-style-type: none"> • Main Service 	Level -	http://www.energyandminerals.ug/

Uganda's e-Government Master Plan

	Mineral Development	<ul style="list-style-type: none"> - SERVER DEFUALT PAGE • Main Content - SERVER DEFUALT PAGE 		go.ug/
11	Ministry of Land, Housing and Urban Development	<ul style="list-style-type: none"> • Main Service - Provides land information and Act - Downloadable application form (Land Transactions Forms) • Main Content - Land Amendment Act - Application form for transfer under mailo tenure, lease hold, etc. - Offering upcoming events and the latest news 	Level 2	http://www.mlhud.go.ug/
12	Uganda Revenue Authority(URA)	<ul style="list-style-type: none"> • Main Service - Provides general tax information - Download online forms (Forms&Templates for e-Registration and e-Return) and manual forms - General Links to affiliated institutions - E-Services and e-Tax • Main Content - Provides tax laws, amendment bills, regulations and customs tax guide information - Offering online forms: PAYE return form, income tax return, VAT Registration etc. - Online payment of taxes: Register for Taxes, Payment Registration, Payment Re-Registration, print payment registration receipt, status tracking, registration of vehicles, etc. 	Level 3	http://www.ura.go.ug/
13	Uganda Communications Commission (UCC)	<ul style="list-style-type: none"> • Main Service - General Links to affiliated institutions - Provides Archived Documents through Notice Board - Facebook, Twitter, YouTube, RSS (Not properly linked) • Main Content 	Level 1	http://www.ucc.co.ug/

Uganda's e-Government Master Plan

		<ul style="list-style-type: none"> - Shares messages of Ministry of ICT/ ITU Secretary General etc. - Licensing information and operators: telecomm. Service providers, postal and courier operators 		
14	Uganda Registration Service Bureau (URSB)	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Online Polls(Vote) - Download Forms - Uganda Registration Information • Main Content <ul style="list-style-type: none"> - Polls about URSB service improvement - URSB News updates - Business registration form, civil registration form, application from for registration of trade mark - Information regarding business registration, civil registration, intellectual property 	Level 2	http://www.ursb.go.ug/
15	National Agricultural Advisory Services (NAADS)	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Facebook, Twitter, RSS (Not properly linked) - Provides reports and publications - NAADS Blog, Webmail Service • Main Content <ul style="list-style-type: none"> - NAADS News Updates & Events - Workshop reports, quarterly progress reports, M&E reports - Provides information regarding funding arrangements 	Level 1	http://www.naads.or.ug/
16	National Social Security Fund	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - SERVER DEFUALT PAGE • Main Content <ul style="list-style-type: none"> - SERVER DEFUALT PAGE 	Level -	http://www.nssjug.org/

Uganda's e-Government Master Plan

17	Uganda Investment Authority	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Facebook, Linked-In, Twitter, YouTube (All properly linked) - Download documents and Request form • Main Content <ul style="list-style-type: none"> - Provides updated News & upcoming Events - Online land request form - Provides key investment sectors information - Provides 52 kinds of different languages in the website (Not properly working) 	Level 2	http://www.ugandainvest.go.ug/
18	NITA-U	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Facebook, Twitter (Properly Works) - Agency Reports & Publications - General links to affiliated institutions • Main Content <ul style="list-style-type: none"> - NITA-U latest news & upcoming events - NBI/EGI Forensic Technical Audit (FTA) Report (Not properly Working) - Provides ICT related policies&laws (ex. E-Waste, Cyber Laws) 	Level 2	http://www.nita.go.ug/
19	Uganda Export Promotion Board	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - UEPB Facebook (Properly works) - Reports & Publications - Application Forms - Quick Directory Search & Keyword Search • Main Content <ul style="list-style-type: none"> - Updated export News on mobile - Trade Fairs & Events - Annual Reports, Brochure, Event Briefs, Market Forecasts - Packaging training program, SME Training Application Forms 	Level 2	http://www.ugandaexportsonline.com/2009/home.php

Uganda's e-Government Master Plan

		- Exporters Directory		
20	Uganda Bureau Of Statistics	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Provides Statistics data - Publications & Data Archive System - Recent Releases and Related Links - Quick Links to General Information • Main Contents <ul style="list-style-type: none"> - Census, Environment Statistics, Macro-economic, Demographic Statistics, Business, Industry Statistics, Statistics by sector 	Level 1	http://www.ubos.org/
21	Uganda Police Force	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - UPF Facebook, Twitter (Properly works) - Click Rates • Main Content <ul style="list-style-type: none"> - Updated news&events and event schedule - Click Rates (Who's Online) - Directorates Information 	Level 2	http://www.upf.go.ug/
22	Directorate For Ethics and Integrity Office of the President (DEI)	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Resource Center and Publications • Main Contents <ul style="list-style-type: none"> - Provides publications of Anti-Corruption Act 2009, Corporate Plan FY 2010-2014 - Information regarding Permanent Secretary's Office, Legal Department, Ethics Education, Finance and Administration 	Level 1	www.dei.go.ug
23	The Directorate of Public Prosecutions	DOWN FOR MAINTENANCE (Username & Password are needed)	Level -	www.dpp.go.ug

Uganda's e-Government Master Plan

24	Uganda Law Society	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Downloads (in PDF files) - General links to affiliated institutions - Online Registration System - Library Services (Not properly working) - ULS Blogs (includes video player) • Main Contents <ul style="list-style-type: none"> - ULS News Highlights - Downloadable Documents: Members Directory, ULS Newsletter Issue 14, CLE Calendar 2012 - 2012 Kampala International Bar Association African Regional Forum Online Registration - Newsletter signup (For Newsletter subscribers) 	Level 1	www.uls.or.ug
25	Tourism Uganda	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Facebook, Twitter, YouTube videos and Webmail services (Properly Working) - Provides Blogs - General web links to other travel agencies • Main Contents <ul style="list-style-type: none"> - Provides general information about Uganda, hotels, restaurants, car rentals, famous places to visits, travel guides - Provides News, Events & Press release 	Level 2	www.visituganda.com
26	Uganda Road Fund	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Online Polls(Vote) - Members Login System, URF Webmail Login System - Information Sharing System: Downloads - Offers Mobile Version of the Website • Main Contents 	Level 1	www.roadfund.ug

Uganda's e-Government Master Plan

		<ul style="list-style-type: none"> - Provide the latest News - One-Year Road Maintenance Plan&Maintenance, Uganda Road Fund Act, Annual Reports, Agencies Audit Reports etc. - General links to affiliated institutions and useful information 		
27	TOOKE	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Information regarding TOOKE products (Foods) - Account Login System, Shopping Cart, Checkout system(PayPal) • Main Contents <ul style="list-style-type: none"> - Preamble to tooke products, bread, soup dishes, flours, main course etc. 	Level 2	www.tookekatale.com
28	Uganda Blood Transfusion Services	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Download Documents (in PDF file) - Online Survey (Polls) • Main Contents <ul style="list-style-type: none"> - Provides upcoming events & Press Releases - Downloads: Donate Blood Brochure, Club 25 Guide Lines 	Level 1	www.ubts.go.ug
29	National Drug Authority	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Provides Drug Registration, Inspection, and Information - Feedback forms - Webmail Login System • Main Contents <ul style="list-style-type: none"> - Registration: Guidelines used in drug registration, List of registered human drugs, veterinary drugs, human herbal drugs etc. - Feedback forms: Customer Satisfaction feedback form, complaints report from 	Level 1	www.nda.or.ug
30	Uganda Wildlife Authority	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Facebook, Twitter, YouTube (Properly Working) - Provides latest News&Updates, Blogs 	Level 1	www.ugandawildlife.org

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		<ul style="list-style-type: none"> • Main Contents <ul style="list-style-type: none"> - Travel Information: Uganda National Parks, Visitor Guide, Uganda Wildlife Act 		
31	Uganda National Bureau of Standards	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Downloadable Documents for UNBS services, registration & application forms • Main Contents <ul style="list-style-type: none"> - Standardization, Quality Assurance, Testing - UNBS Annual Reports, minimum requirements for juice production etc. - Registration form for manufacturers of bread, juice, water - Application forms for product certification, ISO 9001 etc. 	Level 1	www.unbs.go.ug
32	Ministry of Water And Environment	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Offering 58 contents, 14 web links, Visitor Click rates, Calendar of Events - Provides Water Supply Database (Provides publications) • Main Contents <ul style="list-style-type: none"> - Provides Water&Enviorn.Sector Performance Report, Water and Sanitation Sector District Implementation Manual, Weekly Weather Forecasts, Sector Strategic Investment Plans, legislation, policies, and regulations 	Level 1	www.mwe.go.ug/
33	National Housing	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Facebook, Twitter, YouTube, RSS-Feed (All properly Works) - NHCC NewsLetter Subscribe System - Categorize Searching System, Mortgage Calculation System - Online application form • Main Contents <ul style="list-style-type: none"> - Online application for a House - General links to affiliated institutions (Mortgage Institutions) 	Level 2	www.nhcc.co.ug
34	The Public Service Commission (PSC)	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Provides 50 kinds of different languages (linked to Google Translator) - Downloadable documents and reports 	Level 1	www.psc.go.ug

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		<ul style="list-style-type: none"> • Main Contents <ul style="list-style-type: none"> - Downloadable documents: PSC Strategic Plan, Annual Reports - PSC latest News & events 		
35	Uganda Securities Exchange	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Facebook (Not properly works) - Sought to implement a Securities Central Depository (SCD) system in 2009 - E-Library System - Provide stock information with downloadable documents • Main Contents <ul style="list-style-type: none"> - Provides daily Stock prices (data delayed by 30 Min.), trading statistics - Provides information regarding bonds listed, equities listed, securities industry training institute and annual reports 	Level 2	http://www.use.or.ug/
36	Posta Uganda	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - International Financial System (IFS) - IPS Web System - PostGlobal Management Information System (MIS) - Track Shipment System (Shipment ID) - Provides personal services, corporate services, delivery standards information • Main Contents <ul style="list-style-type: none"> - Latest Posta News - Provides information regarding EMS Delivery Standards, EMS Delivery Zones, Domestic Mail Delivery Standards, International Mail Delivery Standards (with downloadable documents) 	Level 2	http://www.ugapost.co.ug/
37	National Environment Management Authority(NEMA)	<ul style="list-style-type: none"> • Main Service <ul style="list-style-type: none"> - Twitter (Works Properly) - Webmail System - Provides information regarding NEMA's Activities & Projects 	Level 1	www.nemaug.org

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		<ul style="list-style-type: none"> - Information Resources (Publications & Video Documentaries) • Main Contents - Provides National/District State of Environment Reports, Performance report, district environment policies - Downloadable documents: Sensitivity Atlas, National Implementation Plan (NIP) 		
38	Office of the Auditor General (OAG)	<ul style="list-style-type: none"> • Main Service - Provides OAG Newsletters, reports (Downloadable) - Provides the latest News & Events and OAG Videos(YouTube linked) - General links to affiliated institutions • Main Contents - Annual Performance Reports, Financial Audit Reports, Value for Money Reports, Special Reports, National Audit Act (Downloadable) - Provides information regarding auditor general, management team, corporate plan 2011-2016 	Level 1	www.oag.go.ug
39	Uganda Industrial Research Institute	<ul style="list-style-type: none"> • Main Service - LogIn System (Username & Password) - Industrial Resource Database (No links or Downloadable documents available) • Main Contents - IRC Database comprises of data on: Industries, Documentation on Uganda Industries, Expert/Personnel 	Level 1	www.uiri.org/irc

3.2.2 System Status of Ministries

A survey was conducted on the IT departments of 25 different public institutions. The results of the survey show that though they have a purpose, the majority of projects have failed to deliver the desired outcome, some not being utilized after implementation

3.2.2.1. e-Government-related Projects (2005~)

<Table 37: Project List>

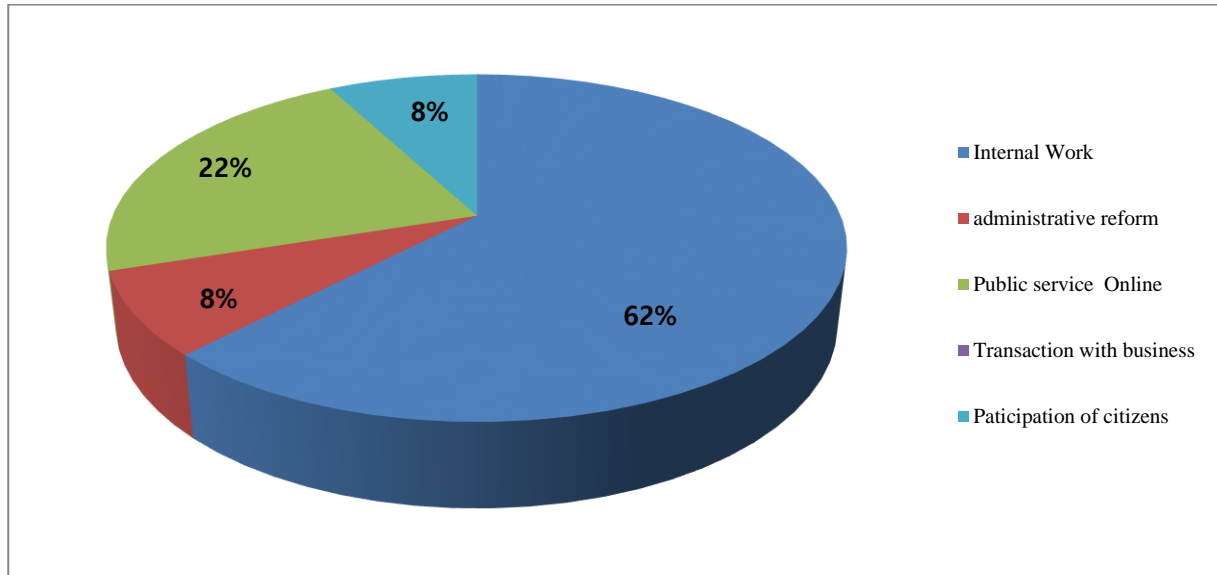
Institution	Project Name	Project Purpose	Status	Funding	Obstacles
Uganda Prisons	Integrated Financial Management System	Administrative	Operational	Central Gov	Insufficient budget
Directorate for ethics and Integrity	Integrated Financial Management System	Internal work	Upgrading	Central Gov.	Users
Directorate of Public Prosecutions	Website	Online Public Service	Upgrading	Central Gov.	Lack of awareness and support from the leader
	PROCAM	Internal Work administrative reform	planning	Netherland	Insufficient Budget
Uganda Electoral Commission	National ID(voter registration phase ii)	Encouraging Citizen Participation	planning	Central Gov.	Insufficient Budget
	ERTDS(Transmission of results)	Internal Work Improvement	Operating	Central Gov.	Lack of skilled Personnel
Ministry of Gender Labor and Social Development	E-Government Phase 1	Online Public Service	Development	Central Gov	Insufficient Budget
National Forestry Authority		Internal work improvement	Operating	Foreign Gov	Users
Public Service Commission	online recruitment system	Internal work improvement	Operating	Central Gov	Insufficient Budget
	website	Online Public Service	Operating	Central Gov	

Uganda's e-Government Master Plan

Uganda Industrial Research Institute	Industry Resource Center	Online Public Service	Upgrading	Central Gov	
	business development center	Transaction with business	Operating	Central Gov	

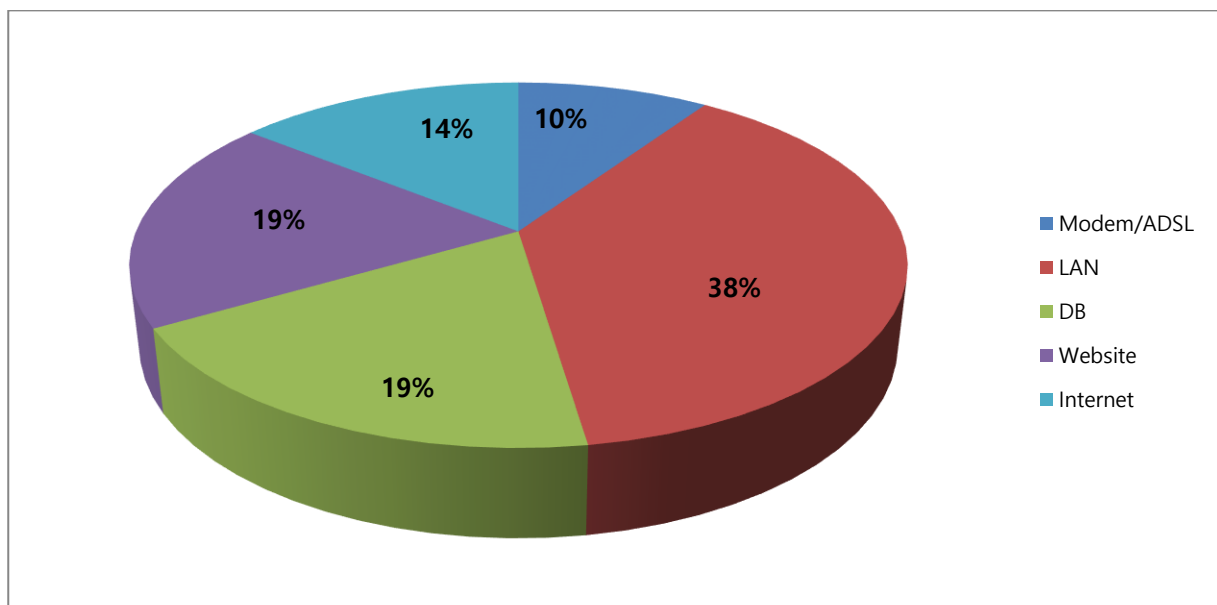
- Since 2005, each government institution has been executing e-Government projects
 - The main purposes of e-Government projects are for internal work improvement, online public services and encouraging citizen participation
 - Most of projects are now in operation or in the development stage

<Figure 16: Main Purpose of e-Government Projects>



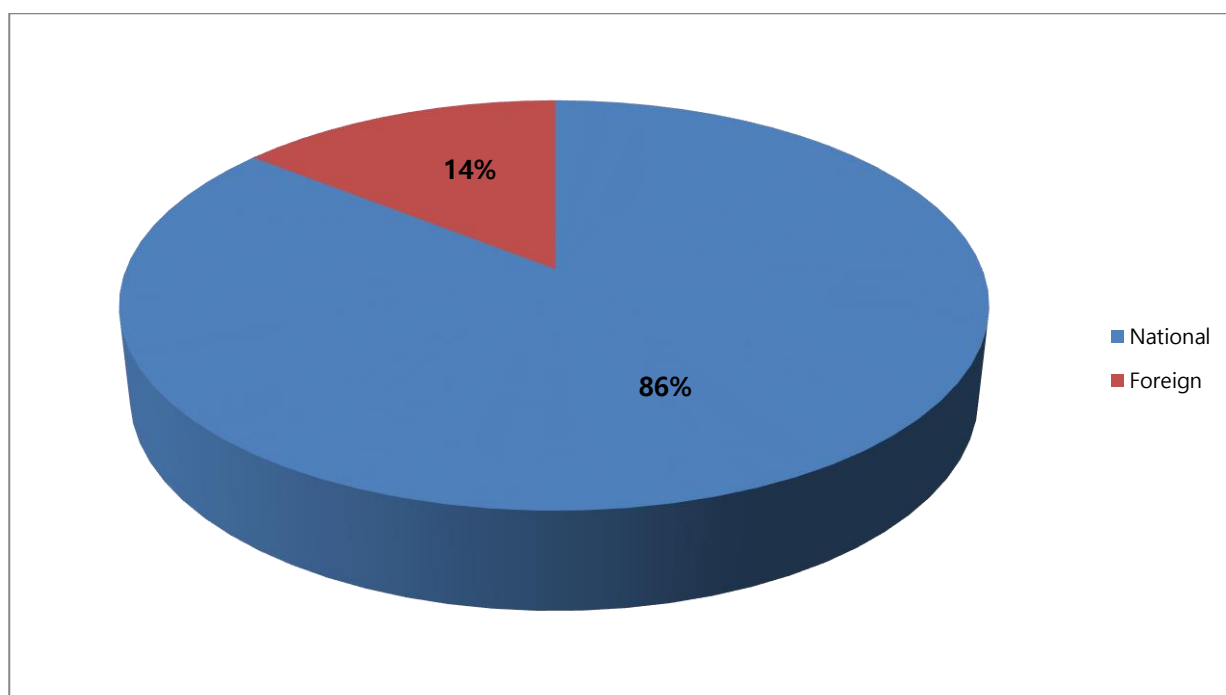
- A user system is composed of intranet, website, DB, search engine, etc.

<Figure 17: System Configuration>



- The e-Government projects are mainly funded from central or local government

<Figure 18: Project Funded>



- The insufficient budget & know how and resistance to new systems are the main obstacles in e-Government projects

3.2.2.2. Operation System Status

<Table 38: Service List>

Institutions	Utilizing Service	Main Function	URL	Target
Uganda Prisons				Public
Directorate for ethics and Integrity			http://www.dei.go.ug	Public
Directorate of Public Prosecutions	CRM	Clients(Victims, witnesses and offenders) lodge complaints through form filling	www.dpp.go.ug	Public
Uganda Electoral Commission	Online voters register	Voters can check particular of polling stations & can also download voters registers	www.ec.or.ug	Citizens
	SMS Platform	Individual voters can check their registration status & polling stations		Citizens
Uganda Law Society	Website	Members can access events & news highlights	www.uls.or.ug	Internal
Uganda Tourism Board	Online safari, Hotel booking ,Car Rental	Users can book their safaris with preferred experiences and tour agents, Users can also book accommodation facilities with preferred Hotels & Motels, Users can also vehicles hire preferred specific	www.visituganda.com	Public
Uganda Road Fund	Web portal	Users can give feed back to the road fund on the condition of roads, download financial releases, Legislations	www.roadfund.ug	citizens
Presidential Initiative on Banana Industrial Development(PIBID)	E-Tooke flour trading	Users order and pay for District quantities of flour		Internal
Ministry of Agriculture	IFMS	Online payment of goods and services as well as procurement management and salary payment	www.ubts.go.ug	Public

Uganda's e-Government Master Plan

Ministry of Agriculture	Website	Through the development, users can access different documents for example permits	www.agriculture.go.ug	Citizens
Uganda Blood Transfusion Services	Website	Giving information about blood bank to the public potential blood donors	www.ubts.go.ug	Public
Ministry of Gender Labor and Social Development	IFMS	Approval of payments online		
	OVC MIS	Users submit data from Districts online		Public
National Drug Authority	Drug Register	Users can access and download the list of registered drugs on the Uganda Market	www.nda.or.ug	Citizens
Amnesty Commission	e-Banking	Pay employees Salaries, EFT(Electronic Fund Transfer)		Public
National Forestry Authority	IFMS	Financial Management		Internal
Uganda Wildlife Authority	Tourism	Online booking of Gorilla permits	www.ugandawildlife.org	Public
Uganda Bureau of Standards (UNBS)	website	disseminate information	www.unbs.go.ug	Public
Regulatory Service Department	website	source of information to end users	www.dda.org.ug	Internal
Cotton Development Organization	water supply database	to provide information about the water data in rural and urban areas	www.mwe.go.ug/water supply database	Citizens
National Housing Construction Corporation	E-Marketing career	user able to view existing projects and apply online for them job application also done online	www.nhcc.co.ug	Customers
Public Service Commission	website	gives information about public service activities	www.psc.go.ug	Internal
	IFMS	integrated financial management system	http://ifmsappol.ifms.co.ug:8000	Internal
	IPPS	interpersonal payroll	http://192.168.100.20:8080/gov-web	Internal

Uganda's e-Government Master Plan

Uganda Securities Exchange	SCD E-SYSTEM	Users can view their account share status inform of statements. They can also print and save their statements	http://scd.use.or.ug	Public
POSTA Uganda	track&trace	customers track their personal items using our system/website	ugapost.co.ug	Business
	IPS	ED messages with all postal operations		Internal
	IFS	financial system for many transactions		Internal
National Environmental Management Authority	Clearing house and biodiversity	Web portal for biodiversity	www.nemaug.org	Public
	Clearing house for oil and gas activities	Information on effects and activities of oil and gas in the albertine region	www.nemaug.org	Public
Office of the Auditor General	OAG website	For reports and information about OAG	www.oag.go.ug	Public
Meteorology	website	predict and disseminate climate data to end users	www.meteouganda.net	Public
National Council of Sports	e- tax	payment and registration +filling of returns of PAYE		Public
Uganda Industrial Research Institute	IRC	online system with industrial establishment in Uganda, personal and documents related to industries in Uganda	www.uiri.org/irc	Business
	BDC	Equipping SMFs stakeholders with use of ICT to enhance productivity		internal

3.2.2.3. IT Resource Status

- Resource Status

<Table 39: Resource Status>

Resources	Average
Information Systems (excluding common systems, ie. Quipux)	0.71 Systems
Number of Servers	5.72 servers
Number of IT Staff	6.86 staff
Percentage of IT Staff (out of total employees)	2.54%
Number of PC per institution	89.97 PCs
PC Penetration Rate	65.27%

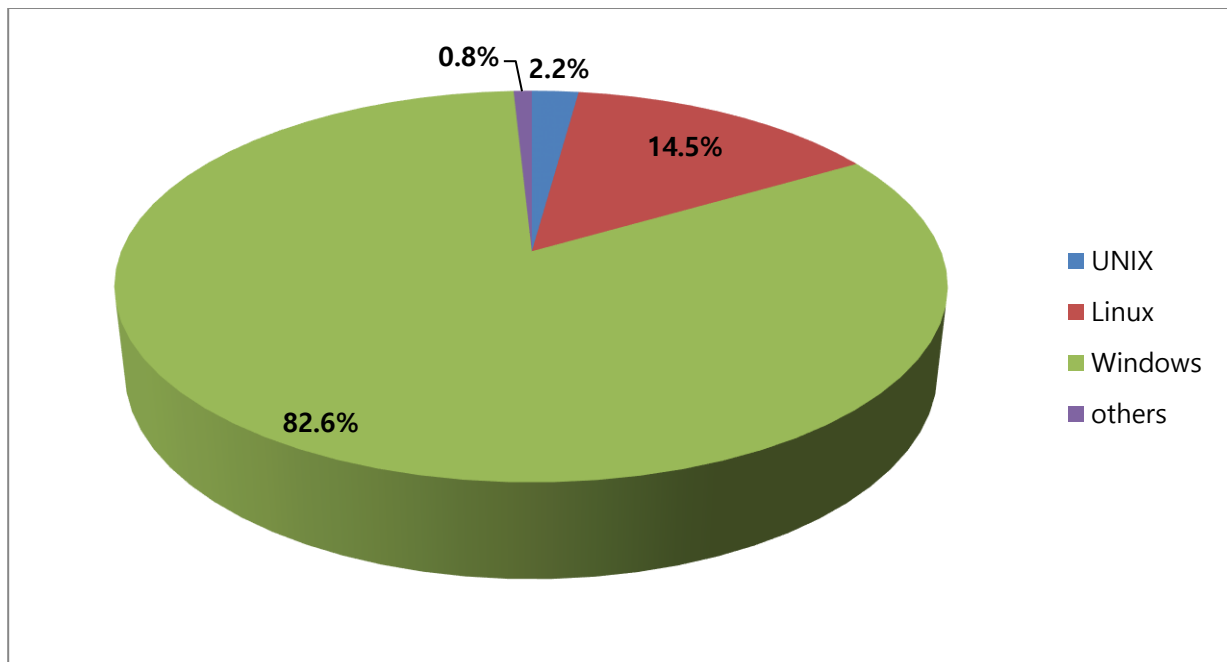
- IT Usage Rate by for Each Rank
 - The usage rate of PCs are similar for different ranks within an organization, yet the use of Internet and e-mail shows a significant difference according to rank
 - Personnel of higher rank shows higher usage rate of IT resources

<Table 40: Usage of IT Resource>

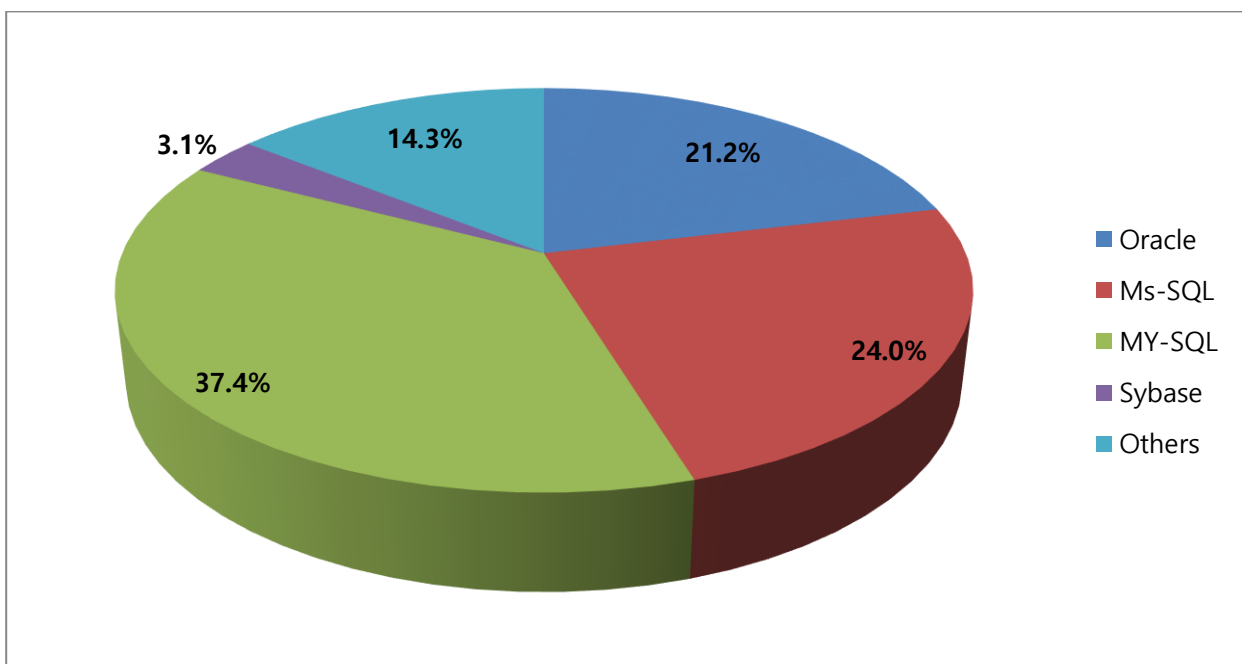
Position	PC	Internet	E-Mail
High Level	62.17%	61%	64.51%
Middle Level	64.63%	67.02%	68.49%
Others Level	58.25%	61.81%	60.34%

- Server OS and DB Composition
 - Mainly Windows and Linux operating systems are used for servers
 - MS-SQL and MySQL are mainly used for database

<Figure 19: OS Configuration>

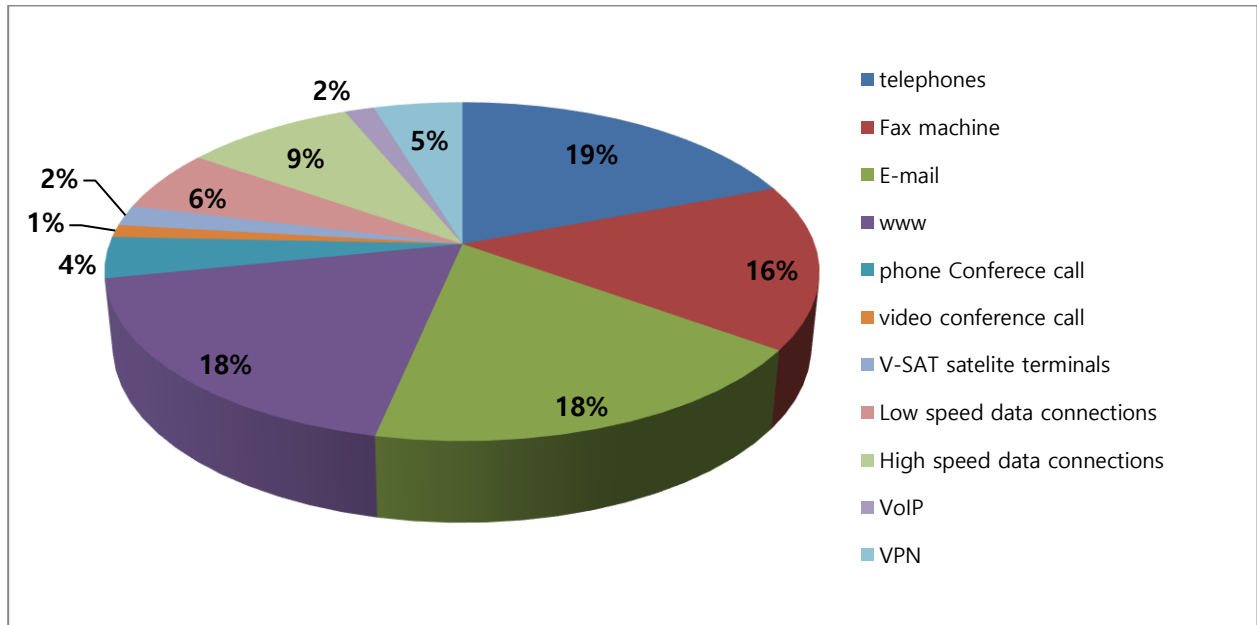


<Figure 20: DBMS Configuration>



- Communication Channel
 - Telephone, fax and e-mail are used as communication channels; other means such as video conferencing is also used

<Figure 21: Communication Channel>

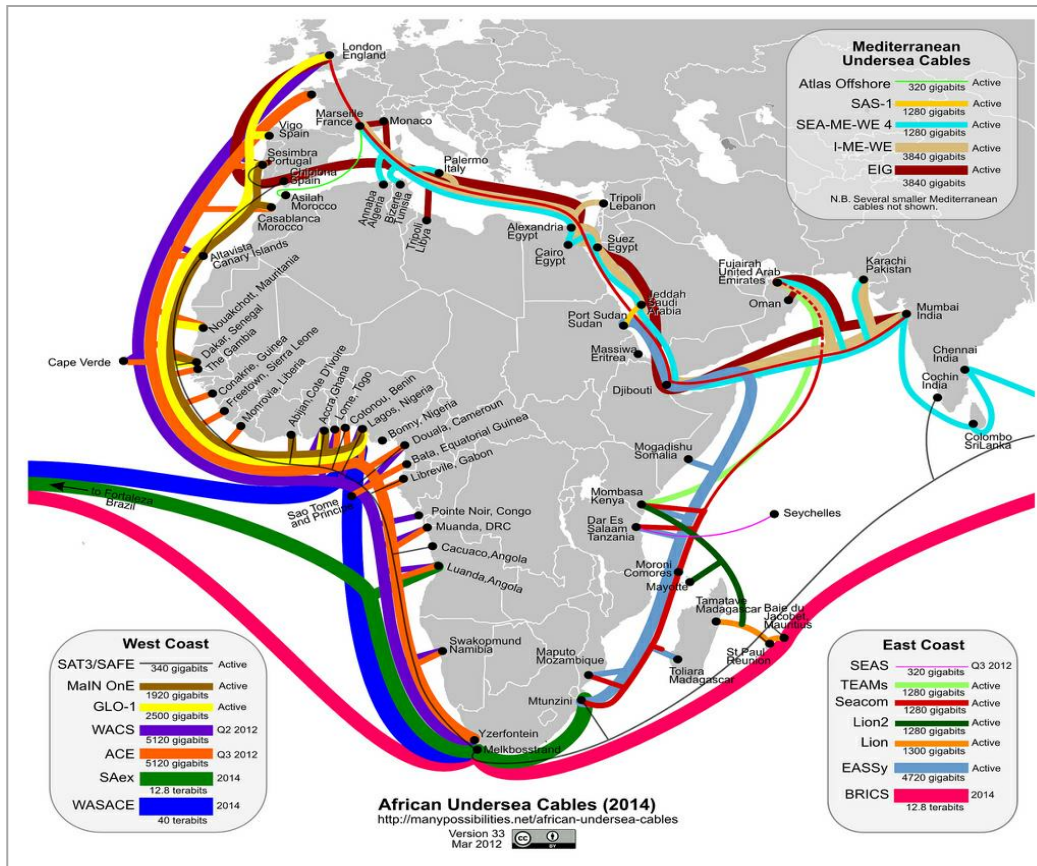


- IT Utilization Support
 - The leaders have a strong drive for IT though most of organizations don't have enough IT education program for effective ICT technology utilization
 - For example, when asked whether their leader "has a strong drive for IT", 75% responded positively.
 - However, when they were asked whether or not they "have an IT education program", only 20% said yes.

3.2.2.4 National Data Transmission Backbone and e-Government Infrastructure Project

- The NBI/EGI is composed of two components, the National Data Transmission Infrastructure (NBI) and the e-Government Infrastructure (EGI)
- The NBI component is designed to connect all major towns onto the National Backbone through the laying of Optical fibre cable.
- **Overall Benefits of the NBI/EGI Project**
 - The E-Government Network Infrastructure is designed to reduce the cost of doing business and public administration in government, improving communications between government agencies, and the delivery of E-Government services within government, to citizens and businesses such as the:
 - Electronic Document storage, retrieval and processing
 - Government web portal and websites for the various branches of Government.
 - Public Key Infrastructure and Electronic Signatures.
 - Online services within Government in areas like procurement
 - Electronic forms for Passport application, Assessment on Taxes
 - National Backbone Infrastructure (NBI) which involves the laying of Fiber Optic Cable in major towns across the country is intended to ensure that high bandwidth data connection is available in all major towns of Uganda at a reasonable rate.
 - Create a more accountable Government
 - Increase transparency
 - Strengthen good governance.
- **UGANDA TRANSMISSION BACBONE**
 - Status of Submarine Cable Construction in East Africa
 - Internet connections had been entirely dependent on satellites until 2009 when submarine fiber optic cable connected in East Africa
 - 3G·WiMAX, which has been developed rely on satellite communication, will be converted into a less expensive light service since the submarine optical fiber connects in 2012.
 - The project to connect across the country with optical network will be progressed with the project of East African submarine fiber optic cables that are built along the coastline.

<Figure 22: Status of submarine cable construction in Africa>

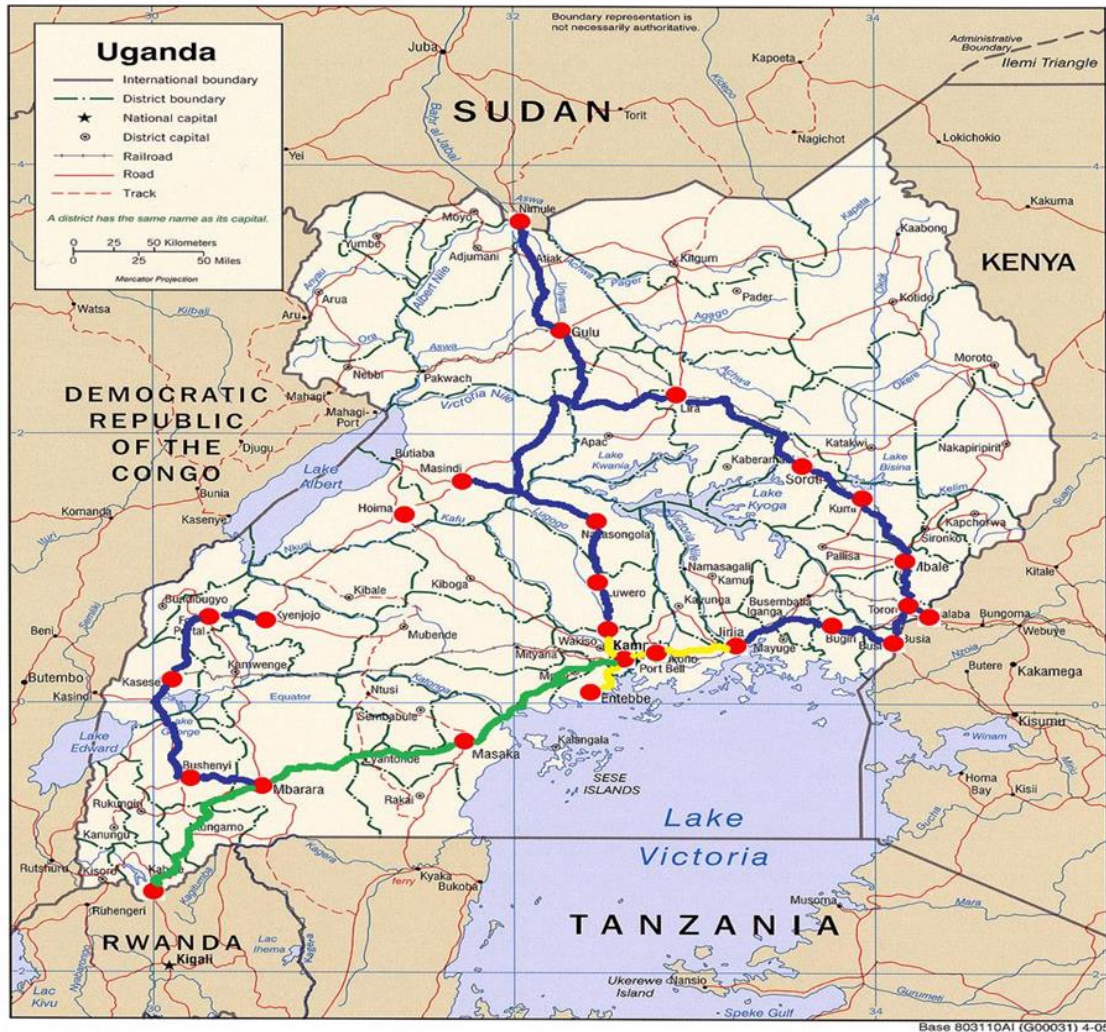


- **The NBI broadly consists of the following:**

The EGI component is intended to connect Ministries and Government Departments into an e-Government Network to provide services such as videoconferencing, Data and Voice communication.

- 1536.39Kms of Optical Fibre Cable across the country to build the National Data Transmission Backbone;
- It consists of 16Core; 4core main transmission line, 4core backup line, and 8core extra line. (need to identify for preparing Fibre Network Management and IP V6)
- Optical Fibre connections from Kampala – Busia/Malaba Border to connect Uganda to Kenya, Kampala – Nimule, to connect Uganda to Southern Sudan and Kampala-Katuna to connect Uganda to Rwanda.

<Figure 23: Map of the Different Phases of the NBI>



Phase I: Kampala, Entebbe, Jinja, Mukono, Bombo

Phase II: Luwero, Nakasongola, Masindi, Gulu, Nimule, Lira, Soroti, Kumi, Mbale, Tororo, Busia, Malaba, Iganga, Mbarara, Kasese, Bushenyi, Fortportal,

Kyenjojo and Hoima.

Phase III: Katuna, Kabale, Ntungamo, Masaka

Phase IV: Sironko, Kapchorwa, Nakapiripirt, Moroto, Kotido, Kitgum, Adjumani, Moyo, Yumbe, Arua, Nebbi and Pakwach

- Status of NBI Project Phases

<Figure 24: Status of NBI Project Phases>

Phases	Time Line	Cost Component 1 NBI	Cost Component 2 EGI	Total
Phase 1	6 Months	8,234,416	21,905,242	30,138,659
Phase 2	12 Months	42,484,125	8,575,000	61,059,125
Phase 3	9 Months	10,918,835	4,472,687	15,391,522
Total	27 Months	61,637,376	44,952,929	106,590,305

Phase I of the NBI has been completed and involved the laying of 168Kms of fiber optic cable to link five (5) towns; Mukono, Bombo, Entebbe and Jinja to Kampala.

The first phase of the EGI has been completed and the following, among others, have been achieved:

1. Laying of the optical fiber cable within Kampala and Entebbe to link 27 Ministries and Government Departments;
2. Delivery and installation of transmission equipment in the five (5) Transmission stations; Entebbe, Bombo, Jinja, Kampala and Mukono have been completed.

Phase II of the NBI/EGI Project is currently ongoing. It involves the laying of 1477 km of additional Optical Fiber Cable to connect the towns of Busia, Tororo, Mbale, Kumi, Soroti, Lira, Gulu, Nimule, Masindi, Hoima, Kyenjojo, Fort Portal, Kasese, Bushenyi, Mbarara, Nakasongola and Luwero onto to the National Backbone,

The construction of the Primary Data Centre, and the deployment of a Government secure collaboration and messaging system. Completion is expected in May 2011.

Commercialization of the NBI is expected to commence in May 2011 which will entail the management of the NBI/EGI infrastructure and collection of revenues from the Infrastructure.

Phase III of the NBI will involve the laying of Optical Fiber Cable to connect Masaka, Mbarara, Ntungamo, Kabale and Katuna onto the National Backbone and the construction of the Network Operations Center (NOC). This will commence in July 2011

- **DWDM Network**

DWDM (Dense Wavelength Division Multiplexing) is the transmission equipment which transmits multiple channels for differing wavelengths of light through a single fiber.

DWDM in Uganda can transmit 40 channels through a single fiber.

<Figure 25: DWDM Equipment >

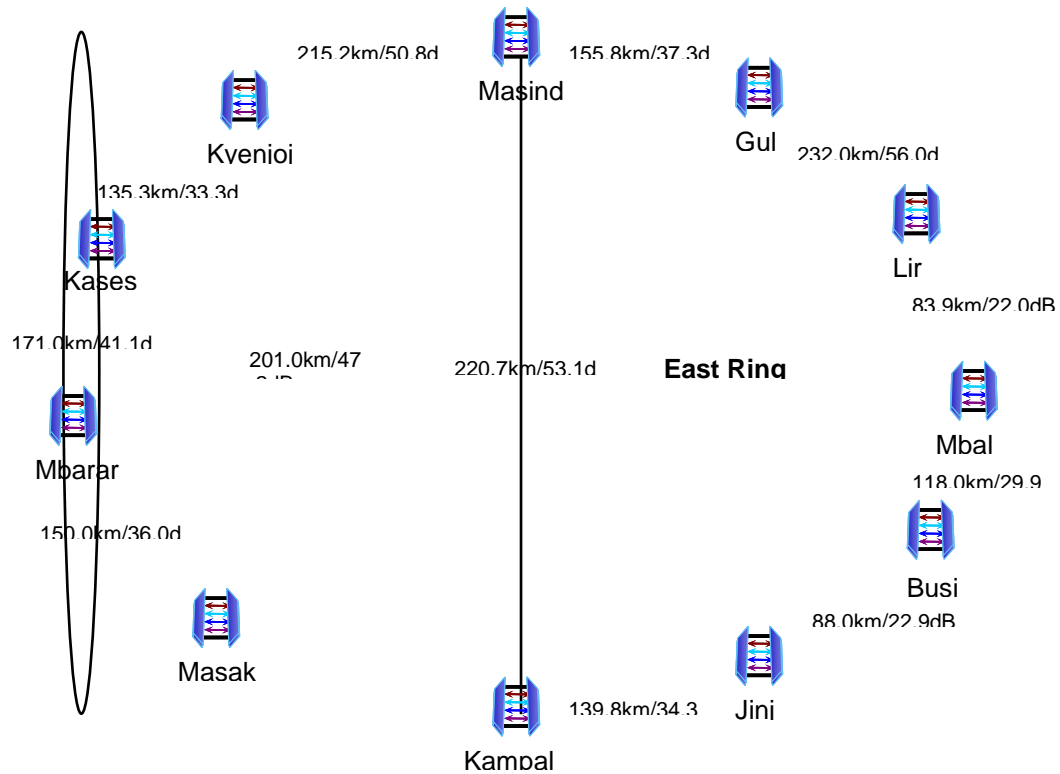
	Content	Remark
Model	Optix BWS 1600G	
Manufacturer	HUAWEI	
Capacity	40 channels	

<Figure 26: Composition of Network >

	Content	Remark
Composition of Ring	East Ring, West Ring	
Quantity of Ring Signal	Two STM-16 (2.5G)	Two MSP 2.5G Ring

A. Schematic Diagram

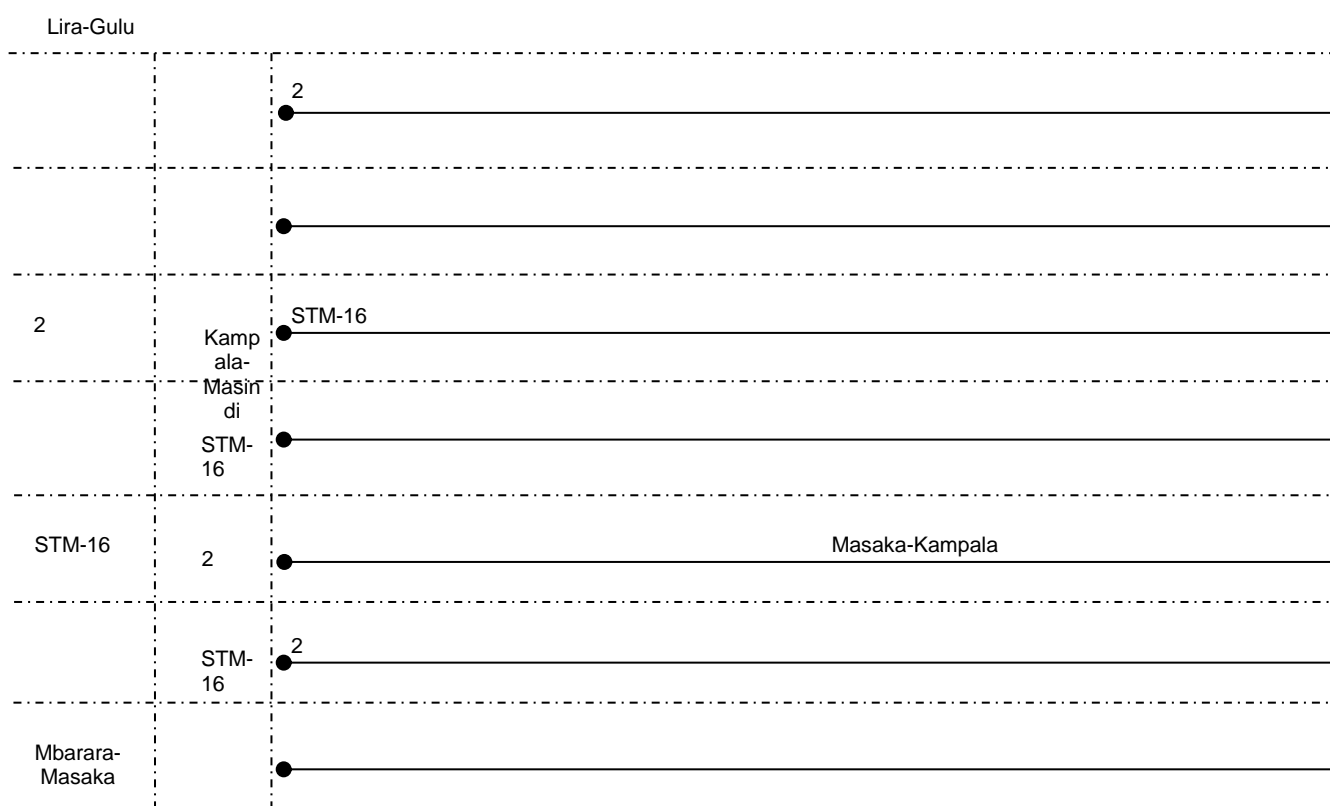
<Figure 27: Overall Schematic Diagram >



<Figure 28: Composition of East Ring >

West Ring Route	Signal	Amount
		●
	STM-16	2
Masindi-Kyenjojo		●
STM-16	2	● Kyenjojo-Kasese
		● STM-16
2	Kases e-Mbarara	●

<Figure 29: Composition of WEST RING >



○ MSPP Network

MSPP (Multi Service Provisioning platform) is an equipment which transmits multiplexed TDM (E1/T1) signal, Ethernet, Gigabyte, and Ethernet signal to STM-1 (155Mbps), STM-4 (622Mbps), STM-16 (2..5Gbps), and STM-64 (10Gbps).

MSPP network in Uganda are multiplexed TDM(E1/T1) Signal, 10/100M Fast Ethernet, and Gigabyte Ethernet signals using multiplex equipments such as STM-16 and STM-45. The MSPP multiplex signals are transmitted through DWDM Ring.

A. MSPP Equipment

<Figure 30: STM-64 MSPP Equipment >

	Content	Remark
Model	Optix OSN 7500	
Manufacturer	HUAWEI	
Capacity	- higher order cross-connect capacity : 360 Gbit/s - lower order cross-connect capacity : 20/40/80 Gbit/s	

	- packet switching capacity : 160 Gbit/s	
--	--	--

<Figure 31: STM-16 MSPP Equipment >

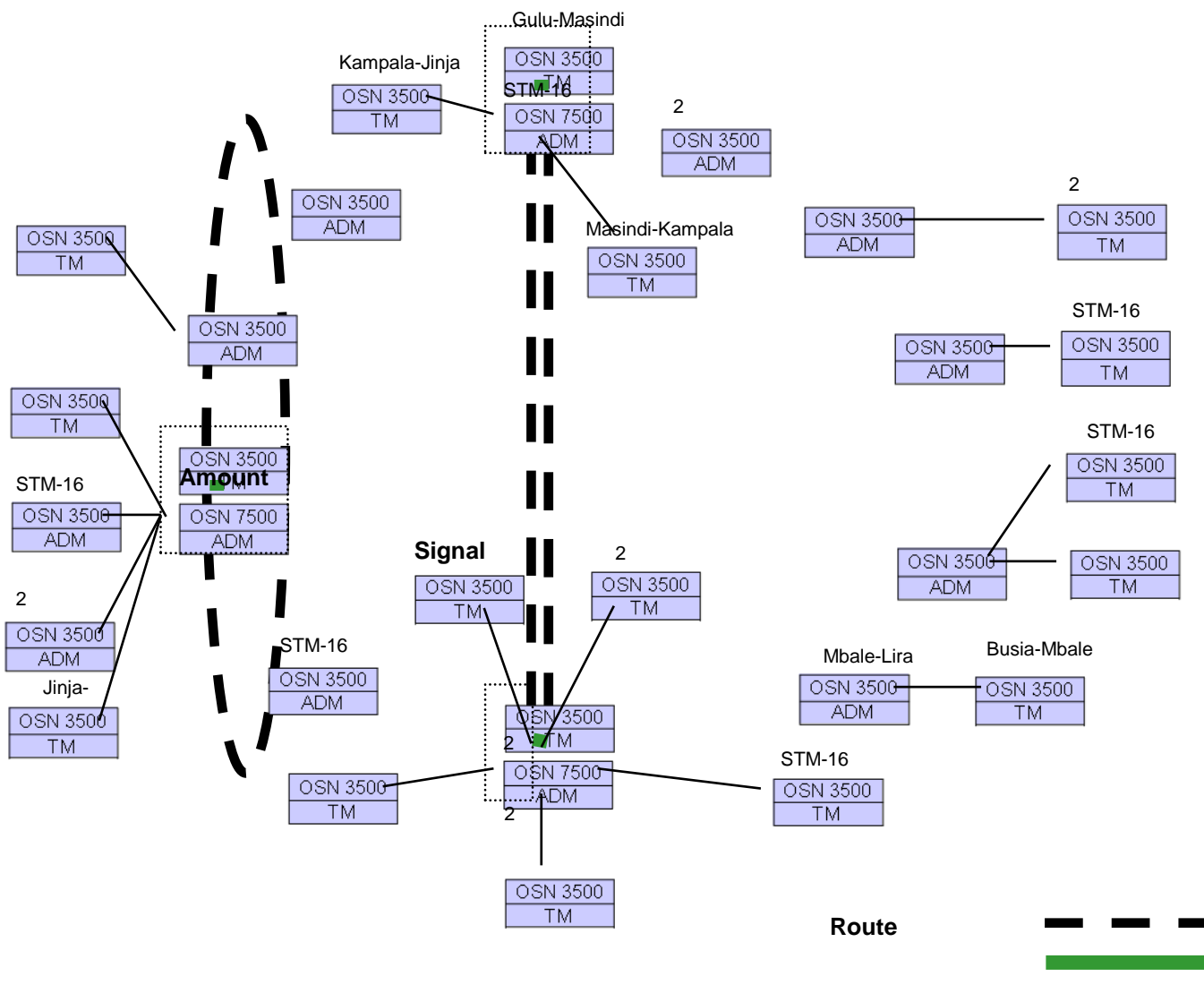
	Content	Remark
Model	Optix OSN 3500	
Manufacturer	HUAWEI	
Capacity	- high-order cross-connect : 200G VC-4 - low-order cross connect : 20G/40G VC-12, or equivalent VC-3.	

<Figure 32: Composition of Network >

	Content	Remark
Composition of Ring	- East Ring : 2*2.5G MSP - West Ring : 2*2.5G MSP	
10G Link Town	Masindi, Mbrara, Kampala (3)	
2.5G Link Town	Hoima, Kyenjojo, kasese, Fort Portal, Bushenyi, Ntungamo, Kabale, Katuna, Masaka, Mpigi, Entebbe, Luwero, Bombo, Mukono, Jinja, Lganga, Busia, Tororo, Bugiri, Mbale, Soriti, Lira, Kumik Gulu, Nakasongola (25)	

B. Schematic Diagram of MSPP

<Figure 33: Schematic Diagram of MSPP >



- **The EGI consists of the following scope:**

- The Primary Data Centre for Government.
- Connection to Ministries and Government Departments through the laying of Optical Fibre Cable onto the e-Government Network.
- Services such as videoconferencing, Voice over Internet Protocol (VoIP), Data exchange and internet access over the e-Government Infrastructure.

- **Status of EGI**

- A. Government Information Data Center

Currently, the data center of Uganda Government has been built as the below

- Lack of stability and security due to unequipped basic infrastructures such as redundant floor, uninterruptible power system, remote surveillance through online, fire systems, and so on.
- Internet traffic is owned and used independently by most each agency
- Unidentified the composition of single internet G/W, Network Operation Center, and Security Control Center.
- Lack of Security because of unseparated private and administrative net as well as inexistent security system

< Figure 34: E-Government main equipment room>



B. The Status of Data Center in Central Government and Computational Equipments

- Central Government owns separated small data center
- Local Governments own separated data center too
- Software application in each local government is not standardized
- Many local governments use their own ICT application for administrative purposes
- The biggest problem is that each ministry does not have any plan to admit Administrative LAN from using their own Private Lan even though Administrative LAN has been built since 2008
- Applications which have been developed by each central and local government do not communicate with each other due to the lack of common ICT standard and information

• Implications

- Uganda Government should focus on building integrated government data center as a part of e-Government project to set stable operating of environment of each system that need to enhance the initiatives of e-Government for backbone infrastructure/e-Government infrastructure, NID, e-Government portal, ICT in education.
- So, strategic approach should be preceded to take experiences for data center construction and operation of state-of-art integrated service levels at the international level.
- Also, IT education infrastructure should be ensured IT initiative planning, implementation, and operation for training human resources to resolve the lack of IT staff.

3.2.2.5 Projects in the Planning Stage

<Table 41: List of Planned Projects>

Department	Project Name	Purpose	Status	Funding	Obstacles	Funding Status
Uganda Prisons	Upgrade and redesign of Website	Administrative reform	Planning	Central Gov	Insufficient Budget Lack of Skilled Person	TBD
Directorate for ethics and Integrity	Internal Mailing system	Administrative reform	Planning	Central Gov	Insufficient Budget	TBD
	Web portal	Internal work improvement	Planning	Central Gov	Insufficient Budget	TBD
Directorate of Public Prosecutions	Networking (LAN&WAN),PROCAMS	Internal work improvement	Planning	Foreign	Insufficient Budget, Lack of Skilled Person,	TBD
	Automation of field officers	Administrative reform	Planning	Central Gov Local Gov Foreign	Insufficient Budget,	TBD
Uganda Electoral Commission	Vot Biometric(Voter Registration	Internal work improvement	Planning	Central Gov	Insufficient Budget	TBD
	VPN network to all District& Regions	Internal work improvement	Planning	Central Gov	Insufficient Budget, Lack of Skilled Person,	TBD
Uganda Tourism Board	National Tourism Web Portal	Online Public service	Planning	UNDP	Insufficient Budget	TBD
	IFMS	Internal work improvement	Planning	Central Gov	Insufficient Budget	TBD

Uganda's e-Government Master Plan

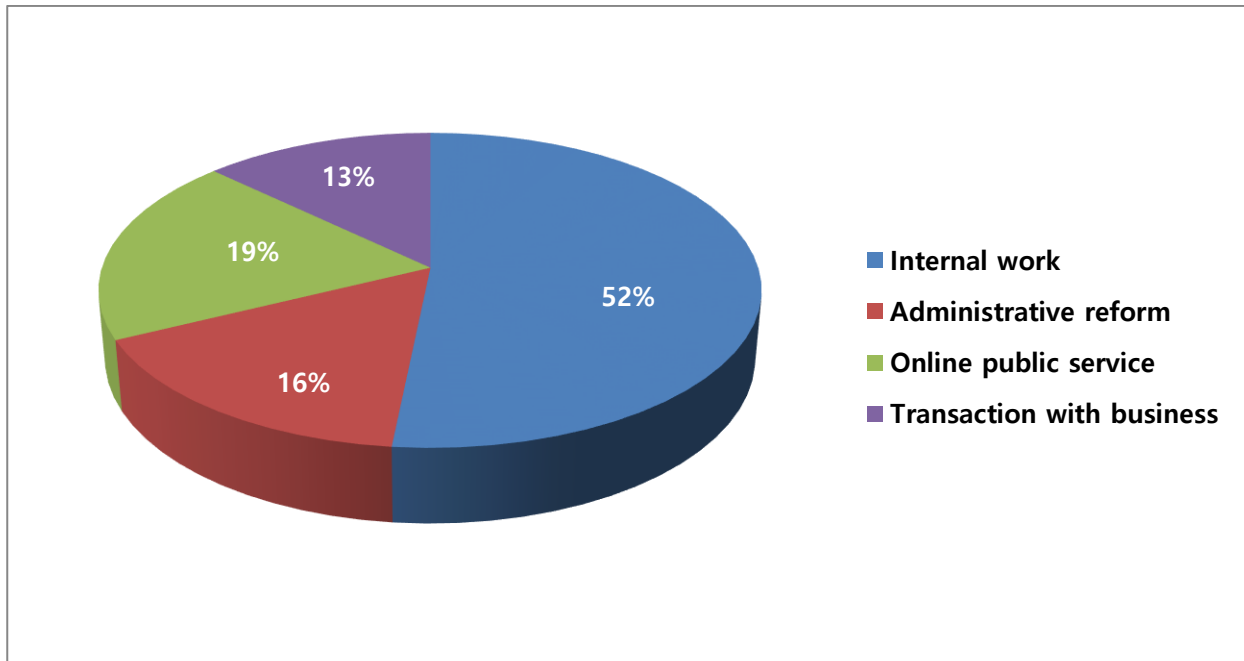
Uganda Road Fund	Integrated Management Information Systems	Internal work improvement	Planning	Local Gov	Lack of awareness and support from the leader	TBD
	Road Network Evaluation System	Internal work improvement	Planning	Local Gov	Lack of Skilled Person,	TBD
Presidential Initiative on Banana Industrial Development(PIBID)	E-Tooke & confectionery trading	Transaction with business	Idea setting	Central Gov	Insufficient Budget,	TBD
	E- Procurement	Transaction with business	Idea setting	Central Gov	Insufficient Budget Lack of Skilled Person,, Lack of awareness and support from the leader	TBD
Uganda Blood Transfusion Services	IFMIS	Online public service	Idea setting	Central Gov	Lack of Skilled Person	TBD
Uganda Human Rights commission	Integrated Management Information System for UHRC	Internal work improvement	Idea setting	Local Gov	Insufficient Budget	TBD
Uganda National Roads Authority	E-procurement system	Transaction with business	Planning	Local Gov	Users	TBD
National Forestry Authority	VOIP	Internal work improvement	Planning	Foreign (USAID)	Insufficient Budget	TBD
	Timber Tracking System	Internal work improvement	Planning	Foreign (USAID)	Insufficient Budget, Users Lack of awareness and support from the leader	TBD
IGG	Connecting the Inspectorate of Government to the NBI/CGI	Internal work improvement	Planning	Foreign (DANIDA)	Insufficient Budget	TBD

Uganda's e-Government Master Plan

Uganda Land Commission	Video & Audio Conferencing	Internal work improvement	Idea setting	Local Gov		TBD
UNBS	TMEA/UNBS(Imports Inspection Department)	Internal work improvement	Planning	Private (TMEA)	Lack of Skilled Person,	TBD
Health Service Commission	E- recruitment System	Online Public service	Planning	Central Gov	Insufficient Budget	TBD
Uganda aids commission	national HIV/Aids stakeholders database	Online Public service	Planning	Central Gov		TBD
National Housing Construction Corporation	E-Payment for suppliers	Transaction with business	Planning	Private (National Housing)	Users	TBD
POSTA Uganda	DBICS	Online Public service, Transaction with business	Planning	Central Gov	Insufficient Budget	TBD
National Environmental Management Authority	Clearing house for oil and gas for albertine region	Online Public service	Planning	Local Gov	Insufficient Budget	TBD
Ministry of Justice and Constitutional Affairs	VOIP & Intranet	Internal work improvement	Planning	Central Gov	Insufficient Budget	TBD
	Justice web Portal	Online Public service	Planning	Central Gov	Insufficient Budget	TBD

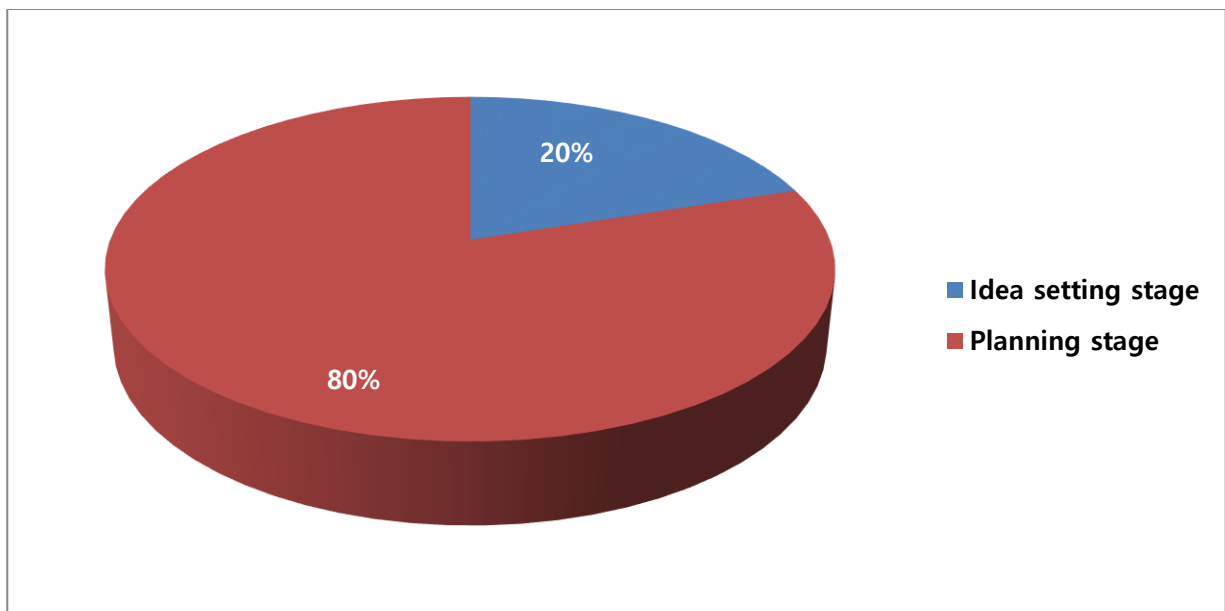
- Main Purpose of Projects
 - Increasing Internal Work efficiency is the most important purpose of the new government projects

<Figure 35: Main Purpose of Projects>



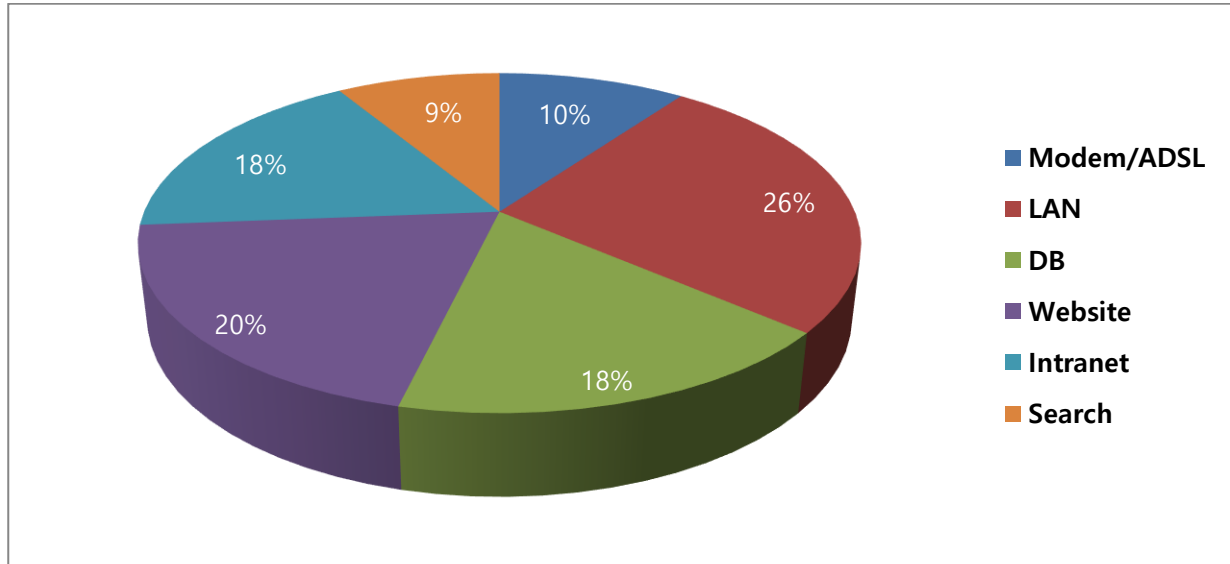
- Project Promotion Status
 - The need for new projects is very high, but most government projects are still in the planning stage and a more detailed action plan should be developed

<Figure 36: Project Stage>



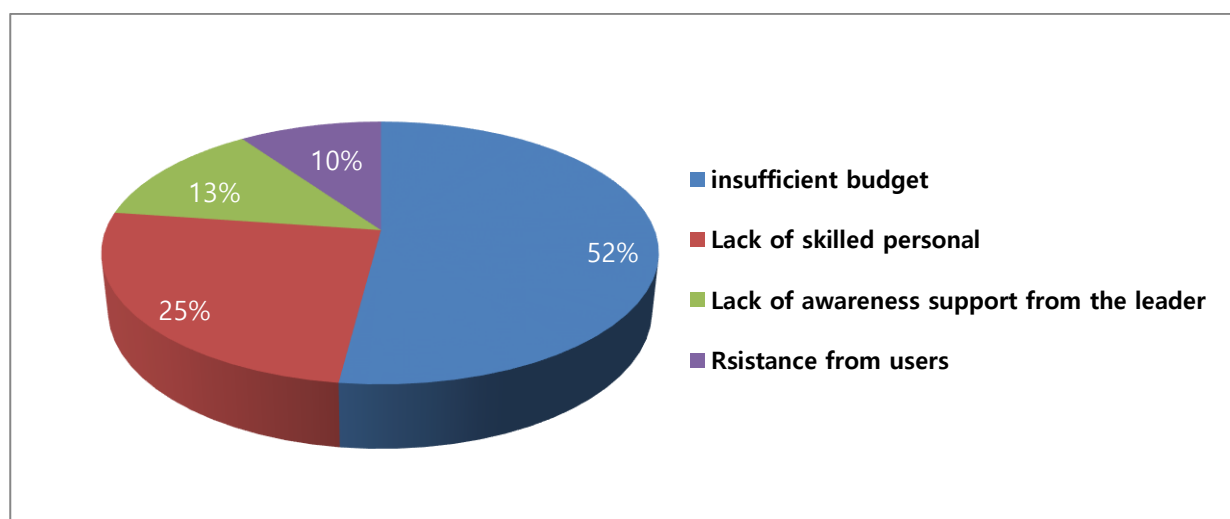
- System Composition
 - Most of the planned projects are focused on developing web services(LAN) based on databases, and also developing intranet for internal user

<Figure 37: System Configuration>



- Obstacles in Project Implementation
 - More than half the people chose “insufficient budget” as the biggest obstacle in implementing government projects; other reasons included a “lack of skilled persona” and “lack of awareness and support from the leader”

<Figure 38: Obstacle in Implementation>



3.2.3 Implications

- Front-office services are mostly in Stage 1 to 2, more interactive services are needed
- For provision of interactive online services for citizens, back-office integration is needed
- For active promotion of e-Government, the personnel in charge should gain professional expertise and user reluctance should be resolved
- The leader's commitment to promote ICT is high, but there aren't any ongoing ICT training programs

3.3 The summary of Interview

3.3.1 The list of Interviewee and Date

- Interviews from Ministry and Public Institutions
 - Ministry : Including Ministry of Internal Affairs, 11
 - Public Agency : including Uganda Revenue Agency, 10
 - NGO : Development Research&Training
 - National University : Merkerere University
 - Parliamentary Group: Chairman of NITA-U, Permanent Secretary, and other high-level officials
- Interview Period : 13rd June ~ 22nd June

3.3.1.1. Contents of Interview

- General Information about the Main Tasks
- Current Status of Ministries
- The Information and Methods for Inter-Collaboration
- Questions for E-Government
 - The Main Object of Initiating e-Government
 - The Major System and Function for Internal Business
 - Constraints of Establishing e-Government
 - The Main Factors of Establishing e-Government
 - Direction of e-Government

3.3.2 Interview Schedule

<Table 42: List of Interviewees>

Date	Interviewee
6.13	<ul style="list-style-type: none"> · Ministry of Internal Affairs · Uganda Communication Committee · Uganda Revenue Authority · Uganda Registration Service Bureau
6.14	<ul style="list-style-type: none"> · Ministry of Foreign Affairs · Ministry of Health · National Agricultural Advisory Services, NAADS · Ministry of Local Government · National Social Security Fund, NSSF · Ministry of Trade, Industry and Cooperatives · Public Procurement and Disposal of Public Assets Authority, PPDA

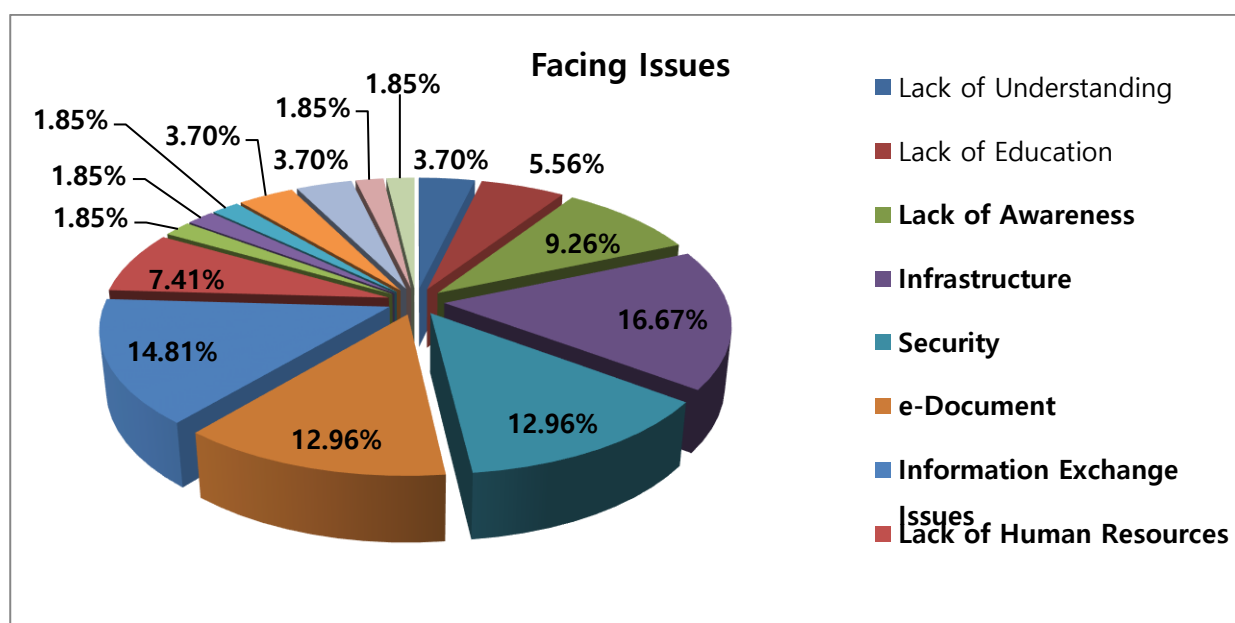
6.15	<ul style="list-style-type: none"> · Ministry of ICT · Ministry of Energy & Mineral Development · Uganda Police Authority · Ministry of Finance
6.19	<ul style="list-style-type: none"> · Development Research & Training(DRT) · Ministry of Public Service
	<ul style="list-style-type: none"> · Parliament Group
6.20	<ul style="list-style-type: none"> · Uganda Investment Authority · Makerere University
6.21	<ul style="list-style-type: none"> · UBOS · Uganda Export Promotion Board · Ministry of Land, Housing and Urban Development
6.22	<ul style="list-style-type: none"> · Ministry of Education

3.3.3 Interview Result Analysis

3.3.3.1 General Information for e-Government

- **Question #1.** The Current Facing Issues for the Aspect of Informatization

<Figure 39: Facing Issue>



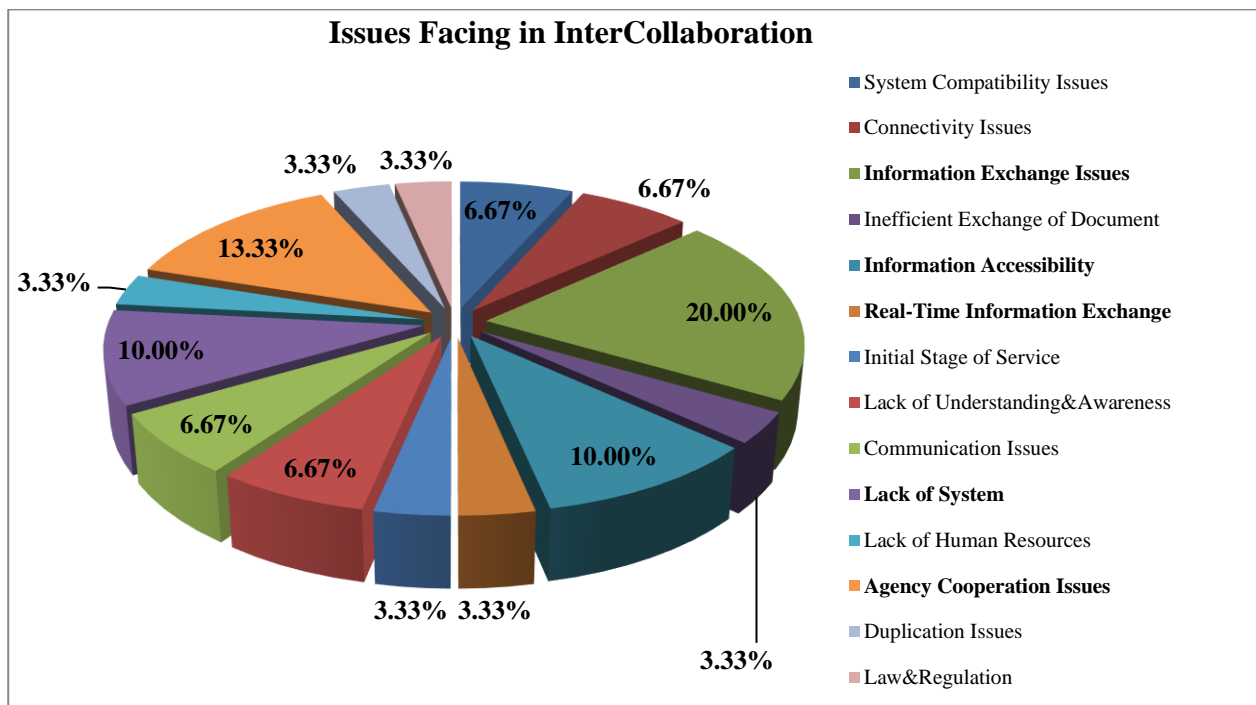
As a result of interview for the aspect of informatization from twenty five ministries, four main issues are taken 57.41%; necessity for the expansion of infrastructure (16.67%), security plan (12.96%), e-Document (12.96%), and information exchange (14.81%). Moreover, NIPA consulting team has recognized that other issues such as duplication of data, lack of education, lack of human resource, and so on are existed.

- **Question#2.** The Information and Methods for Inter-Collaboration

When all interviewed ministries perform their business, they frequently discuss about the inter-collaboration information and exchange information as e-mail and Flash Memory/CD. So, NIPA consulting team realized that the cost and storage problems would be occurred.

- **Question#3** The Problems for Inter-Collaboration

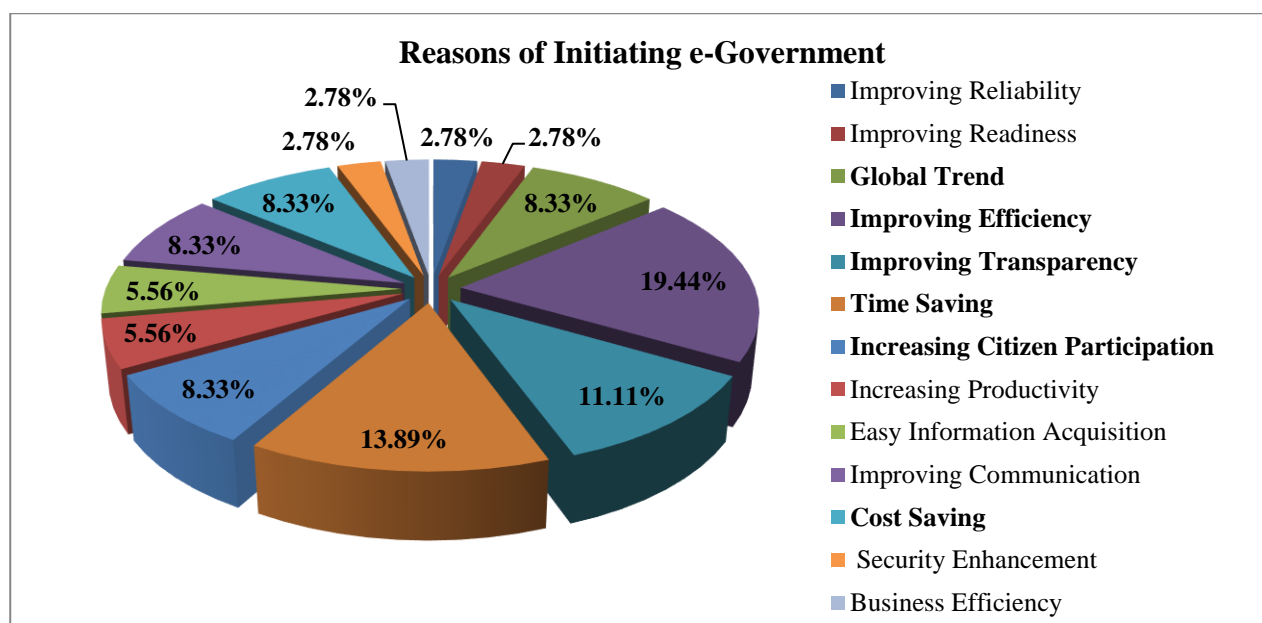
<Figure 40: Issues Facing in InterCollaboration>



NIPA consulting team identified that problems of inter-collaboration are information exchange issues (20%), real-time information exchange (13.3%), information accessibility (10%), and the lack of system (10%) which are total 53.3%. Therefore, it is essential that the establishment of information system and efficient accessibility for current system must be requested preferentially.

• **Question#4.** Reasons of Initiating e-Government

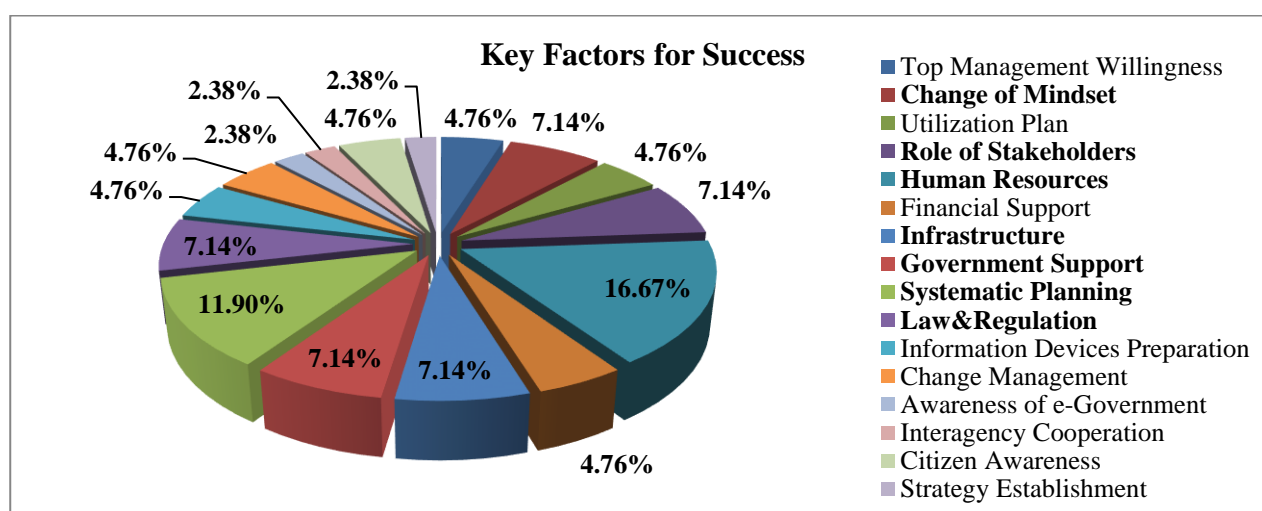
<Figure 41: Reasons of Initiating e-Government>



As a result of interview, the reasons for initiating e-Government are represented improving administration efficiency (19.44%), time saving (13.89%), improving transparency (11.11%), global trend (8.33%), increasing citizen (8.33%), and cost saving (8.33%).

• **Question#5.** Key Factors for e-Government Success

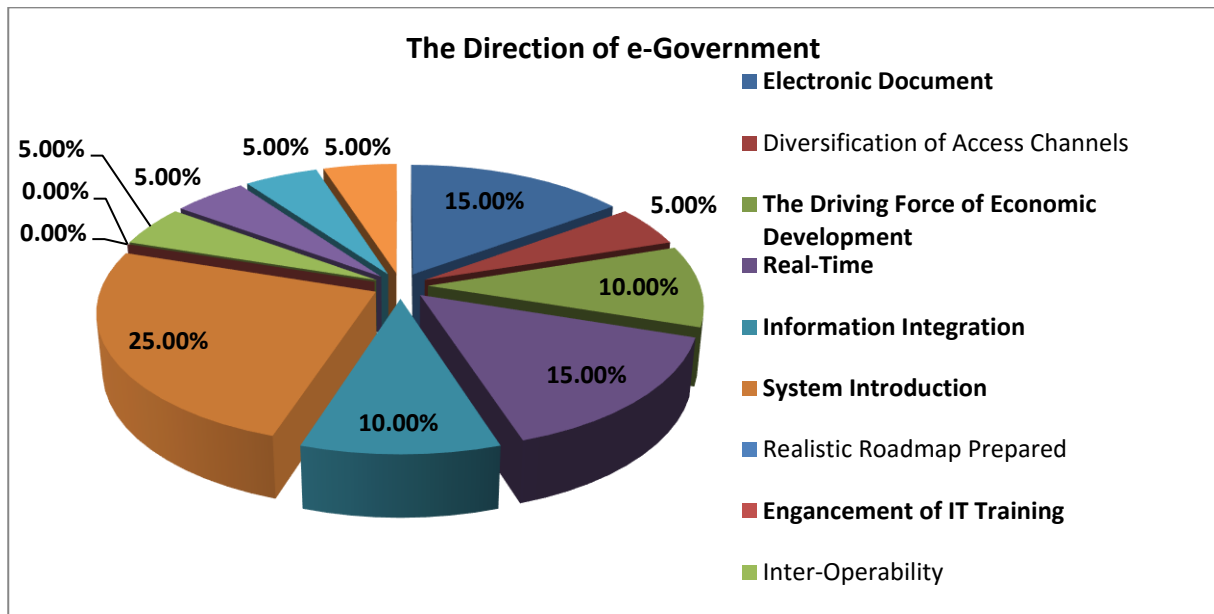
<Figure 42: Key Factors for Success>



Various opinions are proposed as the key factors for e-Government success such as human resources (16.67%), systematic planning (11.90%), the change of mindset (7.14%), the role of stakeholders (7.14%), and government support (7.14%).

- **Question#6.** Direction of e-Government

<Figure 43: Direction of e-Government>



For directions of e-Government, the country needs to introduce more systems (25%), electronic document (15%), real-time information exchange (15%), information integration (10%), and the driving force of economic development (10%) are included in the result of interview.

3.3.3.2 The Common Issues in the Result of Interview

When NIPA team visited government ministries for interviews, the team recognized the information service has not sufficiently provided for the nation. Also, most of the ministries have problems for exchanging information among other ministries although some of them implemented informationization for internal efficiency. NIPA consulting team realized that they have not set the groupware system such as electronic approval, e-mail, and electronic data interchange system. The below lists are common issues which we identified from the results of the interviews.

- General Finding Issues in Government Institutions

<Table 43: General Finding Issues in Government Institutions >

No	INSTITUTION	ISSUES
1	Ministry of Internal Affairs	<ul style="list-style-type: none"> - Duplication of National ID (NID) - Frequent computer problems due to the failure of power supply - Lack of operating experts in computer system
2	Ministry of Foreign Affairs	<ul style="list-style-type: none"> - Impossible to share Visa information with other agencies - Lack of Website for country promotion - Lack of basic facilities and methods for Real-time communication (e-Document Management System, e-Mail, VoIP, etc.) - Lack of understating about NITA-U's initiatives among MDAs - High wage for IT experts and short supply of IT manpower - Budgetary limitation for IT initiatives - Frequent computer problems due to the failure of power supply
3	Ministry of Finance	<ul style="list-style-type: none"> - Need for foundation of security system - Integrated management of data in each ministries - Need for Systematic monitoring system - Lack of IT operating staffs
4	Ministry of Information and Communication Technologies	<ul style="list-style-type: none"> - No plan for information sharing with other ministries - Lack of Information Security Policy and strategy - Shortage of manpower in charge of IT operation in each ministry
5	Ministry of Local Government	<ul style="list-style-type: none"> - Lack of unique National ID (NID) system - High costs of internet - Information exchange via Floppy Disk and Flash Driver - Lack of integrated system among MDAs - Different system and different platforms among MDAs (impossible to interoperate or integrate) - Lack of integrated government administration web portal
6	Ministry of Trade, Industry and Cooperatives	<ul style="list-style-type: none"> - Lack of system for smooth communication and information sharing with other agencies - Lack of awareness and training on the e-Government and IT related system - Working practice dependent on the paper documents - Lack of legal framework for e-Communication
7	Ministry of Health	<ul style="list-style-type: none"> - Absence of national healthcare system based on the NID - Need for digitalization of healthcare records which are now paper documents and linking to NID - Computerizing medical records and securing the interoperability
8	Ministry of Energy & Mineral Development	<ul style="list-style-type: none"> - Impossible to share information in real-time with remote departments

		<ul style="list-style-type: none"> - Unnecessary Paperwork - Lack of systematic IT promotion strategies - Few ICT experts in administrative work - Education for IT expansion - Poor Infrastructure - Poor condition of power supply
9	Ministry of Public Service	<ul style="list-style-type: none"> - Difficulties in sharing information among ministries - Need for integrated DB of ministries to share - Attitude hostile to computerization - Lack of national database to verify one's identity
10	Ministry of Land, Housing and Urban Development	<ul style="list-style-type: none"> - Digitalization of land register - Systemization of lat numbers and land registration
11	Ministry of Education and Sports	<ul style="list-style-type: none"> - Lack of ICT knowledge of teachers - Regional gap in terms of education - Lack of IT infrastructure in remote areas
12	Uganda Communication Committee(UCC)	<ul style="list-style-type: none"> - Users' inadequate knowledge of informatization - Lack of privacy protection system - Lack of Network Infrastructure - Lack of knowledge of e-signature - Compatibility problems among different systems and applications used in MDAs - Lack of technical staffs in computer system operation
13	Uganda Revenue Authority	<ul style="list-style-type: none"> - Difficulties in verification of correct data in case of multiple similar information - Duplication of citizens' information among governmental agencies due to the lack of unique National ID - Security problems and lack of legal basis - Impossible to exchange information about visa and immigration between governmental agencies - Unstable national backbone network - Users' inadequate knowledge of informatization
14	Uganda Registration Service Bureau	<ul style="list-style-type: none"> - Risks of breakage in register books - Digitalization of register books - Establishment of information sharing system among governmental agencies - Internet accessibility and lack of IT experts - Education for IT expansion - Poor Infrastructure - Poor condition of power supply
15	Public Procurement and Disposal of Public Assets Authority (PPDA)	<ul style="list-style-type: none"> - Education/Training for remote agencies - Legal Framework related to procurement - Education for IT expansion - Poor Infrastructure

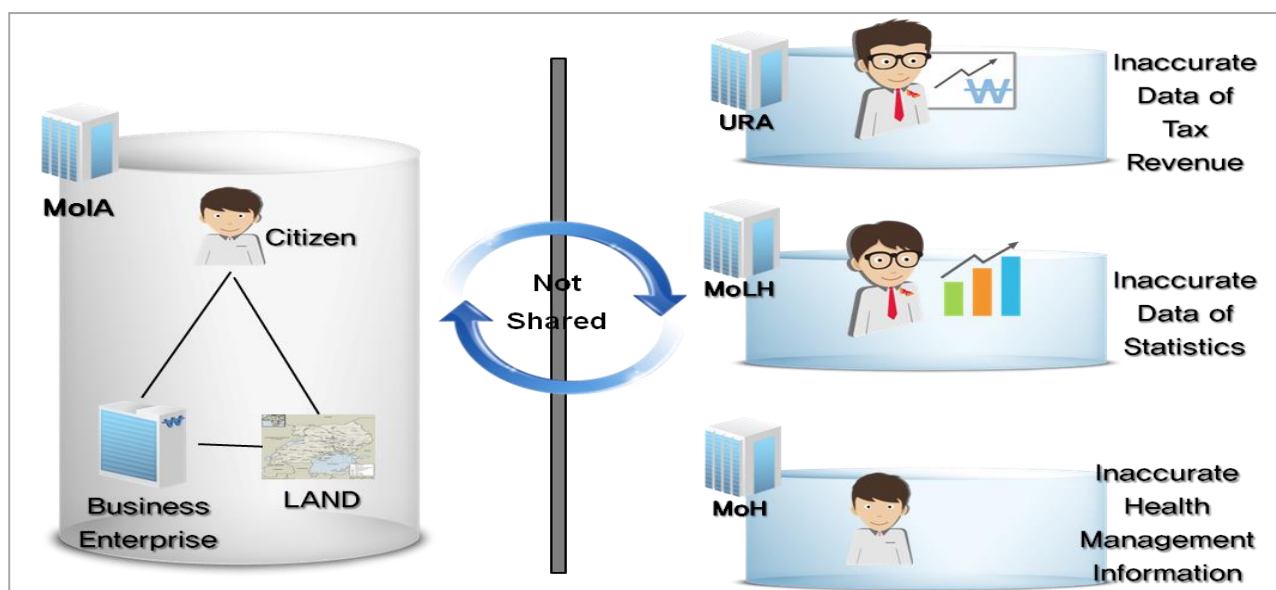
		- Poor condition of power supply
16	Uganda Investment Authorities	- High cost to support IT system and online services - Change of paper-based working practice - Share of e-Documents among related institutions - Lack of National ID
17	Uganda Bureau of Statistics	- Measurement of demographics in real time - Digitalization of documents
18	Uganda Export Promotion Board	- Improvement of Internet access of SMEs - Improvement of ICT environment in SMEs
19	National Agricultural Advisory Services (NAADS)	- Establishment of agricultural information sharing system
20	Uganda Police Force	- Different system within the Police which is not interlocked - System which is not linked to other governmental agencies - Average 2 hours of downtime per day - Lack of unique National ID - System transfer without losing accumulated information
21	National Social Security Fund (NSSF)	- Lack of personal DB and linkage - Difficulty in verifying member's personal authentication in real time - Frequent computer problems due to the failure of power supply - Lack of technical staffs in computer system operation
22	National University (Makerere University)	- Enhance ICT industry for graduates majoring in IT - Settle down a Uganda Model of IT technology through industry-university cooperation - Expand the IT base
23	NGO(Development Research and Training)	Lack of citizens' participation in governmental web sites

• Summary of finding issues

Issue #1 : The Duplication of Information for Resident Registration

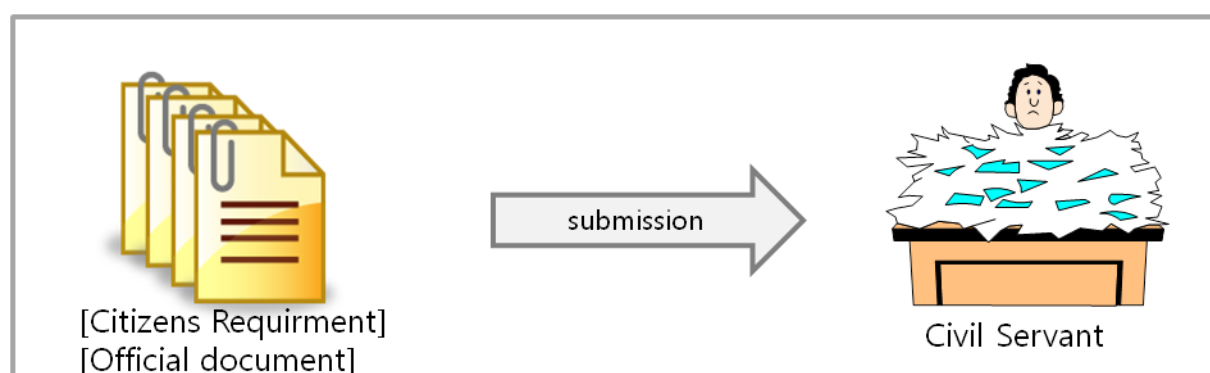
When NIPA consulting team interviewed each ministry about whether or not the information of resident registration is accurate or not, all of them responded that various problems have always occurred because the resident registration information is not unique. Inaccurate date of statistics, inaccurate health management information, and inaccurate criminal record information are resulted from inaccurate personal information from primary data.

<Figure 44: Primary Data (N-ID, LAND, Business) for e-Government >

**Issue #2 : Low Usage of e-Document**

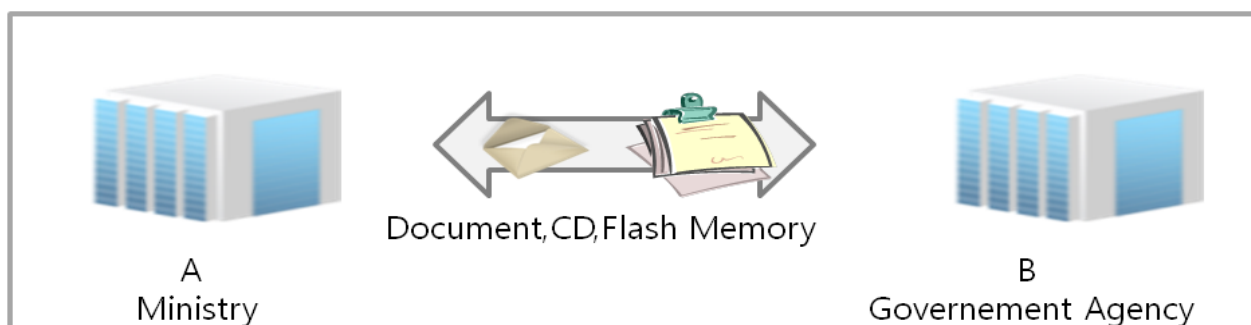
Most of national information has been recorded in paper documents. Moreover, ministries mostly have been in constant correspondence with others to exchange information. Most of the ministries have spent unnecessary human power, cost, and time to digitalize these paper documents. Almost all ministries have common problems related to e-Document.

<Figure 45: The Way of Data Processing >

**Issue #3 : The Problem of Exchanging Information**

Although the central ministry has set up an information system, it takes a lot of time to access information because they usually exchange the information by e-mail and paper documents among other ministries

<Figure 46: The way of Information Exchange>

**Issue #4 : The Management of Environment in Computer Room**

Information resources in each ministry have been independently managed. However, service downtime is often occurred due to unstable supply of electricity. Furthermore, temperature and humidity has been maintained irregularly and minor vibrations can affect the data in the data computer room in some ministries.

<Figure 47: Improper Management of a Thermal-hygrostat and NBI Equipment Interruption>-

**3.4 Requirement of Citizens & Business Enterprises****3.4.1 Overview**

A questionnaire survey was conducted to seek out requirements of citizens and business executives. The survey results are based on the level of informatization of the nation, awareness of e-Government, requirements of e-Government, and priority services that are necessary. Part of the survey results are used from Ernst & Young.

3.4.2 General Information

- **Questionnaire Survey Results**

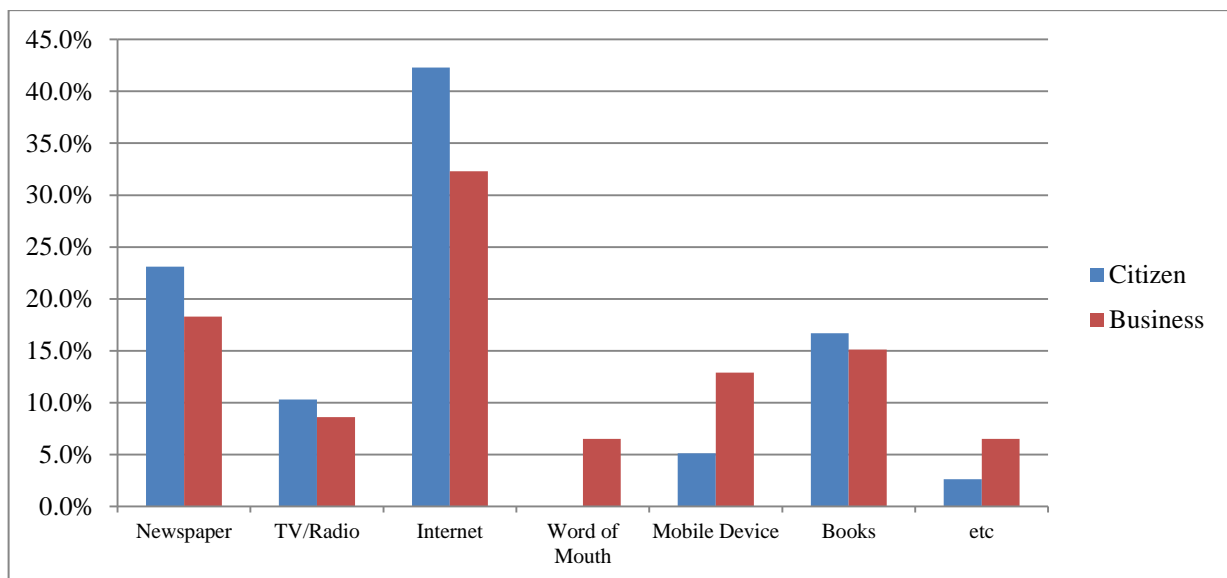
In order to understand the current e-Government status of Uganda, a questionnaire survey was conducted on 34 citizens, 41 business executives, and 39 technical staffs.

The survey consisted of questions such as how respondents accessed information, what medium they used for internet connection, how often they received ICT training etc. Based on the results, the stakeholders' requirements for e-Government were analyzed.

- **Access to Information**

When asked what types of media they used to access information, both stakeholders answered internet as their prime source. Both stakeholders chose Newspapers as their second source of access to information.

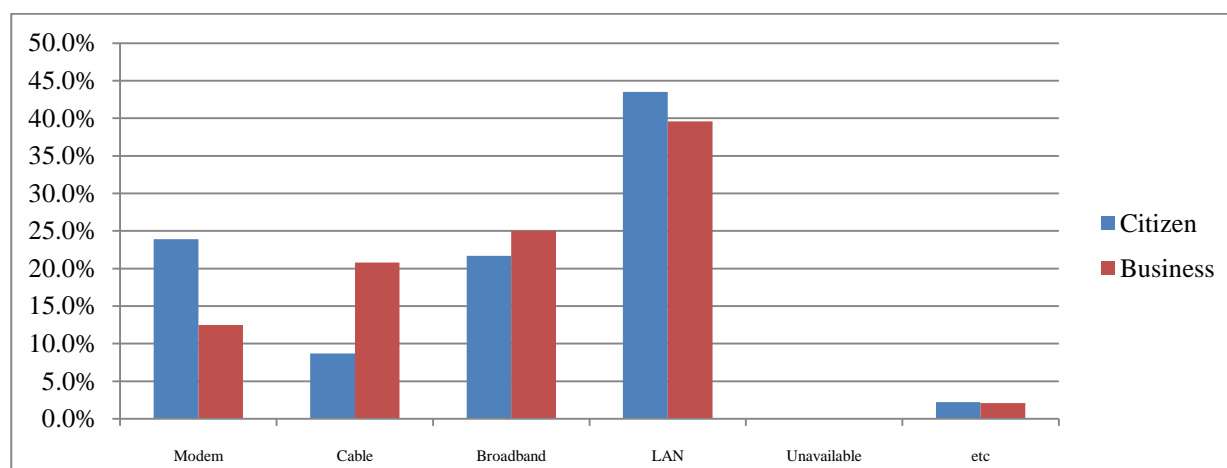
<Figure 48: Access to Information>



• Internet Connection

When asked how the respondents connected to the Internet, answers varied. The majority of citizens and business executives are using LAN for means of internet connection. Business executives who could afford a high usage fee used broadband as their second means of connection, whereas many citizens are using modems as their second.

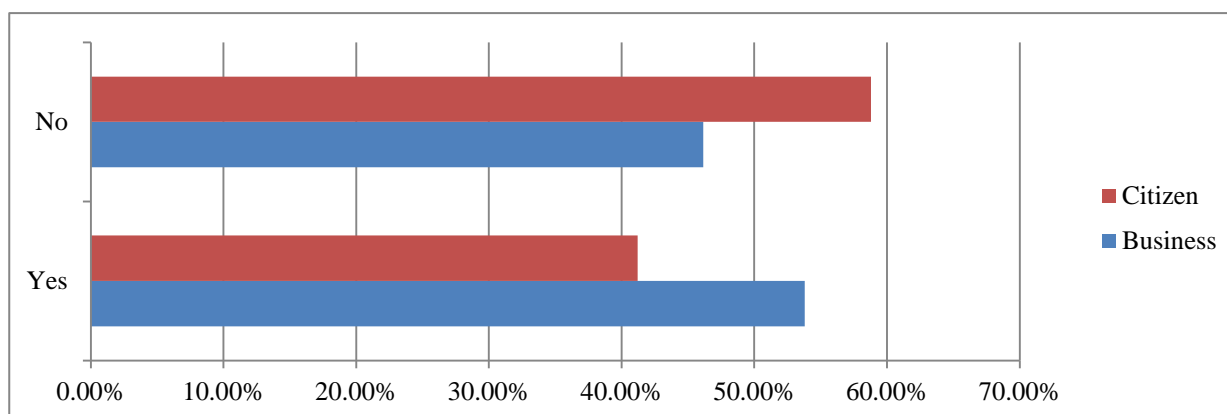
<Figure 49: Means of Internet Connection>



• ICT Education

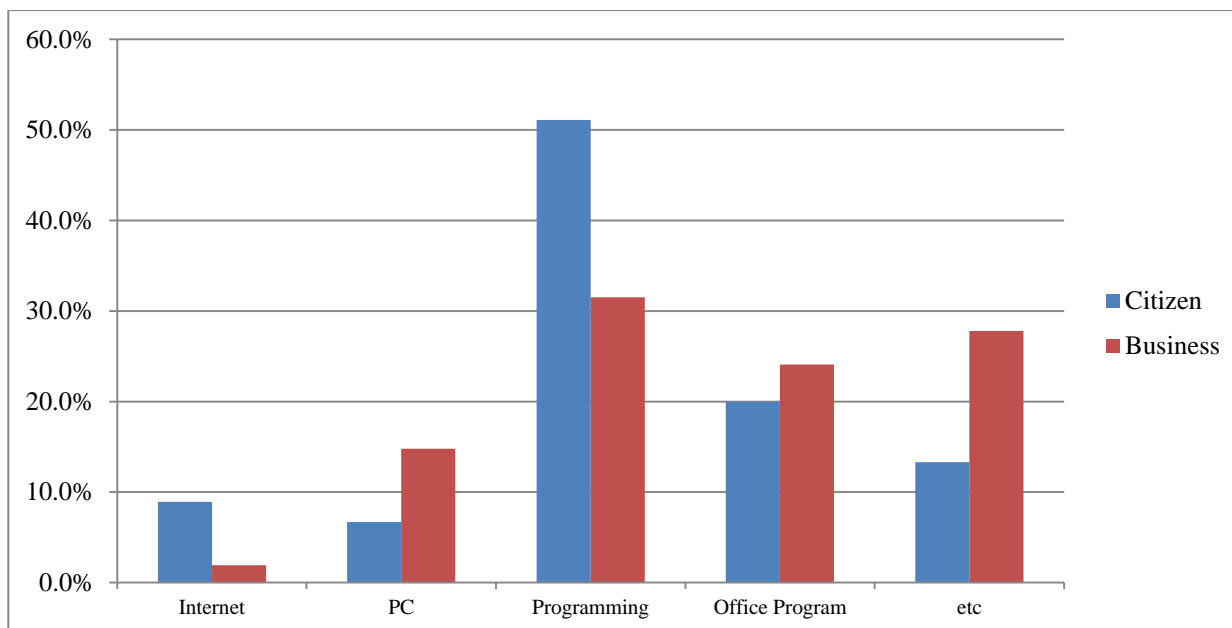
Among the respondents, only 41.2% of citizens and 53.8% of business executives had received some form of ICT education.

<Figure 50: ICT Education>



When asked what type of ICT education they would like to receive, most citizens and many business executives chose programming. Business executives also have mentioned ICT education are needed in areas of Linux and Windows servers, ERP systems whereas citizens would like to have ICT education training in areas of Microsoft, web content management, and data backups

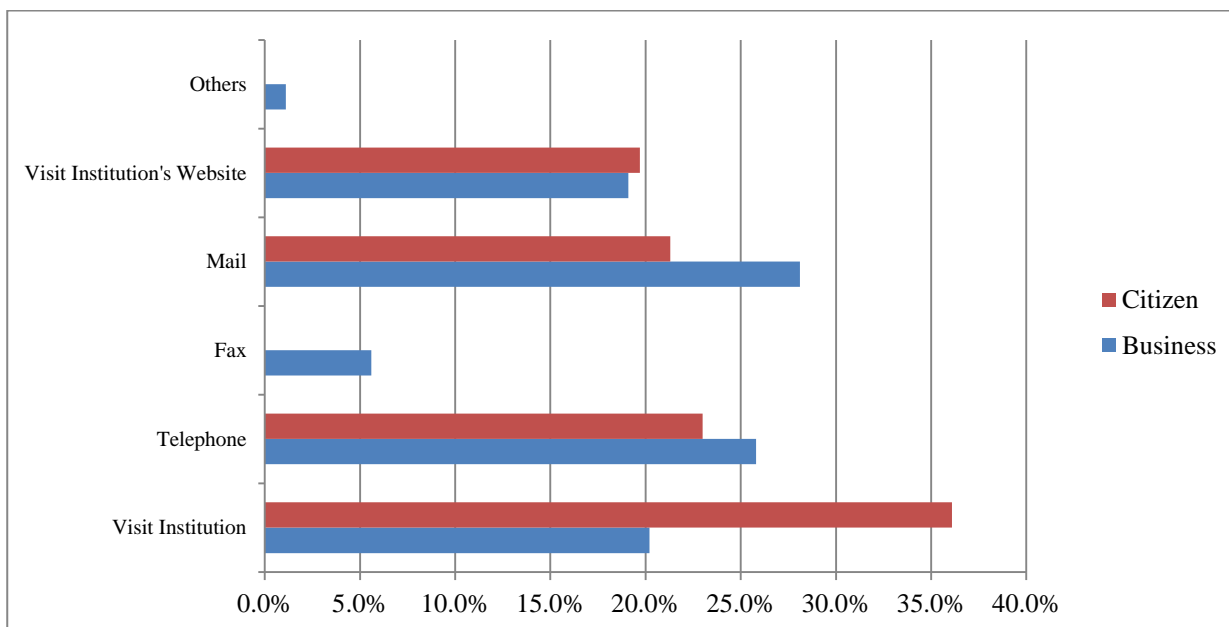
<Figure 51: ICT Education Needs>



- Civil Service**

In order to receive necessary civil services, citizens must visit the relevant government institutions or use telephone whereas business executives mostly use mails or telephone for applying civil services

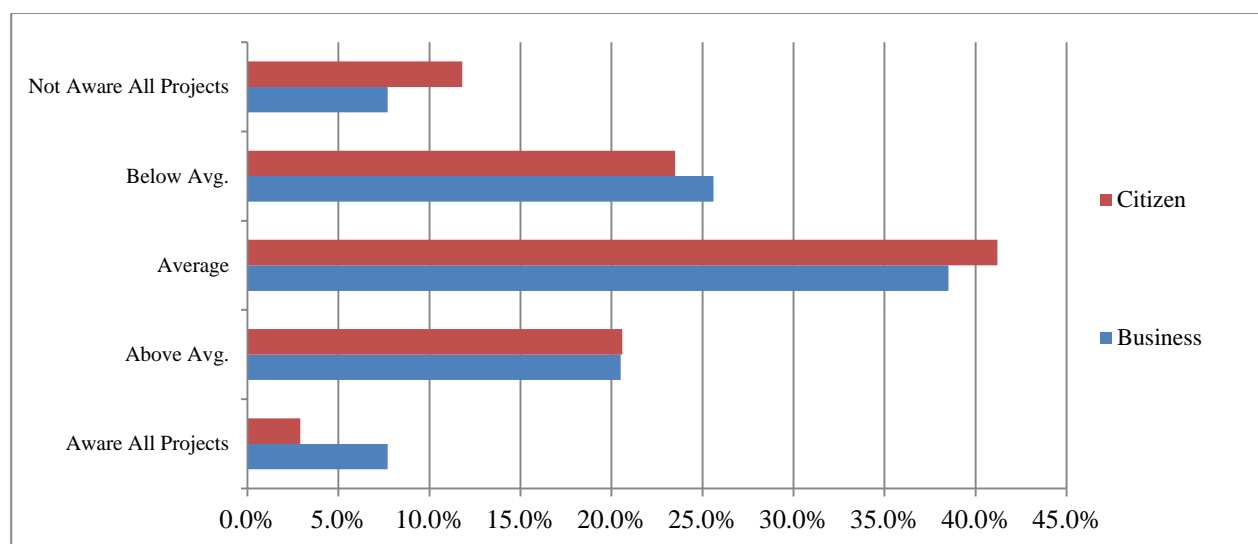
<Figure 52: Civil Service Application>



• e-Government Service

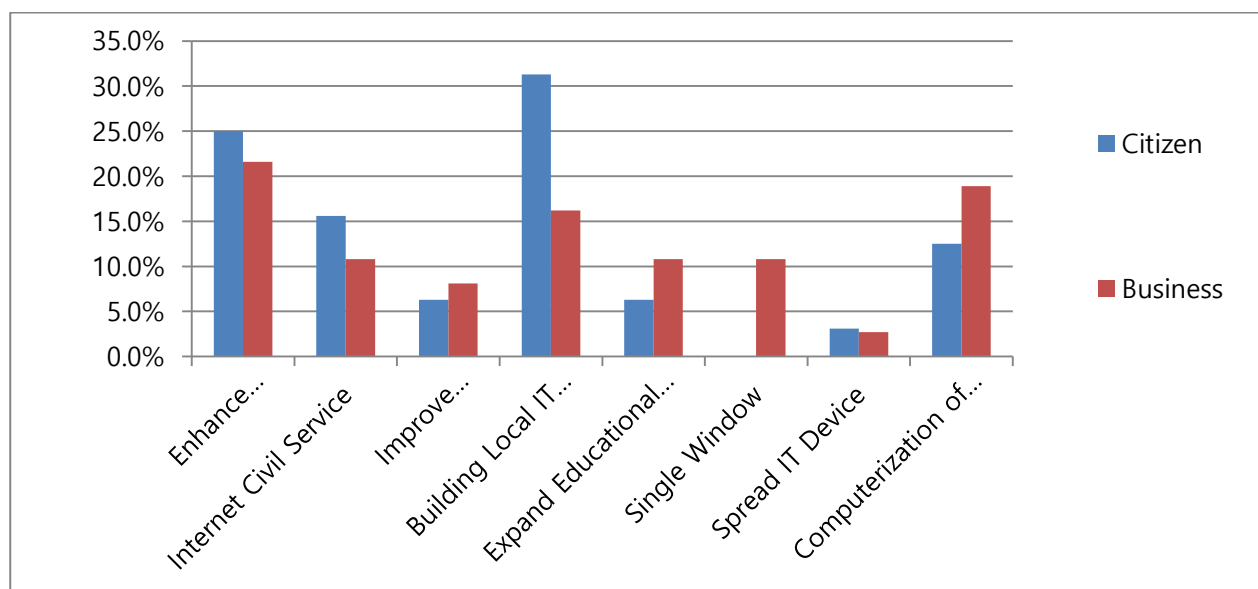
When asked whether or not they were aware of the ongoing national IT projects, average of 64.7% of citizens and 66.7% of business executives responded positively; others responded that they were not really aware of IT projects.

<Figure 53: National IT Project Awareness>



When asked about what e-Government projects they considered as a national priority, citizens responded that establishment of regional IT centers should be a top priority, whereas business executives responded expansion and improvement of the telecommunication infrastructure as the priority.

<Figure 54: e-Government Priorities>

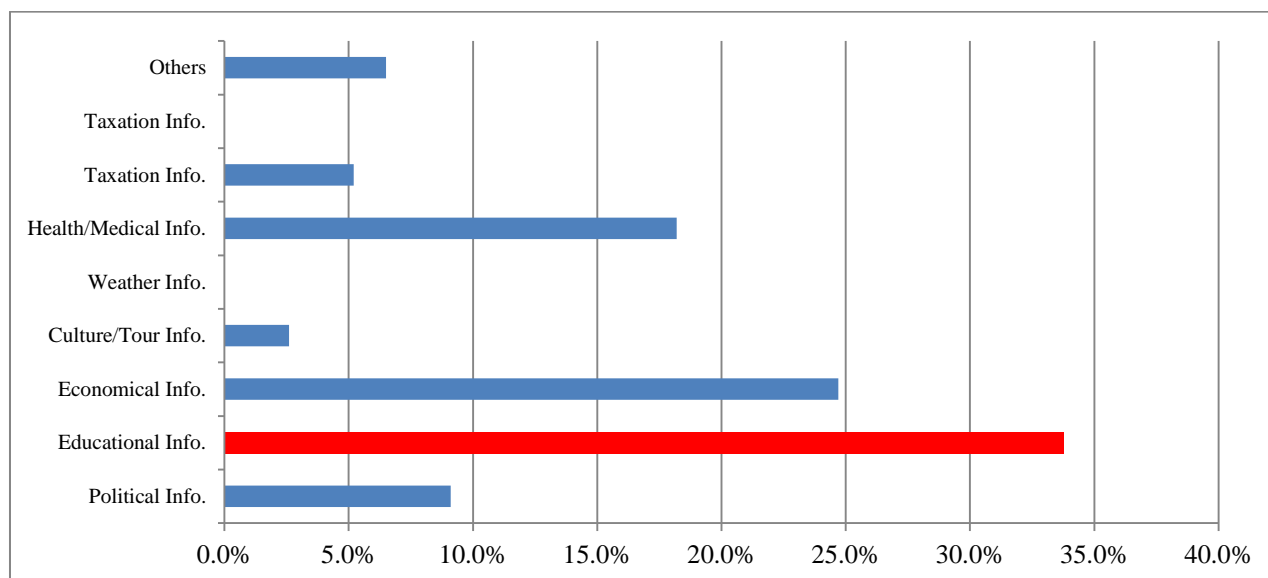


3.4.3 Requirement of Citizens

- Information Importance**

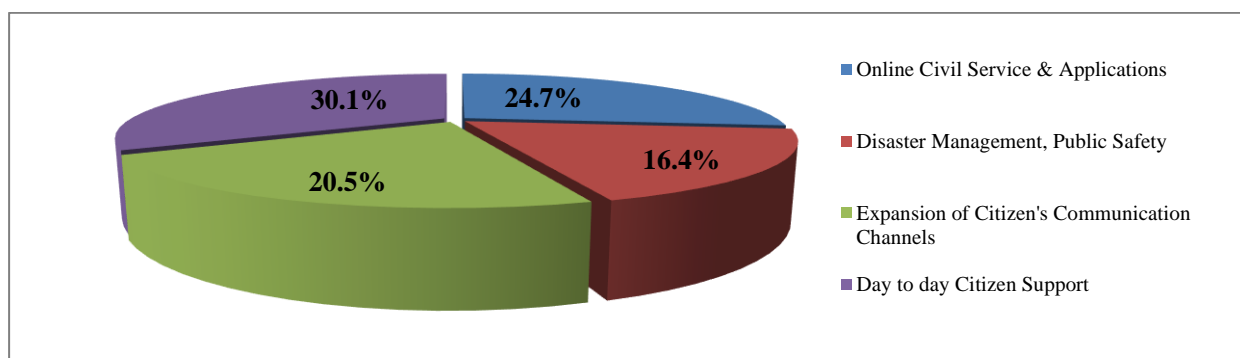
When asked about what information is the most important to citizens, Education information was chosen as the most important. The result reflects that the citizens have the high interests in education. On the other hand, not so many people are having interests in Taxation or Weather information for citizens.

<Figure 55: The Most Important Information>



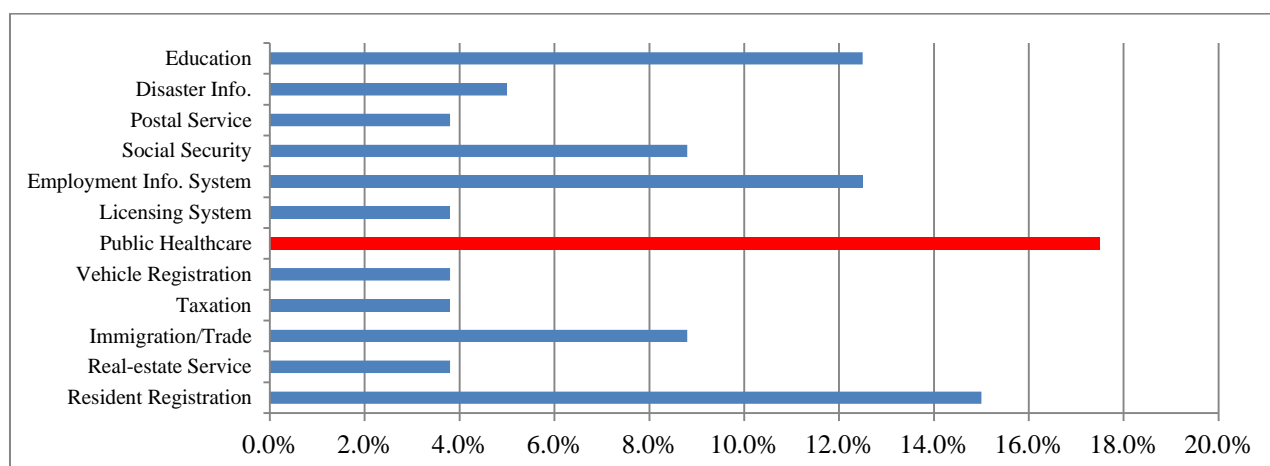
Most respondents felt that Day-to-Day Citizen Support should be improved the most in government administrative services. The respondents also felt Online Civil Service & Applications needs to be improved for better government administrative services. Combined together, it is necessary for the government to consider developing online civil services which can support day-to-day life for the citizens overall.

<Figure 56: Government Administrative Service Improvement>



When asked about which government administrative service should be created first by the government, Public Healthcare Service was chosen as the most priority. Currently, many citizens in Uganda are suffering from diseases due to the limited health budget, lack of medical expertise, facilities and there is also lack of health systems such as e-Health.

<Figure 57: Government Administrative Service Priority>

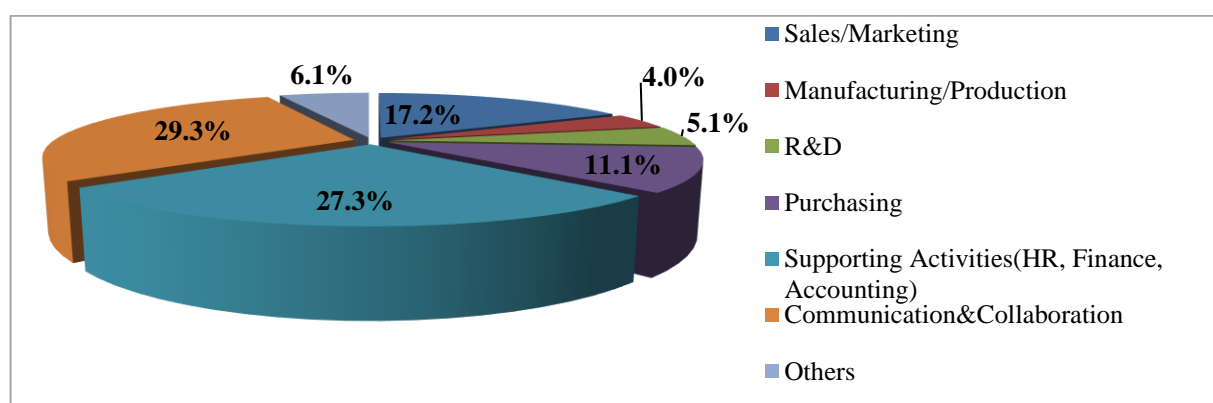


3.4.4 Requirement of Business Executives

- **Business Support**

There were 39 business executives who shared their opinions and responded to the e-Government Questionnaire Survey. The respondents replied that a large portion of Communication and Collaboration such as messenger, e-mail, portal etc. were handled through IT services and computerized. Some supporting activities such as HR, finance, accounting works were also handled through IT services.

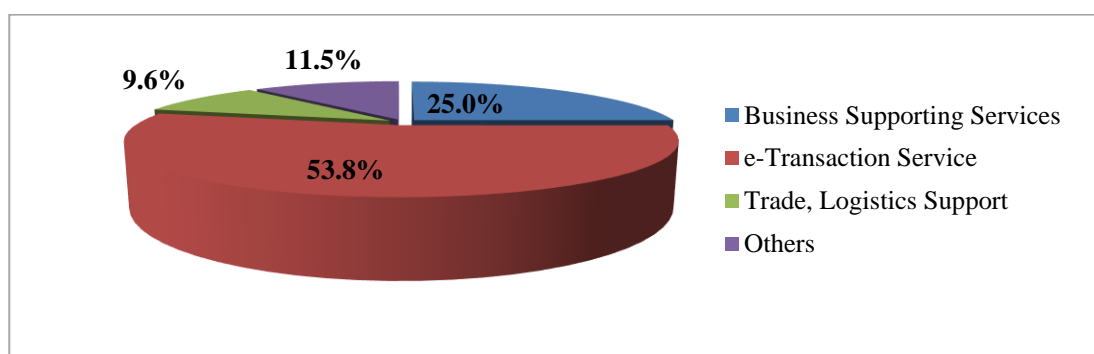
<Figure 58: Computerized Business>



• e-Government Service

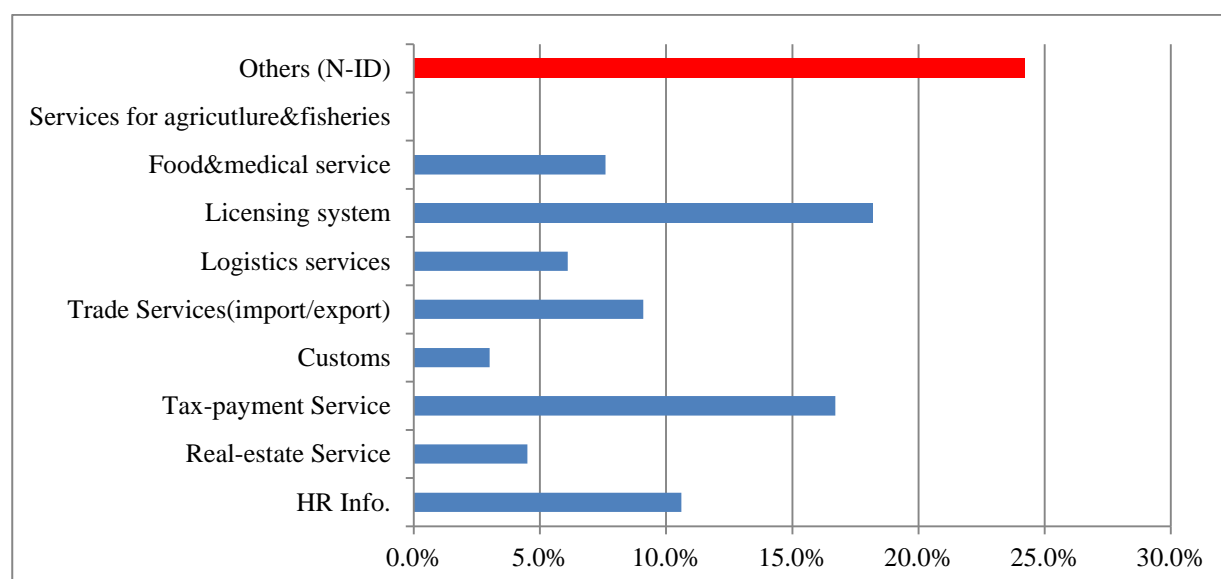
More than half of the respondents replied that national administrative services should be improved in a way that supports e-transaction and commercial information. They also emphasized the need for enhancement of business supporting services such as factory registration, procurement etc.

<Figure 59: Government Administrative Service Improvement>



When asked about which government administrative service should be created first by the government, most respondents specified their answers rather than selecting one of the choices. Currently in Uganda, there is no unique national identification number available. Most respondents said they need unique N-ID system, information sharing management system, and health services.

<Figure 60: e-Government Priority>



3.4.5 Ernst & Young Result of Survey

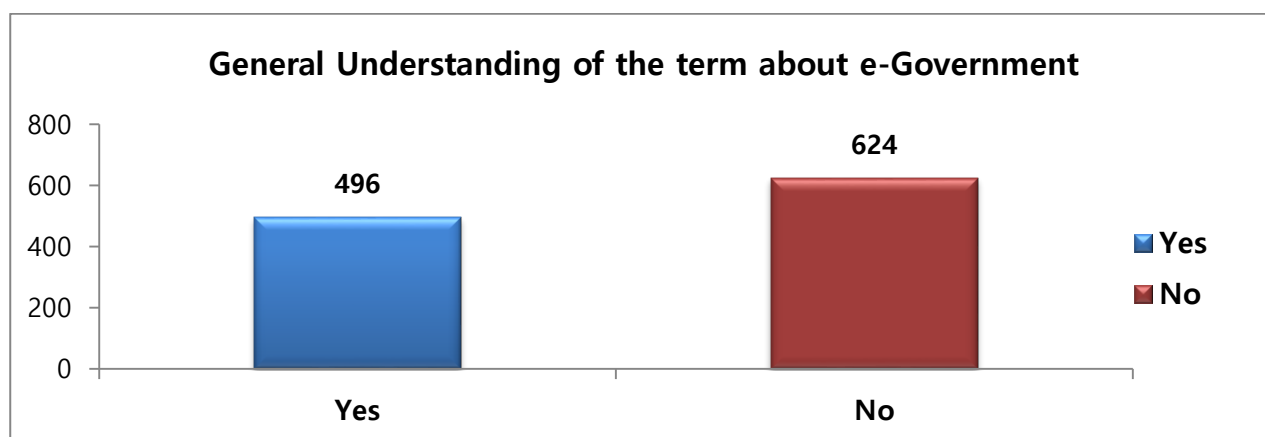
3.4.5.1 Overview

NITA-U asked for a survey related to information for satisfaction of e-Government, awareness of e-Government service, and requirements for e-Government to Ernst & Young. NIPA consulting team has analyzed the result of this survey.

3.4.5.2 The Survey for Satisfaction of e-Government

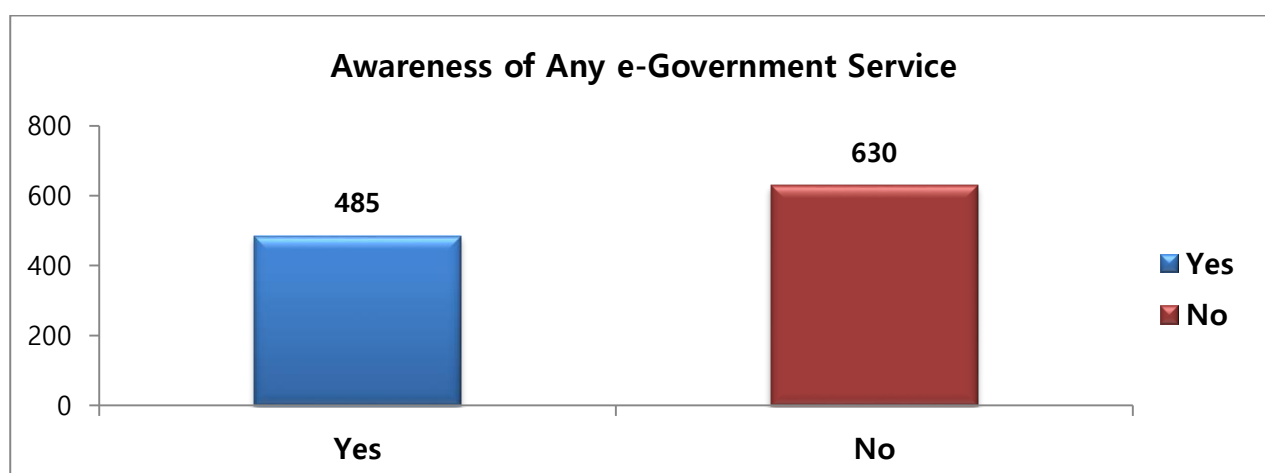
According to the result of the survey related to if citizen and companies generally understand of the term about e-Government or not, 496 people responded 'Yes', 44%, and 624 people answered 'No', 56%.

<Figure 61: General Understanding of the term about E-Government>



In addition, 485 people, 43%, answered 'Yes' for the question, awareness of any e-Government service. Otherwise, 630 people, 57%, responded 'No'.

<Figure 62 Awareness of Any e-Government Service>



3.4.5.3 Requirements for e-Government Service

The objectives of this survey are to know the requirements level of e-Government service in the side of citizen and companies and to take priority requirements. NIPA consulting team has used some of the information from the Ernst&Young survey document.

Ernst&Young has surveyed the requirement level of e-Government services as listing fragments of requirement information. In this report, NIPA consulting team has identified the priority requirements which take the high number portion of respondents, answered for, 'Moderate' and 'High'.

<Table 44: Requirement Level of e-Government Services>

Category	Moderate Priority	High Priority	Total
E-Banking	805	145	950
Production (agricultural) and Market Information Services	713	216	929
E-Passport	685	228	913
Social Services Public Information	581	319	900
Utility Bills	670	225	895
E-Commerce	563	331	894
Driving Permits	654	233	887
E-Procurement	532	354	886
Land Information System	566	311	877
E-Tax	609	231	840
Smart Cards	499	331	830
Transport Information	468	362	830
Electronic Customs	508	287	795
E- Voting	525	246	771
Integrated e-Justice System	376	372	748
Meteorology and Tidal Information	321	427	748
e-Immigration	387	350	737
Environmental Management Information System	344	378	722
E-Parliament	313	339	652
E-Local Government	335	312	647

According to the above table, it was investigated that citizen and companies prefer to take advantage of e-Bank, Production and Market information Service, E-passport, Social Services Public Information in order. However, e-Bank system has to be taken law and policy by government before each bank carries it out. Also, e-Bank system correlates with social infrastructure. Therefore, details of e-Bank analysis should be necessary.

3.5 e-GAT Analysis

3.5.1 Overview

The e-Government assessment tool (e-GAT) is a pre-assessment tool that provides a formalized and standardized evaluation of a given nation's e-Government maturity in relation to Korea's. The assessment was conducted focusing on improvement themes on four critical service areas; government to government (G2G), government to business (G2B), government for citizen (G4C) and infrastructure. The above categories had three or four improvement themes, for a total of 14 improvement themes. Each of the improvement themes had one to four indicators for a total of 33 indicators.

<Table 45: e-GAT Indicators>

Category	Improvement Theme	Indicators
[G2G] Innovating the way the Government Works	Nation Finance Innovation	Integrated National Finance Management
		Informatization of Regional(Local) Finance Management
	Government Process Innovation	Document Processing and Informatization of archives
		Informatization of Local Government Administration
		Informatization of the Central Government Administration
	Inter-Ministry Collaboration	Administrative information sharing
		Linkage between government functions
		Integration for HR administration
[G4C] Innovating Citizen-Oriented Government Services	Enhanced Delivery of Citizen Services through the Internet	Informatization of the education administration
		Education administration information sharing
		Civil Services Provided
		Public Availability of Administration and Level of Online Citizen Participation
	Enhancing Coverage of National Welfares Services	Management of Critical National Database
		Informatization of Tax Services
		Information on employment/hiring services provided
	Innovation of national disaster and safety management services	Internet Service for Improving Citizen Welfare
		Medical and health services provided
		National disaster management services provided
[G2B] Enhancing Government-led Business Competitiveness	Government Services Enhancement (B2G)	Drug management services provided
		Citizen support services provided
	Commercial Services Enhancement (B2B)	Automation for Business Activities
		National Procurement Process Transparency
		Informatization of Business Transactions
		Business Support Services Provided
Innovating Common e-Government Infrastructure	Support to import/export work	Convenience for Import/Export Related Declaration Process
		Integration/connection of e-trading services
	Integration of Information Resources	Management of National Information Resources
		Business Continuity for Information Resources
		Telecommunication Environment for E-Government Services
	Information Security Enhancement	Security system for stability of e-Government
		Implementation of authentication system for stable and reliable services
	Establishment of e-Government governance system	e-Government responsible organization and related department
		Improvement and establishment of e-Government laws and policies

3.5.2 Methodology

The e-GAT was conducted on Uganda e-Government TFT members. A level of 1 to 5 was selected by the surveyees, with distinguishing factors like, “The internal DBs and systems of the local government finances are internally linked and an agency specific standard/interconnection between internal systems have been established,” to determine the current level or future image.

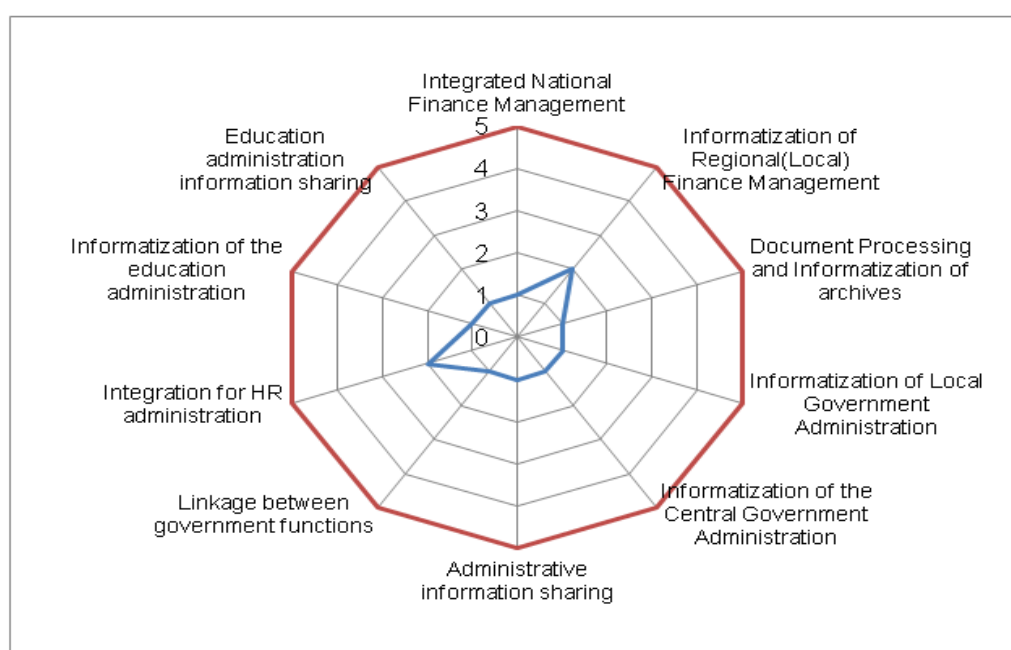
The current status was conducted on e-Gov TFT members to select a level between 1-5 for each indicator that represents the current situation in Uganda based on the explanation and examples given for level.

And the future image was conducted in a similar fashion to assess where a given indicator was likely to be within 2 or 3 years. Feasibility and national importance (determined by national goals expressed in the national agenda) were two main points of consideration while conducting the future image. Priorities would then be assessed through a gap analysis of the current level and the future image.

3.5.3 e-GAT Result

- **Area of G2G**

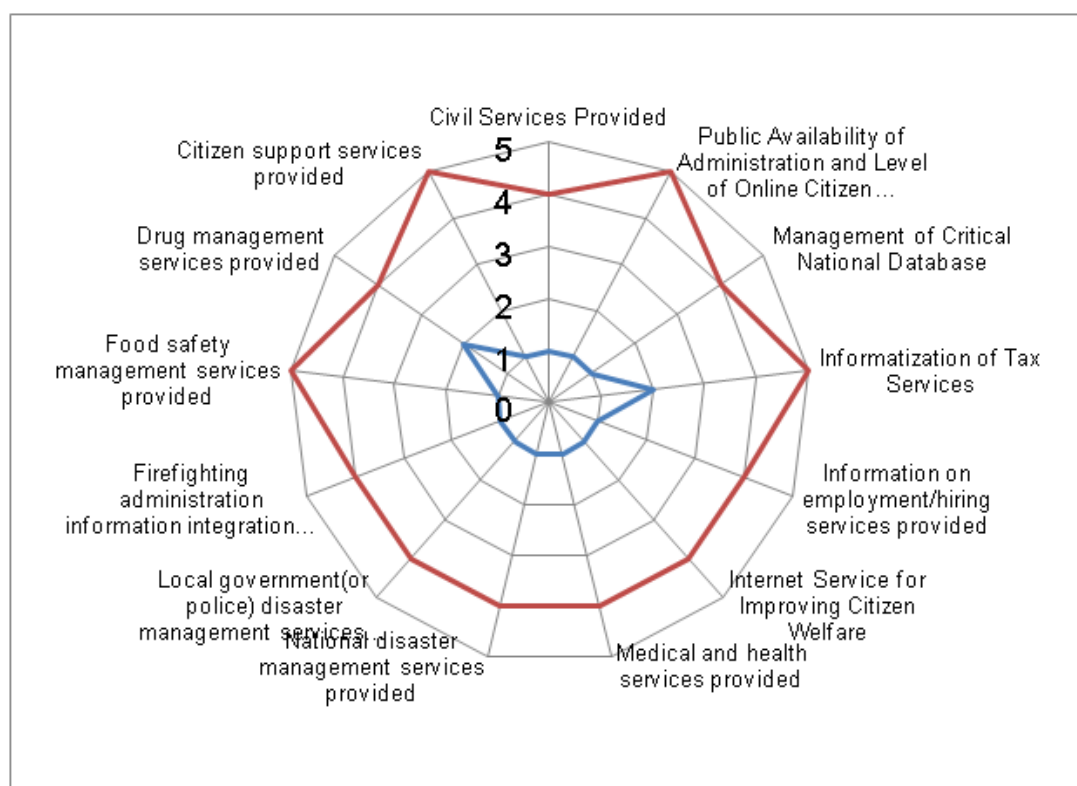
<Figure 63: (G2G) Innovating the way the Government Works>



- Modernization of national finance management improvement theme ranked the highest in the G2G category, with the level of integrated national finance management provided ranking highest in priority.
- Interview results showed that finance management in each MDA was not digitalized, not interconnected and integrated with other relevant public/private organizations and interconnection was highly needed. Data or information is not properly shared across all the government MDAs.

3.5.3.1 Area of G4C

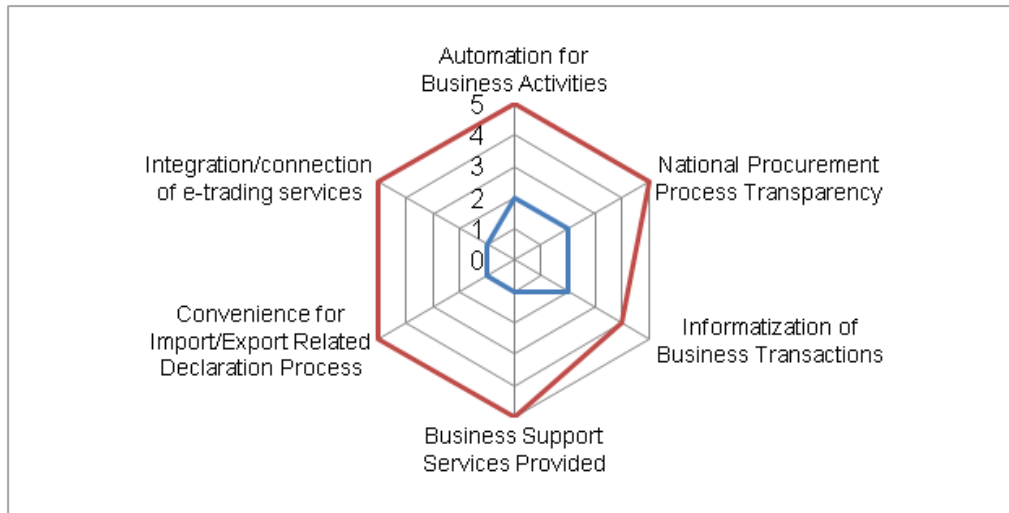
<Figure 64: (G4C) Innovating Citizen-Oriented Government Services>



- Enhancing internet services to support civilian day-to-day life improvement theme ranked the highest in the G4C category, with the level of food safety management services and the level of citizen support services provided ranking highest in priority.
- Interview results showed that the level of online government services provided to the citizens were low, therefore, the rate of online citizen participation were low and the overall citizen support services were not properly provided in the nation

3.5.3.2 Area of G2B

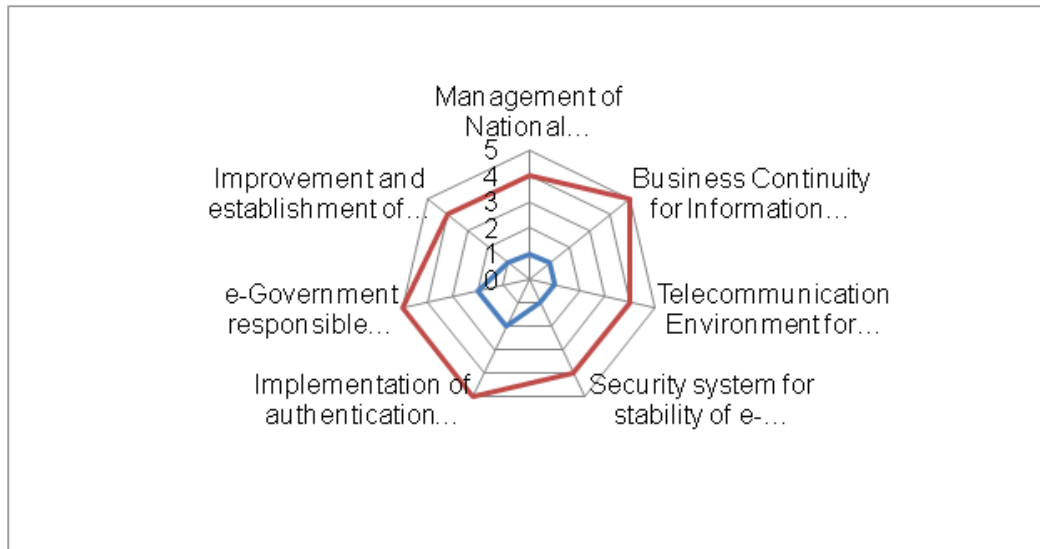
<Figure 65: (G2B) Enhancing Government-led Business Competitiveness>



- Support to import/export work improvement theme ranked the highest in the G2B category, with the level of support to import/export work ranking highest in priority.
- Interview results showed that related ministries, departments, and agencies are not connected and that most work was done in papers. There is a need for integrated and linked information systems where services and information are provided in online to private business enterprises of the country and to increase business climate and national competitiveness.

3.5.3.3 Area of Infrastructure

<Figure 66 1: Innovating Common e-Government Infrastructure>



- The theme of achieving efficient management through integration of information resources ranked highest in the infrastructure category, with business continuity for information resources ranking highest in the priority.
- Interview results showed that for disaster prevention, data backup system, business continuity plans or disaster recovery plans are needed

4. Legal Framework

4.1 Overview

A fragmented legal environment can create important barriers for the implementation of e-Government. An adequate legal and regulatory framework is needed to:

- Establish legal equivalence of e-Government processes with paper-based ones: The introduction and uptake of e-Government services and processes will remain minimal without a legal equivalence between digital and paper processes
- Provide a framework for collaboration among public agencies and across levels of government: Public governance frameworks are often based on the assumption that agencies work alone and this can act as an inhibitor to collaboration and information sharing among and organizations
- Provide clear regulations and guidance to agencies: Combining existing requirements with clear informal/regulatory guidance is a primary challenge to e-Government coordinators. If agencies are unable to determine what is required of them – e.g. on data security and technical standards – they are likely to be unwilling to invest in new projects that may not conform with the requirements
- Protect individual privacy and security: Ensuring that e-Government initiatives are in step with society's expectations on privacy and security is crucial to building the trust needed to obtain the proper societal support to e-Government implementation

E-Government is interdisciplinary in its nature as it involves issues pertaining to the traditional legal domain as well as modern social, political, economic and culture dilemmas. A traditional law making approach to developing an e-Government legal framework is facing challenges and a mixed-approach with emphasis on dialogue and cooperative relationships across government levels and on self-regulatory efforts is essential in the future.

OECD experiences show that is no “right” approach. Countries have adopted different approaches, such as introducing new laws, modifying existing ones, a whole-of-government approach for the development of a cohesive legislative framework and passing laws that support e-Government goals on an as-needed basis.

Therefore, there are strong needs for analysis of current legal framework in Uganda. And then, key findings are derived from the analysis.

4.2 Current Legal Framework in Uganda

In Uganda, there are six Acts and one Regulation related to e-Government; National Records and Archives Act, Access to Information Act, National Information Technology Authority-Uganda Act, Computer Misuse Act, Electronic Signatures Act, Electronic Transactions Act, and Access to Information Regulations. To find out key findings of current legal framework in Uganda, these law and regulations are analyzed.

<Table 46: Current Legal Framework in Uganda>

Title	Date of Assent	Descriptions	Compositions
The National Records And Archives Act	7 th June, 2001	An Act to provide for the rationalised management of all Government and other public records and archives under one single authority, for the preservation, utilisation and disposal of such records and archives, for the repeal of the Records (Disposal) Act, and for other connected matters	Part I. Preliminary Part II. Establishment and Functions of a National Records and Archives Agency Part III. Responsibilities of the Creators of Public Records for their proper Management Part IV. Responsibilities of the Director for the Management of Public Records and Archives Part V. Local Government Records and Access to Archives Part VI. Financial Provisions Part VII. General Schedules
The Access To Information Act	7 th July, 2005	An Act to provide for the right of access to information pursuant to article 41 of the Constitution; to prescribe the classes of information referred to in that article; the procedure for obtaining access to that information, and for related matters	Part I. Preliminary Part II. Access to Records and Information Part III. Exemption from Access Part IV. Third Party Intervention Part V. Complaint and Appeals Part VI. Miscellaneous Schedules
The Information Technology Authority-Uganda Act	15 th July, 2009	An Act to provide for the establishment of the National Information Technology Authority-Uganda and to provide for its objects, functions, composition, management and finances; and other related matters	Part I. Preliminary Part II. Establishment, Objects, Functions and Powers of the National Information Technology Authority, Uganda Part III. The Board and its Functions

Uganda's e-Government Master Plan

			Part IV. Secretariat Part V. Information Technology Surveys and Powers of the Authority Part VI. Finances of the Authority Part VII. Miscellaneous Schedules
The Computer Misuse Act	1 st November 2010	An Act to make provision for the safety and security of electronic transactions and information systems; to prevent unlawful access, abuse or misuse of information systems including computers and to make provision for securing the conduct of electronic transactions in a trustworthy electronic environment and to provide for other related matters	Part I. Preliminary Part II. General Provisions Part III. Investigations and Procedures Part IV. Computer Misuse Offences Part V. Miscellaneous Schedule
The Electronic Transaction Act	17 th February, 2011	An Act to provide for the use, security, facilitation and regulation of electronic communications and transactions; to encourage the use of e-Government services and to provide for related matters	Part I. Preliminary Part II. Facilitating Electronic Transactions Part III. E-Government Services Part IV. Consumer Protection Part V. Limitation of Liability of Service Providers Schedules
The Electronic Signatures Act	17 th February, 2011	An Act to make provision for and to regulate the use of electronic signatures and to provide for other related matters	Part I. Preliminary Part II. Electronic Signatures Part III. Secure Digital Signatures Part IV. Public Key Infrastructure Part V. Miscellaneous Schedule
The Access To Information Regulations	2007	In Exercise of the powers conferred on the Minister of Information and National Guidance by section 47 of the Access to Information Act, 2005	Part I. Preliminary Part II. Access to Records Schedules

Uganda's e-Government Master Plan

		The purpose of these Regulations is to provide the procedure for accessing records from a public body	
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4.3 Key Findings

In 2005, starting to establish the Access to Information Act, Uganda government has been trying to create a legal framework for e-Government.

In recent years, Uganda government has organized primary legal framework such as the Computer Misuse Act, the Electronic Transaction Act, and the Electronic Signatures Act.

However, since each Act has few or no implementing ordinances and regulations, there are some difficulties to execute actual work related e-Government.

Also, in order to promote ICT and effectively establish the e-Government, 3 categories of legal framework which Uganda needs to institutionalize. These are Laws on National Informatization Promotion, Law on ICT Industry Promotion, and Laws on ICT Infrastructure Establishment.

5. Benchmarking Case Study

5.1 Overview

Benchmarking is to assess the relative performance of the nation by certain standards. In this section, two nations, which are Republic of Korea and the United Kingdom will be benchmarked in regards to legal frameworks related to ICT, vision, strategies, e-Government development histories and initiatives. In addition, benchmarks provide a method of comparing the performance of various e-Government systems and services that currently available and will be implemented soon in country.

5.2 Korea's e-Government

5.2.1 Korea's Vision and Strategies

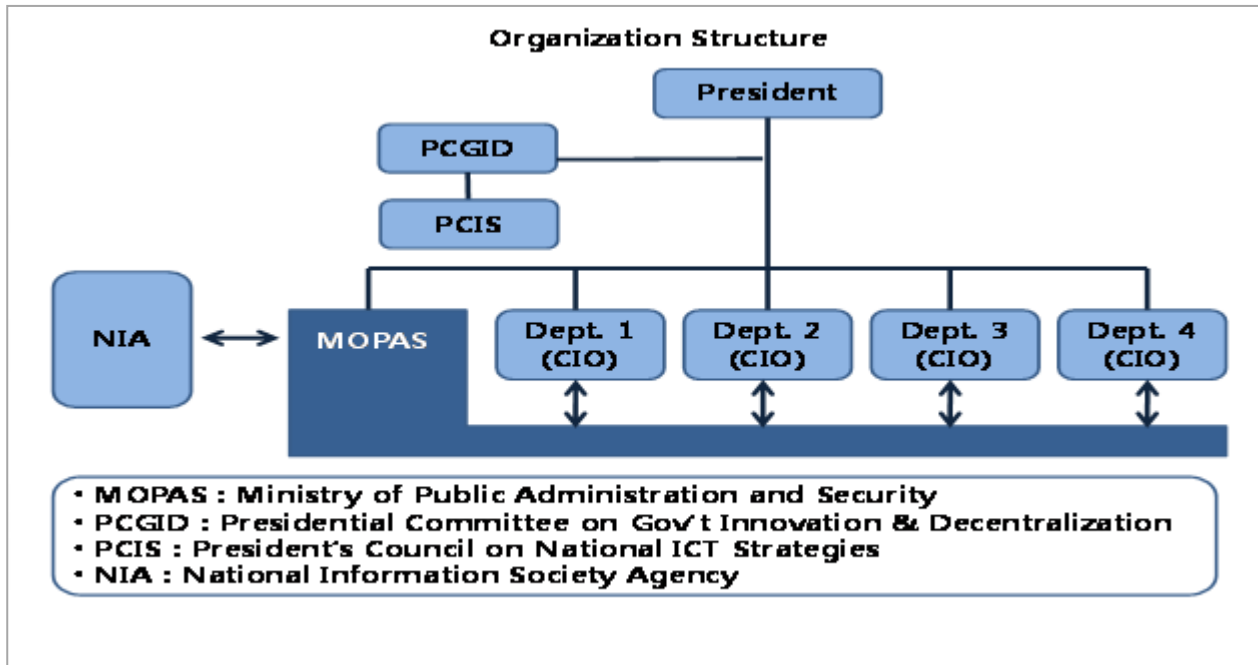
- Vision and Goals (2008~Present)
 - **Vision:**
 - The World's Best Digital Government Inside the People
 - Vision 2030: Hopeful Korea in Harmony
 - **Goals:**
 - Offer Customer-Centric Customized Citizen Services: by integrating services with focus on citizens and businesses
 - Accelerate System-Based Government Innovation: by building intelligent administration service system
 - Enhance Preventive System for a Safer Society: by delivering real-time information network for public security
 - Lay Groundwork for Sustainable Advancement of e-Government: by enhancing infrastructure for e-Government
 - **Strategies:**
 - Establish Governance Structure
 - Innovate Process and Realign Systems
 - Strengthen Performance Management System
 - Enhance e-Government Human Resources
 - Improve Global Leadership
- Implementation Strategies
 - Establish Governance Structure
 - Innovate Process and Realign Systems
 - Strengthen Performance Management System
 - Enhance e-Government Human Resources
 - Improve Global Leadership

5.2.2 Korea's e-Government Organization Structure

Korea's e-Government project is promoted by the Ministry of Public Administration and Security (MOPAS), which is planning to secure economic resources in order to promote ICT throughout the nation

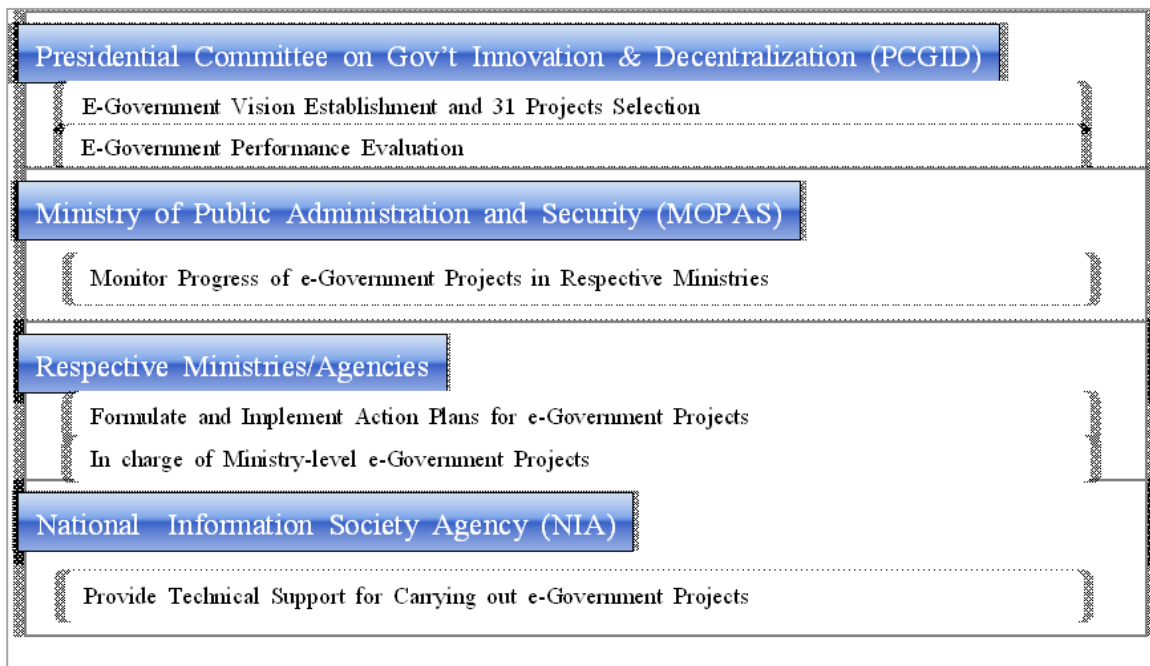
through the consultation and coordination. MOPAS works under the Presidents, PCGID, PCIS, and works with NIA. The role of each organization is as follows.

<Figure 67: Korea's e-Government Organization Structure>



<Source: Korea e-Government White Paper (2008)>

<Figure 68: Role of Organization>



<Source: Korea e-Government White Paper (2008)>

5.2.3 Korean e-Government Development History

Below is a detailed description of Korea's e-Government history starting from the late 1970s. First stage is for preparing for e-Government with initiation of NBIS, and the second phase was the early stage of e-Government with construction of NBIS. The third phase was the formation of e-Government foundation which promoted ICT enablement and the fourth phase was full-fledged implementation of e-Government with having 11 e-Government project initiatives. The fifth phase is to advance development of e-Government with 31 e-Government initiatives. The last phase is aiming for the world's best digital government inside the people.

<Table 47: Korea's e-Government Development History>

Phase	Period	Category	Description
Preparing for e-Government	1978	Initiating NBIS	<ul style="list-style-type: none"> ▪ Preparing for e-Government - Digitalization within each ministry and agency
Early Stage of e-Government	1987 ~ 1996	Constructing NBIS	<ul style="list-style-type: none"> ▪ Early Stage of e-Government - Prioritized implementation in 13 key business process areas such as resident registration, real estate, etc. - Full online connection of administration work units - Act on promoting national network expansion and usage (Jun. '87)
The Formation of e-Government Foundation	1996 ~ 2000	Promoting ICT Enablement	<ul style="list-style-type: none"> ▪ The Formation of e-Government Foundation - Building a high speed information super highway, promoting the increase of internet use - E-Government comprehensive implementation plan (Sep. '99)
Full-Fledged Implementation of e-Government	2001 ~ 2002	11 e-Government Initiatives	<ul style="list-style-type: none"> ▪ Full-Fledged Implementation of e-Government - 11 Key Initiatives for e-Government such as Government for Citizen(G4C) and e-Procurement - Promoting linkage among work units of ministries and agencies (in limited areas) - Enactment of the e-Government Act (Mar.'01)

Uganda's e-Government Master Plan

Advanced Development of e-Government	2003 ~ 2007	e-Government Roadmap & 31 e-Government Initiatives	<ul style="list-style-type: none"> ▪ Advanced Development of e-Government - 4 Innovation areas, 31 e-Government Roadmap Projects - Enhancing linkages among ministries and agencies based on multi-work units - Amendment of the e-Government Act (Jan. 07')
The World's Best Digital Government Inside the People	2008~Present	Promoting Nation Informatization	<ul style="list-style-type: none"> ▪ Integrated e-Government Promotion - Expansion of integration and linkages btw ministries and agencies etc. - Research on Next Generation e-Government Projects - Analysis of VISION 2030 Key Initiatives

<Source: *Korea e-Government (2008)*>

5.2.4 Korea's 11 Major e-Government Initiatives (1998-2002)

There are three innovation areas in total with 11 e-Government projects. In the area of upgrading government-wide services for citizens and private businesses, there are four main e-Government projects. Second area is to improve the effectiveness of administration with four e-Government initiatives, and the last innovation area is for establishing an infrastructure for e-Government with three main initiatives

<Table 48: 11 Major e-Government Initiatives >

Area	Main Project	Agency
Upgrade Government-wide Services for Citizens and Private Businesses	1) Government for Citizen (G4C) System	MOPAS
	2) Social Insurance Information Sharing System (SIIS)	MW
	3) Home Tax Service System (HTS)	NTS
	4) Government e-Procurement System (G2B)	PPS
Improve the Effectiveness of Administration	5) National Finance Information System (NAFIS)	MOSF
	6) National Education Information System (NEIS)	MEST
	7) Local Government Information Network System Project for 21 Service Areas	MOPAS
	8) Personal Policy Support System (PPSS)	MOPAS
Establish an Infrastructure for e-Government	9) E-Approval and E-Document	MOPAS
	10) E-Signature and the E-Seal System	MOPAS
	11) Government-wide Integrated Computer Network	MOPAS

<Source: Korea e-Government White Paper (2008)>

5.2.5 Korea's 31 Major e-Government Initiatives (2003-2007)

Between 2003 and 2007, Korea was trying to advance and develop e-Government services; there were four innovation areas, 10 agendas, and 31 e-Government roadmap projects. First innovation area is for innovating the way Government works which includes three agendas with 11 projects and the second area is for innovating civil services which includes four agendas with 13 projects. Third area is for innovating information resource management with three agendas and five projects. The last innovation area is for maintenance of laws related to e-Government and includes one agenda and one major project.

<Table 49: 31 Major e-Government Initiatives >

Area	Agenda	Main Project	Agency
Innovating the Way Government Works	1. Establishing Electronic Work Processes	1) Document Digitalization	MOPAS NIA
		2) National & Local Integrated Finance Informatization	MOPAS
		3) E-Local Government	MOSF
		4) E-Inspection System t	BAI
		5) E-National Assembly	NAS
		6) Integrated Criminal&Jurisdiction Info System	MOJ
		7) Personnel Administration Informatization	MOPAS
		8) Foreign Affairs and Trade Informatization	MOFA
		9) Government Project Real-Time Management	Office of the President
	2. Expansion of Administrative Information Sharing	10) Expansion of Administrative Information Sharing	MOPAS
	3. Service-Oriented BPR	11) BRM Development	MOPAS
Innovating Civil Services	4. Enhancing Citizen Services	12) Enhancement of Internet Citizen Services	MOPAS
		13) National Security Management Integrated Service	NEMA
		14) Linkage and Enhancement of Construction, Land ,Registration	MLTM
		15) Enhancement of National Tax Service	NTS
		16) National welfare Integrated Information Service	MW
		17) Food, Drugs Integrated Information Service	MIFAFF

		18) Employment Integrated Information Service	MOEL
		19) Administrative Trial Internet Service	MOLEG
	5. Enhancing Enterprise Services	20) Single Window Service for Business Enterprises	MKE
		21) National Distribution Integrated Information Service	MLTM, Korea Customs Service
		22) E-Trade Service	MKE, Korea Customs Service
		23) Foreigner-support Integrated Service	MKE, MOJ, MOEL
		24) Expansion of e-Government Overseas	MKE
	6. Expanding e-Participation	25) Expansion of Online Citizen Participation	MOPAS
Innovating Information Resource Management	7. Integration & Standardization of Information Resources	26) Establishment of Government-wide Integrated Data Processing Environment	MKE
		27) Enhancement of Telecommunication Network	MKE
		28) Government-wide ITA Application	MKE
	8. Strengthening Information Security System	29) Establishment of Information Security System	NA, MOPAS, MKE
	9. Specializing ICT Experts	30) Strengthening & Management of IT Personnel and Operating Organization	MOPAS
Maintenance of Law	10. Maintenance of e-Gov Law	31) Maintenance of e-Government and Safety related Laws	MOPAS

<Source: Korea e-Government (2008)>

5.2.6 Korea's Major e-Government Initiatives (2008-Present)

With a new government administration established, a new vision and projects are established in 2008 for e-Government initiatives. The main objectives of the projects are to integrate and share information across all MDAs, improve administration efficiency, and to enhance services for citizens and business enterprises.

<Table 50: Korea's Major e-Government Initiatives >

Area	Main Projects	Agency
1. Enhancement Administration Efficiency	1) Spatial Data Integrated Service	MOPAS, MLTM
2. Improving convenience of citizen	2) e-Government Integrated Service	MOPAS
	3) User-oriented Administrative Information Distribution	MOPAS
	4) Resident Life Service	MOPAS, MW
	5) User-oriented Law&Legislation System (ISP)	MOJ
	6) National Portal Website Establishment	MOPAS
	7) Enhancement of BPR/ISP and System for Civil Service	MOPAS
3. Economy Revitalization	8) Support of Business Enterprise Competiveness	MKE
	9) Integration of National Logistics/Distribution and Trade Network	MLTM, MKE
	10) AEO Operating System	Korea Customs Service
	11) Establishment of E-Passport and Standardization of Foreigner Identification	MOJ, MOFA
4. Enhancement of Social Safety	12) Livestock Hygiene Service Management	QIA
	13) GIS-based Real-Time Emergency Response System	NEMA
	14) Aerospace Rescue Response System	NEMA
	15) National Safety Information Integration	NEMA, Police
5. Informatization Infrastructure	16) EA Strategy Establishment	MOPAS
	17) Integrated Certification System Establishment	MOPAS
	18) Wide e-Government Service Provision	MOPAS
	19) e-Government Standardized Common Services and Development Framework	MOPAS
	20) Secure e-Document Authenticity	MOPAS
	21) Internet and Work Network Separation	19 Ministries
	22) Regional Information Sharing System Procedure Improvement	MOPAS
	23) Government Directory System	MOPAS
	24) eDocument Distribution System Reliability	MOPAS

	25) Integrated Global Communication System	MOFA
	26) e-Government Integration Network Accessibility	NCIA
	27) Meteorological Observation Standardization and Joint-Use System	KMA
	28) National Informatization Linkage and Utilization	MO PAS, other Ministries
	29) Resource Integration Technical Skill Support	NCIA
	30) National Information Protection System Enhancement	MOPAS

<Source: Korea e-Government White Paper (2009, 2010)>

5.2.7 Assessment Result of Korea's e-Government

During the past 20 years, Korea has made lots of efforts to increase the service level of e-Government and be recognized by the world. According to 2012 United Nations e-Government Survey rankings, the Republic of Korea is the world leader (0.9283).

<Table 51: The Assessment Result of Korea e-Government >

Classification		2005	2008	2010	2012
e-Government Index	Readiness Index	5 th	6 th	1 st	1 st
	Online Service(Web Level)	0.79 (4 th)	0.82 (6 th)	1.00 (1 st)	1.00(1 st)
	Telecomm. Infrastructure	0.67 (9 th)	0.69 (10 th)	0.64 (13 th)	0.8356 (7 th)
	Human Capital	0.97 (14 th)	0.98 (10 th)	0.99 (7 th)	0.9494(6 th)
	Online Participation Index	0.87 (5 th)	0.98 (2 nd)	1.00 (1 st)	1.00 (1 st)

<Source: Digital Times, UN E-Government Survey 2012>

<Table 52: e-Government Readiness Index Rankings>

Country	2005		2008		2010		2012	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Korea	0.8727	5 th	0.8317	6 th	0.8785	1 st	0.9283	1 st
United States	0.9062	1 st	0.8644	2 nd	0.8510	2 nd	0.8687	5 th
Canada	0.8425	8 th	0.8172	7 th	0.8448	3 rd	0.8430	11 th
United Kingdom	0.8777	4 th	0.7872	10 th	0.8147	4 th	0.8960	3 rd
New Zealand	0.8021	12 th	0.8631	5 th	0.8097	5 th	0.8381	13 th

<Source: Digital Times, UN E-Government Survey 2012>

5.2.8 Korea's Major e-Government System

5.2.8.1 Overview

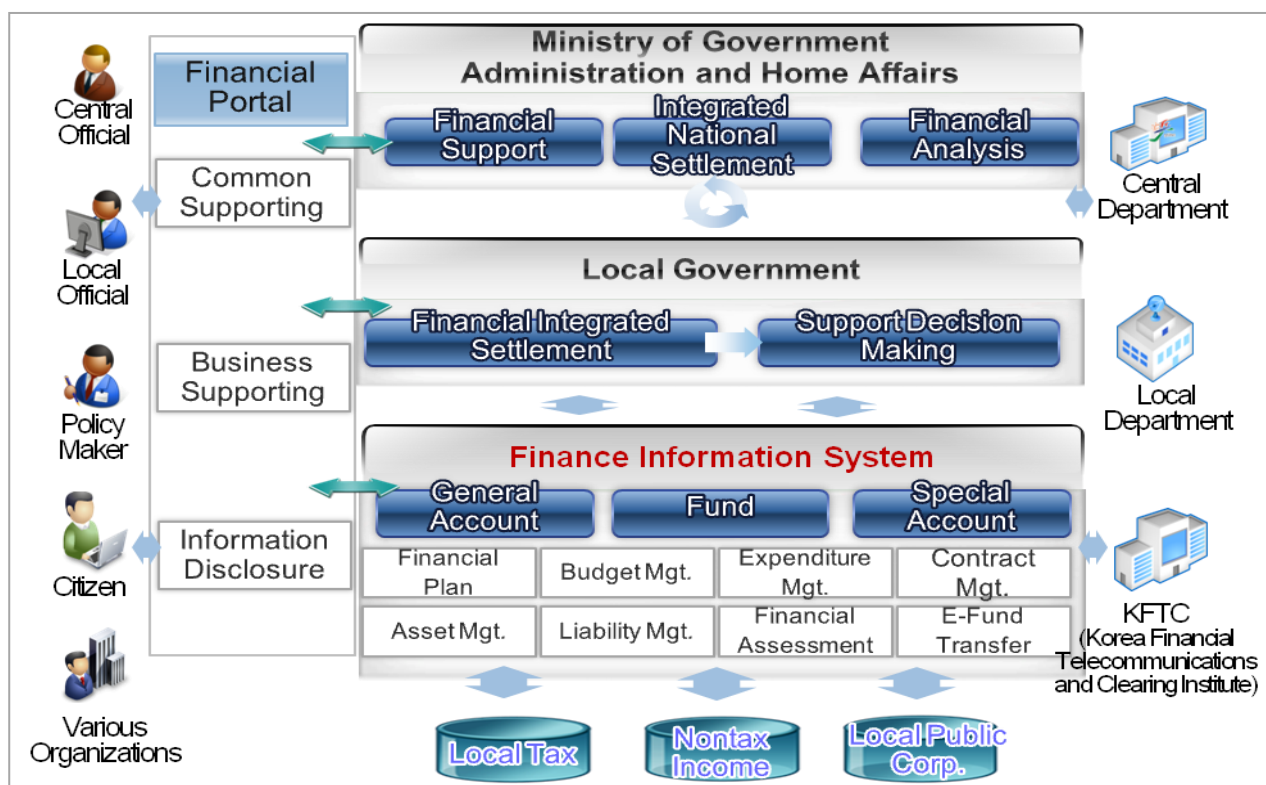
- **G2G** – Innovating the Way Government Works
 - Innovation of National Finance Management
 - National Administrative Finance Information System
 - Electronic Fund Transfer
 - Consolidated Administration·Finance System for Local Education
 - Innovation of Government Administration Process
 - e-Document System
 - Digital Archiving System
 - Local Administration Information System
 - Electronic Approval System
 - Government Administration Management System (On-Nara System)
 - Linkage & Collaboration Between Ministries
 - Administrative Information Sharing System
 - Consolidation Personnel Administration System
- **G4C** – Innovation of Citizen-Oriented Government Services
 - Enhanced Delivery of Citizen Services through the Internet
 - G4C, Government for Citizen
 - Consolidated Online Tax Service (Home Tax System)
 - Online Administrative Trial System

- Architectural Administration Information System (AIS)
 - Online citizen participation portal website
 - Integrated Civil Service Call Center
- Enhancement of National Welfare Services
 - National Welfare Information System
 - Resident Life Supporting System
 - Employment Information System
- Innovation of national disaster and safety management
 - National Emergency Management Information System
 - Fire Prevention Information System
 - Food and Drug Integrated Information System
 - Agriculture and Livestock Safety Management System
 - National Medical and Health Information System
- Enhancing Internet Services to Support Civilian Day-to-Day Life
 - Integrated Resident-Life Information System
 - Vehicle Information Management System (VIMS)
 - Real Estate Information Management System
- **G2B** – Enhancing Competitiveness of Business Enterprises
- Government Service Enhancement (B2G)
 - National Electronic Procurement System
 - Customs Informatization System
 - Single Window for Online Business Services (G2B)
- Business Enterprise Service Enhancement (B2B)
 - Plant IT System
 - National Integrated Logistics Information Service
- Import/Export Work Services (G2B)
 - International Trade Port Infrastructure
 - Electronic International Trading System
 - Airline Logistics Coordination System
- **Infrastructure** - Innovation of Information Resource Management
- Government-wide Integrated Data Center
- Government-wide Information Technology Architecture (ITA)
- Enhancement of e-Government Telecommunications Network
- Government Encryption System

5.2.8.2 G2G – Innovating the Way Government Works

- National Administrative Finance Information System

<Figure 69: National Administrative Finance Information System>



○ Description

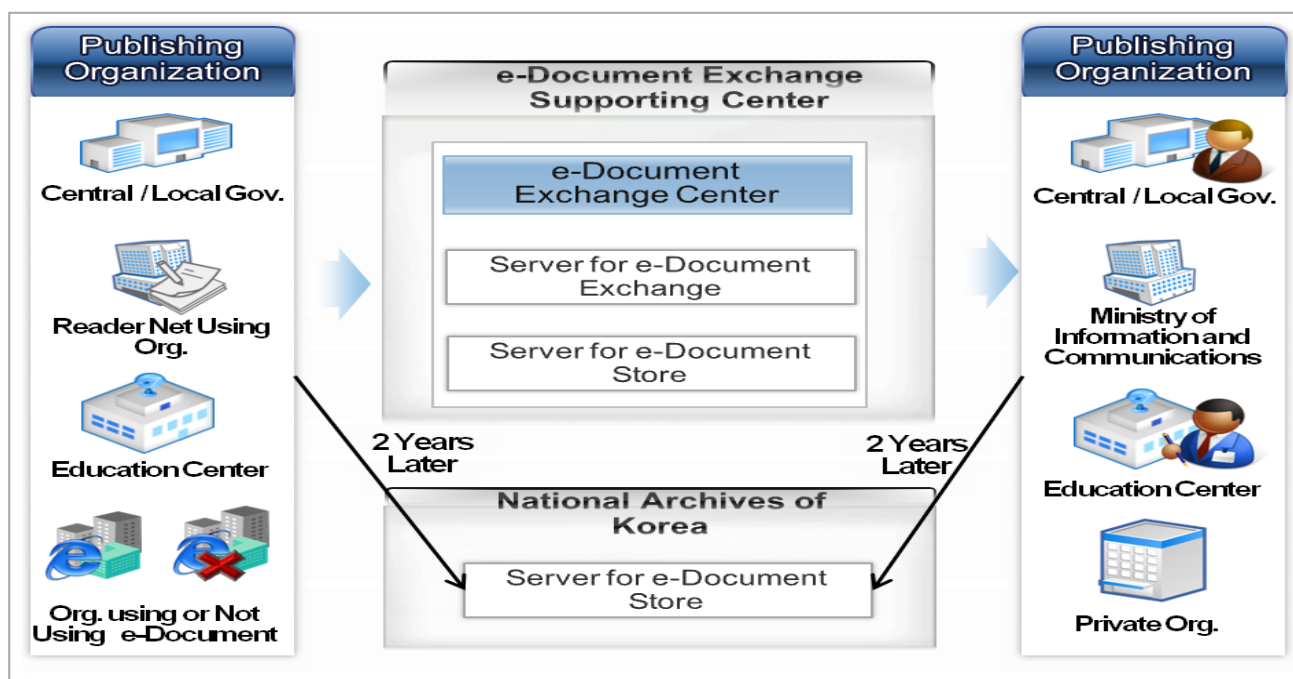
- A system established for efficient and transparent local finance management
- An online integrated system which can be used in real-time from budget formulation to execution, accounting, settlement of account, evaluation etc.

○ Main Function

- A whole finance operation process can be managed in real-time (Financial plan → budget formulation → execution → settlement → evaluation)

- e-Document System

<Figure 70: e-Document System>



○ Description

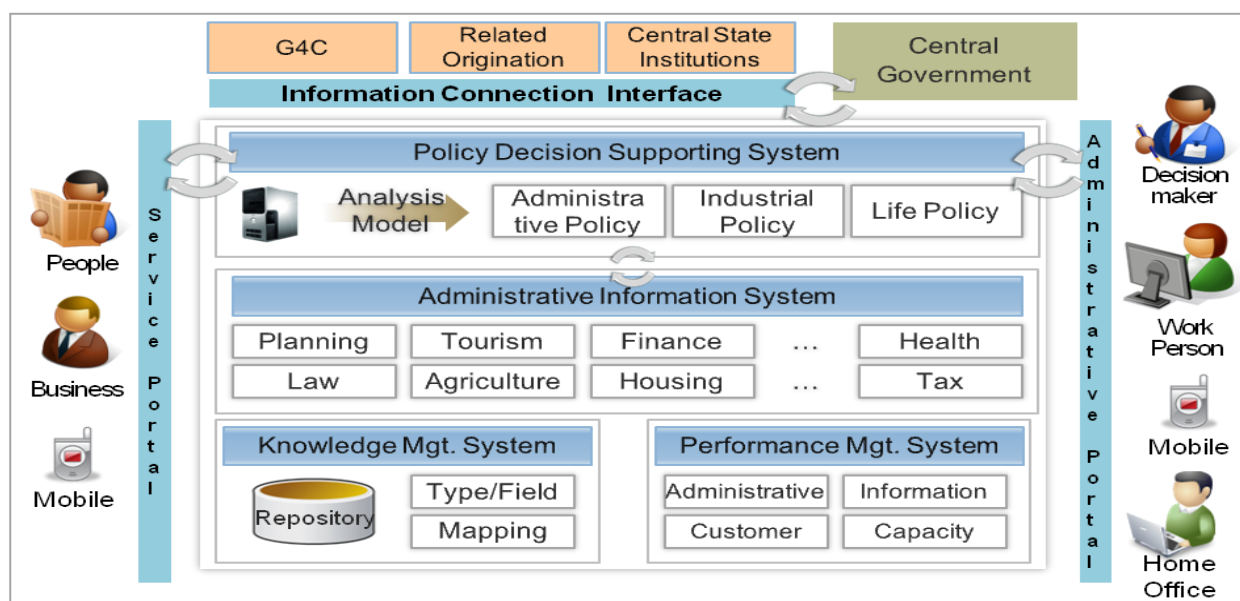
- Digitalization of documents
- Expansion of distributing documents in electronically

○ Main Function

- Expansion of e-Document to central administrative organization, affiliated organization, and other public institutions
- Converted to international standard way of distributing e-Document(ebMS : ebXML Message Service) and secure safety and extendibility

- Local Government Administration Information System)

<Figure 71: Local Government Administration Information System>



○ Description

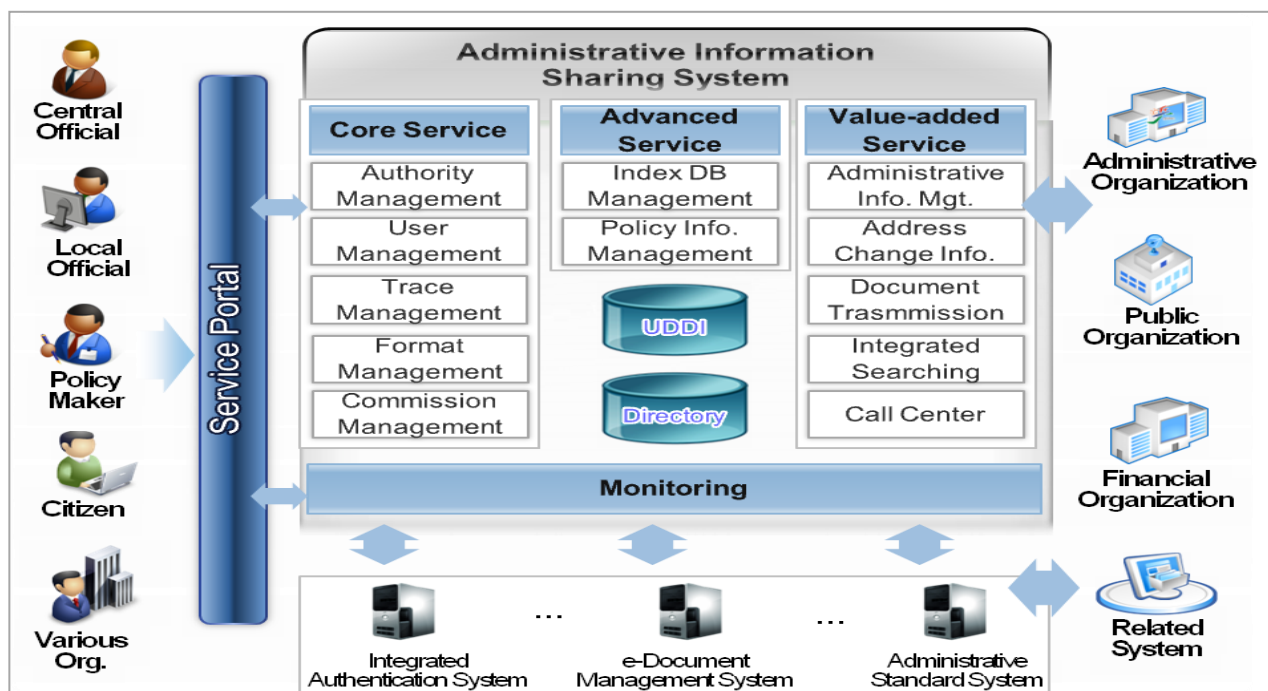
- Reducing required documents for civil services through informatization and standardization in government internal administrative work
- Provides integrated vertical-horizontal work and information through integration of central-government and local government work

○ Main Function

- Established local government work management system, local administrative information system, and information sharing system
- Provides single window online service which has been customized and provides integrated administrative service through the portal site

- Administrative Information Sharing System

<Figure 72: Administrative Information Sharing System>



○ Description

- A system which shares necessary information across the ministries and agencies on five areas of information in residents, real-estate, vehicle, business enterprise, tax

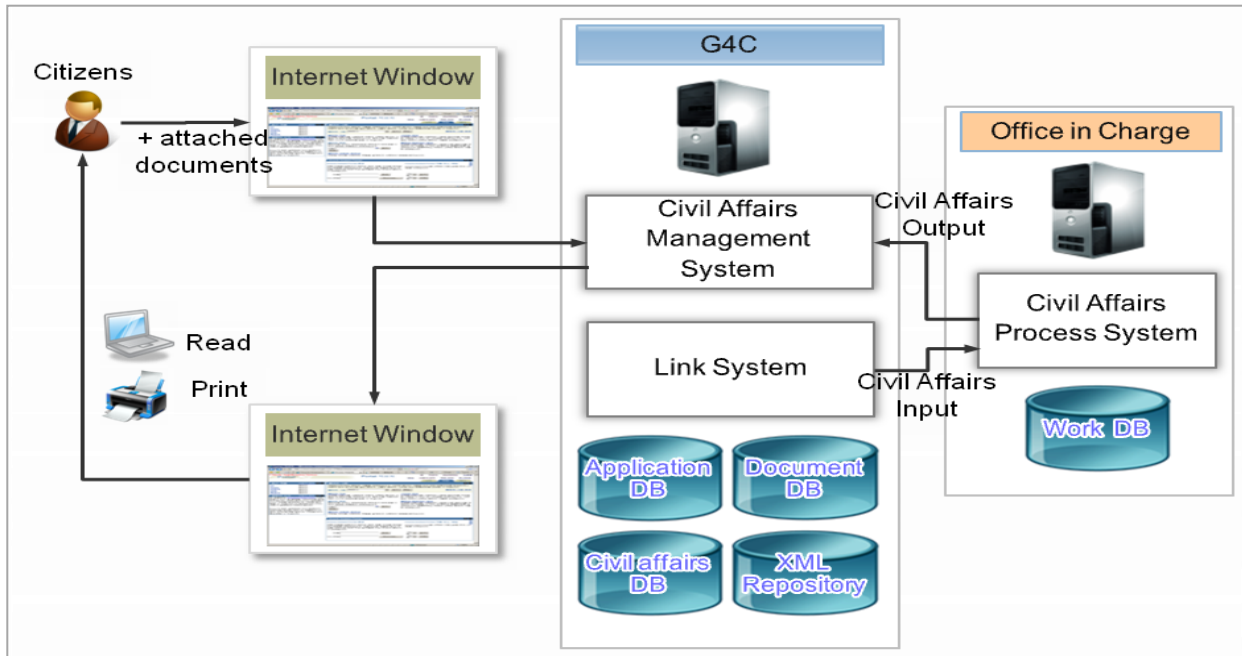
○ Main Function

- It is no longer necessary for citizens to bring required documents resulting from integrated information sharing system within all government administrative agencies
- Established several kinds management systems in order to establish the administrative information sharing service management system

5.2.8.3 G4C – Innovation of Citizen-Oriented Government Services

- Internet Civil Service (G4C, Government for Citizen)

<Figure 73: Internet Civil Services>



○ Description

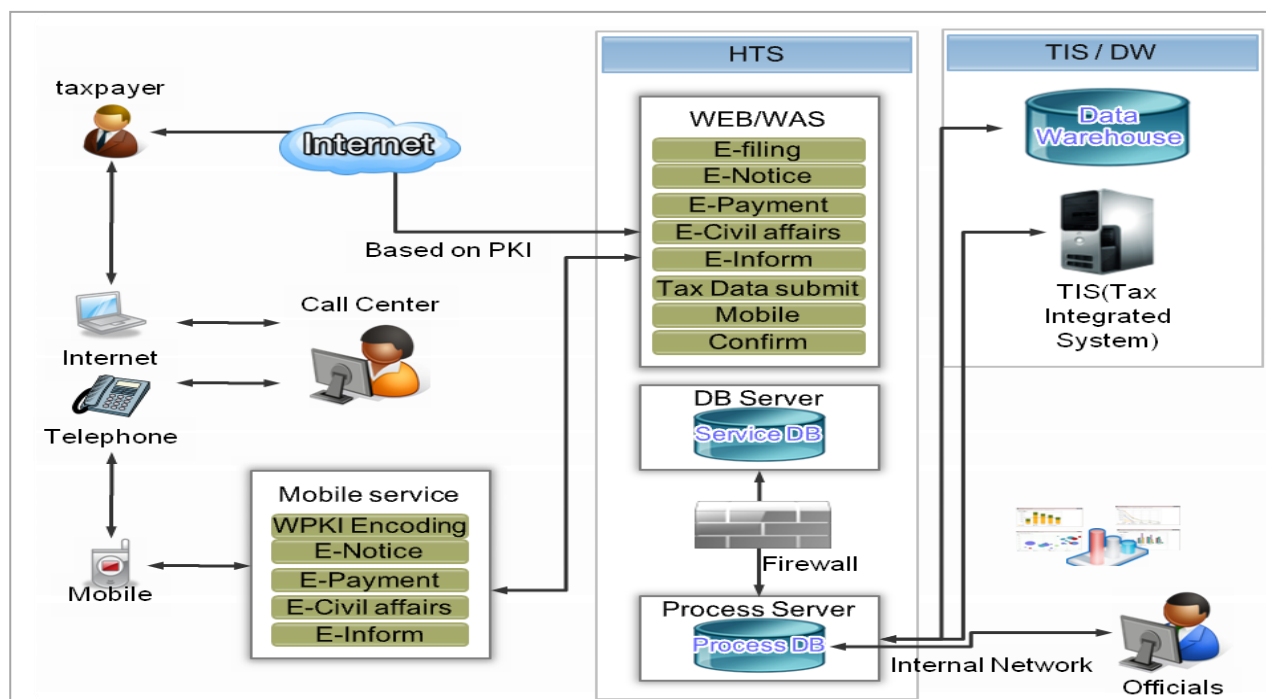
- This system can be accessed to four major citizen services such as resident, vehicle, real-estate, tax, enterprises without visiting the actual government offices if one has internet accessibility

○ Main Function

- There are five major citizen service areas such as resident, vehicle, real-estate, tax, business enterprise and provides 800 kinds of civil services through Online 24 Hour Single Window
- Provides diverse services through mobile devices and ARS Help-Desk service

- Consolidated Online Tax System

<Figure 74: Consolidated Online Tax System>



○ Description

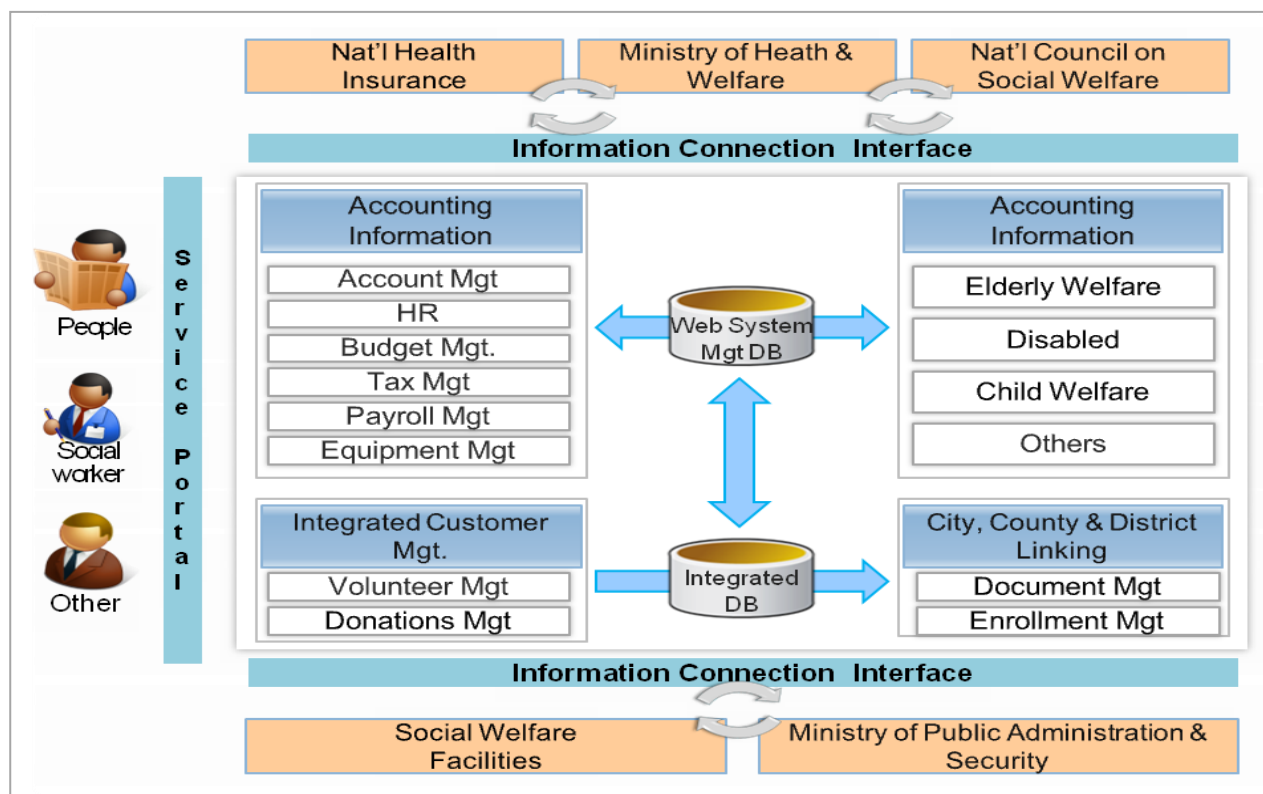
- Improve the convenience of taxpayers, and the efficiency of tax administration in anywhere and anytime

○ Main Function

- Provides internet civil services such a tax declaration, notification, payment, business license, payment confirmation and others
- View diverse kinds of history of tax payment through online
- Provide additional services through mobile devices and PDAs

- National Welfare Information System

<Figure 75: National Welfare Information System>



○ Description

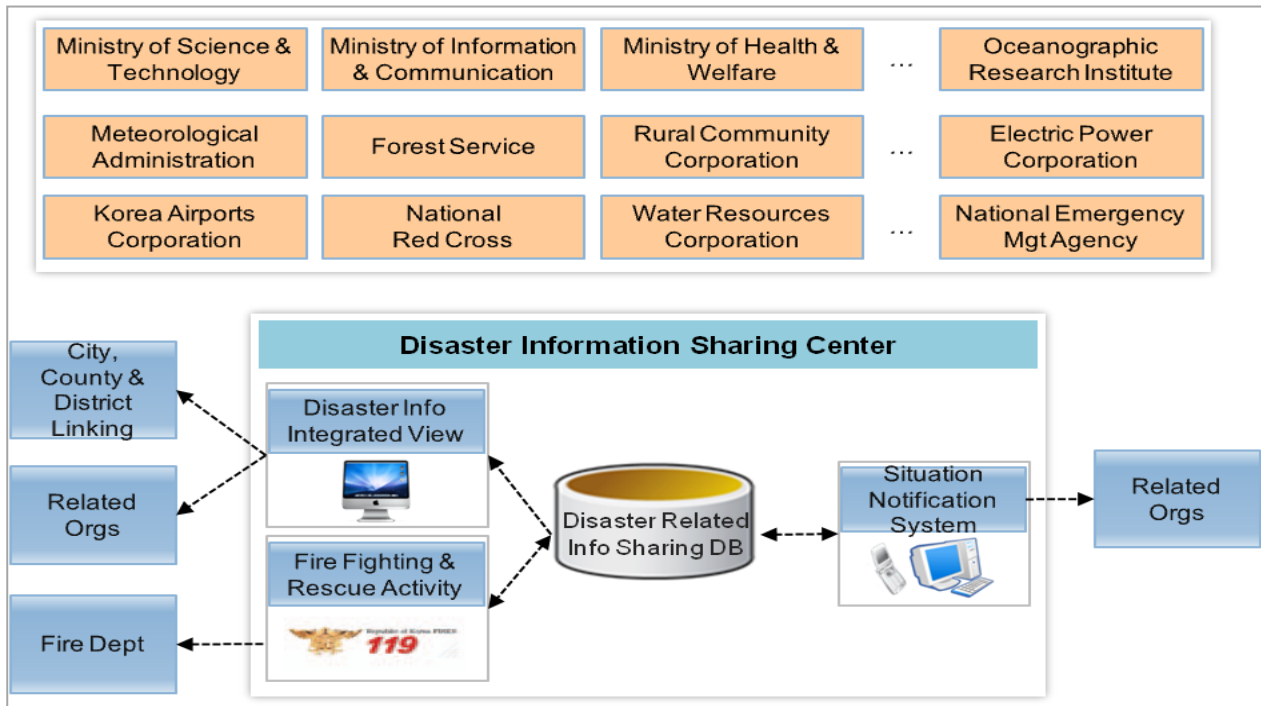
- Provides national welfare information and application of welfare services through national welfare portal website
- Established integrated system between MOEL, MOGET, MEST, MCST, and other public agencies which are in charge of welfare services
- Provides a community network where a provider and beneficiary could exchange and share their opinions

○ Main Function

- Provides customized services through linking diverse public agencies which provides welfare related information through Content Management System (CMS)
- Provides handicapped welfare services online without visiting the actual government offices for a disabled person
- Provides welfare services for senior citizens online

- National Emergency Management Information System

<Figure 76: National Emergency Management Information System>



○ Description

- Established emergency management government structure for central, local government, private organization, and citizens
- Disseminate disaster information in real-time and established immediate response system
- Data collection related to disaster and data mining to prevent emergencies

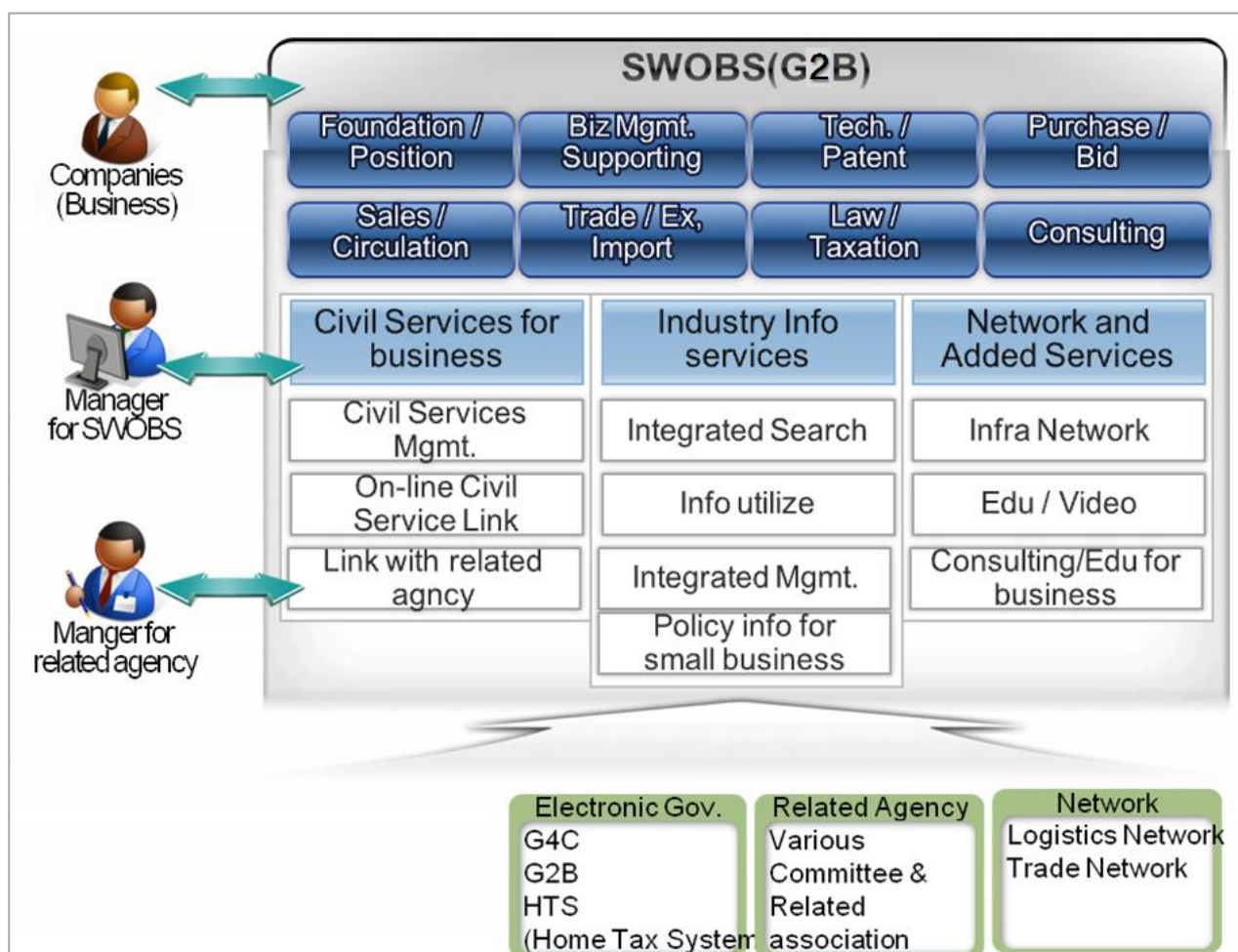
○ Main Function

- Provides a location of person who reports, finds a scale of the disaster, and provides emergency relief through using GIS information
- Established emergency management information DW to analyze and forecast and support policies and decision making

5.2.8.4 G2B – Enhancing Competitiveness of Business Enterprises

- Single Window for Online Business Service

<Figure 77: Single Window for Online Business Service>



○ Description

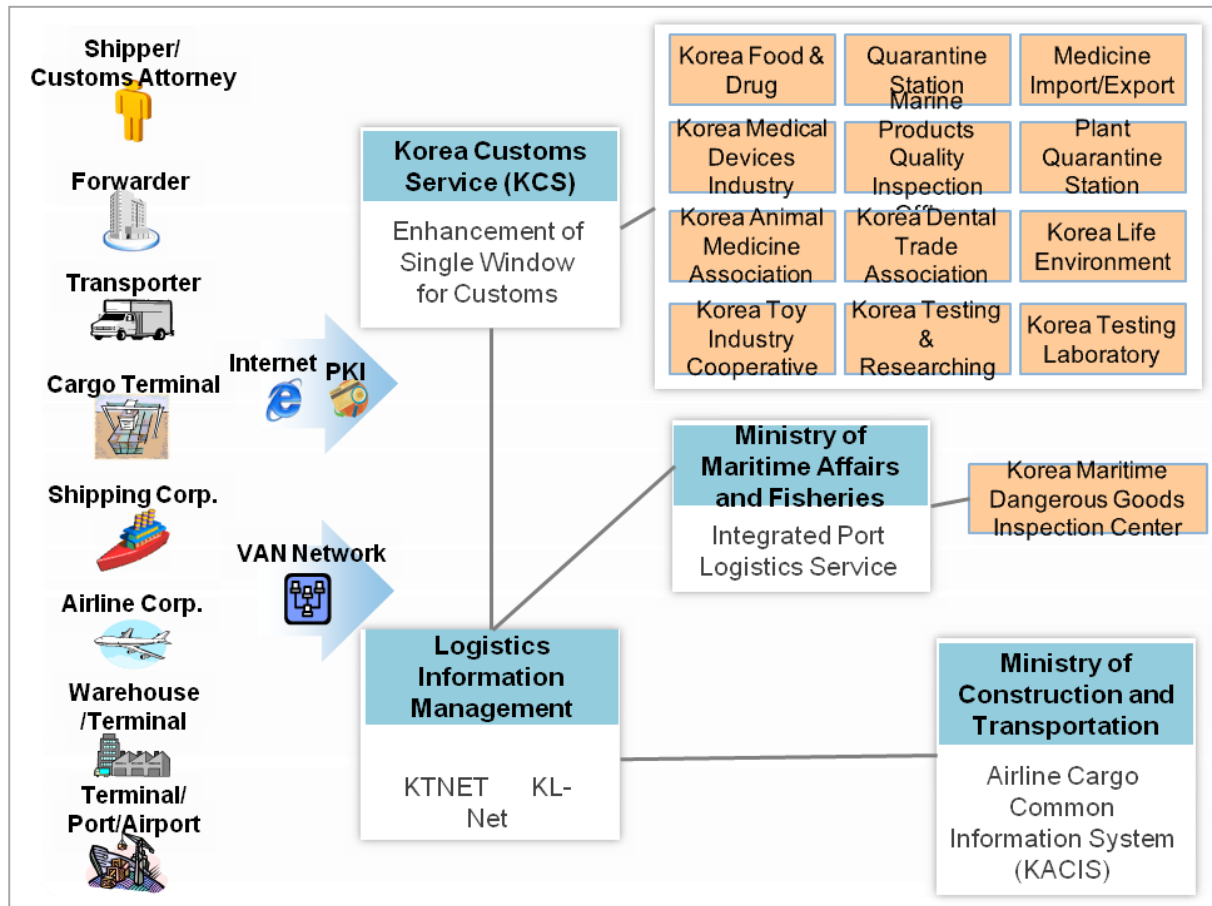
- Provides online government administration and citizen services from business enterprise point of view
- Provides integrated and high quality information by efficiently using diverse kinds of business information

○ Main Function

- Linked with online business process system in each government ministry
- Provides information and search engine categorized by industry, topics, the latest industry information (ex. Statistics etc.)

- National Integrated Logistics Information Service(NILIS)

<Figure 78: National Integrated Logistics Information Service>

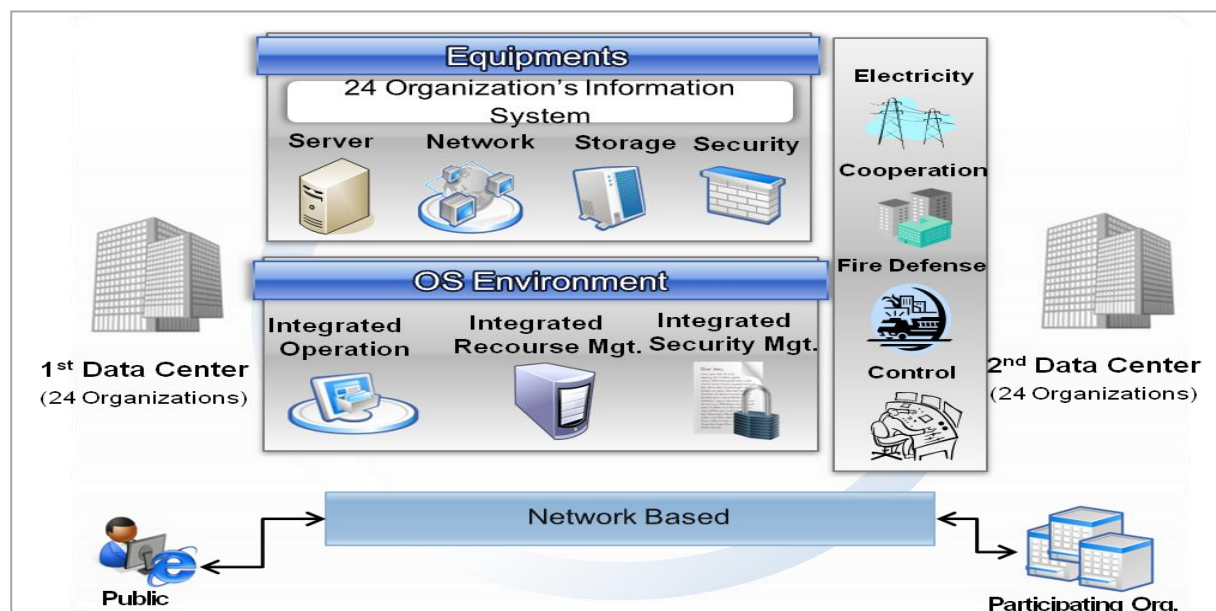


- Description
 - Reduced and standardized duplicated processes of logistics/distribution system and provides user-oriented integrated logistics services through process improvement
- Main Function
 - Established information DBs for ports and air logistics, customs, quarantine and others
 - Provides freight/ cargo information tracking services
 - One-stop service through single window of export/import customs process

Innovation of Information Resource Management

- Government-wide Integrated Data Center

<Figure 79: Government-wide Integrated Data Center>



○ Description

- 24 hour integrated operating management
- Government-wide integrated operation management which has been separately managed by different ministry or work
- Maintenance of backup system of national key information system
- Enhance efficiency, safety, economics of national information resources

○ Main Function

- Provides integrated computing environment based on logical and physical models
- Joint-use and integrated operating management of information based on national systems
- Provides disaster recovery and back-up services

Implications

- Korea aims to have the world's best e-Government services
- Promoting e-Government for improving G4C services, business efficiency, and information resource efficiency
- Law & Regulation has been supported to promote e-Government
- Promoting horizontal communication way through strong leadership of the leading organization and collaboration with CIO in each Ministry
- Process improvement through consulting prior to system implementation

5.2.9 Korea's E-Government Act

5.2.9.1 Definition of E-Government

The term “Electronic Government” refers to the government efficiently performing administrative affairs among administrative agencies or for the people through digitalization of administrative agencies’ business by the use of information technology.

5.2.9.2 Purpose of e-Government Act

The purpose of e-Government Act is to promote the business for creating electronic government by providing basic principles, process, progressing method, etc. for electronic processing of administrative affairs, and to upgrade the quality of the people’s living in the era of knowledge-based society by increasing productivity, transparency and democracy.

5.2.9.3 Future Plan of e-Government Act

The Act is established for implementing systems, and laws related to mobiles or other kinds of e-Government related laws are expected to be developed continuously in the future

5.2.9.4 E-Government Act Component

e-Government Act is composed of seven Chapters, two Clauses, and 78 Articles. First chapter talks about general provisions which explain about the definition of terms used and scope in this Act. The second chapter explains agendas to provide e-Government services for citizens, and the third chapter is about laws to provide e-Document for administration efficiency, electronic authentication, and other shared services. The fourth chapter explains about the laws related to sharing data of administration information between citizens and government agencies. The chapter five explains about the laws related to information technology architecture for introducing information system effectively. The chapter six defines about the laws to expand e-Government services in local governments. Details of the Acts are on the following table.

<Table 53: Korea's E-Government Act Components>

Chapter 1 General Provisions
Article 1 Purpose of e-Government
Article 2 Definition of e-Government
Article 3 R&R of Government Agencies and Public Officials
Article 4 Principle of e-Government
Article 5 Mid&Long-term e-Government Plan Establishment
Article 6 Relations with Other Laws

Chapter 2 e-Government Service Provision and Utilization	
Clause 1 Electronic Civil Services	Article 7 Electronic Application for Civil Service
	Article 8 Required Documents through Electronic
	Article 9 Non-visiting Civil Service
	Article 10 Confirmation of Identity
	Article 11 Electronic Notification
	Article 12 Electronic Administrative Information Provision
	Article 13 Cost of Electronic Administrative Information Provision
	Article 14 E-Payment for Taxes and Others
	Article 15 E-Payment
Clause 2 e-Government Provisions and Utilization	Article 16 e-Government Service Development · Provision
	Article 17 Increase Participation of Users
	Article 18 Ubiquitous Based e-Government
	Article 19 Measure of Using e-Government
	Article 20 e-Government Portal Management
	Article 21 Citizen Participation in e-Government
	Article 22 e-Government Service Usage Survey · Analysis
	Article 23 Effective Management of e-Government
	Article 24 G4C Service Security Measure
Chapter 3 Electronic Administration Management	
Article 25 Electronic Document Usage	
Article 26 Electronic Document Approval	
Article 27 Electronic Document Transmit · Reception	
Article 28 Electronic Document Transferring Time period	
Article 29 Administrative Digital Signature Authentication	
Article 30 e-Management for Administration Knowledge	
Article 31 Gathering Opinion through Information Communication Network	
Article 32 Electronic Government Work and Others	
Article 33 Reduction of Paper Documents	

Article 34 Administrative Personnel Management	
Article 35 Prohibition	
Chapter 4 Administrative Information Sharing	
Article 36 Effective Management on Administration Information	
Article 37 Administration Information Sharing Center	
Article 38 Administration Information Sharing	
Article 39 Application • Approval of Administration Information Sharing	
Article 40 Evaluation • Approval • Consultation Agenda	
Article 41 Withdrawal • Cancellation of Administrative Information Approval	
Article 42 Prior Consent on Information Subject	
Article 43 View Claims on Information Subject	
Article 44 Claim Charges for Administration Information Sharing	
Chapter 5 Enhancement of e-Government Operation Base	
Clause 1 Introduction and Utilization of Information Technology Architecture (ITA)	Article 45 Information Technology Architecture Master Plan Establishment
	Article 46 Introduction • Operation of Information Technology Architecture(ITA) in different agencies
	Article 47 Promoting Introduction • Operation of ITA
	Article 48 BPR for Information Communication Technology
Clause 2 Effective Management on Information Resources	Article 49 Securing Interoperability for Technology Evaluation
	Article 50 Standardization
	Article 51 Utilization of Sharing Services
	Article 52 Information Communication Network Establishment
	Article 53 ICT Personnel Development Plan Establishment
	Article 54 Information Resource Integrated Management
Clause 3 Enhancement of Information System	Article 55 Regional Information Integrated Center Establishment • Operation
	Article 56 Information Communication Network Security Measure Establishment • Implementation
	Article 57 Information System Audit of Administration Agency

Safety • Reliability	Article 58 Registration of Corporate Audit
	Article 59 Compliance of Corporate Audit
	Article 60 Auditing Agency
	Article 61 Disqualification of Corporate Audit
	Article 62 Revocation of Registration for Corporate Audit
	Article 63 Corporate Audit which received Disposition of Revocation of Registration
Chapter 6 Promoting Policies or Others for Implementation of e-Government	
Article 64 E-Government Initiation and Support	
Article 65 Regional Informatization Project Initiation & Support	
Article 66 Pilot Project Initiation	
Article 67 Prior Consultation	
Article 68 Performance Analysis & Diagnosis	
Article 69 Data Submission & Cooperation	
Article 70 Global Cooperation of e-Government	
Article 71 Specialized Agency Designation	
Article 72 Korea Regional Information Research & Development Institute	
Article 73 Mandate • Consignment of Authority	
Article 74 Breach of Confidence & Prohibition	
Article 75 Penalty of Public Official	
Chapter 7 Penalty	
Article 76 Penalty	
Article 77 Joint Penal Provisions	
Article 78 Fines/ Penalty Fees	
Source: Korea Ministry of Government Legislation 2012	

5.3 United Kingdom (UK)'s e-Government

To deduce key findings through case study of e-Government, NIPA consulting team chose UK which has the highest ranks in the evaluation index of the major international organization.

- UK ranked 3rd out of 193 countries in e-Government Development Index published by UN
- UK ranked 10th out of 152 countries in ICT Development Index published by ITU
- UK ranked 15th out of 139 countries in Network Readiness Index published by WEF

* ITU: International Telecommunication Union

* WEF: World Economic Forum

<Table 54: Ranks of UK in the Evaluation Index>

Category	Research Organization	Rank	The number of target countries	Release Date
e-Government Development Index	UN	3 rd	193 countries	February, 2012
ICT Development Index (IDI)	ITU	10 th	152 countries	September, 2011
Network Readiness Index (NRI)	WEF	15 th	139 countries	April, 2011

<Source: NIA (National Information Society Agency in Korea), 2012>

5.3.1 Key Milestones of e-Government Policy

<Table 55: UK Key Milestones of e-Government Policy>

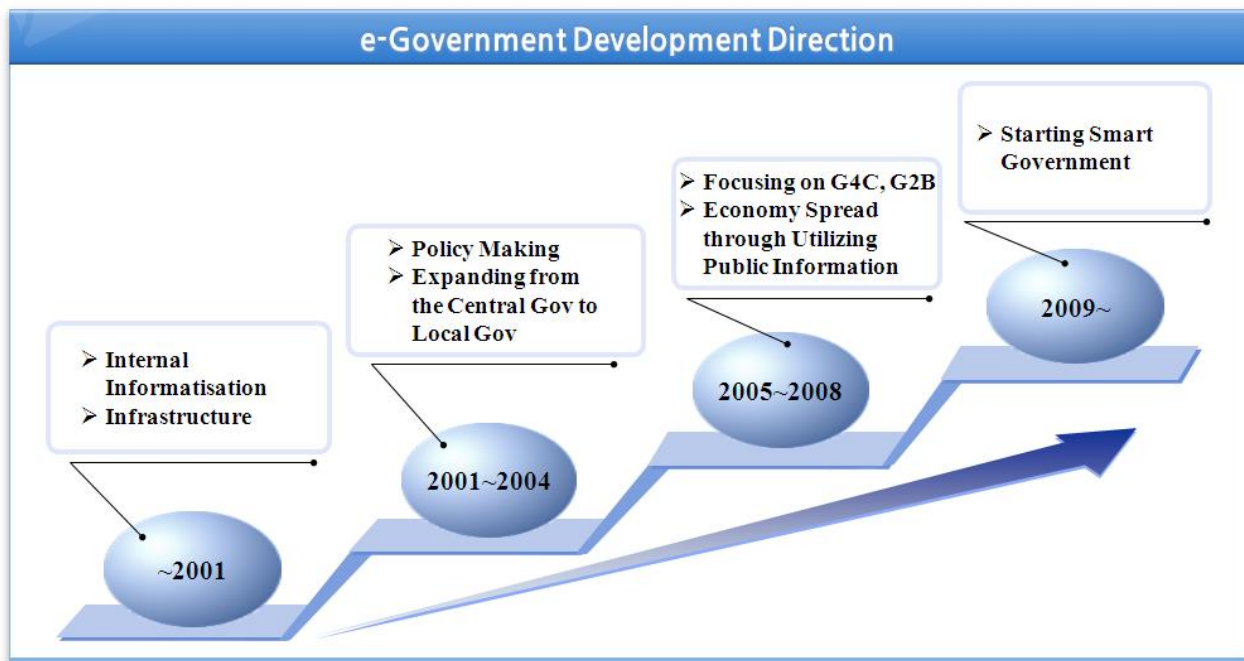
Time	Title	Description
~ 2000	1996 'Government Direct' green paper	• A prospectus for the electronic delivery of government services
	1998 Electronic Government: IT and Citizen	• The report assesses how ICT can be used by the government to improve internal working and the delivery of public services
	1999 Modernising Government Action Plan	• The plan lists 62 commitments for the first two years of the programme, including the development of a single electronic gateway aimed at opening up a range of one-stop-shop services
	2000 e-Government: a strategic framework for public services in the Information Age	<ul style="list-style-type: none"> • UK's official e-Government strategy • The framework challenges all public sector organizations to innovate and commits all central government departments to develop e-Business strategies

			<ul style="list-style-type: none"> • Call for government to provide the necessary common infrastructure and leadership
2001 ~ 2010	2001	e-Policy Principles	<ul style="list-style-type: none"> • A set of guidelines for policy-makers across government designed to ensure the effectiveness of new e-Government policies
	2002	National Strategy for Local e-Government	<ul style="list-style-type: none"> • The strategy provides a framework to transform local council services by linking them with other public services and offering greater choice, convenience and accessibility for customers, as well as greater cost-effectiveness for councils
	2004	Independent Review of Public Sector Efficiency	<ul style="list-style-type: none"> • Identifying potential for efficiency gains in government operations with a view to releasing resources for frontline service delivery, the review outlines the role of e-Government as key to the government's efficiency drive
	2005	Transformational Government-Enabled by Technology	<ul style="list-style-type: none"> • The UK's new e-Government strategy • The document sets the strategy for transforming public services using ICT and outlines how effective use of technology, designed around citizens' and businesses' needs, can transform people's daily lives
	2007	Power of Information Review	<ul style="list-style-type: none"> • Assess how the government can harness the phenomenon of internet advice-sharing sites and empower people with information that could help improve their lives • The review examines how non-personal public sector information can be reused and reinvigorated outside of government to generate public and economic value
	2009	Digital Britain: the Interim Report	<ul style="list-style-type: none"> • The report contains more than 20 recommendations aimed at securing Britain's place at the forefront of the global digital economy
	2009	Putting the Frontline First: Smarter Government	<ul style="list-style-type: none"> • Sets out the priorities for the government to improve public services while reducing public expenditure
2011~	2011	Government ICT Strategy	<ul style="list-style-type: none"> • This strategy sets out the strategic direction of central government ICT and the key actions that will be delivered over the next 24 months
	2011	Government ICT Strategy -Strategic Implementation Plan	<ul style="list-style-type: none"> • This Strategic Implementation Plan provides a reference for central government and is designed to be read alongside the Government ICT Strategy

Through the key milestones of e-Government, UK's e-Government has developed throughout four phases. First phase is until 2000, UK government has laid groundwork for e-Government development based on internal informatization. Second phase is from 2001 to 2004, UK government has expanded e-Government from the central government to the local government through policymaking. Third phase is from 2005 to 2008, UK government has development G4C and G2B services focused on public service. And last phase is

from 2009 to current, UK government has started to implement a 'Smart Government' become a topic in the world to pursue more sophisticated e-Government.

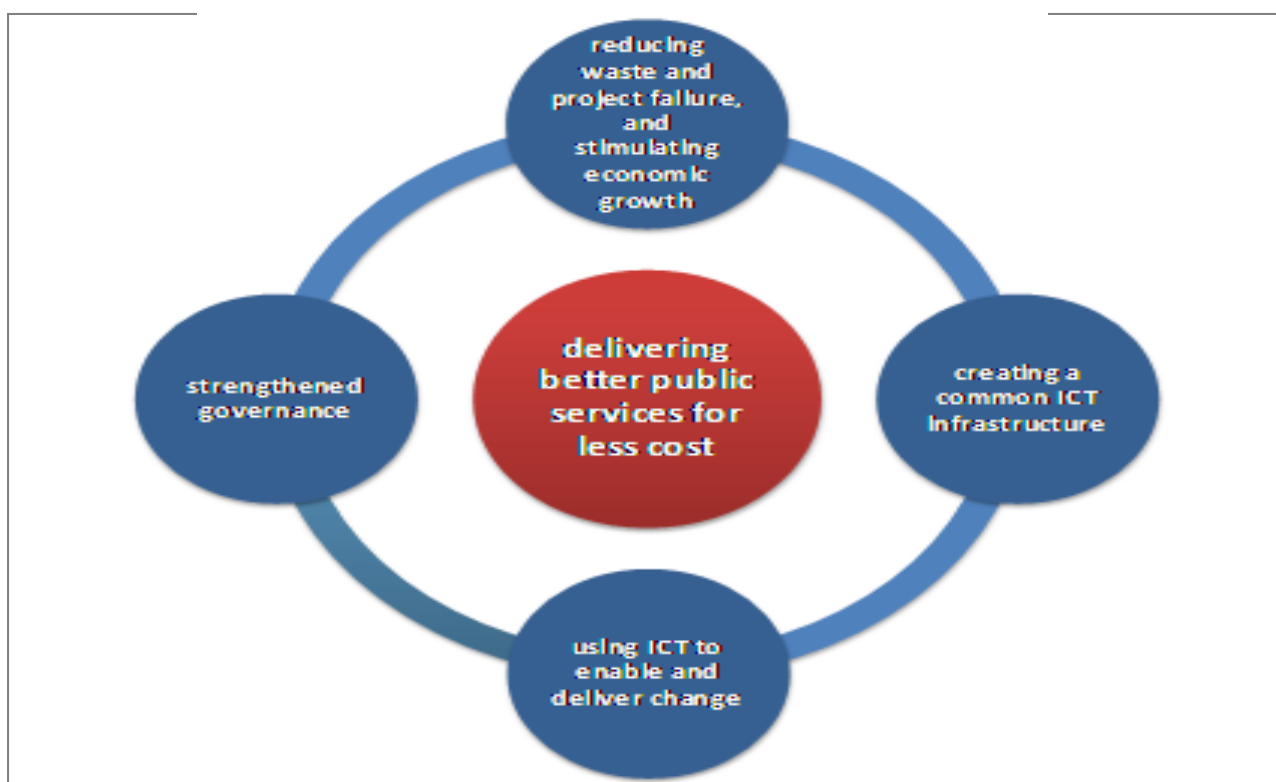
<Figure 80: e-Government Development Direction in UK>



5.3.2 The Government ICT Strategy 2011

The UK government published the ICT Strategy in March 2011. The Strategy described how the government ICT landscape would change over the current spending review period and included 30 actions which form the foundation activities for achieving the Strategy's core objectives of:

- Reducing waste and project failure, and stimulating economic growth;
- Creating a common ICT infrastructure;
- Using ICT to enable and deliver change; and
- Strengthening governance.



<Source: HM Government, 2011>

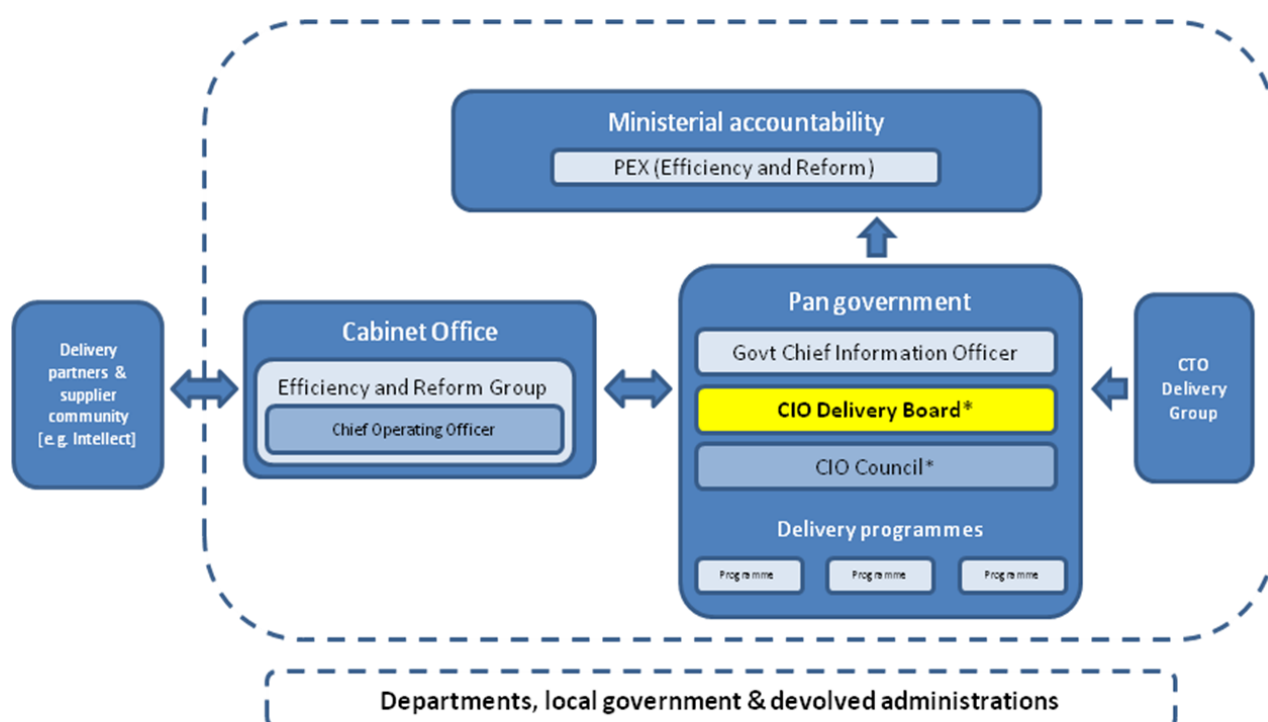
This strategy will deliver better public services for less cost. ICT can release savings by increasing public sector productivity and efficiency. The savings are critical in order to reduce the structural deficit and continue to fund front-line services.

The Government ICT strategy will enable the building of a common infrastructure underpinned by a set of common standards. Government will work to accelerate implementation of the strategy as part of its drive to cut down costs and improve current capabilities.

The strategy will build on the ICT moratorium, project review and contract renegotiations which have allowed the Government to appraise and take control of spending and ensure that projects demonstrate value for money and effectiveness. It will further underline the Government's commitment to increasing transparency, through actions such as publishing government ICT contracts online. This will make it easier for the public to scrutinise how money is spent as well as opening up new opportunities for business.

The strategy is focused on driving real change. It sets out how government ICT will enable the delivery of public services in very different ways to the past. The Government is taking a different approach to deliver this strategy, characterised by a strong centre and continued commitment to greater transparency through regular and open reporting.

5.3.3 Governance Structure



* Chaired by Government Chief Information Officer

<Source: HM Government, 2011>

A new ministerial committee (the Public Expenditure Committee (Efficiency and Reform), or PEX(ER)) has been created which will drive progress by providing a forum for scrutiny and decision making in order to ensure that government ICT is used more effectively to power public sector reform.

A CIO Delivery Board, comprising CIOs from the large delivery departments, will be established to sit above the CIO Council and advise PEX(ER) on progress. The Delivery Board will take ownership of the delivery and implementation of the ICT Strategy. This method of delivery will require corporate behaviour and action from all departments.

The CIO Council members are accountable for implementing the strategy in their organization and portfolio managing their ICT. The CIO Delivery Board and CIO Council will be led by the Government Chief Information Officer, supported by the Efficiency and Reform Group based within the Cabinet Office.

The Cabinet Office will work with the devolved administrations to develop a shared vision that aligns with the principles of the strategy.

Many of these actions represent not just technological change, but changes to the operating culture of government. Strong leadership within and across all departments will be required to drive this strategy forward.

The strategy applies to central government, executive agencies and arm's length bodies. The Government will continue to work with wider public sector interests to ensure the delivery of better public services for less.

5.3.4 e-Government Legal Framework

In UK, there are main legal texts impacting on the development of e-Government. The main legal texts are divided into 8 categories, such as e-Government legislation, Freedom of Information legislation, Data Protection/Privacy legislation, e-Commerce legislation, e-Communications legislation, e-signatures legislation, e-procurement legislation, and Re-use of public sector information.

5.3.4.1 e-Government legislation

There is currently no overall e-Government legislation in the UK.

5.3.4.2 Freedom of Information legislation

Freedom of Information Act 2000 (FOIA)

The Freedom of Information Act 2000 received Royal Assent on 30 November 2000 and came fully into force on 01 January 2005. It provides clear statutory rights for any member of the public to apply for access to information held by bodies across the public sector, together with a strong enforcement regime.

5.3.4.3 The main features of the Act are:

- a general right of access to information held by public authorities in the course of carrying out their public functions, subject to certain conditions and exemptions
- in most cases where information is exempted from disclosure there is a duty on public authorities to disclose where, in the view of the public authority, the public interest in disclosure outweighs the public interest in maintaining the exemption in question
- a new office of Information Commissioner, and a new Information Tribunal, with wide powers to enforce the rights created
- a duty imposed on public authorities to adopt a scheme for the publication of information

The legislation will apply to a wide range of public authorities, including Parliament, Government Departments and local authorities, health trusts, doctors' surgeries, publicly funded museums and thousands of other organizations in England, Northern Ireland and Wales. Scotland has a specific Freedom of Information (Scotland) Act 2002.

5.3.4.4 Data Protection/Privacy legislation

Data Protection Act 1998

The Data Protection Act 1998 received Royal Assent in July 1998 and came into force on 1 March 2000, giving effect to the EU Data Protection Directive (95/46/EC). The Act gives rules for the way organizations must treat personal data and information, which apply to paper as well as electronic records. These rules are

mandatory for all organizations that hold or process personal data, in the public as well as private and voluntary sector.

5.3.4.5 The Act contains eight Data Principles:

- All data must be processed fairly and lawfully
- All data must be obtained & used only for specified and lawful purposes
- All data must be adequate, relevant and not excessive
- All data must be accurate, and where necessary, kept up to date
- All data must be kept for no longer than necessary
- All data must be processed in accordance with the individual's rights
- All data must be kept secure
- All data must be transferred only to countries that offer adequate protection

Digital Economy Act 2010

The Act is about online copyright infringement. First, the act gives permission at least one year, and then, is to simplify procedures to sue and track for continuous offenders. And legal system is established for the introduction of 'technical measures' to potentially shut and degrade internet connection quality of these offenders. Also, new procedure after trial is made to handle appeals.

5.3.4.6 e-Commerce legislation

Electronic Communications Act 2000

Electronic Commerce (EC Directive) Regulations 2002

The Electronic Communications Act 2000 aims to help build confidence in electronic communications by creating a legal framework for electronic commerce and the use of electronic signatures, both in the private and public sectors. The Act is completed by the Electronic Commerce (EC Directive) Regulations 2002, which transposes into UK law the majority of the provisions of the EU Electronic Commerce Directive (2000/31/EC), on certain legal aspects of information society services, in particular electronic commerce, in the internal market.

Electronic Commerce (EC Directive) (Extension) (No. 2) Regulation 2003

This is the supplementary regulations that eCommerce Regulations are applied to Copyright and Related Rights Regulations 2003 which is modified.

5.3.4.7 e-Communications legislation

Communications Act 2003

Privacy and Electronic Communications (EC Directive) Regulations 2003

Transposition of the new EU regulatory framework for e-Communications was substantially completed with the entry into force of the Privacy and Electronic Communications (EC Directive) Regulations 2003 (transposing the e-Privacy Directive) on 11 December 2003. Other key elements of the Framework, such as the Framework Directive (2002/20/EC), the Access Directive (2002/19/EC), the Authorisation directive

(2002/20/EC) and the Universal Service Directive (2002/22/EC), were implemented in the UK via the Communications Act 2003.

5.3.4.8 e-Signatures legislation

Electronic Communications Act 2000

Electronic Signatures Regulations 2002

The Electronic Communications Act 2000 aims to help build confidence in electronic communications by creating a legal framework for electronic commerce and the use of electronic signatures, both in the private and public sectors. The Act is completed by the Electronic Signatures Regulations 2002, which implements in UK Law the European Directive 1999/93/EC on a Community framework for electronic signatures.

5.3.4.9 e-Procurement legislation

Public Contracts Regulations 2006

The use of electronic means in the public procurement process is not currently regulated in the UK. The new EU public procurement directives (2004/17/EC and 2004/18/EC) are expected to be implemented by the end of January 2006. The following areas of use of electronic means in the public procurement process will be regulated by national legislation: rules applicable to communication, storage of data and use of specific procedures, e.g. e-auctions and dynamic purchasing systems.

5.3.4.10 Re-use of Public Sector Information

Re-use of Public Sector Information Regulations 2005

The Re-use of Public Sector Information Regulations 2005, coming into force on 1 July 2005, implements in UK law the EU Directive 2003/98/EC of 17 November 2003 on re-use of public sector information (PSI Directive). In May 2005 the UK Government established an Office of Public Sector Information (OPSI), with responsibility for the coordination of policy standards on the re-use of public sector information. Attached to the Cabinet Office, the new body has an extended remit to advise on and regulate the operation of the re-use public sector transparency and remove obstacles to re-use. According to the government, the OPSI will lead the UK public sector to provide consistent and transparent processes for potential re-users to gain access to public sector information.

5.3.5 e-Government Roadmap

<Table 56: Government ICT Strategy Actions mapped to delivery areas>

Government ICT Strategy Action		Strategy Delivery Area	Completion Date	Progress
1	To improve the sharing and re-use of ICT services and solutions, departments will populate the first stage of a comprehensive cross-government ICT Asset and Services Knowledge base	Asset and Services Knowledge base	October 2011	Supplier has been appointed and is developing the Asset and Services Knowledgebase.
2	To become a single intelligent procurer of ICT, government will develop a new operating model for departments and will roll out a new procurement system	Procurement	October 2011	Government Procurement Service restructured to be leaner and more efficient. Commitment on cost reductions in excess of 25% on spend on all common goods and services including ICT from baseline of £13bn by the end of March 2013. Policy and capability improvements covering EU procurement regulations, transparency in procurement and contracting, and streamlining the procurement process using 'lean' principles.
3	To create a level playing field for the use of innovative ICT solutions, government will publish a toolkit for procurers on best practice for evaluating the use of open source solutions	Procurement	October 2011	Guidance drafted and undergoing internal consultation.

Uganda's e-Government Master Plan

4	To assist with the deployment of agile solutions using open source technology, government will establish an Open Source Implementation Group, a System Integrator Forum and an Open Source Advisory Panel. These will aim to educate, promote and facilitate the technical and cultural change needed to increase the use of open source across government	Open Source	October 2011	All bodies established.
5	To create greater opportunities for SMEs and to reduce risk of project failure, government will publish guidance on the presumption against government ICT projects valued at over £100 million	[Being taken forward by Major Projects Authority]	October 2011	Guidance drafted.
6	To increase SME participation, government will publish a new approach to ICT procurement that will reduce timescales and cost, and will ensure that SMEs are provided with improved opportunities to directly compete for government business	Procurement	October 2011	Range of measures relating to procurement and SMEs announced by Minister for the Cabinet Office on 11 February 2011. Contracts Finder launched. Contract to develop the government ICT Asset and Services Register was awarded to a SME and published on Contracts Finder.
7	To increase accountability, government will publish both estimated and actual procurement timescales for new procurements over £10,000, and details of contracts awarded to SMEs	Procurement	October 2011	
8	To encourage greater SME participation, government will publish all new tender documents over £10,000	Procurement	October 2011	

Uganda's e-Government Master Plan

9	Government will establish an approach and capabilities for agile delivery in government which can be replicated across departments (culture, multidisciplinary teams, risk-based testing, service-oriented architecture, product management and road-mapping)	Agile	April 2012	Steering group established. Draft government terms of reference produced, and engagement with six of the biggest departments underway. Agile SMEs identified. Agile methods utilised with Universal Credit programme - "Leap 1" scope delivered successfully.
10	Government will identify and agree the common technology components that are needed to underpin agile development	Agile	April 2012	
11	Government will create a 'virtual' centre of excellence across government and the private sector which can enable fast start-up and mobilisation for agile projects	Agile	April 2013	
12	Government will identify a pilot project within each department to prove and embed the agile approach	Agile	April 2012	
13	Government will publish an ICT Capability Strategy including – as key outcomes – a blueprint for a programme to utilise and develop talent among existing civil servants, and the guiding principle that SROs will be expected to stay in post until an appropriate break in the life of an ICT programme/project to reduce the risk of failure	Capability	October 2011	First draft of strategy with IT Profession Board for comment. Work streams and plans to implement strategy being fine-tuned by IT Profession Board. The Major Projects Authority (MPA) has established a work-stream designed to address the development and effectiveness of SROs and drive the reduction in SRO turnover figures.

Uganda's e-Government Master Plan

14	Government will create a fully operational, online Applications Store to enable the re-use of business applications and components across the public sector	Cloud Computing	April 2013	Proposals are being developed as part of the cloud strategy.
15	To ensure that appropriate data is transparent and shared rather than duplicated, government will implement engagement processes for open data standards activity and crowd-source priority areas for data standards	Open Standards for Data	October 2011	Governance and Working Group to lead delivery established. Engagement process drafted which links to the Open Standards Board. This board would provide overall governance for all open standards. Consultation with key stakeholders conducted.
16	To reduce the cost and carbon footprint of government ICT, government will set up a programme to reduce the cost of data centres across the estate, leading to a 35% reduction in costs over five years	Data Centre Consolidation	October 2011	Project launched with agreed terms of reference, governance and resources.
17	To reduce the cost of government networks, the private sector will deliver the first instantiations of Public Sector Network	Public Services Network (PSN)	April 2012	Baseline standards delivered. First PSN services operational (Hampshire and Kent exchanging services).
18	To improve the flexibility and reduce the cost of desktop solutions, government will publish a common desktop/device strategy with detailed implementation plans	End User Devices	October 2011	Established Pan-Gov't Strategy Group. First draft of strategy created.
19	To examine the benefits of delivering standardised desktop services using a cloud-based model, government will develop a desktop prototype for the cloud	End User Devices	April 2012	

Uganda's e-Government Master Plan

20	To detail how services will shift to cloud-based technologies, government will publish a Cloud Computing Strategy with implementation plans	Cloud Computing	October 2011	G-Cloud delivery board established and first draft of cloud strategy completed.
21	To enable delivery of interoperable and open ICT solutions so that they can be shared and reused, government will publish a reference architecture	Reference Architecture	April 2012	Governance, project team and project plan in place for all deliverables with detailed plan of engagement and consultation.
22	To allow for greater interoperability, openness and re-use of ICT solutions, government will establish a suite of agreed and mandatory open technical standards	Open Technical Standards	April 2012	Open standards survey conducted.
23	To recognise information as an organizational asset and to deliver improved access to clean and consistent information, government will develop an Information Strategy while maintaining necessary protection for sensitive information	Information Strategy	April 2012	Governance and Working Group to lead delivery established. Draft information strategy principles created.
24	Government will publish a Greening Government ICT strategy in line with the Government ICT Strategy and wider carbon reduction policies This will set out how government will achieve reductions in operational costs and carbon footprints, and will include the use of collaboration and mobile working technologies	Green ICT	October 2011	Governance reviewed and pan-govt working group established to deliver green ICT strategy.

Uganda's e-Government Master Plan

25	Government will develop an appropriate and effective risk management regime for information and cyber-security risks for all major ICT projects and common infrastructure components and services	Risk Management	April 2012	Initial governance in place. Work has begun on establishing scope of risk mgmt regime.
26	To make citizens' lives simpler and easier, government will mandate 'channel shift' (move online) in selected government services	Channel Shift	October 2011	DWP digital service strategy for automated online service delivery published. JSA Online move to online applications. State Pension Online increased self-service capability.
27	To open up new, innovative services from a diverse range of providers, the Government will create cross-government standards on APIs and develop a quality assurance 'kite mark'	APIs	April 2013	Governance established. Work on reviewing existing standards and identifying exemplar standards at an advanced stage.
28	To improve government capability to exploit new and innovative ICT solutions, the Government will appoint a Director of ICT Futures	Innovation	October 2011	Director appointed.
29	To facilitate a two-way dialogue with citizens, departments will ensure that an online channel is included in all government consultations	Online Government Consultations	October 2011	Governance established and work coordinated with Digital Engagement Strategy.
30	To embed social media as a mainstream channel used routinely to engage with citizens, business and internally, the Government will develop practical guidelines on departmental access to the internet and social media channels	Social Media	April 2012	Scope, governance and joint working with Gov't Digital Service Team established. Discussion paper circulated to departments and selected external organizations in September 2011.

<Source: HM Government, 2011>

5.3.6 e-Government Infrastructures and Services

5.3.6.1 Infrastructure

Main e-Government Infrastructure components are below the Table.

<Table 57: Main e-Government Infrastructure>

Category	Infrastructure	Description
Portal	Direct.gov.uk	<ul style="list-style-type: none"> Launched in March 2004, Direct.gov.uk is the UK Government's citizen portal Provide citizens with a single entry-point to online public services Unlike its predecessor UK online, Direct.gov.uk is not organized on a "life-cycle episodes" model but on the basis of major public services areas and of target customer groups
	BusinessLink.gov.uk	<ul style="list-style-type: none"> Launched in November 2003, providing access to government information and services for businesses, business owners and managers
Network	Government Secure Intranet (GSI)	<ul style="list-style-type: none"> Initially launched in April 1998, the GSI is the primary network infrastructure for connecting and joining up central government departments and agencies Provide a secure and reliable connection to the Internet, including secure access to the web, file transfer and search facilities, directory services, web publishing, and a mechanism for exchanging electronic mail both within the GSI community and over the Internet
	Government Connect Secure Extranet (GCSx)	<ul style="list-style-type: none"> Secure wide area network (WAN) that allows officials at local public-sector organization to interact and share data privately and securely with central government departments, such as the National Health Service, the Criminal Justice Extranet and the Police National Network
	Public Sector Network (PSN)	<ul style="list-style-type: none"> The Public Sector Network (PSN) will change the approach to the acquisition of Information and Communications Technology by the UK Public Sector, allowing public sector customers and select partners to harness changing technology to better support their delivery of service and the transformational government agenda
e-Identification	Government Gateway	<ul style="list-style-type: none"> Launched in February 2001, is a central registration and authentication engine enabling secure authenticated e-Gov transactions to take place over the Internet

		<ul style="list-style-type: none"> • Users need to register with the Gateway in order to enroll for using online government services and subsequently transact securely with government departments
Security	Global system for Checking the Fingerprints of Visa Applicants	<ul style="list-style-type: none"> • The system covers visa applications from 133 countries, approximately 75% of the world's population
e-Procurement	Buying Solutions	<ul style="list-style-type: none"> • Buying Solutions is the UK's non-obligatory national e-procurement platform • Buying Solutions is only permitted platform on behalf of all UK contract authorities • It provides procurement solutions to deliver procuring products and services at the national level to customers of central government and all broader public sector
Knowledge Management	Knowledge Network (KN)	<ul style="list-style-type: none"> • Launched in October 2000, KN is a Government-wide electronic communication tool helping government departments to share knowledge with each other, and providing an online collaborative working environment across government

5.3.6.2 e-Government Services for Citizens

Main e-Government Services for Citizens components are below the Table.

<Table 58: Main e-Government Services for Citizens>

Services	Website	Description
Income taxes (declaration, notification of assessment)	hmrc.gov.uk direct.gov.uk	<ul style="list-style-type: none"> • Online self-assessment system enabling individuals and agents to send tax returns over the Internet and offering automatic calculation of tax and faster repayments
Job Search services by labour offices	direct.gov.uk	<ul style="list-style-type: none"> • Fully functional job research facility enabling job seekers to look for jobs nationwide
Unemployment Benefits	direct.gov.uk	<ul style="list-style-type: none"> • Information only
Family allowances	hmrc.gov.uk direct.gov.uk	<ul style="list-style-type: none"> • The Child Benefit e-service allows parents to send an electronic claim or report a change of circumstances over the internet • It uses the Government Gateway to do this securely • Since 2003, part of family support is payable under the form of tax credits (Child Tax Credit and Working Tax Credit) paid by HM Revenue & Customs • The tax credits website enables online calculation of entitlement, filling and submission of applications, prior to electronic payment

Medical costs (reimbursement or direct settlement)	N.A.	<ul style="list-style-type: none"> • This service is not relevant for the UK • Most treatment in the National Health Service (NHS) is free at the point of delivery • There can be charges for some things (NHS prescription and dental charges, optical and hospital travel costs), for which help with some health costs is limited to people living on a low annual income • Health costs outside the public health service are not reimbursed
Student Grants	direct.gov.uk	<ul style="list-style-type: none"> • Launched in November 2004, the Student Finance Direct portal enables students in England and Wales to apply for a range of financial support products (loans, grants, allowances, etc.) online • Registered users can apply for loans via a simple online form, check their loan accounts online, see details of scheduled payments, view correspondence, and update their profile
Passport	passport-application.gov.uk direct.gov.uk	<ul style="list-style-type: none"> • Secure site designed to help UK Nationals complete a passport application form on screen (users can request online or telephone help if necessary) and to pay the application fee online
Driving License	dvia.gov.uk direct.gov.uk	<ul style="list-style-type: none"> • Information online form ordering service
Car registration (new, used and imported cars)	direct.gov.uk	<ul style="list-style-type: none"> • Information and forms to download
Application for building/planning permission	planningportal.gov.uk direct.gov.uk	<ul style="list-style-type: none"> • The planning portal, developed by the Planning Inspectorate and a number of other stakeholders, provides access to information on the planning process • It enables users to download planning applications forms • For some local authorities the form can be submitted electronically with attachments, and the associated fee can be calculated, with an option to pay electronically in some cases • The government intends to create a single standard planning application form, which will be available on the Planning Portal
Declaration to the police (e.g. in case of theft)	direct.gov.uk	<ul style="list-style-type: none"> • Online notification of certain minor crimes (theft, criminal damage/vandalism, theft from a motor vehicle, damage to a motor vehicle) • For more serious complaints, information on ways to contact local police forces
Public libraries	N.A.	<ul style="list-style-type: none"> • Most public libraries have online catalogues

(availability of catalogues and search tools)		
Certificates (birth, marriage): request and delivery	gro.gov.uk direct.gov.uk gro-scotland.gov.uk groin.gov.uk	<ul style="list-style-type: none"> The General Register Office (GRO) now offers the facility to order certificates online, which can be used to place orders using the GRO index reference and for certificates dating from 1900 up to 18 months before the request date where the exact details are known
Enrolment in higher Education/ university	www.ucas.com direct.gov.uk	<ul style="list-style-type: none"> Universities and College Admissions Service (UCAS) is the central organization that processes applications for fulltime undergraduate courses at UK universities and colleges UCAS Apply is a secure web-based system allowing applicants to apply online to UK higher education
Announcement of moving (change of address)	N.A.	<ul style="list-style-type: none"> This service is not relevant for the UK, where there is no obligation to inform the authorities of a change of address
Health related services (interactive advice on the availability of services in different hospitals; appointments for hospitals)	nhsdirect.nhs.uk	<ul style="list-style-type: none"> NHS Direct Online provides health information and advice for the people of England It is supported by a 24 hour nurse advice and information helpline and is also accessible through digital TV The NHS is implementing an electronic booking system that will enable GPs to book hospitals appointments electronically for their patients

5.3.6.3 e-Government Services for Business

Main e-Government Services for Business components are below the Table.

<Table 59: Main e-Government Services for Business>

Services	Website	Description
Social contribution for employees	hmrc.gov.uk businesslink.gov.uk	<ul style="list-style-type: none"> Internet service enabling employers to submit and receive PAYE (Pay as You Earn) and NIC (National Insurance Contributions) forms and returns over the Internet, and to make payments electronically Requires registration and enrolment with the Government Gateway And EDI-based service is also available
Corporation tax: declaration, notification	hmrc.gov.uk businesslink.gov.uk	<ul style="list-style-type: none"> Service enabling companies and agents to send Corporation Tax returns, computations and accounts over the Internet, and to make corresponding payments Companies can also view details of their Corporation Tax

		<p>position with the Revenue online, including liabilities and payments for each accounting period as well as any interest or penalties that may have been charged</p> <ul style="list-style-type: none"> • The system requires registration and enrolment with the Government Gateway
VAT: declaration, notification	hmrc.gov.uk businesslink.gov.uk	<ul style="list-style-type: none"> • Service enabling declaration and payment of VAT online • Requires registration and enrolment with the Government Gateway
Registration of a new company	companieshouse.gov.uk businesslink.gov.uk	<ul style="list-style-type: none"> • Information and forms for company registration and company information submission • Forms for company registration can be submitted electronically using an online 'Electronic Filing' service
Submission of data to statistical office	statistics.gov.uk/default.asp	<ul style="list-style-type: none"> • This service is not relevant for the UK, where business are not obliged to submit data to the national statistical office
Customs declarations	hmrc.gov.uk businesslink.gov.uk	<ul style="list-style-type: none"> • Electronic services (web-based and EDI-based) available to importers and for declaration and payment of customs operations
Environment-related permits (incl. reporting)	environment-agency.gov.uk businesslink.gov.uk	<ul style="list-style-type: none"> • Information and downloadable forms
Public procurement	buyingsolutions.gov.uk ogc.gov.uk	<ul style="list-style-type: none"> • Buying Solutions is the UK's non-obligatory national e-procurement platform • It provides procurement solutions to deliver procuring products and services at the national level to customers of central government and all broader public sector

6. Critical Success Factor (CSF)

6.1 GAP Analysis

The purpose of GAP analysis is to look at enabling technology, applications, systems and information technology processes that are available in a nation and which would be necessary for Government to realize its vision, strategic goals and objective for ICT. In carrying out the Gap analysis, the enabling environment such as ICT policies, available technology, level of standardization and compatibility of systems should be also factored in.

In this analysis, Republic of Korea, the United Kingdom, and Republic of Uganda are each compared and sought gaps in terms of ICT status. 2012 Rankings of e-Government readiness index by UN are each compared, and each of the national ICT strategies is analyzed. In addition, ICT related legal framework, which supports e-Government, has been analyzed in each nation. Most importantly, three nations' e-Government services are analyzed in terms of G2G, G4C, G2B and Common Infrastructure.

<Table 60: GAP Analysis>

GAP Analysis			
	Republic of Korea	United Kingdom	Uganda
Ranking of e-Government Readiness Index by UN	Ranks 1st (out of 193 counties)	Ranks 3 rd (out of 193 counties)	Ranks 143 rd (out of 193 counties)
ICT Development Stage	1978~ • Initiation of NBIS 1987~1996 • Construction of NBIS 1996~2000 • Formation of e-Government Foundation (Building a high	~2001 • Internal Informatization • Establishment of Infrastructure 2001~2004 • Policy Making • Expansion from the Central	• Development Stage of ICT Infrastructure • Promoting the use of ICT in business and service operation (e-Commerce, e-Government) • Developing policy, legal and regulation based on ICT/e-

Uganda's e-Government Master Plan

		speed information super highway) 2001~2002 • 11 e-Government Initiatives 2003~2007 • 31 e-Government Initiatives & Roadmap 2008~Present • Expansion of integration and linkages btw ministries and agencies etc. • Expansion of m-Government	Gov to Local Gov 2005~2008 • Focusing on G4C, G2B • Economy Spread through Utilizing Public Information 2009~ Starting Smart Government	Government
Legal Framework	e-Government Act	O	O	X
	e-Payment	O	X	X
	e-Transaction	O	X	O
	e-Tax	O	X	X
	e-Government Portal Management	O	X	X
	e-Participation	O	X	X
	e-Document Usage& Approval	O	X	X
	Digital Signature	O	O	O
	Information Technology Architecture (ITA)	O	X	X
	ICT Personnel Development Plan	O	X	X

Uganda's e-Government Master Plan

	Information Resource Integrated Management	O	O	X
	Data Protection/Privacy Act	O	O	X
	e-Commerce	O	O	X
	e-Communication	O	O	X
	e-Procurement	O	O	X
	Re-use of Public Sector Information	O	O	X
	Cyber Law	O	X	O
	e-Waste	X	X	O
Infrastructure Application	e-Signature/e-Seal	O	O	X
	ITA	O	X	X
	Information Security System	O	O	X
	PKI	O	O (e-Identification)	X
	Integrated Data Center	O	O	X
	e-Government Telecommunication Network	O	X	O
	Government Encryption System	O	X	X
G2G Application	National Finance Information System	O	O	X
	National Education Information System	O	O	X

	Government Administration Management System	O	O	X
	Local Government Information Network System	O	O	X
	Personal Policy Support System (PPSS)	O	X	X
	e-Approval	O	X	X
	e-Document	O	O	X
	e-Fund/Transfer	O	X	X
	Digital Archiving System	O	O	X
G4C Application	e-Tax System	O	O	O
	e-Trial/Forensic System	O	O	X
	e-Participation	O	O	X
	e-Library	O	X	X
	Government Portal	O	O	X
	Architectural Administration Information System (AIS)	O	X	X
	Integrated Civil Service Call Center	O	O	X
	National Welfare Information System	O	O	X
	Resident Life Information System	O	O	X
	Employment Information System	O	O	X

Uganda's e-Government Master Plan

	National Emergency Management Information System	O	O	X
	Fire Prevention Information System	O	O	X
	Food and Drug Integrated Information System	O	X	X
	Agricultural and Livestock Safety Management System	O	O	X
	National Medical and Health Information System	O	O	X
	Vehicle Information System	O	O	X
	Real Estate Information Management System	O	O	X
G2B Application	Social Insurance Information Sharing System (SIIS)	O	O	X
	e-Procurement	O	O	X
	e-Trade	O	O	X
	Customs Information System	O	O	X
	Single Window for Online Business Service	O	X	X
	Plant IT System	O	X	X
	National Integrated Logistics Information	O	O	X

6.2 SWOT Analysis

SWOT analysis is to find out factors of Strength(S), Weakness(W), Opportunity(O), Threat(T) based on environment and current status of e-Government in Uganda. It specifies the objective of project and identifies the internal and external factors that are favorable and/or unfavorable to achieve e-Government of Uganda. SWOT analysis is the first stage of planning and helps to focus on key issues of the country. Through the SWOT Analysis, Critical Success Factors (CSF) will be identified for improvement themes.

- Internal factors – The Strength and Weakness factors based on Current Status of e-Government in Uganda
- External factors – The Opportunities and Threats based on PEST Analysis

<Table 61: SWOT Analysis>

SWOT Analysis			
Strength (S)	<ul style="list-style-type: none"> E-Government projects are mainly funded from central or local government Many government institutions have strong commitments to develop ICT or e-Government related projects Supportive on IT education program Development of NBI 	Opportunity (O)	<ul style="list-style-type: none"> A landlocked country. (A tremendous chance of becoming a distribution hub and increase inter-regional trade with its neighboring countries) Advantage of geographical location and favorable climate for doing business Many agro-based industrial activities Reserves an amount of oil and gas An amount of resources allocated in education sector to develop highly skilled human resources Phase 1 (One – way information)
Weakness (W)	<ul style="list-style-type: none"> Lack of IT Resources (IT infrastructure, Education Training, Human, awareness, Medical Health information) Lack of IT Service (Sharing information), Primary Data(Personnel, Land, Business, Digital Informatization) Lack of law & Regulations Lack of IT Action Planning &Directions 	Threat (T)	<ul style="list-style-type: none"> No specific direction of legal framework and plans of policies related to e-Government Import markets are bigger than export markets High cost of internet usage fee and inadequate internet support infrastructure of the nation Increase of computer illiteracy rate Lack of IT budgets High rate of youth unemployment, poverty The lack of Social Infrastructure (roads & transport infrastructure and electric power supplies)

6.3 Identification of CSF(Critical Success Factor)

e-Government CSF is identified based on SWOT analysis: Use of Strength factors to improve Opportunity factors (SO), use of Strength factors to avoid Threats (ST), use of Opportunity factors to avoid Weaknesses (WO), use of Threats to avoid Weakness (WT)

6.3.1 SO (Strength & Opportunity)

- Uganda will become a distribution hub for trading with development of ICT or e-Government related projects of the nation
- Through the government's strong commitment and funds toward e-Government or ICT, many agro-based industrial activities and oil&gas industry sectors will be expanded and improved
- An amount of resources will be allocated in education sector if there is Government's strong supports on IT education programs
- Since Uganda's e-Government services are mostly in the initial state (Phase 1-one way information), there is a tremendous chance of getting improved through development of NBI

6.3.2 WO (Weakness & Opportunity)

- Through Government budgets allocated in education sector, IT resources (human resources, awareness etc.)will be developed
- Through improving current level of e-Government service (Phase 1- One way information), national IT services and primary data will be developed
- Through Government budgets allocated in education sector for development of highly skilled human resources, details of laws & regulations, and IT action planning will be established

6.3.3 ST (Strength & Threat)

- Through Government's strong commitment to develop e-Government projects, there will be specific direction of legal framework and plans of policies related to e-Government
Through the development of NBI, internet usage fee could be reduced and have adequate internet support infrastructure of the nation
- Through Government supports on IT education programs, rates of computer illiteracy, youth unemployment, and poverty can be reduced
- Through budgets from central-local governments and their strong commitments on development of e-Government projects, there would be sufficient IT budgets
- Through the development of NBI, Uganda will have adequate social infrastructure (roads, transport, and electric power supply)

6.3.4 WT (Weakness & Threat)

- Through having adequate internet support infrastructure and sufficient IT budgets, IT services (sharing information) and primary data (personnel, land, business) will be developed
- Through reducing rates of computer illiteracy, youth unemployment, poverty, there will be development of IT resources (Human resources, awareness, health information)
- Through specific direction of legal framework and plans of policies related to e-Government details of law & regulation will be developed
- Through having adequate social & IT infrastructure (roads & transport infrastructure and electric power supply), details of IT action planning and direction will be established.

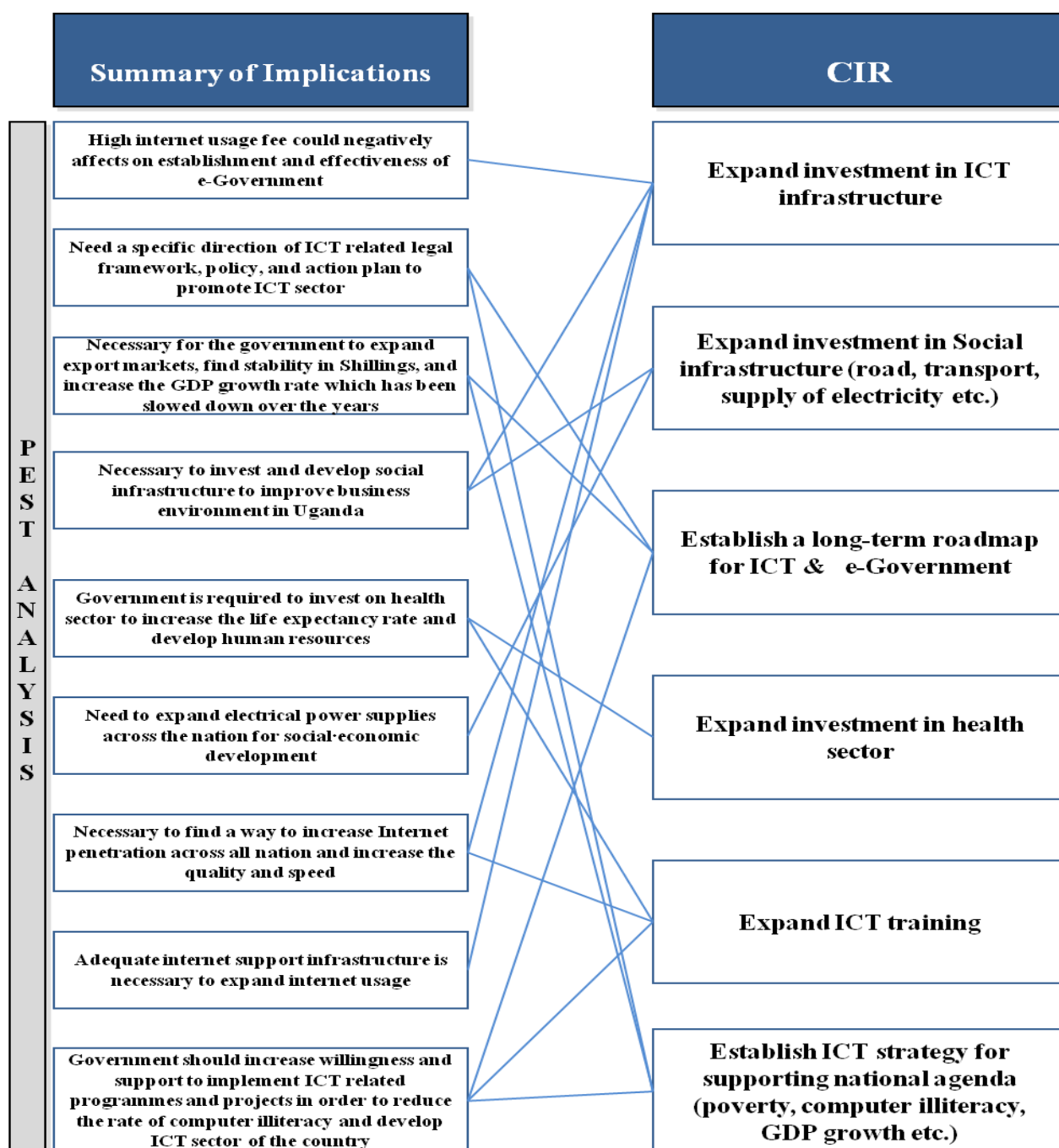
6.3.5 Results of CSF Identification

- **Virtuous Cycle of Generating IT Human Resources**
- **Establishment of IT Planning**
- **Establishment of IT infrastructure**
- **Securing IT Budgets**
- **Expansion of e-Government Services through promotion**
- **Set a Direction of Law & Regulation**

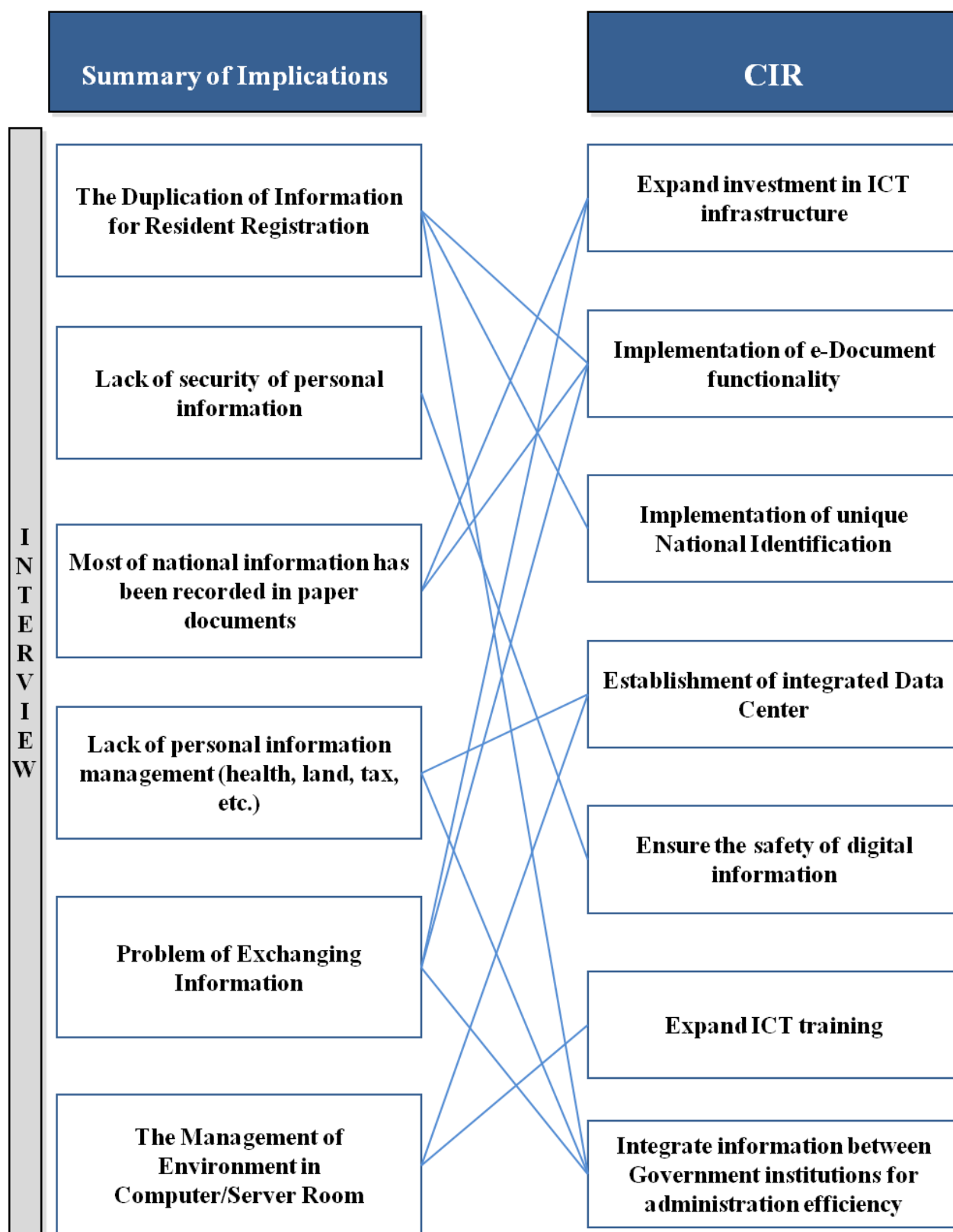
7. Critical Information Requirement (CIR)

CIRs are identified based on implications of PEST analysis, interview results from Government institutions, questionnaire surveys from citizens and business executives. Based on the results of 16 identified CIRs, the direction of future model has been set.

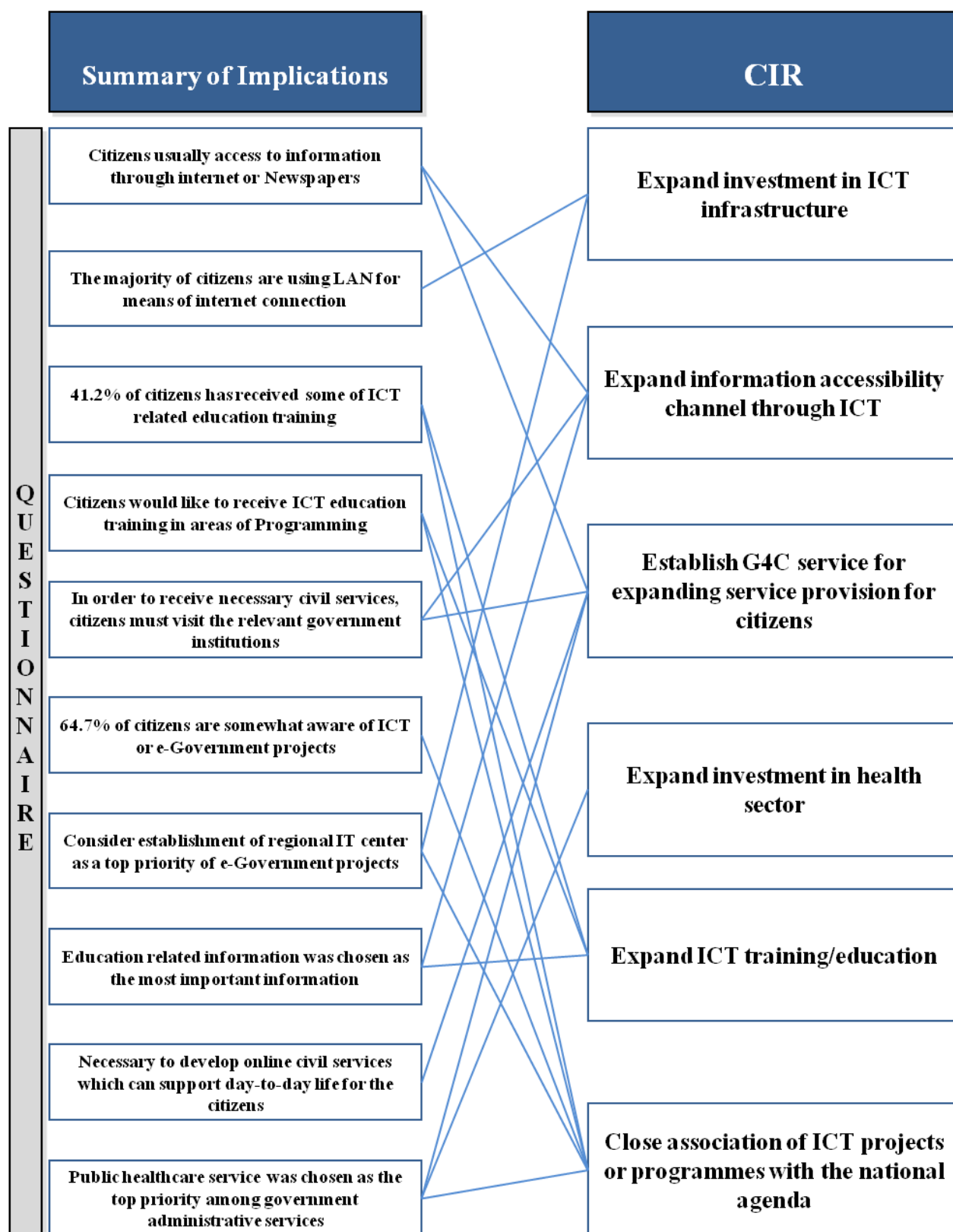
7.1 CIR – Implications of PEST Analysis



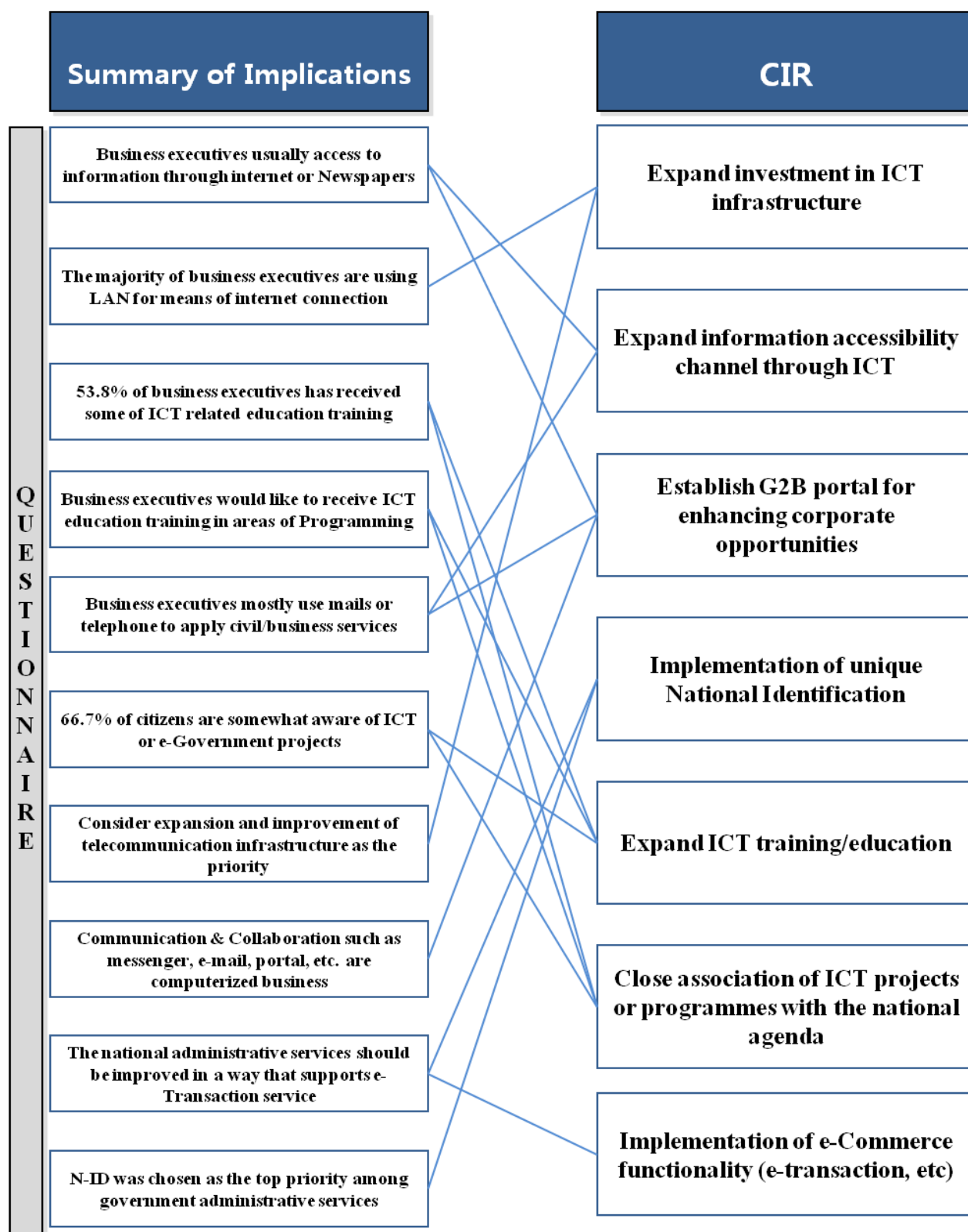
7.2 CIR – Implications of Interview Results



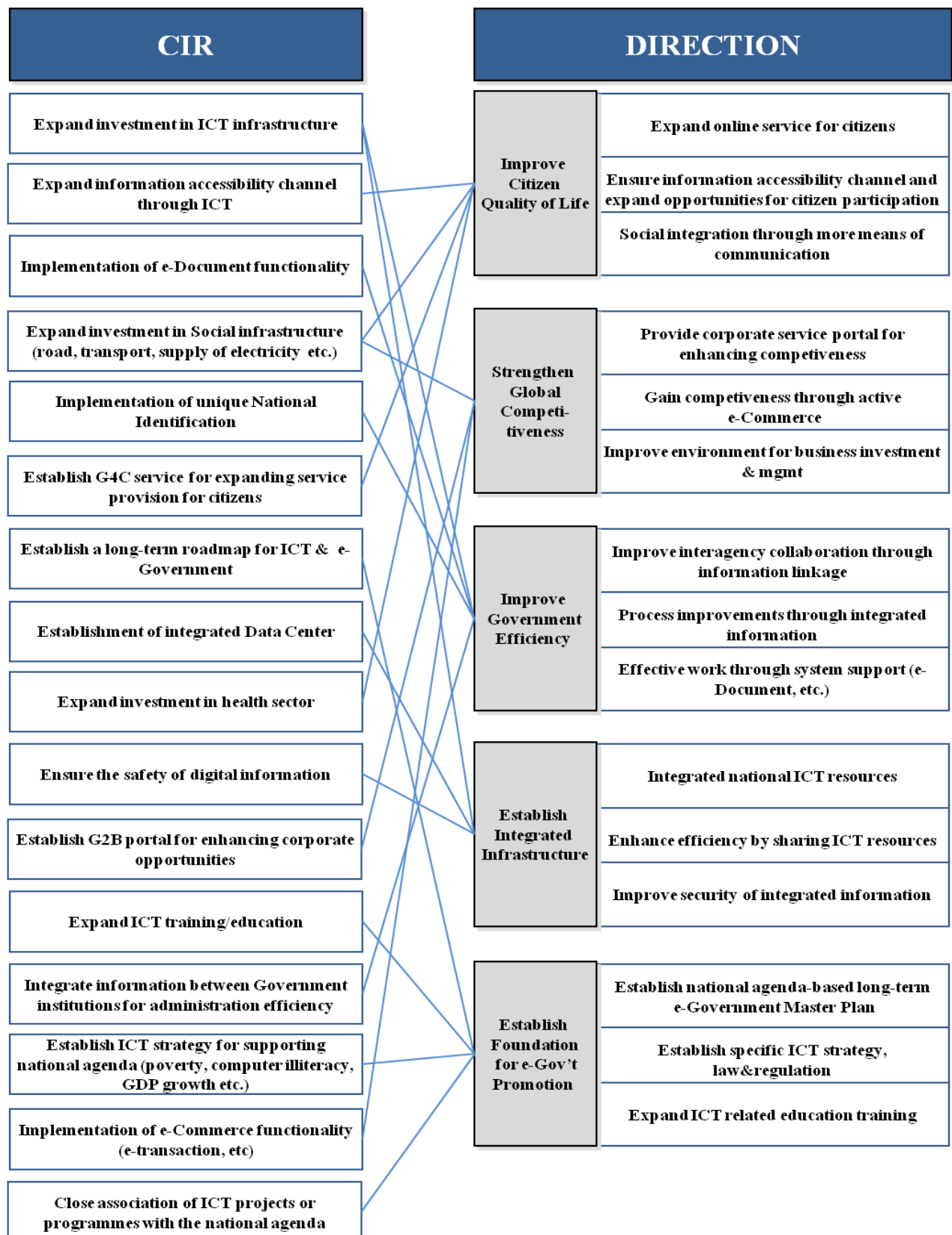
7.3 CIR – Implications of Questionnaire for Citizens



7.4 CIR – Implications of Questionnaire Survey for Business Executives



7.5 CIR - Future Model Direction Setting



III. Vision & Strategy

1. e-Government Vision & Mission

1.1 Overview

In the previous chapter, bibliographic study, surveys and interviews were conducted to review and analyze Uganda's current policy, ICT status and requirements for e-Government. Benchmarking case study of Korea, the United Kingdom, and global ICT trends were analyzed to help establish the e-Government of Uganda. Based on implications generated through the analysis, the critical success factors (CSF) and critical information requirement(CIR) are identified for establishment of e-Government in Uganda. Based on the CIR, directions for strategies were established which can be categorized into G4C, G2B, G2G and common infrastructure.

Being in the initial level of ICT (One-way communication), it is extremely important for Uganda to establish the e-Government project which fits the environment of Uganda by utilizing lessons learned from the e-Government requirements, latest technologies and benchmarking case studies. These efforts will prepare the grounds for Uganda to leap forward in the global arena.

With these efforts, vision and mission for the establishment of e-Government as well as strategies to achieve such vision and mission were established. The vision and mission are set for the goal of e-Government project such as to share the value of the project with governments and citizens. This in turn, makes it possible to implement e-Government Mater Plan more effectively and efficiently.

The period of the vision for Uganda's e-Government Mater plan is set for five years. This plan takes a greater consideration of the dynamic developments in information communication technology and to implement established plan.

NIPA's consulting team has derived and created a vision and mission statement from the previous chapters. The vision statement is established as an image of the future society that citizens imagine or hope it would be like, while the mission statement is established as a guide for formulating strategies of an important task that citizens are given to do.

NITA-U believes that the establishment of e-Government vision and mission statement are necessary for the development of ICT sector. NITA-U also realizes that the current government administration is willing to carry out and shared the budgets for ICT sectors for the development of e-Government.

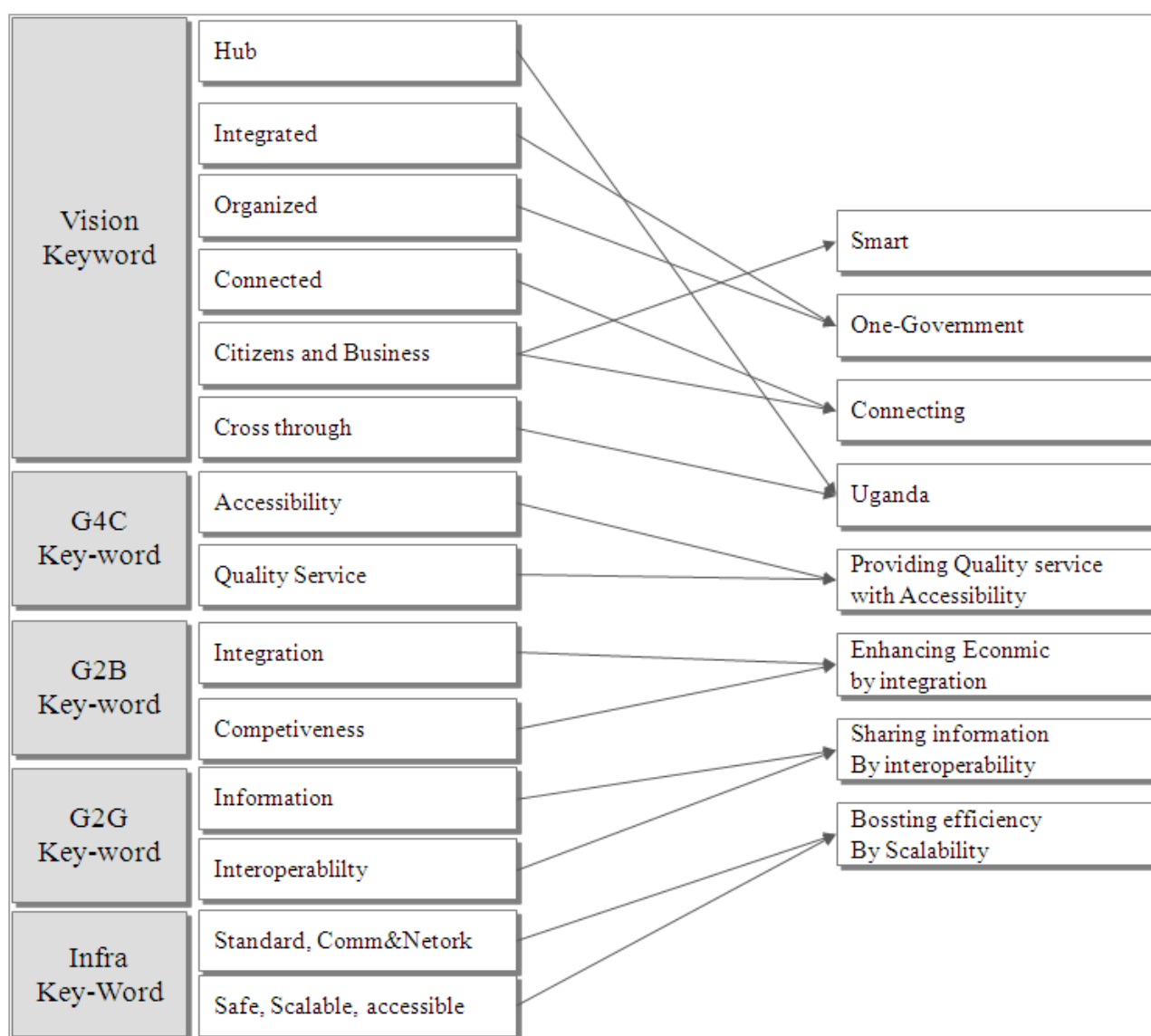
In addition, NITA-U has emphasized the importance of an "awareness campaign" to inform citizens about the benefits that could be realized through e-Government. Awareness of e-Government was low even for public officials in Uganda. ICT educating and training to the public on the benefits of e-Government needs to be done based upon the execution of the master plan to promote civil services.

1.2 Vision

In general, a vision can be defined as a comprehensive concept for describing an image of the business success. In other words, it is the future image that Uganda would like to achieve in next five years through the e-Government. Through this e-Government project, the national economy will be improved through transparent administrative services to increase convenience and living standards of citizens.

Key words from the previous chapters were categorized into G4C, G2B, G2G, and Infrastructure based on identified CSF and their interrelations are as shown.

<Figure 81: Interrelations of Key Words from G4C, G2B, G2G, and Infrastructure>



The common goal of these key words is to be a developed country with a high average living standard through ICT as the new growth engine. In five years, all government institutions in Uganda will be

integrated via network and Uganda will provide citizen-centered and transparent services for citizens and establish a knowledge-based society.

Lastly, Uganda will maximize the use of ICT to create values of government, citizens, business enterprises and all other parts of society, and create a synergy effect through networking. In this respect, the vision statement for Uganda's e-Government is defined as the following:

Vision Statement of e-Government is, '**Integrated Smart One-Government**' by:

- Providing quality services with accessibility
- Enhancing Competitiveness by integration
- Information sharing through interoperability
- Boosting efficiency by expandability

1.3 Mission

In the mission statement, the key words were presented for the purpose of pursuing e-Government. The key words were identified based on interviews, questionnaires and current ICT status of Uganda:

- Key words presented as the purpose of e-Government are as follows:
 - Providing quality service to citizen
 - Improving country's competitiveness
 - Connecting Uganda
- Key words presented in the business activity are as follows:
 - Innovating administration to citizens
 - Reforming unnecessary and redundant processes
 - Improving accessibility
- Key words for sharing values are as follows:
 - Integrated and organized administration
 - Safety and Systematic society

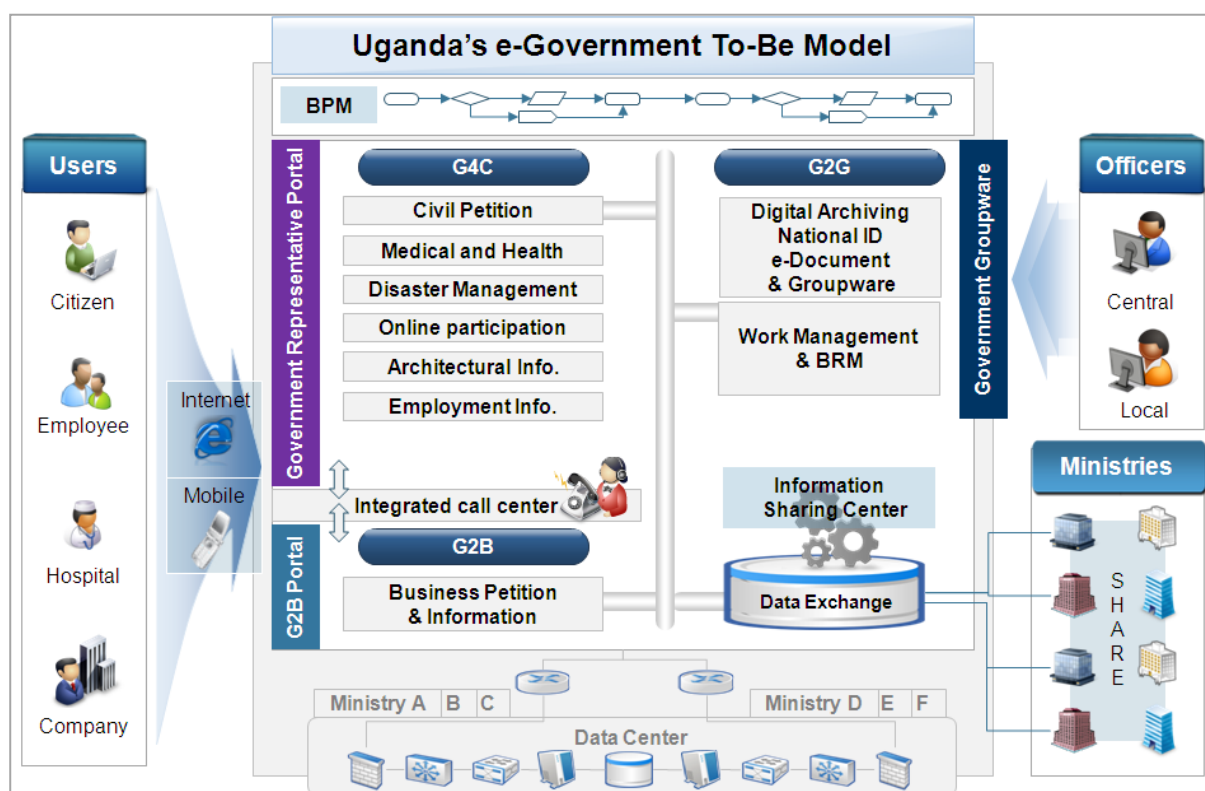
Taking these keywords, a mission statement, which includes the purpose, business activity and values, is drawn up as the following.

Mission Statement of e-Government:

Integrating Uganda to provide quality services to citizens, and to improve the national competitiveness through administration innovation, and to reform unnecessary processes based on interconnected government and safe society

1.4 Future Model

<Figure 82: Uganda's e-Government To-Be Model>



Once the vision and mission for e-Government of Uganda are established, future model of Uganda's e-Government which provides a single-window for accessing one-stop civil services to citizens and a channel for private business entities to access necessary business information and services online, will be established. These activities can be done by active information sharing across the government institutions. Moreover, civil servants from the central and local governments will be able to log in to the government portal in order to do their work more efficiently. As for infrastructure, the government can achieve high-availability and security by integrating all the servers in one location.

The future image of Uganda's e-Government will also provide administrative services to its people through various channels, thereby improving the convenience of people. Also it will provide integrated and transparent administrative services for private business enterprises so that they can have greater competitiveness. All the work processes of agencies and departments are to be linked closely to one another, and enhancing work efficiency.

With these efforts, Government of Uganda will be able to realize a full knowledge-based society.

2. Strategy & Initiatives

2.1 Overview

The vision and mission statement were established in order to set the basic direction of strategies based on CSF generated from the Research&Analysis and to present the future image of Uganda's e-Government.

Administrative services are categorized into G4C, G2B and G2G service, and its respective goals and strategies are established. To provide these services, it is essential to establish legal and institutional framework and supply network and other equipments that meet the situation of Uganda. Goals and strategies for the ICT infrastructure required for each service type are also established.

Priority projects will be evaluated and will be included in the roadmap for the establishment of e-Government in Uganda. Specific goals in establishing e-Government of Uganda are defined as follows:

- G4C
 - Definition: Interaction of Government to Citizen where electronic dissemination of information and electronic delivery of services takes place is to fulfill the primary objective of e-Government
 - Goal: Provide citizen-oriented and customized services
- G2B:
 - Definition: Interaction of Government to Business involves improved and efficient procurement of goods and services by the government from the commercial business entities
 - Goal: Provide transparent and prompt services
- G2G:
 - Definition: Interaction of Government to Government involves sharing of data and conduct of electronic information exchange amongst various government departments and other entities
 - Goal: Networked and knowledge-based government
- Infrastructure:
 - Definition: The foundation needed to realize e-Government and to provide advanced services of country
 - Goal: Management of integrated ICT infrastructure and establishment of legal framework

2.2 Goal & Strategies – G4C

G4C refers to administrative services that the government to its citizens through the establishment of e-Government. Its goals and strategies are as follows:

- Goal:
 - To diversify service channels for citizens through ICT and establish citizen-oriented services
- Strategies:
 - Online public services
 - Provide online administrative services to improve accessibility of civil services
 - Establish supporting system for expanding internet services
 - Diversification of civil services

- Provide convenient civil services through visits, online, fax, e-mail, telephone, etc.
- Provide civil services which is available at anytime and anywhere
- Relevant Projects:
 - Government Representative Portal, e-Learning, National Welfare Information System, Employment Information System, National Medical and Health Information System, Online Citizen Participation Portal, Integrated Civil Service Call Center, Architectural Administration Information System.

2.3 Goal & Strategies – G2B

G2B refers to administrative services that the government provides to businesses enterprises and industries through e-Government. Its goals and strategies are as follows:

- Goal:
 - To provide integrated industrial information and online services and enhance the enterprise competitiveness through One-stop and transparent G2B services
- Strategies:
 - One-stop business service
 - Provide integrated government administration information via online to business enterprises that support economic activities
 - Provide fast & customized information
 - Disclosure of administration information and process
 - Enhance business competitiveness through Open Government administration information and procedures
 - Provide transparent business related services
- Relevant Projects:
 - Online Single Window for Business Service, Customs Information System, National Integrated Logistics, e-Procurement, Electronic International Trading System, Government for Foreigners (G4F)

2.4 Goal & Strategies – G2G

G2G refers to information and administrative services that is provided to government institutions through the establishment of e-Government. In order to enhance national competitiveness, this process should be improved and integrated through process re-engineering. Its detailed goals and strategies are as follows:

- Goal:
 - To standardize government administration process, digitalize government administration, and share administrative information to enhance work efficiency
- Strategies:
 - Standardization of government administration work
 - Establish National Data Bank
 - Make a standard for administrative procedures by establishing BRM (Business Reference Model) and introducing groupware
 - Establish e-Approval and e-Document service
 - Computerization of Government administration

- Paper Digital Archiving
- Change government administration into an automated, paperless process through ICT
- Enhance government's administration process
- Integration of government information resources
 - Integrate all computerized administrations through KMS execution
 - Establish an integrated government ICT center
- Relevant Projects:
- Digital Archiving, National-ID, Groupware (EDMS, e-Approval, KM), e-Document System, National Administrative Finance Information System, Informatization of City/Province Administration, Government Work Management System, Government Business Reference Model, e-Foreign Affairs, e-National Assembly

2.5 Goal & Strategies – Infrastructure

Infrastructure is the foundation needed to realize e-Government and to provide advanced services in Uganda. Without this foundation, all the services mentioned above cannot be provided, and thus infrastructure needs to be laid out before anything else. This includes law & regulation, communication network and equipments, human development, organization, budget and etc. Its detailed goals and strategies are as follows:

- Goal:
- To strengthen ICT education, expand ICT Infrastructure, formulate related legal framework and organization
- Strategies:
- Establish nation-wide ICT infrastructure
 - Build the nationwide telecommunication network and improve the capacity of network traffic transmission
 - Expand internet coverage
 - Distribution of inexpensive Internet and PC
- Development of national standard
 - Develop e-Government's IT Standard Framework System
 - Establish system and security standard at the government level
 - Establish a national standard model of business, IT systems and technology to enhance interoperability and prevent duplication
- Development of National ICT literacy and HRD
 - Establish HR development programs
 - Provide ICT education opportunities for citizens to facilitate e-Government participation
- Improvement of laws and regulations
 - Establish favorable law and regulation on e-Government
 - Establish favorable laws to prevent redundant ICT investment
 - Establish and revise the legislations to drive systems supporting new technology
- Organization of e-Government Committee
 - Empower the e-Government projecting committee

- Establish an authorized organization to promote e-Government systematically and efficiently at the government level
 - Relevant Projects:
 - Government Data Center, Information Sharing Center, and PKI

3. Project Identification

In the previous section, Uganda's vision and mission for e-Government were established. Also, goals and strategies of administrative services to achieve the vision and mission, specific goals and strategies to achieve were identified. Moreover, projects to be executed based on these strategies were also selected.

Below are the details of projects selected to determine priority projects and prepare for the establishment of e-Government.

3.1 G4C

3.1.1 Government Representative Portal

The Government Portal is a single window lined with e-Government, information providing system, and operation infrastructure in order to maximize efficiency and provide a high quality administration services to citizens. One website helps to reduce the cost (human resources, space, etc.) compared to operating and managing many different websites. Also it helps citizens to easily find government services through one place.

The Government Portal seeks to provide convenient services to citizens by reducing the number of paper documents and office visits. It also promotes administrative democracy and transparency through various services such as processing civil petition, providing administrative information, and gathering public opinions from e-Petition Service Center.

3.1.2 e-Learning

e-Learning system provides an opportunity of a high quality education with inexpensive prices to people who are not only in big cities like Kampala and Entebbe but also people living in rural areas. Through e-Learning system, inequality of education opportunity can be resolved. Students in rural areas will have equal access to high quality education contents with students in urban areas. University and Government are necessary to create learning opportunities available online and provide better educational contents by various teaching-learning methods.

3.1.3. Recruitment and Employment Information System

Recruitment and Employment Information System seeks to develop comprehensive employment information and network for a society. It also provides customized services through matching functionality of employer and employee.

3.1.4 National Medical and Health Information System

EMR(Electronic Medical Record) provides customized services with sharing health or medical records of patients. It is a paperless digital and computerized system of maintaining patient data, designed to increase the efficiency and reduce documentation errors by streamlining the process. It improves the level of medical care for citizens.

3.1.5 Online Citizen Participation Portal

The portal allows a diverse communication channel between the government and citizens allowing public administration to be more participation-oriented. Citizen services that are requested, civil petitions that are filed, creative policy ideas that are suggested are shared to ministry personnel who are in charge of such affairs.

3.1.6 Integrated Civil Service Call Center

Civil services can be provided offline for citizens who are not familiar with computers, or who do not have immediate access to computers. Simple health services can be done through the call center while more specific consultation can be done through the related organization by calling.

3.1.7 Architectural Administration Information System

Through the Single Window, all the civil services related to architectural administration can be processed. Also, civil services are processed by One-Stop through sharing information across the relevant institutions.

3.2 G2B

3.2.1 Single Window for Online Business Service

Single window for online business service provides an integrated services required by enterprises. It provides various information including civil affairs and industry-related information as well as the corporate civil applications (i.e. Licensing and certificate issuing) and electronic payments.

3.2.2 Customs Information System

e-Customs seeks to provide citizens with better services for import and export of goods. This can be accomplished by building a customs clearance system with computerized management of customs procedures, enabling the country to actively respond to the international trade market. It also supports the establishment of national trade policy and provides information on trade policy in each government ministry.

3.2.3 National Integrated Logistics

National Integrated Logistics system provides information and services related to logistics and licensing procedures. Related agencies (i.e. port, railway stations, airport, customs agencies, etc) and other private business entities can use the information for decision making and undergo desired activities.

3.2.4. Electronic International Trading System

Electronic international trading system provides services for import-export management, logistics, which can be accessed by banks and related agencies. Online processing allows faster, easier and more convenient method through the interoperability of private and public entities from domestic to international organizations.

3.2.5. Electronic Procurement System

G2B is defined a deal between government and private business entity with electronic method. e-Procurement system is a typical example of G2B. The system is used for providing Government with various goods and services through online tenders to support government administrative work.

3.3 G2G

3.3.1 Digital Archiving

Digital archiving is to reduce and minimize paper documents through converting paper documents into digital images by scanning and build a database for effective management of digitalized documents.

3.3.2 National Identification (N-ID)

National Identification is substantive information services for citizens to increase government administration efficiency, to secure resident taxes through integrated and unique resident data of birth, death, and other personal information which are managed by Ministry of Internal Affairs.

3.3.3 Groupware (e-Document, e-Approval, Knowledge Management System)

Groupware consists of e-Bulletin, e-Approval, e-mail, e-Document and schedule management to share information and to communicate in real-time. Also it seeks to integrate distributed information, minimize the use of papers through the e-Bulletin and e-Approval System. It is very useful when an organization has remote work places. It improves business efficiency through information sharing such as through e-mails and schedule management.

3.3.4 National Finance Information System (NAFIS)

NAFIS is a system which assists budget related work from national budget execution to settlement. The system helps to reduce an amount of manual accounting work. The system has integrated national financial

data from all relevant government institutions including central and local governments and helps fiscal decision-making and budget planning with easy access to analyzed data. Processes are integrated with auditing board and increase transparency.

3.3.5 Informatization of City/Province Administration

Through the establishment of local e-Government, communication channels will be developed with central and local governments and provide civil services in local areas. It would also help to improve administration efficiency through horizontal and vertical inter-linked government information

3.3.6 Government Work Management System

Government work management system allows administrative work to become process-based through standardization, consolidation, systematization of all process of government administrative operations, and systematically managing the accumulated knowledge assets from previous experiences. The system also assists in aggregating policy information during the policy revision process. It is a work management which is interconnected with BRM.

3.3.7 Government Business Reference Model (BRM)

Business Reference Model (BRM) is a function-oriented framework which describes government businesses, independent of the agencies and local governments that perform them. Identification of certain businesses results in re-classification of services in a top down approach. BRM is the foundation of Enterprise Architecture and requires connectivity to relevant public institutions, laws, budget and information systems.

3.3.8 e-Foreign Affairs

e-Foreign Affairs is a networked platform between the Ministry of Foreign Affairs and overseas diplomatic offices (embassies, consulates, etc.) where information can be shared in a secure environment. Services including accounting, payroll, personnel management, as well as administrative work can be conducted. Knowledge management, electronic documents, and administrative support systems improve the quality of service and collaboration.

3.3.9 e-National Assembly

This is a system which facilitates people's participation through knowledge sharing and discussion in activities related to parliament and congress. It is an important framework for e-Democracy, interlinking public institutions, e-Administration and the voice of the citizens, as the next generation public participation. It supports deliberation on the budget, national audit, and legislation enactment.

3.4 Infrastructure

3.4.1 Government Data Center

Government Integrated Data Center (G-IDC) provides e-Government services to all central and local government institutions. This would provide a single facility to house the hardware, software and staffs. It would be physically secure (guarded premises with controlled physical access) and protected against natural disasters (fire, floods, etc.) and malicious attack. It would provide 24 X 7 X 365 service levels (adequate monitoring staff, backup hardware, etc.) and should be equipped with environmental controls (electrical power supply, air conditioning, etc.)

3.4.2 National IT Standard Framework

Uganda has been operating individual platform in accordance with informatization level of each government institution. Having national IT standard Framework, Government institutions can increase the level of interoperability by utilizing IT standard, common technology skills and reduce the cost and time for the nation.

3.4.3 Administration Information Sharing Center

Government data center provides integrated services through centralization of information and standardization of work processes from all government entities. As a result, the center increases efficiency, reduces time for administrative work and significantly increases annual cost savings. The national information sharing center is a primer for the paperless government.

IV. Implementation Strategy

In the previous chapter, priority projects which should be executed to establish Uganda's e-Government were identified, and these projects are incorporated into e-Government road map in the order of their priorities.

To implement predefined e-Government projects, more details of functions and specific requirements of projects must be defined. Therefore, to facilitate the establishment of Uganda's e-Government, Uganda's e-Government Roadmap from 2013 to 2018 will be identified in this chapter. Details of functions such as budget, required manpower and time which would take to implement are included.

1. e-Government Road Map

1.1 Overview

In Chapter II, the ICT status of Uganda, benchmarking case studies, and ICT trends were analyzed. Based on this analysis, the vision, mission and strategies for Uganda to realize e-Government were presented in Chapter 3 with projects to be conducted. As previously mentioned, Uganda's e-Government master plan has set the goals to be achieved in five years starting from 2013. Thus, project schedule and action plans must be drawn out to meet this given time frame.

In order to set realistic and specific goals, development models of other countries such as Korea and the United Kingdom were taken as reference, and the e-Government development model that fits the Uganda situation was created. After developing the e-Government model for Uganda, the target level for 2018 was determined and conditions needed to achieve such level were defined.

While all the projects defined in the previous chapter need to be executed, it is realistically difficult to implement them all at the same time due to insufficient budget and system, lack of technical workforce, insufficient awareness among people and poor infrastructure. Thus, prominent figures from all the sectors of Uganda and the consulting team from NIPA Korea has evaluated the feasibility of these projects, such as its importance and possibilities, and determined their priorities.

The order of priority is reflected in the roadmap which Uganda has to implement to achieve the target level in five years. Other essential issues, such as creation of organization, preparation of related laws and regulations, human development plan, and securing budgets were prepared separately.

1.2 e-Government Promotion Stage

The UN-ASPA (UN & the American Society of Public Administration, 2002) has defined the level of e-Government into five-stages according to the level of Internet and web-based government services. Each stage is as follows:

<Table 62: e-Government Stage>

Stage 1	<ul style="list-style-type: none"> • Emerging web presence • Creation of the government website. Basic and limited level of information is provided in a static manner
Stage 2	<ul style="list-style-type: none"> • Enhanced web presence • Expansion in government websites. Increased dynamics in information through regular updates of information/contents
Stage 3	<ul style="list-style-type: none"> • Interactive web presence • Usage of electronic formats. 2-way communications via web (online application, confirmation and response)
Stage 4	<ul style="list-style-type: none"> • Transactional web presence • Provision of actual online services, process handling and electronic payment
Stage 5	<ul style="list-style-type: none"> • Fully integrated web presence (seamless) • All services and links are provided on a single government portal, and all the administrative services can be processed online

Also, Deloitte has defined the development of e-Government into six stages; from Stage 1 of each government agencies providing services through their own channels according to their respective level of using web-based application programs and their level of organizational innovation (Information Publishing); to Stage 6 of complete integration in the back office, front office and information/service provision channels (full Integration and enterprise transformation).

These standards play an important role in examining developments in e-Government status of each country. Korea also checks its development stage by evaluating websites of its government agencies and departments every year. In the course of such evaluation, websites that are well-presented and operated are discovered and announced to the public. Through these activities, Korea tries to improve the convenience of its people and make its administrative process more efficient. The e-Government Headquarter of Korea in 2005 announced Korea's e-Government to be in Stage 4 of the UN-ASPA's development stage and some parts are already in Stage 5. Since 2006, Korea enhanced mobile services to safely land in Stage 5. Mobile services allow administrative services to be provided whenever and wherever

In April 2002, the Digital Philippines Foundation of the Philippines examined 140 government websites based on the five stages of e-Government defined by the UN-ASPA. The result showed that it was

impossible to access 14% of the websites and 24% was in Stage 1, 42% in Stage 2, 19% in Stage 3, and no government agency had reached Stage 4, where administrative services can be completely delivered online. It also showed that these government websites did not have uniformity as they were independently created by their respective organizations.

As in above cases, many countries are assessing their government websites to evaluate their current level and to resolve problems. This is to provide better services to its people and renovate administrative services, which will ultimately enhance national competitiveness.

1.3 e-Government Promotion Stage of Uganda

In order to create the e-Government promotion model of Uganda, it is important to make general evaluation on its current level of e-Government according to the promotion stage of UN-ASPA. According to the evaluation, Uganda is well into the first stage, providing limited services through websites. It is still not able to keep its information or contents up-to-dated, which is a condition to enter the second stage. Also, while some departments are using electronic formats as required in the third stage, its level of two-way communications is still not in smooth. Taking these into account, Uganda's e-Government status can be assessed as spreading over the first stage to the third stage

An ideal model for Uganda was designed by considering the Ugandan's conditions, international standards and research results. This e-Government development model is comprised of four stages. The reason why Uganda has four stages while UN-ASPA has five stages is because Uganda has great difference in the level of e-Government among each government agencies and their service levels differ greatly as well. Thus, by reducing the stages, all government agencies can achieve higher level of e-Government in a shorter period of time.

Figure shows four stages of Uganda's e-Government model. For each stage, its respective core value and goal, as well as required services, functions, conditions to achieve changes in processes are specified.

<Table 63: Promotion Model of Uganda's e-Government>

Indicator	Stage 1	Stage 2	Stage 3	Stage 4
Core Value	Higher productivity inside an agency	Higher productivity Cross agencies	Inter agency collaboration	Partnership with the private sector
Goal/Sector	Digitization/Own	Clustering/G2G	Service/G4C, G2B	Value / All2All
Service	Provider driven	Provider driven (pseudo citizen-centric)	Citizen centric	Citizen driven
	Information	Government Portal	Personalized & Customized	Intelligent

	Publishing/ download	Interacting	Transacting/Web self-service	Value portal on the value-network
	Wire-connected	Wire-connected	Wireless/semi- ubiquitous	ubiquitous
Information Sharing	Isolated from other agencies	Partially integrated in a cluster	Fully integrated in a cluster	value-networked among cluster
Process Innovation	No process Innovation	Internal BPR	Cross-agency BPR	Value-chain creation
Participation	Offline (N:0)	Web bulletin board (N:1)	Service transaction based (1:1)	Multiple transaction based (1:N)
ICT	Local computing	Web computing	Analytical computing	Ubiquitous computing

First stage is to computerize the internal process of the government. There is no connection amongst government agencies and no changes in administrative process are required. With partial online connection, some service application forms or information can be provided on the web. This is where Uganda is currently standing as shown in the previous assessment.

Second stage is to provide more comprehensive and citizen-centric services through innovation in administrative process via BPR and connection of government agencies. And the integrated services through connection of government agencies and to handle the citizen's requests online through the web. In this stage, all the government agencies are interconnected and the process on handling integrated services can also be improved. At this stage, it is possible to provide citizen-centric, customized services.

The third and last stage is the same as the final fifth stage of UNASPA's model. All processes are integrated and the knowledge-based government is established, realizing the ubiquitous environment where citizens and businesses can get all the services they want wherever they are.

The conditions that Uganda needs to satisfy in each stage in order to leap from stage 1 to stage 2 and 3 in a short period of time are as follows:

In order to move up from the first stage to the second stage, the following conditions should be satisfied:

- Provision of online administrative services
- Creation of a common platform and standardization for information distribution
- Creation of a responsible body for consistent execution of the plan
- Creation of an information sharing system within the government

In order to move up from the second stage to the third stage, the following conditions should be satisfied:

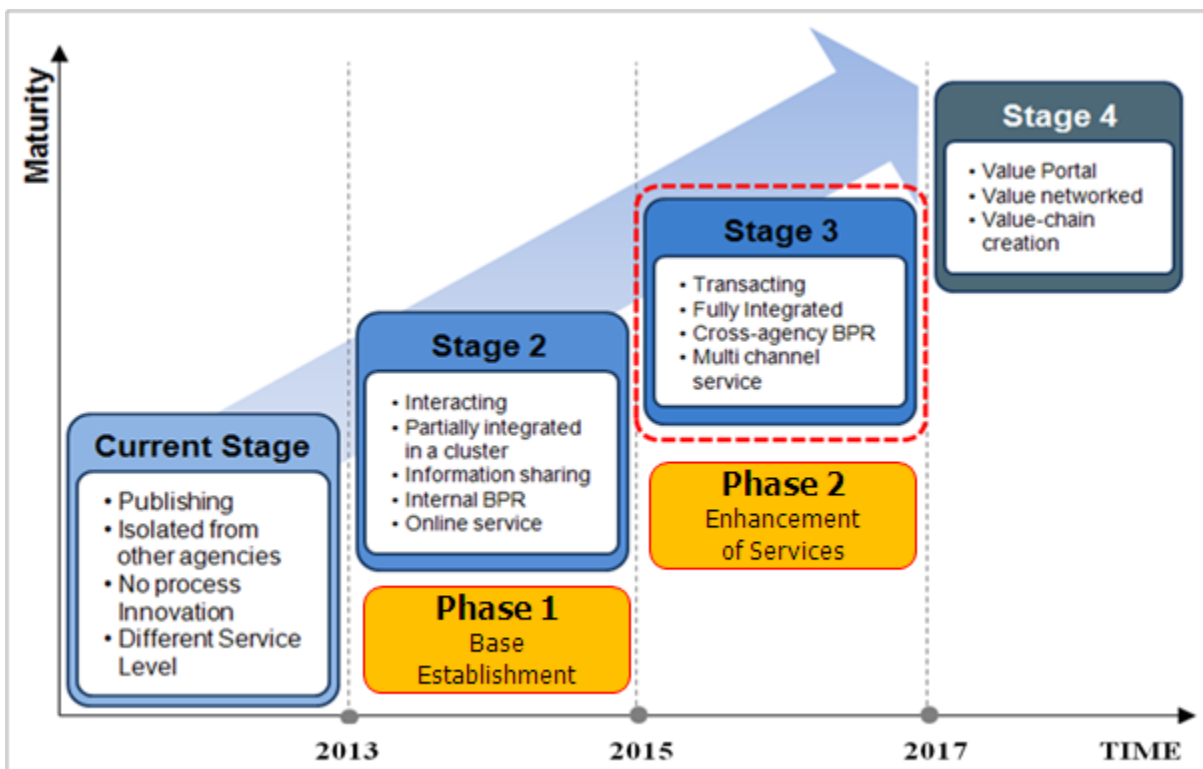
- Two-way transactions
- Access to services through various channels and media
- Knowledge-based administrative process
- Government-wide collaborative network for knowledge sharing

Here, continuous expansion of service areas and ICT infrastructure is essential. Also, as already defined in previous chapter, the Uganda's e-Government mission statement says, **"Integrating Uganda to provide quality services to citizens, and to improve the national competitiveness through administration innovation, and to reform unnecessary processes based on interconnected government and safe society."**

In order to achieve this mission statement, the goal is set to enter 'Stage 3 e-Government' by 2018 with consideration to internal competency of Uganda in pursuing the e-Government in the past, changes in external environments, citizen's demand for informatization and etc.

The 5 year roadmap is divided into two phases, phase 1 which aims to establish the basis of the Uganda's e-Government, and phase 2 which aims to enhance the provision of services.

<Figure 83: Goal of Uganda's e-Government>



1.4 Method of Project Priority Evaluation

In the previous chapter, projects to be executed to establish the e-Government in Uganda were defined. These projects need to be carried out by the Ugandan government with continuous attention. In order to do so in an effective manner, all the budget, workforce, organization and other conditions needed to perform the project should be prepared. Goal of the Ugandan e-Government master plan establishment project is to define projects for five year period from 2013. To achieve the goals mentioned in Chapter 3 within this period, priorities should be evaluated and decide the order for each projects.

For this purpose, Ugandan e-Government task force and key stakeholders at workshop (which held in 23rd of August) reviewed and held discussions on 24 projects defined in the previous chapter and the project coordinators and five NIPA consultants also made some evaluations.

In order to set priorities, each project will be evaluated in the aspect of importance and feasibility.

Then, projects will be classified for each phase. Prioritization is important for the following reasons:

- It helps the Government achieve suitable resource allocation among investment options
- Analytical assessment accompanied with prioritization is useful for creating a linkage between expected outputs of projects and program level objectives
- The estimation of expected effects and costs requires the assessment of demand for e-Services, since deviation in demand, both in term of the volume and speed of uptake, causes the change in the expected value generated by a given activity
- The focus it brings to gauge the level of demand among user group (citizens, business executives and public officials) will lead the way to stakeholder participation and consultation, which is critical in reducing the occurrence of supply-driven projects

One of the major indicators is “Importance” which has two valuation bases such as emergency and effect/impact, and the other indicator is “Feasibility” which also has two valuation bases, such as technological realization and political realization.

The evaluation method is as follows:

<Table 64: Criteria of Project Priority Evaluation>

Evaluation Indicators		Evaluation Criteria	H (8-10)	M (4-7)	L (1-3)
Importance	Strategic/ Urgency	Consideration on policy, requirements of users, and phase of e-Gov. implementation	Immediate (within 1 year)	Short-term (2-3 years)	Long-term (4 years)
	Effect /Impact	Consideration on the objectives and other factors to implement the project	All citizens and ministries/agencies are affected	Many citizens and ministries/agencies are	A few citizens and ministries/agencies are

			by the realization of the project.	affected by the realization of the project	affected by the realization of the project
Feasibility	Technological Realization	Consideration on the technological level and capacity to implement the project	Fully possible to implement project	A little difficult to implement project	Very difficult to implement project
	Political Realization	Consideration on the law and regulation to implement the project	Fully possible to lead implementation immediately	Amendment or enactment of law/regulation is needed	Amendment and enactment of law/regulation are needed

Emergency is evaluated with consideration to policy, requirements of users, and phase of e-Government implementation. When a project is needed immediately, 8~10 points are given; when a project is needed in a short-term period (2~3 years), 4~7 points are given; when a project is needed in a long-term period (4 years), 0~4 points are given.

Effect/impact is evaluated with consideration to objectives and other factors of the project. When all citizens and government ministries/agencies are affected by the realization of the project, 8~10 points are given; when many citizens and ministries/agencies are affected by the realization of the project, 4~7 points are given; when a few citizens and ministries/agencies are affected by the realization of the project, 0~4 points are given.

Feasibility of technological realization is assessed with consideration to the technological level of and capacity to implement the project. When it is fully possible to implement project, 8~10 points are given; when it is a little difficult to implement project, 4~7 points are given; and when it is very difficult to implement project, 0~4 points are given.

Political realization is assessed with consideration to laws and regulations related to the project implementation. When it is fully possible to lead implementation immediately, 8~10 points are given; when an amendment or enactment of laws/ regulations is needed, 4~7 points are given; when both the amendment and enactment of laws/ regulations are needed, 0~4 points are given.

Points generated from these assessments on each project went through the portfolio analysis and then were reflected on the roadmap according to their priorities.

1.5. Result of Project Priority Evaluation

- As the first step for making evaluation in Uganda, NIPA consulting team has first listed priority projects. Then priority projects were evaluated by the key stakeholders and markings were tallied into a single chart. They were sorted into “Importance” and “Feasibility” column and each project was re-marked according to the evaluation criteria.
- The evaluation results were then cross checked with the key stakeholders, NITA-U, and NIPA at the workshop which conducted final modifications generating the results displayed in Table below.

<Table 65: Result of Evaluation>

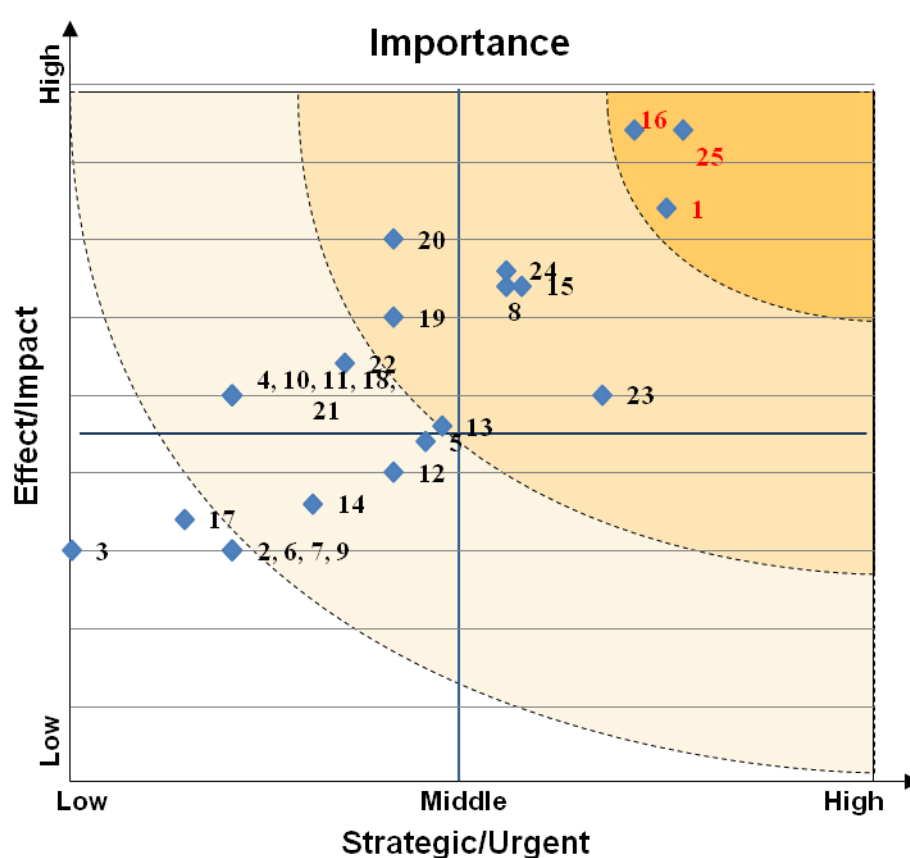
No.	PROJECT LIST	Importance		Feasibility		Avg.
		Strategic /Urgent	Effect /Impact	Technical Realization	Political Realization	
1	National IT Standard Framework	9.7	9.2	8.5	6.7	8.5
2	e-Learning	7	7	5	3	5.5
3	Recruitment and Employment Information System	6	7	6	4	5.75
4	National Medical and Health Information System	7	8	5	3	5.75
5	Single Window for Online Business Service	8.2	7.7	7.5	6.7	7.5
6	Government Business Reference Model (BRM)	7	7	6	4	6
7	Architectural Administration Information System	7	7	5	4	5.75
8	Government Work Management System	8.7	8.7	6.5	5.3	7.3
9	Customs Information System	7	7	6	3	5.75
10	National Integrated Logistics	7	8	5	3	5.75
11	Electronic International Trading System	7	8	5	3	5.75
12	Government Representative Portal	8.0	7.5	7.8	6.8	7.5
13	Groupware (e-Document, e-Approval, Knowledge Management System)	8.3	7.8	6.3	5.2	6.9
14	Digital Archiving	7.5	7.3	6.7	5.7	6.8
15	Electronic Procurement System	8.8	8.7	7.8	5.2	7.6
16	Government Data Center	9.5	9.7	8.3	5.7	8.3
17	Online Citizen Participation Portal	6.7	7.2	7.0	6.3	6.8
18	Integrated Civil Service Call Center	7	8	5	4	6
19	Informatization of City/Province Administration	8	8.5	4	4	6.125
20	e-Foreign Affairs	8	9	4	3	6
21	e-National Assembly	7	8	4	3	5.5
22	National Finance Information System (NAFIS)	7.7	8.2	7.5	7.0	7.6
23	PKI	9.3	8.0	6.8	8.2	8.1
24	Administration Information Sharing Center	8.7	8.8	7.3	6.0	7.7
25	National Identification (N-ID)	9.8	9.7	8.8	5.3	8.4

1.6 Portfolio Analysis

For the portfolio analysis, each project was scored based on the evaluation criteria, and its result was first marked on the importance table per each project and grouping was conducted. Then, the feasibility score, which is the second evaluation criteria, was determined to evaluate what is important and possible per each project and it was reflected on the roadmap.

In the figure below, four projects such National Identification (25), Government Data Center (16), and National IT Standard Framework (1) have high scores in terms of emergency and effect/impact, putting them the 1st priority group.

<Figure 84: Project Importance Evaluation>



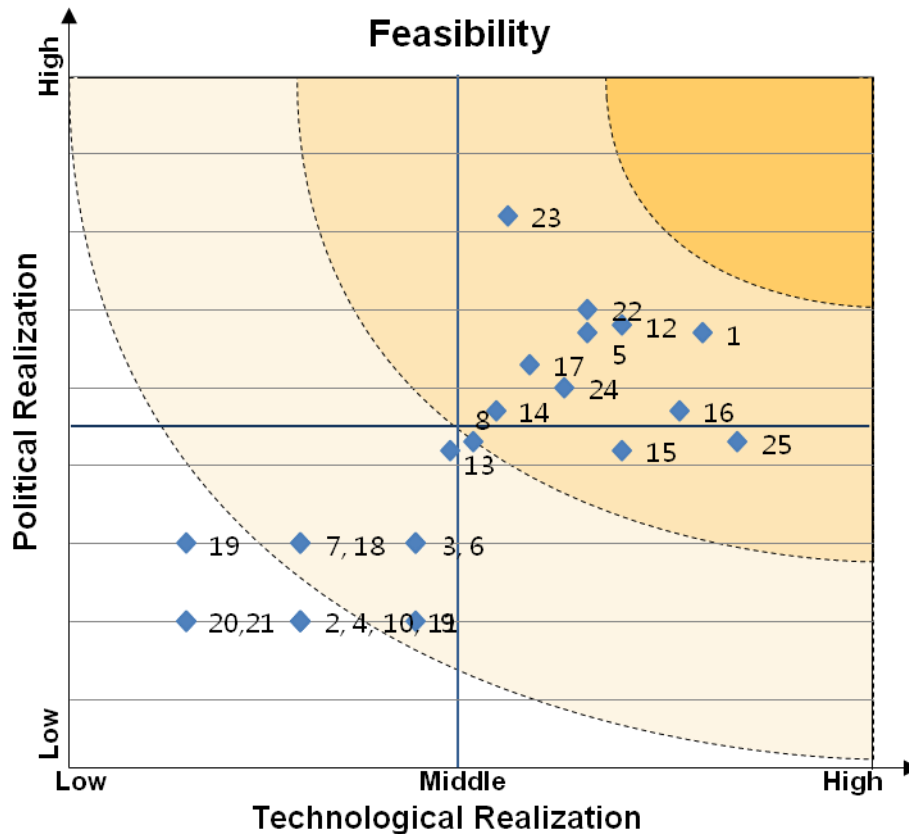
1.6.2 Project Portfolio Analysis – Feasibility

The projects were evaluated upon feasibility. The feasibility indicators of each project were classified by detailed indicators of technological realization and political realization.

If a project is technically feasible but there is no political foundation to support the project, it is difficult to implement the project, and it is the same the other way round. Thus, in the feasibility analysis, National Identification(25) project ranked the highest in technological realization, and PKI(23) ranked the highest in

political realization. Although the majority of projects ranked high in technological realization, most projects scored low in the political realization. This implies that although projects maybe technically feasible and important, the supporting legislature and regulations to successfully implement and use the services are limited.

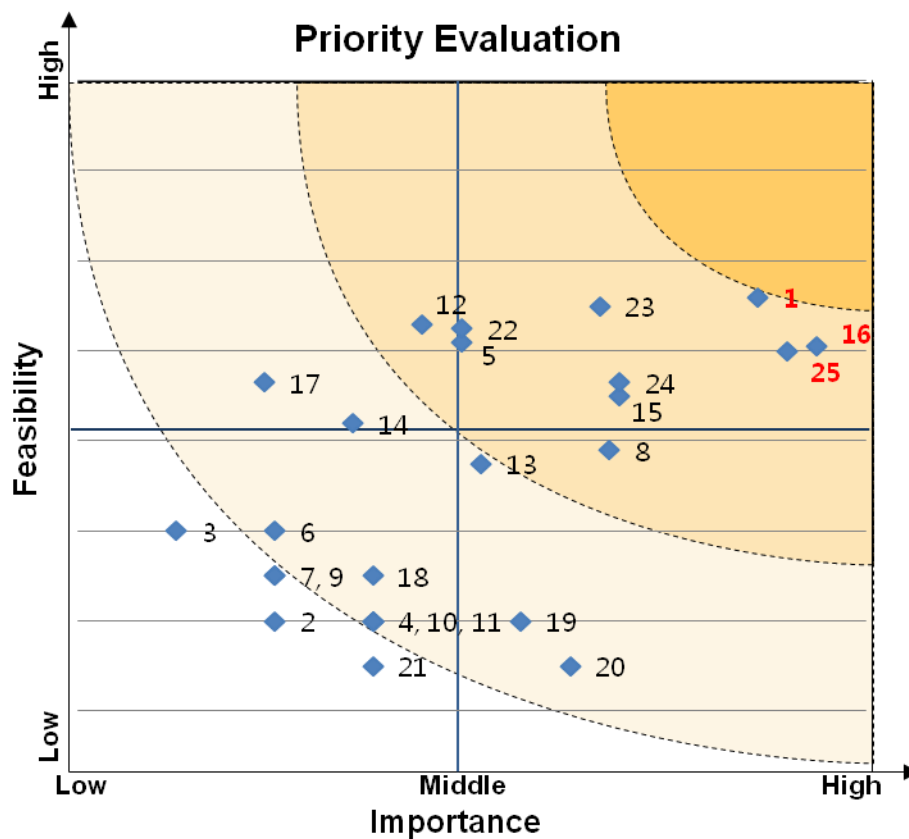
<Figure 85: Project Feasibility Evaluation>



1.6.3 Project Portfolio Analysis – Final Analysis

The consolidated results took the average of the feasibility and the importance to visually display the prioritization of the projects. For the final results of consolidated project priority, three projects fell in the high priority range, National IT Standard Framework(1), Government Data Center(16), National Identification(25).

<Figure 86: Consolidated Project Priority Results>



<Table 65> ranks the different projects into implementation stages according to their prioritization score, and categorizes the top 13 projects into their relevant phase proposed in the action plan.

<Table 66: Consolidated Project Priority Results>

Phase	No.	PROJECT	Service Type	Score
Phase 1 Base establishment	1	National IT Standard Framework	Infrastructure	8.5
	25	National Identification (N-ID)	G2G	8.4
	16	Government Data Center	Infrastructure	8.3
	23	PKI	Infrastructure	8.1
	24	Administration Information Sharing Center	Infrastructure	7.7
Phase 2 Enhancement of Service	15	Electronic Procurement System	G2B	7.6
	22	National Finance Information System (NAFIS)	G2G	7.6
	5	Single Window for Online Business Service	G2B	7.5
	12	Government Representative Portal	G4C	7.5
	8	Government Work Management System	G2G	7.3
	13	Groupware (e-Document, e-Approval, Knowledge Management System)	G2G	6.9
	14	Digital Archiving	G2G	6.8
	17	Online Citizen Participation Portal	G4C	6.8
N/A	19	Informatization of City/Province Administration	G2G	6.125
	6	Government Business Reference Model (BRM)	G2G	6
	18	Integrated Civil Service Call Center	G4C	6
	20	e-Foreign Affairs	G2G	6
	3	Recruitment and Employment Information System	G4C	5.75
	4	National Medical and Health Information System	G4C	5.75
	7	Architectural Administration Information System	G2G	5.75
	9	Customs Information System	G2B	5.75
	10	National Integrated Logistics	G2B	5.75
	11	Electronic International Trading System	G2B	5.75
	2	e-Learning	G4C	5.5
	21	e-National Assembly	G2G	5.5

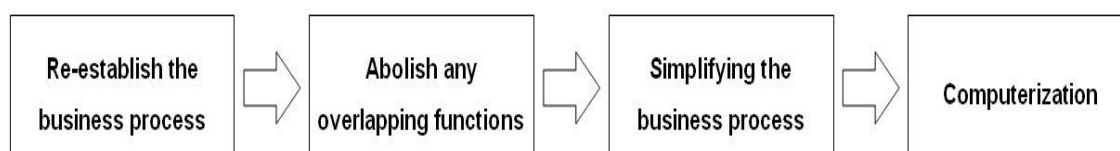
1.7 Implementation Strategy of Project

So far, vision and mission needed to efficiently establish the e-Government in Uganda were formulated, and strategies and projects required to achieve them were also identified. Based on these, project priorities were determined to create a plan that is actually executable.

Here, strategies needed in actually implementing projects were established so that any problems that may arise during the execution of projects can be minimized and that projects can be implemented continuously to achieve the target as planned.

Following strategies were devised based on lessons learned from the analysis on Uganda's current e-Government status and benchmarking in the Chapter 2. Their objectives are to provide the foundation needed for Uganda to continuously pursue the e-Government master plan.

<Figure 87: Process of Computerization>



First is maximizing the effect of informatization through the process innovation:

- Computerization of existing processes merely automates processes without giving any other effects
- Before computerization of processes, business processes need to be realigned to eliminate unnecessary processes, which can increase work productivity. Also, any overlapping functions among government departments or agencies should be abolished to bring greater efficiency in administrative processes
- In particular, unnecessary processes should be clearly eliminated to streamline processes before realizing computerization. Only then, the true e-Government that delivers efficient and prompt administrative services can be realized

Second is introduction of the project implementation and management structure:

- Introduce the system of assigning goals and giving awards to the project owner and the project executing organization
- Create the e-Government arbitration committee to arrange and implement the pan-governmental project
- Implement the project deliberation system to prevent overlapping investments
- Conduct regular inspection and reporting on project implementation

Third is promotion of the IT industry through the e-Government:

- Develop and apply cutting-edge ICT technologies in the e-Government project

- Expand participations by domestic IT businesses through the government's continuous efforts to develop ICT projects
- Expand technologies accumulated through e-Government project into the private sector IT projects

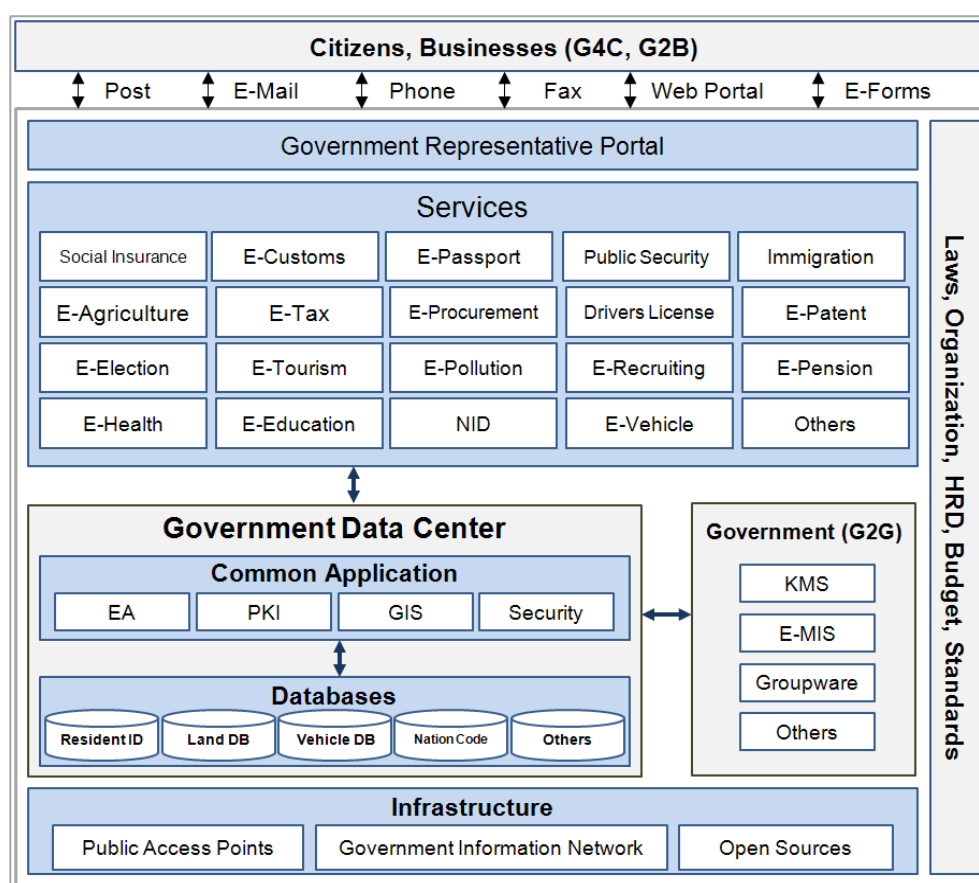
These implementation strategies should have the objectives to: deliver convenience in administrative services for citizens and enhance national competitiveness through more efficient administrative process by effectively and continuously executing the Uganda's e-Government; facilitate employment through promotion of the domestic IT industry; diversify profit structure through expansion of the cutting-edge industry; and ultimately, improve the average living standards of the people.

1.8. e-Government Roadmap

The results from the assessment above are summarized into the roadmap below according to each stage, so that it can help Uganda establish the e-Government in a realistic and efficient manner and jump to the 2nd stage of e-Government model by 2015.

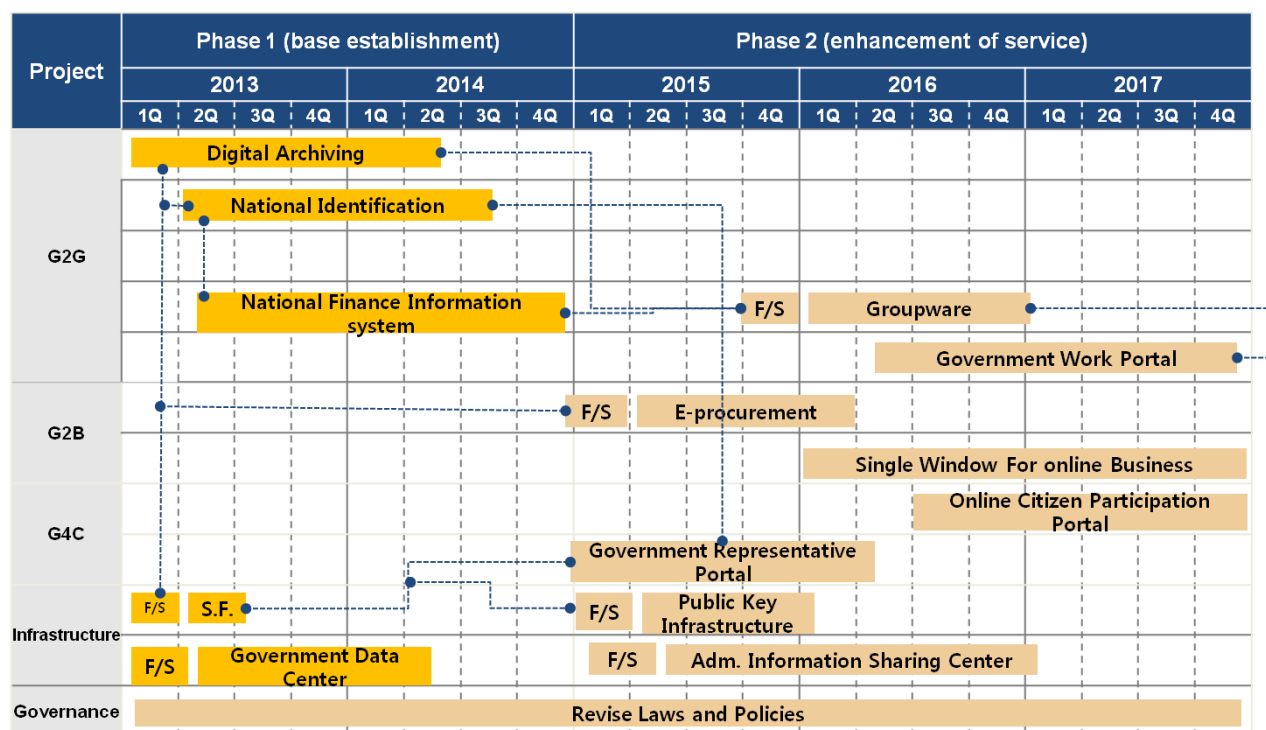
First of all, goals and strategies for each sector of e-Government project and projects to achieve them are as follows:

<Figure 88: Roadmap of e-Government>



Its priorities and schedule are based on the five year plan as is shown below:

<Figure 89: Timeline for the Roadmap of e-Government>



(S.F.: IT Standard Framework)

Following detailed roadmap is drawn up with detailed phases for each project in the G4C, G2B, G2G, and Infrastructure sectors, according to the entire project schedule above. Governance is an essential dimension to e-Government, and activities should continuously be developed to absorb and manage the change required in all e-Government initiatives

In the G4C sector, Government Representative Portal and Online Citizen Participation Portal are implemented in phase 2. Also, all projects should go through the BPR/ISP stage, so that the project can be executed in a more efficient and systematic manner.

In the G2B sector, e-Procurement and the Single Window for Business Service are both selected in phase 2. Once the computerization is realized within the government and the ICT infrastructure is expanded, more effective ways to support businesses can be devised.

In the G2G sector, National Identification system, National Finance Information System, Government Work Portal are all executed in phase 1. In the second phase, Groupware and Digital Archiving are implemented.

In the infrastructure sector, National IT standard framework and Government Data Center are implemented in first phase and PKI and Administration Information Sharing Center is implemented in phase 2.

In addition to the projects, creation of the executing body, introduction of laws/institutions, ICT training, standardization etc. should be implemented in the first phase to support other projects and to establish the e-Government more efficiently

Detailed plans such as tasks, schedules and budgets are specified separately for those projects to be executed in phase 1 as marked in the detailed roadmap.

When the actual project is carried out according to this roadmap, Uganda will be able to achieve the level of e-Government as it initially aimed. In order to realize the e-Government, not only the implementation of target projects is required, but also the creation of the e-Government organization, preparation of laws/system, training of ICT personnel and securing budget as described in the evaluation criteria above are essential. Through these, technical and systematic feasibility can be enhanced.

In order to create an environment where the e-Government project can be executed smoothly, Uganda needs to make the following preparations as identified in the benchmarking studies.

2. Legal Framework

Across the world, paper documents are being converted to digital documents and more services are processed through computer such as conducting administrative work online. Uganda has also adopted electronic system where civil application forms are downloadable from the government websites. Growing usage of computer will soon evolve the working process to become more efficient where citizens would use their computer to access government websites and get things done directly.

This kind of changes in working method however cannot be expanded without justifying the reason for adoption to the users. It also requires the government to establish a systematic foundation to accelerate the change. The government should thereby build the groundwork to nurture domestic ICT industry and provide convenient administrative services for civil applicants who would no longer have to visit administrative bodies in person. This is also the objective of the e-Government. However to justify the cause, it is first necessary to institutionalize and reform related legal framework.

This Chapter will state the legal framework which will be the systematic foundation necessary for creating e-Government of Uganda. Legal framework has been drawn from the analysis of Ugandan legal framework status and benchmarking studies in Chapter 2

Only the system and basic contents that should be included in the law and ordinance will be stated here because the details should be adjusted to fit the circumstances of Uganda.

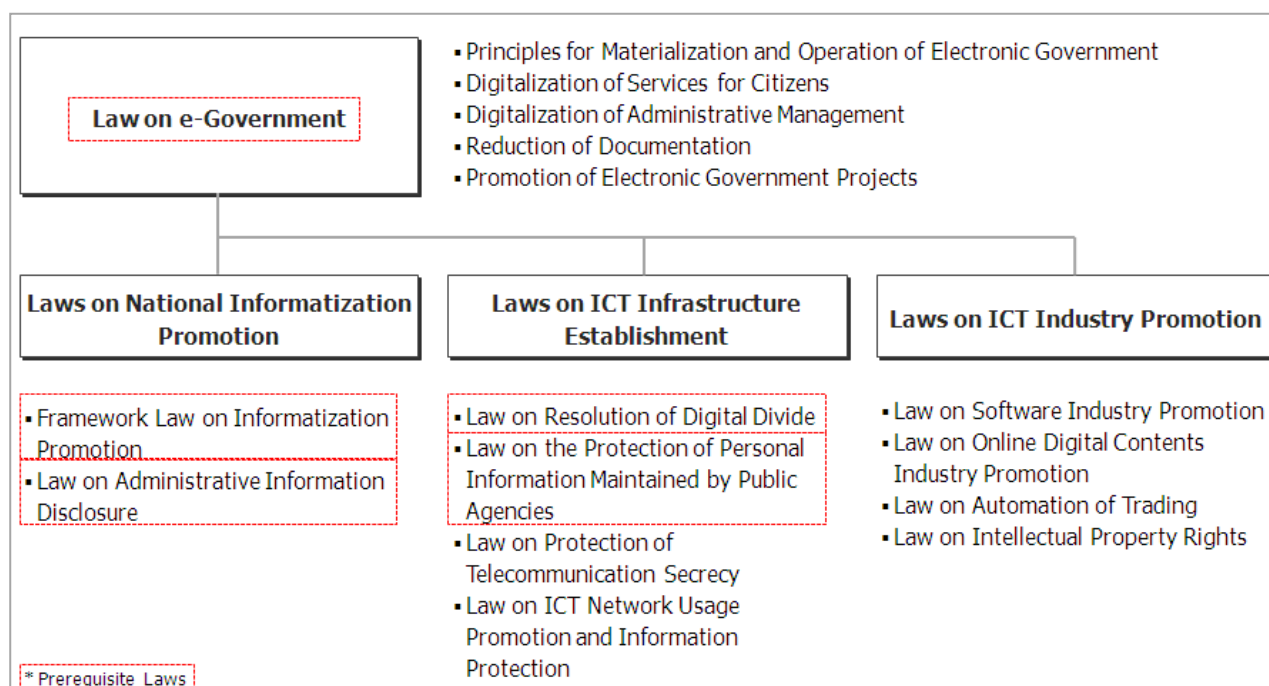
2.1 To-Be Model

Through status analysis and benchmarking studies, it has been found that there are 1 Law and 3 categories of legal framework which Uganda needs to institutionalize in order to effectively establish the e-Government and promote ICT industry. They are Law on e-Government and Laws on National

Informatization Promotion, Laws on ICT Infrastructure Establishment, and Laws on ICT Industry Promotion.

Responsibility of enacting the prerequisite laws related to e-Government depends on R&R of each ministry. The laws related to one or more ministries should be enacted by the ministry which is arbitrated by e-Government steering committee.

<Figure 90: Ugandan Legal Framework for e-Government>



2.1.1 Law on e-Government

Without law on e-Government, when it comes to the legal ground for administrative affairs, many laws such as Administrative Procedure Act, Government Record Act, and etc. regulated e-Government related affairs but were not enough because they are offline-based laws. To solve the problem, law on e-Government must be enacted.

The goal of the law is to facilitate projects to realize e-Government by defining basic principles, procedures and implementation methods, and to raise quality of life in the era of knowledge and information by enhancing productivity, transparency, and democratic quality of administrative organizations, linking projects to carry out administrative innovation and to realize e-Government, Innovation of work procedure for informatization, task execution and service delivery through information and communication network, identification of citizen's complaints about operation of e-Government and quick improvements.

To achieve the above goal, the following should be included and details are depicted in prerequisite laws.

- Principles for Materialization and Operation of Electronic Government
- Digitalization of Services for Citizens
- Digitalization of Administrative Management
- Reduction of Documentation
- Promotion of Electronic Government Projects

2.1.2 Laws on National Informatization Promotion

In order to carry out e-Government and informatization project in an efficient and consistent manner, the following laws must be enacted to build the supporting legal framework that would integrate scattered informatization services within the government and promote informatization of government and private sector.

- Framework Law on Informatization Promotion
 - Law to improve the quality of life for the nation and to contribute to the development of the national economy, thereby promoting the informatization and laying the foundation for the information and communications industry and achieving the advanced information and communications industry infrastructure
- Law on Administrative Information Disclosure
 - Law to ensure the people's rights to know and to secure the people's participation in state affairs and the transparency of the operation of state affairs by prescribing necessary matters concerning the people's claims for the disclosure of information kept and controlled by public institutions and the obligations of public institutions to disclose such information.

2.1.3 Laws on ICT Infrastructure Establishment

To promote national informatization efforts, issues that arise in the process of informatization should be solved systematically such as the gap between rural and urban district, leakage of personal information, invasion of telecommunication network, identification theft on the Internet. These kinds of issues could become a major roadblock for building an e-Government. Therefore, these problems should be solved systematically to secure safety and earn credibility for effective settlement of e-Government in Uganda. The following laws should be enacted to resolve such issues.

- Law on Resolution of Digital Divide
 - Law to increase the living standards and achieve balanced development by providing ICT access to those with limited access for economic, regional, physical, or social reasons such as low income family, people living in fishery and farming regions, physically challenged, senior citizens and female
- Law on the Protection of Personal Information Maintained by Public Agencies
 - Law to secure the proper execution of public affairs and to further protect the rights and benefits of all citizens by the establishment of necessary guidelines concerning the protection of private information managed by computers of public agencies

- Law on Protection of Telecommunication Secrecy
 - Law to protect telecommunication secrecy and promote freedom by allowing access for only certain people and after going through strict legal procedure
- Law on ICT Network Usage Promotion and Information Protection
 - Law to enhance living standards and improve public welfare by building the foundation for informatization society through promotion of ICT network usage and protection of telecommunication service users

2.1.4 Laws on ICT Industry Promotion

Launch of e-Government is ultimately for the development of the nation and wellbeing of its citizens. By promoting the ICT industry, more job opportunities will be created, which will increase the living standards and ultimately contribute to the growth of economy from export of accumulated knowledge. To achieve the above objective, legal framework to promote ICT industry must be enacted. The following are the necessary laws.

- Law on Software Industry Promotion
 - Law to increase living standards and achieve economic growth by building the foundation for S/W industry development and enhancing its competency
- Law on Online Digital Contents Industry Promotion
 - Law to increase living standards and achieve economic growth by building the foundation for online digital contents industry and enhancing its competency
- Law on Automation of Trading
 - Law to enhance industrial competency and promote economic growth by automating trading process which will simplify its process, speed up circulation of trading information, cut lead time and cost
- Law on Intellectual Property Rights
 - Law for the protection of intellectual creation of human that has value such as literature, art, music, play, published material, database and computer program. The specific laws enacted to balance the profit of creator and interests of public are copyright law, patent law, utility model law, design law, and trademark law

2.2 Prerequisite Laws

Laws reforms are the key task to undertake in order to successfully achieve the e-Government. Offline oriented laws and systems will inevitably become an obstacle. Therefore, the following laws should be reviewed before any other ICT laws in order to create an e-Government with strong systematic foundation.

Schedule for legislation of prerequisite laws defined above are depending on implementation of e-Government projects related to each law. Therefore the order of legislation is Law on e-Government first, and then, Framework law on Informatization Promotion, Law on the Protection of Personal Information Maintained by Public Agencies, Law on Administrative Information Disclosure, Law on Resolution of Digital Divide, and Role and Responsibility of ICT Organization.

2.2.1 Law on e-Government details

The following should be included in the law to effectively establish the e-Government.

- Principles for materialization and operation of electronic government
 - Principles of priority on citizen's convenience, prior work reforms, electronic processing, disclosure of administrative information, verification by administrative agency, sharing administrative information, protection personal information, overlapped investments, and outsourcing of development of technology and operations
- Digitalization of services for citizens
 - Electronic processing of civil petitions and electronic verification of required documentation
 - Processing of civil petitions without appearance
 - Verification of identity
 - Electronic notice or information and electronic provision of administrative information
 - Fees and electronic payment of grants and benefits
- Digitalization of administrative management
 - Preparation of electronic documents and formation of official electronic documents
 - Transmission and receipt of electronic documents and time of dispatch or arrival of electronic documents
 - Authentication of administrative digital signatures
 - Sharing administrative information, procedure for sharing administrative information, sharing administrative information with public agencies, and duties of persons handling and using administrative information
 - Management of administrative knowledge and re-design of work processes of administrative agencies
 - Standardization
 - Establishment of information and communications networks
 - Establishment and implementation of security measures for information and communications networks
 - Convergence of opinions through information and communications network
 - Electronic performance of work and online remote service
 - Improvement of public official's ability to utilize information and communications technologies and remote education and training
- Reduction of documentation
 - Reduction of paper documents and plans for reduction of documentation
 - Establishment and implementation of execution plans
 - Public announcement of results of reduction and committee on reduction of documentation
- Promotion of electronic government projects
 - Establishment of medium-and long-term plans for electronic government projects and support for electronic government projects
 - Prior consultations about electronic government projects
 - Evaluation of performance

- Diffusion and proliferation of informatization system

2.2.2 Framework law on Informatization Promotion

The following should be included in the law to promote informatization, create the foundation for ICT industry and consolidate the ICT foundation.

- Formulation of plans for promotion of informatization, etc. and promotion system
 - Formulation of basic Plan, implementation plan, and adjustment of policy of informatization promotion
 - Creation of informatization promotion committee and appointments of officials in charge of informatization, etc.
- Promotion of informatization for state and society
 - Promotion of public informatization and dissemination of information culture
 - Establishment of sound information and communications ethics
- Laying foundation for information and communications industry
 - Promotion of standardization of information and communications
 - Training of information and communications manpower
 - Creation of information and communications industrial complex
 - Assistance for new and superb information and communications technology
- Advanced infrastructure of information and communications
 - Management of super-high speed national network
- Informatization Promotion Fund
 - Creation of informatization promotion fund and manage resources, usages, and operations

2.2.3 Law on the Protection of Personal Information Maintained by Public Agencies

The following should be included to prevent illegal usage and dissemination of personal information, protect the right of information subject and encourage appropriate usage.

- Collection and management of private information
 - Collection of private information and extent of private information file possession
 - Advanced notification and public announcement of private information files
 - Preparations for private information file register and securing safety of private information
 - Restrictions on use and its tender of managed information
 - Duties of person handling private information
- Inspection and correction, etc. of private information
 - Inspection of managed information, restrictions on inspection of private information, and correction managed information
 - Request for appeal and request by proxy
- Penal provisions

2.2.4 Law on Administrative Information Disclosure

The following should be included to guarantee the right to know for the citizens, allow people to participate in state affairs, and secure transparency in national administration.

- Obligation of person requesting for information disclosure and public organization that hold the information
 - Obligation of person requesting for information disclosure and public organization that hold the information, disclosing of administrative information, writing and sharing of information index
- Information disclosure process
 - Information not to be disclosed, method for requesting disclosure, decision whether to disclose information, deliberation committee on disclosing information, notification of decision whether to disclose information, partial disclosure and electronic disclosure, cost payment
- Process to appeal for dissatisfaction
 - Objection application, administration judgment, lawsuit, request not to disclose information by 3rd party
- Information disclosure committee
 - Establish information disclosure committee, form the members, oversee the system, request for data submission, report to national assembly

2.2.5 Law on Resolution of Digital Divide

The following should be included to guarantee that everyone not only use the ICT but also can be provided administration service regardless of discrimination in the country.

- Support to educate the rural area including senior citizens and female
- Support to expand the Internet access in remote and isolated area
- Strategy of expansion of communication network facility
- Strategy to support the telecommunication fare

2.2.6 Role and Responsibility

Although the role and responsibilities of government agencies should be stipulated in national laws and decrees, the role and responsibility of ICT organization described in next chapter should be legislated by the national leader in order to propel the e-Government initiatives continuously regardless of regime change.

- The e-Government Steering Committee and e-Government Agency should be independent institutions for efficient execute the e-Government initiatives
- The roles and responsibilities of the e-Government institutions are depicted next chapter

3. Institutional Framework

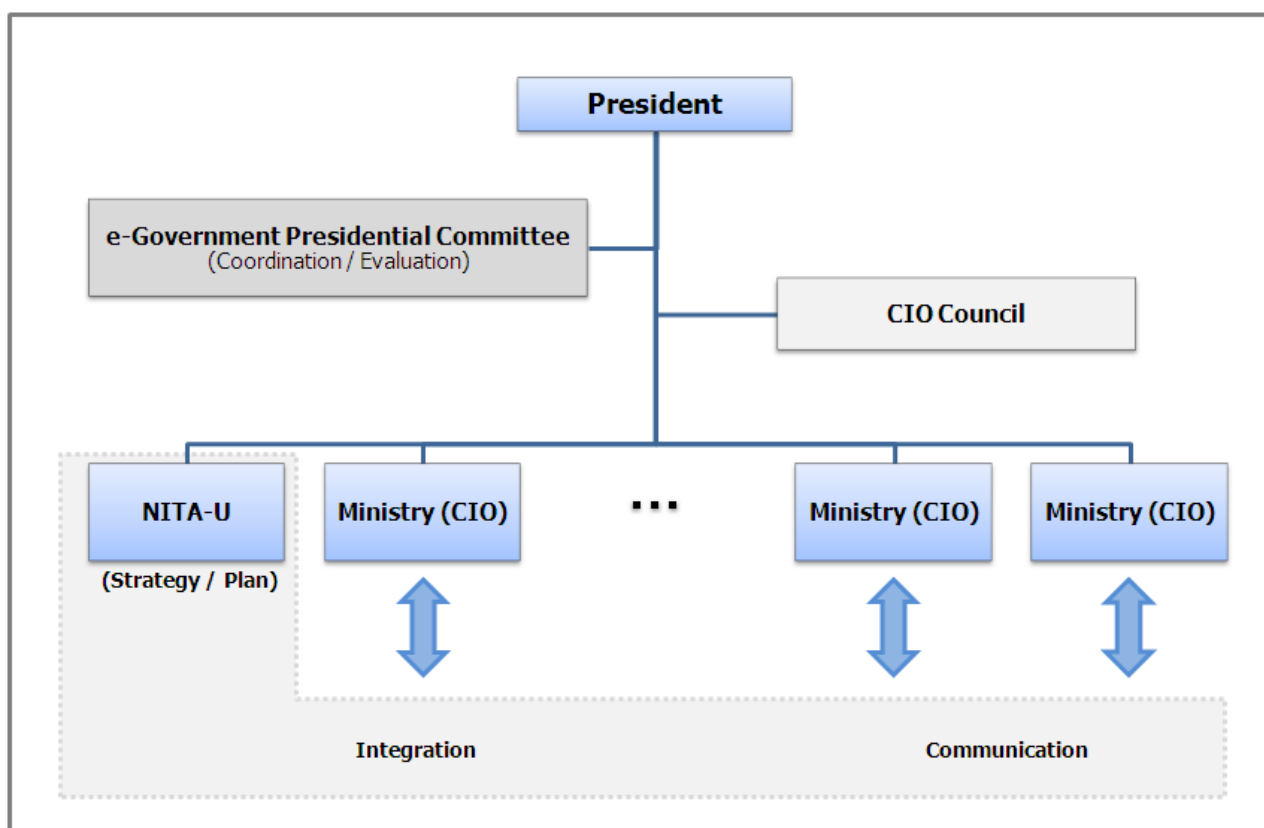
3.1 Institutional Framework Model

In Chapter 2, based on status review and benchmarking studies of countries with advanced ICT organization, Uganda should first create organizing bodies that can effectively build the e-Government of Uganda. It will require establishment of e-Government presidential committee under the supervision of the head of state. Also it will require establishment of a CIO Council which will consist of CIO's from each of the ministries. NITA-U's role will be to plan, communicate and integrate the e-Government strategy

The e-Government presidential committee can be the expanded organization of the Ministry of Information, Communication, and Technology (MoICT). This committee should establish the vision for Uganda's e-Government, establish, execute, and evaluate national ICT policy in order to prevent redundant investment and conduct national informatization projects in an efficient and consistent manner.

The role of executing e-Government projects within public institutions should be clearly defined to undertake full responsibility by the designated CIO. The ICT organization will be composed of the following. A government-wide reorganization might be reconsidered for efficiency and effectiveness.

<Figure 91: Institutional Framework To-Be Structure>



3.2. Roles and Responsibilities

Detailed roles and responsibilities (R&R) of each government institutions in pursuing the e-Government are as follows:

3.2.1. President

- Strong leadership and ownership for implementing e-Government
- Clarifying of roles and responsibilities

3.2.2. e-Government Presidential Committee

- Establishing vision and goal of e-Government
- Basic planning for e-Government
- Selecting project and operating multi-ministries related projects and nation-wide key projects
- Appropriately distributing budget and human resources for e-Government
- Building favorable law and regulations for e-Government
- Monitoring and evaluating each e-Government project
- Developing basic plans of government-wide common infrastructure
- Committee should consists of about 10 ICT experts from industry and academia, about 15 secretaries of ministries and under 20 ICT staff and general management staff from ministries

3.2.3. CIO Council

- Organizing e-Government executive organization and participation
- Monitoring projects operated by the institution
- Supporting the project management and supervision, evaluating results and conducting publicity activities
- Supporting the distribution and proliferation of developed services
- Preparing and submitting periodic report on the plan and programs operated to the presidential committee
- Performing with regards to the guidelines of the ICT standards
- Developing and implementing HRD program for ICT

3.2.4. NITA-U

- Responsibility for making strategy and planning Uganda's e-Government
- Making the national framework plan on ICT promotion in both public and private sectors
- Coordinating and mobilizing project with related ministries
- Determining and setting technical standard and certifying network equipment
- Managing communication licenses
- Planning and establishing a nation-wide information infrastructure
- Approving and monitoring tariffs of dominant operators in the market

- Contacting and working with international organizations and institutions related to communications and information

3.2.5. Ministries

- Designating a CIO, an executive cross functional officer of the ministry and CIO e-Government development Council
- Planning and executing the ministry's e-Government plan
- Redesigning current government service process to fit the e-Government
- Collaborating with other ministries to create efficient government administration
- Revising of laws and regulations for e-Government at the ministry level
- Supporting government administration for e-Government implementation, such as organizing and publicizing
- Planning, adjusting and reviewing the autonomous tasks of government agencies

4. Budget Planning

One important factor to successfully execute e-Government projects is securing the budget. There are many methods of securing budget from AFDB, World Bank and developed countries such as ODA, securing capital through tax collection and fund raising, and financing through financial companies.

Methods for Uganda to secure budget will be stated below, and the appropriate measures can be selected depending on the characteristics and period of the project.

When Korea was at the initial stage to introduce e-Government, the country has secured its budgets by selling its Frequency, IP, URL, etc. to the private telecommunication business operators to establish telecommunication network. The biggest problem that Uganda is currently facing is to find out a source of revenue to secure ICT budget. By utilizing the Korean case, selling IT resources is one of the ways to secure budget for ICT of the nation

4.1 Method of securing ICT budget at the initial stage of developing Korea's e-Government

In 1991, Korea established Law on the ICT Research and Development, and then on 1st January, 1993 Information and Communications Fund carried out based on the law. Through the fund, Korea had own methods to promote the National Information.

After that, in 1995, Korea has established Law on Informatisation Promotion, and then from 1996, Informatisation Promotion Fund carried out based on the law to accelerate national informatisation.

There are many ways to raise the Informatisation Promotion Fund:

- Government contributions or loans
- Contributions by key telecommunications business operator pursuant to provisions of the Communications Act

- Revenues accruing from the fund operation
- Loans and other revenues
- etc.

The most important feature of the Informatisation Promotion Fund is that the statutory charges of the key telecommunications business operators comprise a large part of the Fund.

Look at the Informatisation Promotion Fund in 2004 accelerated e-Government promotion in Korea, the statutory charges of the key telecommunication business operators accounted for 10% (about \$220 million) of the entire fund.

Informatisation Promotion Fund has been used in the project on training of ICT human resources, project on the construction and utilization of super-high speed information and communications infrastructure, project on the informatisation promotion in various areas such as public·local·industry·life, project on the construction of the basis for ICT industry, and project on ICT R&D.

4.2 Domestic Efforts

4.2.1 Fund raising

Countries that have already built the e-Government have installed policies to raise exclusive fund for the promotion of ICT industry. For example, Korea raised information technology promotion fund to aggressively build national information infrastructure and computerize administrative work.

In order for Uganda to promote ICT industry and smoothly establish e-Government, financial resource or funds should first be secured. There are many ways to raise funds such as securing special budget of the government, selling government owned bandwidth to private companies for their business, or asking for donations from private companies who wins IT business rights such as being the wireless career.

The informatization promotion fund should be used for R&D of ICT, development, installment and distribution of ICT standards, training of ICT personnel, and projects to establish the foundation for ICT industry. The fund should be operated by the key government body of ICT such as NITA-U

The Uganda government should enact law regarding fund operation in order to prevent misuse, promote national informatization by expanding ICT infrastructure, and ultimately make ICT industry the new growth engine of the country.

4.2.2. Special Purpose Tax

Other than fund raising to promote informatization, special purpose tax could be imposed for certain period to secure budget for promoting informatization and realizing the e-Government. In other words, this special purpose tax should be levied on ICT businesses or import/sales of related facilities, but the economic environment of Uganda should first be considered. The fund raised through tax collection can be used for its original purpose of purchasing ICT facility and expanding its infrastructure. This method should also be backed by legal regulations so that tax levy and usage of collected tax would be transparent.

4.3. ODA (Official Development Assistance)

Uganda may secure budget not just within the country but also outside of Uganda. One method of raising fund is through ODA (Official Development Assistance).

OECD Development Assistance Committee (DAC) is composed of central/regional government, government agency or public organization of granting countries, which grants loans, donations and technology support to developing countries or international organization for economic development and improved welfare.

4.3.1. Bilateral ODA

Assisting country supports beneficiary country (developing country) directly by providing assistance fund or commodity goods free of charge or with compensation.

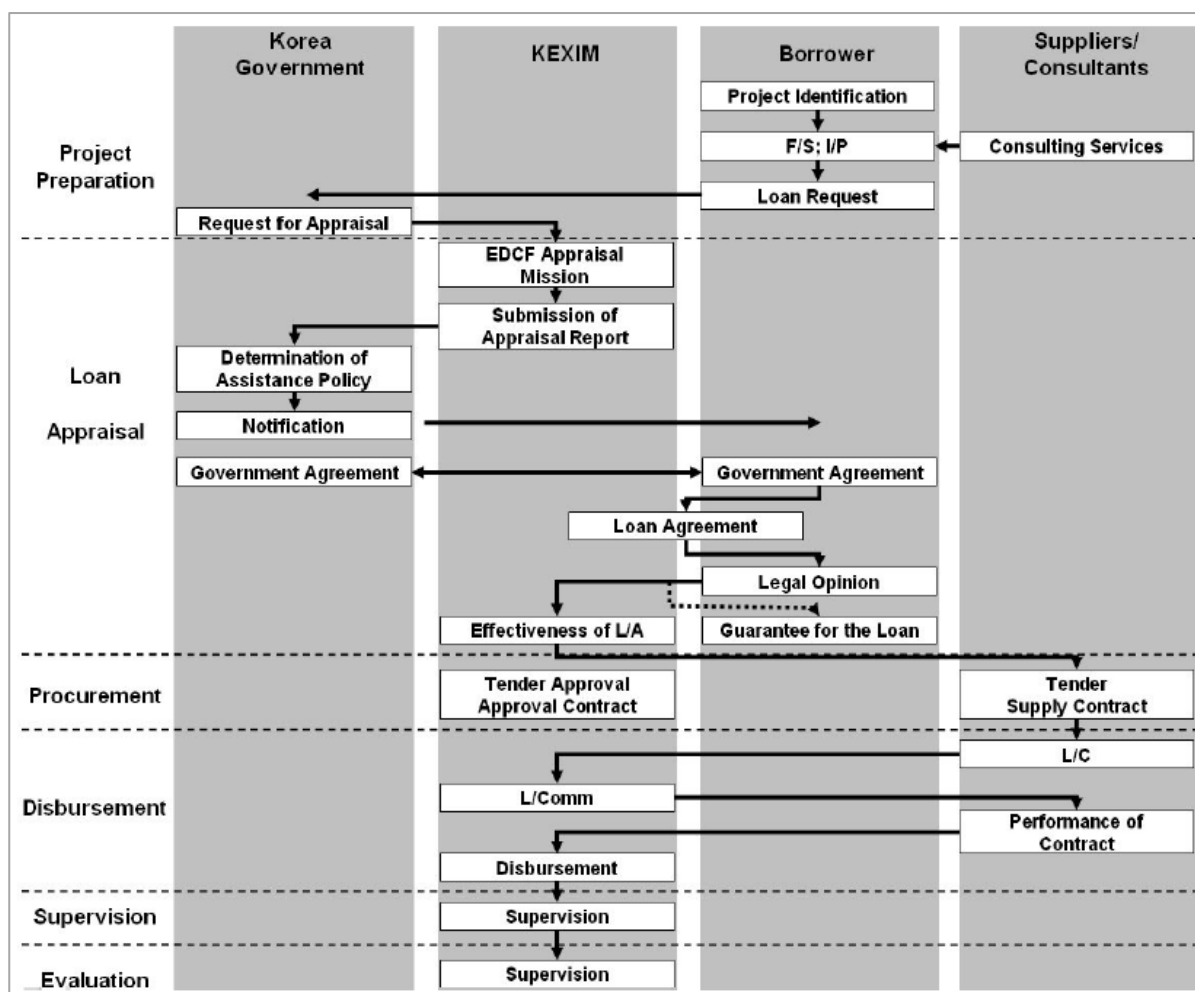
- Free grant: Beneficiary country is granted with cash or goods without any financial obligation. In other words, developing country does not have the obligation to pay back.
 - e.g. Technology support, food assistance, disaster relief, etc.
- Grant with compensation: Beneficiary country is granted with cash or goods with financial obligation. In other words, developing countries must fulfill their obligation to pay back the granted fund
 - e.g. Assistance in public development program or business of developing countries

4.3.1.1. EDCF (Economic Development Cooperation Fund)

EDCF is a bilateral ODA loan program to help developing countries spurt industrial growth and improve economic stability, as well as encourage development of a sound economic relationship between Korea and other countries. In terms of economic infrastructure assistance, among other fields, EDCF has emphasized the importance of reducing the “digital divide” by seeking ways to assist developing countries in their development of the information technology (IT) industry.

- Loan Procedures
 - Loans to foreign governments are granted in accordance with a standard procedure, which starts with project identification then proceeds to preparation, appraisal, loan negotiation, loan agreement, project implementation and supervision, and ends with the evaluation of completed projects
- Terms and Conditions for EDCF Loans
 - Loan Amount: Up to 80% of the total project cost
 - Interest Rate: 0.5% ~ 3.0%
 - Repayment Period: Up to 30 years, including a maximum 10 year grace period
 - Denomination: Korean Won

<Figure 92: Loan Procedure Chart of EDCF>



4.3.1.2. OECF (Fund granted by JBIC)

OECF refers to loan granted by Japan to developing countries since 1961 or the organization in charge of the fund. The fund was granted with the objective to promote cooperation with global economy by contributing to industrial growth and economic stabilization of developing countries.

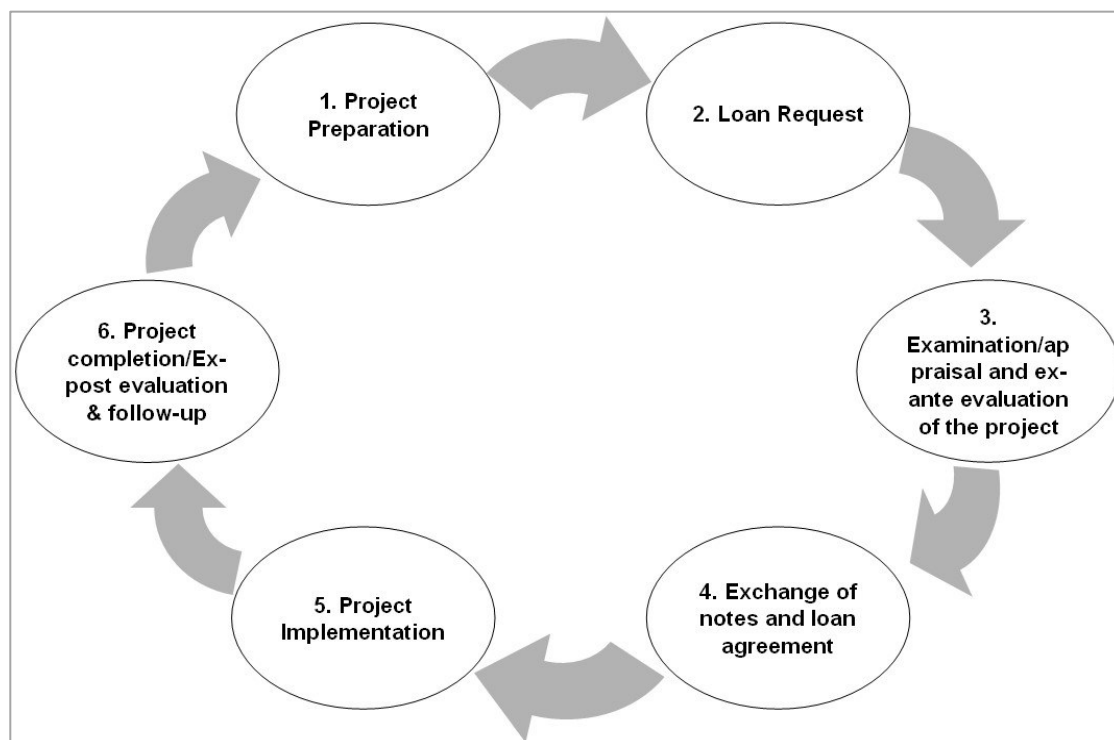
The major usage of OECF are credit financing for government agencies of developing countries or financing loans to Japanese or local companies doing business in developing countries.

The OECF provides long-term, low interest loans and/or takes equity in significant private sector projects which are linked to the fulfillment of its objectives.

- Project Cycle of ODA Loans
 - ODA loans follow six steps. Lessons learned from the ex-post evaluation in the final stage will be fed back to the first stage of project preparation. This flow of steps is the project cycle
- Terms and Conditions for OECF Loans (In case of least developed countries)

- Interest Rate (General Terms) : 0.65% ~ 0.80%
- Repayment Period (General Terms) : Up to 30years, including a maximum 10 year grace period.

<Figure 93: Project Cycle of OECF>



4.3.1.3. USAID (U.S. Agency for International Development)

USAID is an independent federal government agency that receives overall foreign policy guidance from the Secretary of State. USAID supports long-term and equitable economic growth and advances U.S. foreign policy objectives by supporting:

- Economic growth, agriculture and trade
- Global health
- Democracy, conflict prevention and humanitarian assistance

4.3.2 Multilateral ODA

Assisting countries indirectly support the beneficiary countries through financing or donations (contributions) from international development organization such as the World Bank, AfDB, UNDP etc. or through concessional loans of international bodies.

4.3.2.1. AfDB (African Development Bank)

AfDB provides financing for projects that will effectively contribute to economic and social development of the country concerned and have the strongest poverty reduction impact in conformity with the country

and AfDB strategies. Project identification may require the help of outside experts, especially in smaller and less developed DMCs (developing member countries). If so, AfDB can provide technical assistance to help a country identify and prepare a project for possible financing.

- Project Cycle
 - The various stages from country programming to project completion and evaluation are known collectively as AfDB's project cycle
 - The documents produced are disclosed according to specific disclosure requirements and criteria for confidentiality under the new Public Communications Policy (PCP)
- Terms and Conditions for AfDF Loans
 - Interest Rate : 1% ~ 1.5%
 - Repayment Period (Project Loans) : Up to 32 years, including a maximum 10 year grace period

4.3.2.2. World Bank

The World Bank is a vital source of financial and technical assistance to developing countries around the world. It is made up of two unique development institutions owned by 184 member countries—the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). Each institution plays a different but supportive role in our mission of global poverty reduction and the improvement of living standards. The IBRD focuses on middle income and creditworthy poor countries, while IDA focuses on the poorest countries in the world. Together they provide low-interest loans, interest-free credit and grants to developing countries for education, health, infrastructure, communications and many other purposes.

- Project Cycle
 - Projects range across the economic and social spectrum in these countries from infrastructure, to education, to health, to government financial management
 - The projects of the Bank finances are conceived and supervised according to a well-documented project cycle. Documents produced as part of the project cycle can be valuable sources of information for interested stakeholders wanting to keep abreast of the work. The Bank is financing for businesses wishing to participate in Bank-financed projects

5. Human Resource Development

Human resource development (HRD) is an essential element for successful implementation of e-Government. As already explained in the e-Government requirements analysis in Chapter 2, expansion of education opportunity was found to be a priority in the successful implementation of e-Government as well as one of the biggest obstacles faced by Uganda in introducing e-Government (40% of civil servant have experience in receiving education while citizens, civil servants and businesses all agree that “Expansion of Education Opportunity” should be priority in creating e-Government).

In HRD, broad range of targets, such as public servants, citizens and students, should be taken into account. In particular, education for married women, people living in the rural area and the disabled, who have relatively fewer opportunities to get training on how to use a computer, should be included.

By utilizing the Informatization Promotion Fund, ICT trainings should be facilitated, computer literacy should be improved and the digital divide should be narrowed.

To achieve these goals, Uganda should:

- Introduce a computer-related curriculum for the secondary education and above
- Introduce an internationally certified ICT Certificate
- Introduce a training program to develop ICT experts
- Expand the provision of e-learning
- Conduct ICT training on public servants according to their level and improve computer literacy
- Establish ICT-related departments at universities and provide supports
- Introduce programs for the elderly, housewives and handicapped people
- Introduce the Informatization Village and improve computer literacy

Through the execution of the above, the impacts will be:

- Improvement of computer literacy
- Increase the need of computer utilization
- Foster the ICT industry
- Improve the abilities of operation
- Standardization of operating equipment
- Bridging digital divide through e-learning and informatization village
- Increase ICT-related human resource
- Improve quality of ICT curricula
- Eradicate computer illiteracy

For example, the environment should be formed so that women can take formal education equal to the men, which will eradicate illiteracy gap between genders. Also, central/local government should open computer' lectures to women and the handicapped in telecenters, schools and village offices.

In general, courses on informatization are comprised of: basic IT course that teaches the basics of computer; developer course on how to develop a system; system administration course for system introduction and for system operation managers; multimedia specialist course; and mastery course.

To develop the ICT resources, Uganda has to introduce the following type of step-by-step ICT training courses:

- Basic IT courses for regional residents, students, public staff, etc.

- Basic computing course
- Microsoft Word/Excel/PowerPoint
 - Homepage making
 - Developer Courses
- Web programming course
- Web design course
- Java programming course
- C programming course
- Visual C++ professional course
- Fundamental of SQL
- Mobile programming course
 - System Administrator Courses
- Internet courses
- Security courses
- Windows 2000 administrator courses
- CCNA course
- Linux/Unix course
- System programming course
- MS-SQL server course
- Oracle database course
 - Multimedia Specialist Courses
- Graphics and publishing design course
- Flash course
- Auto CAD course
- Animation course
 - Mastery Courses
- Security master course
- PC master course
- Network master course
- Web master course
 - e-Government courses
- National informatization CIO course
- National informatization expert course
- e-Government course
- Telecommunication policy course
- National informatization policy course

To accomplish the fast implementation of Uganda's e-Government, the internal process of the government must be computerized. For this, the issue of educating the civil servants responsible for each government process is important. For the quick adaptation of the civil servants to the computerization, the following strategy should be utilized.

- Stage by stage implementation of the education system
- Provide basic IT education for all the civil servants by distributing PCs
- Increase IT specialists through IT education matching each specialized process
- Increase IT literacy rate by educating in stages
 - Implementation of Chief Information Officer (CIO) system
 - Promotion and Compensation system linked to the IT education and its outcome
 - Increased usage of computer
- Limit use of paper where computer has been distributed
 - Implement groupware so that computer is used for exchanging electronic documents and communication

5.1. Segmented Training by Role

5.1.1. Training for Policy Makers

A training program for policy makers in e-Governance needs to be drafted and needs to be focused according to the requirements of the policy makers at the top. This may include communication of the following:

- Vision, Mission, Strategies, Policies guidelines, frameworks, roadmaps
- E-Governance Technology Architecture, framework, guidelines
- Funding Strategy
- Human Resources Strategy for project leadership, implementation, operations
- Security Policy, Framework, guidelines
- Policy on integrated services (ownership, responsibility, etc.)
- Process Reengineering
- Policies, strategies and guidelines for outsourcing of e-Government projects
- Policies and guidelines on managing content
- Policies on employment generation through e-Government
- Prioritization policy
- Policy on interoperability
- Policy on spread of access

5.1.2. Training for CIO's

A training program for CIO's (Chief Information Officer) is another issue to be addressed. This training program needs to be focused according to the requirements of the CIO's and may include the following:

- Defining the System Architecture
- Software and Hardware Policies
- Protecting Information and Resources
- Employee Privacy
- Copyright Issues
- Computer and Network Security
- Policies for Encryption
- Content for E-governance
- Optimum Utilization of computer Resources
- Telecommunication and business Laws
- Infrastructure
- Awareness: spreading the information about the Government Initiatives
- Technology Issues
- Marketing and Distribution of Services
- e-Governance initiatives in various States
- Global e-Governance Developments

5.1.3. Training for Specific Projects

There may be specific requirements for training in certain specific projects for the same IT module-training programs needs to be worked out. Such programs can be need based and outsourced when required. A few suggestive programs include:

- Decision Support and Expert Systems
- Knowledge Management and Dataware housing
- GIS
- System Analysis, Design and Development
- Evaluation of IT Projects
- DBMS
- Project Management
- Strategic Management
- Organizational Behavior and Management of Change
- Technology Management
- Creativity and Innovation
- Quality Management and Government
- Security
- ISP & BPR
- Legal Aspects
- PKI

- Payment mechanism
- Networking

The above project specific trainings may include language specific trainings that maybe required.

5.1.4. Training for Civil Servants

A basic training course for civil servants should be conducted periodically to increase basic skills needed to accomplish work efficiently and also to increase success rate of change initiatives. Such programs can be need based and outsourced when required. A few suggestive programs include:

- Office Automation
 - Text Processors
 - Spread Sheet etc
 - Multilingual Support
- Software
 - Operating System
 - DBMS
- Networking
 - Basic Components, Topologies
 - LAN, WAN, MAN, Network Security and Protocols
 - Internet, Intranet and Extranet
 - Wireless Transmission, Mobile and Radio Communication
 - Broadcast Systems, Satellite Communication
- Hardware
 - Basic Hardware
 - Clients, Nodes and Servers
- Administrative application
 - Internal systems like QUIPUX and existing groupware/EDMS

6. Infrastructure

6.1. Expansion of National Backbone

Most of central governments and public institutions are interconnected with fiber optical cable as the first phase of NBI. Also, global network is connected by submarine cables and established an effective way to exchange information across all government institutions.

However, the development of NBI should be continuous to increase citizen participation and business efficiency. The first phase of NBI requires stabilizing, and the second phase requires implementation plan or actual implementation. The government requires continuous investment and management of NBI projects to fulfill the requirements. The preparation to convert from IPv4 to IPv6 should be getting ready in time. IPv4 has been stopped for allocation starting from June, 2011 and it has been run parallel with IPv4 and IPv6 for the next ten year. After ten years, the IPv4 will be no longer useful worldwide. For Korean

case, the cost for converting to IPv6 will be around 1 billion Dollars and Uganda should also be prepared for this as well as preparation for second and third stage for the development of NBI.

6.2 Standardization

In order for a country to establish an e-Government and to pursue national development by promoting ICT industry, it is inevitable that the country should standardize various codes&platform generated from automation of administrative businesses and ICT devices. Such ICT related national standardizations necessary for establishing e-Government are as follows.

Standardization includes the e-Government Standard Framework system, equipment, interface, protocol, network, language, application, security, and etc.

6.2.1 Introduction of Korea's e-Government Standard Framework

6.2.1.1 Overview

e-Government Standard Framework is an infrastructure environment for implementing application SWs and provides basic functions in the application SW runtime. The e-Government Standard Framework has an objective to increase the quality of e-Government services, the efficiency of IT investment and the standardization and the reusability of application SWs through establishing and applying the development framework standard.

There are many problems in the existing e-Government system because each individual application system uses various kinds and versions of frameworks. The development frameworks used in the existing e-Government system are hard to maintain without vendor's technical support because they are provided as Black Box modules, and so have specific vendor dependency. In case of systems on which multiple development frameworks are applied, the definition of development standards, the supply of developers and the education for each framework lead to redundant investments and it is hard to manage the versions even in a single development framework due to the incompleteness of the systematic management procedure for the framework. The standardization of e-Government Framework eliminates the technical dependency on vendor's proprietary development framework, promotes the standardization, and so increases the quality and reusability, of application SWs, increases the investment efficiency through the unification of development framework maintenance.

6.2.1.2 Features

The e-Government Standard Framework has following features to accomplish its objective to increase the interoperability and the reusability of National Information Systems.

- **Complies with open standards**
 - Uses open and widely used technologies instead of proprietary technologies
 - Eliminates the dependency on a specific vendors by using open source based technologies
- **Integrates with commercial solutions**

- Assures interoperability by providing standards for integrating with commercial solutions
- Provides interchangeable structures which are not dependent on specific solutions
- **Oriented towards standardization on the national scale**
 - Holds advisory meetings of public officials, professors and solution and SI vendors
 - Performs standardization on the national scale through persistent opinion gathering and information exchange
- **Flexible to cope with the newest technologies**
 - Structured to exchange modules easily to cope with the progress of technologies
 - Loose coupling between modules through interface-based integration
- **Provides easy to use and function-rich environments**
 - Provides convenient Editing, Compiling and Debugging environment through an Eclipse-based development environment
 - Provides functions for the UML and ERD modeling
 - Provides convenient data processing functions using DBIO

6.2.1.3 Benefit

The e-Government Standard Framework increases development productivity and component reusability among application systems by providing a standardized infrastructure, increases the interoperability and promotes the standardization of application SWs through the interface standards.

- Increase in development productivity: Minimizes redundant developments by providing common essential functions and allows developers to concentrate on the business logic by defining an infrastructure.
- Increase in the reusability of e-Government application systems: Increase the standardization of the development framework allows components already developed on the e-Government Standard Framework to be reused in other application systems.
- Increase in the interoperability of the e-Government systems: Increase the interoperability of application systems by using standard inter-system integration interface.
- Standardization of e-Government application systems: Promotes the standardization of the program code by providing the standardized development infrastructure for presentation, business logic processing and data processing.
- Promotion of open source SW use: Promotes the developer's use of open source SWs by defining open source based standard framework.
- Improvements in the competitiveness of SM-sized SW vendors: Strengthens the competitiveness of SM-sized SW vendors by sharing the e-Government Standard Framework and increasing development manpower skillful in developing on the framework

6.2.1.4 Standardization scope

- National IT Standard Framework
 - Centralized code system applied to all government levels is required.
 - Common codes can be determined by looking into codes generated when automating the government's administrative businesses.
 - Address code, item code, ID number system, institution code, date format, etc.
- Hardware/software
 - Set the standard on PCs, communication equipments, S/W, etc used in Uganda to secure interoperability, to enhance convenience in usage and to expand distribution at lower prices
 - Specifications on standard PCs and communication equipments for the administrative network
 - Create the national standard security system
 - Standard interface for the administrative network
 - Development tool and language for the administrative network

6.2.2 PKI(Public Key Infrastructure)

Uganda has a law related to digital signature, but it is not really in use in the nation, yet. The country needs a tool to identify individuals and for a personal privacy protection. Introducing PKI is truly necessary for information accessibility, SSO and for other types of factors for infrastructure.

6.2.2.1 Overview

PKI is for a personal identification with individuals or business entities. By using encryption technique, it no longer gives danger of forgery/counterfeit of information and promote e-Business environment. For better and safe communication on internet and digital environment, following requirements are necessary to be followed:

- Authentication between the parties
- Ensure the integrity of information transmitted
- By a third party, ensuring confidentiality to prevent information leakage
- Sent and received between the parties about the repudiation of the information content

6.2.2.2 Application of the PKI

Public Key Infrastructure (PKI) is a collection of technologies for production and management of authentication certificate based on public key encryption technique skills. This skill has been used in many ways such as for e-Payment system of banks, intranet for enterprises, and e-Document in various government institutions. Customers from bank can use PKI as an authentication certificate for e-Payment services, business entities, and public organizations use it when exchanging documentation in digital environment. PKI also provides solutions for legal issues in e-Government environment. The following table provides institutions which can apply application of PKI.

<Table 67: Application of the PKI>

Institutions	Service Award	Applications
Financial committee, Banks	Merchants, cardholders	Secured Deal
Bank	Account Holders	Home-banking
Government	Citizens	Submit tax returns for tax, social security system for the door In response righteousness Personal credentials
	Business	Business credentials Submit financial status reports Electronic contract Electronic Signature
Post	Post's customers	Electronic postmark, electronic registered mail
Health insurance Authority, health maintenance organization	Doctor, Hospital	Access to patient records, treatment plans submitted, is a safe treatment Street and reimbursements for services performed
Legal Authority	Judges, lawyers, lawyers	Submission of court depositions and other legal documents
Business of Software	Software module	Ensure that virus software is downloaded to the safety
	Customers	Electronic Software delivery

6.2.2.3 Expected Benefit

The PKI gives values to Government by preventing loss of Data and increasing administration convenience and efficiency. In addition, it gives values to citizens by increasing reliability and transparency of work processes

- Data Loss Prevention: Prevention of data loss by preparing government key consign & recovery system of General & confidential documents
- Convenience & Efficiency: Handling all of the processes related to confidential documents through online and improving stability & security
- Reliability: Unauthorized person cannot access confidential information. Reduction of personal information exposure
- Transparency: Low possibility of irregularities and corruption through government key system

V. Action Plan

1. Overview

According to Uganda's vision and mission statements of e-Government, the following projects are identified as priority projects in order to establish e-Government in Uganda. The 25 priority projects are identified based on portfolio analysis in consideration of importance, and feasibility. Among the projects, 13 projects are selected for Phase I and Phase II according to the Table below. This chapter is to identify budget and scope of each project.

<Table 68: 25 Priority Project Overview>

Phase	No.	Project	Definition	Service Type	Score
Phase 1 Base Establishment	1	National IT Standard Framework	Maximizes the development productivity, assures the quality and minimizes the risk factors	Infrastructure	8.5
	2	National Identification (N-ID)	Informatizing citizen's information from birth to death, and resident life	G2G	8.4
	3	Government Data Center	To ensure the safety of national information and to provide integrated services	Infrastructure	8.3
	4	PKI	An electronic certificate of qualification for individuals to access information	Infrastructure	8.1
	5	Administration Information Sharing Center	Sharing administrative information across the government institutions and helps citizen's visit to gov. office	Infrastructure	7.7
Phase 2 Enhancement of Service	6	Electronic Procurement System	Cost reduction by digitizing purchasing procedures of all institutions	G2B	7.6
	7	National Finance Information System (NAFIS)	A system which assists budget related work from national budget execution to settlement	G2G	7.6
	8	Single Window for Online Business	A single-window based on integrated services which are necessary for business enterprises	G2B	7.5

	9	Government Representative Portal	All government services such as e-Application and e-Issuance can be accessed through a single window	G4C	7.5
	10	Government Work Management System	Allows administrative work to become systematic process-based by managing the accumulated knowledge assets from previous experiences	G2G	7.3
	11	Groupware (e-Document, e-Approval, Knowledge Management System)	Users create and share documents through designated work portal and connection with record management system	G2G	6.9
	12	Digital Archiving	A system which digitalizes and stores data and information	G2G	6.8
	13	Online Citizen Participation Portal	Allows citizen services to be provided through a single window	G4C	6.8

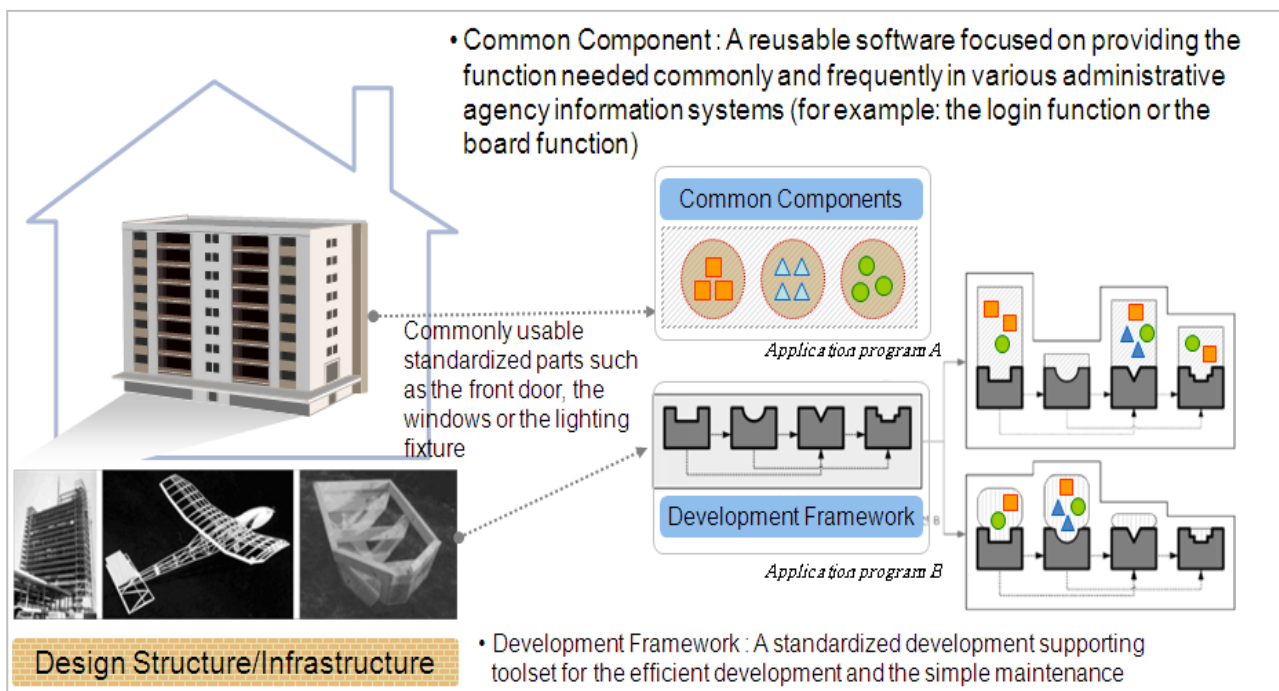
2. National IT Standard Framework

2.1 Overview

The framework template-based programming maximizes the development productivity, assures the quality and minimizes the risk factors. National IT Standard Framework enables work simplification, performance & quality assurance, cost savings, and on-time delivery.

2.2 Conceptual Image

<Figure 94: National IT Standard Framework & Common Components>



2.3 Functions

- Provides support tools for the overall Software development life-cycle, such as requirements gathering, analysis/design, implementation, testing, and deployment
- Provides common runtime modules for running the Software applications
- Provides operational tools for monitoring and operating Software application based on e-Government Frame
- Provides management tools for maintaining and improving efficiently e-Government Frame

2.4 Schedules

<Table 69: Schedule – National IT standard Framework>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Feasibility Study	←→											
Implementation		←→										

2.5 Budgets

<Table 70: Expense – National IT standard Framework >

Types	Calculation	Amount (USD)
Feasibility Study	Consultant for FS : 6 M/M	107,142
Development	Developer : 12M/M	214,285
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions	32,142
Total		353,569

2.6 Expected Benefits

- e-Government Frame ensures interoperability which is necessary for information sharing and inter-linkage among agencies by constructing the application based on e-Government Frame. This improves interagency collaboration.
- e-Government Frame provides standardized screen and interface for various e-Government. Easy implementation of inter-linkage among e-Government systems increases levels of public satisfaction by offering one-stop service that was unavailable in the previous system because respective government agencies offered different services.
- e-Government implementation providers are now able to improve their core competencies, technological capabilities, and productivity by utilizing e-Government Frame. The project also promotes strengthening SMEs competitiveness by offering an equal chance of bidding for e-Government project to various companies such as SMEs, solution providers, and venture companies.

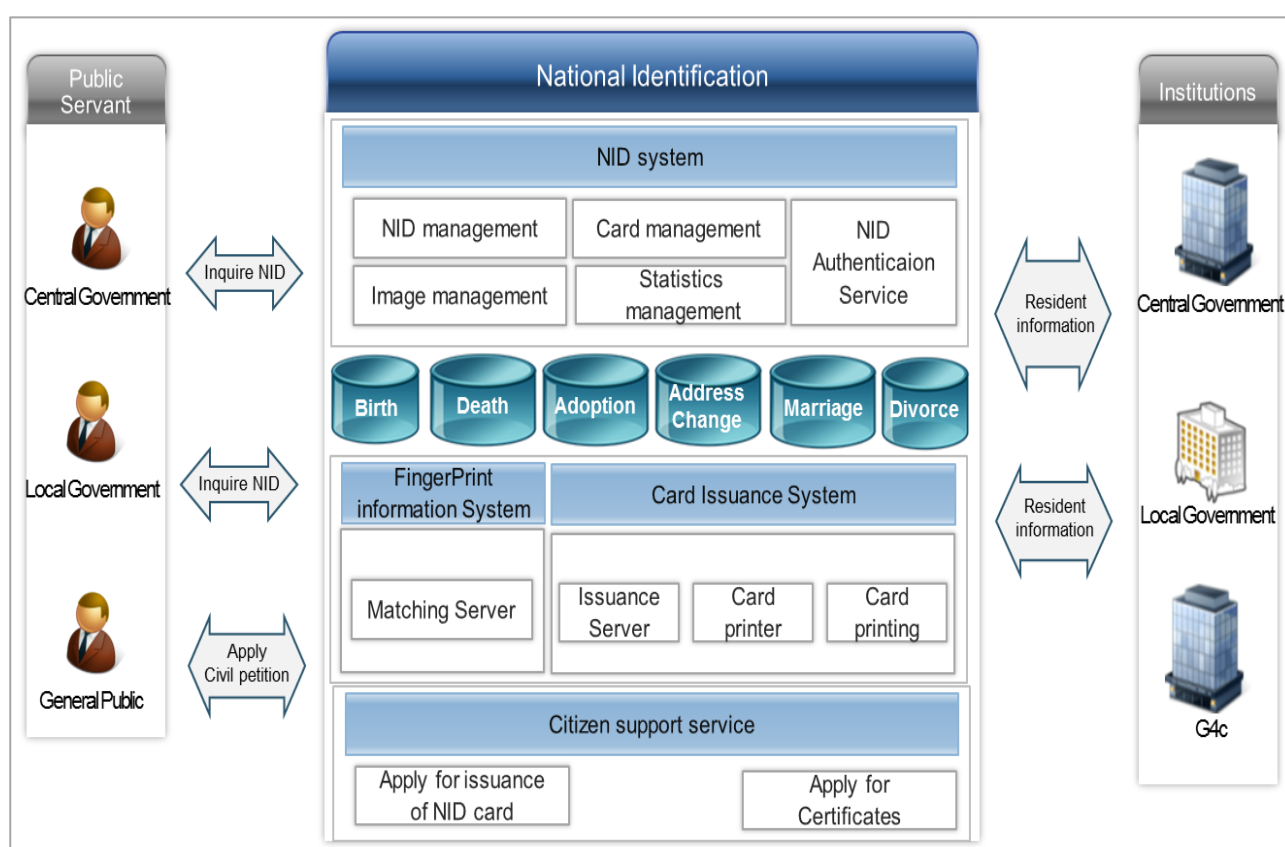
3. National Identification

3.1 Overview

N-ID is a system for informatizing citizen's information from birth to death, and resident life for each residential area. In addition, it is a basic data for managing personal property, business, and other important personal information. In order to establish N-ID, relevant paper documents should be digitalized (Digital Archiving) beforehand.

3.2 Conceptual Image

<Figure 95: National Identification >



3.3 Functions

- Declaration of birth, marriage, and death
- Production and provision of residential information
- Online certificate issuance of birth, marriage, death, and resident registration
- Issuance, renewal, termination of N-ID

3.4 Schedules

<Table 71: Schedule – National Identification>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Planning	←			→								
Implementation				←						→		
Improvement in Law		←						→				

3.5 Budgets

<Table 72: Expense – Digital Archiving System>

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 116 M/M	1,502,500
Development	Developer : 626 M/M	3,756,250
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions	3,005,000
Total		8,263,750

3.6 Expected Benefits

- Increase the quality of civil services such as N-ID, and other kinds of resident related certificates.
- Secure tax revenue of citizens and use for census of nation
- Increase the reliability of data/information of medical, criminal records, and for counting the number of voters

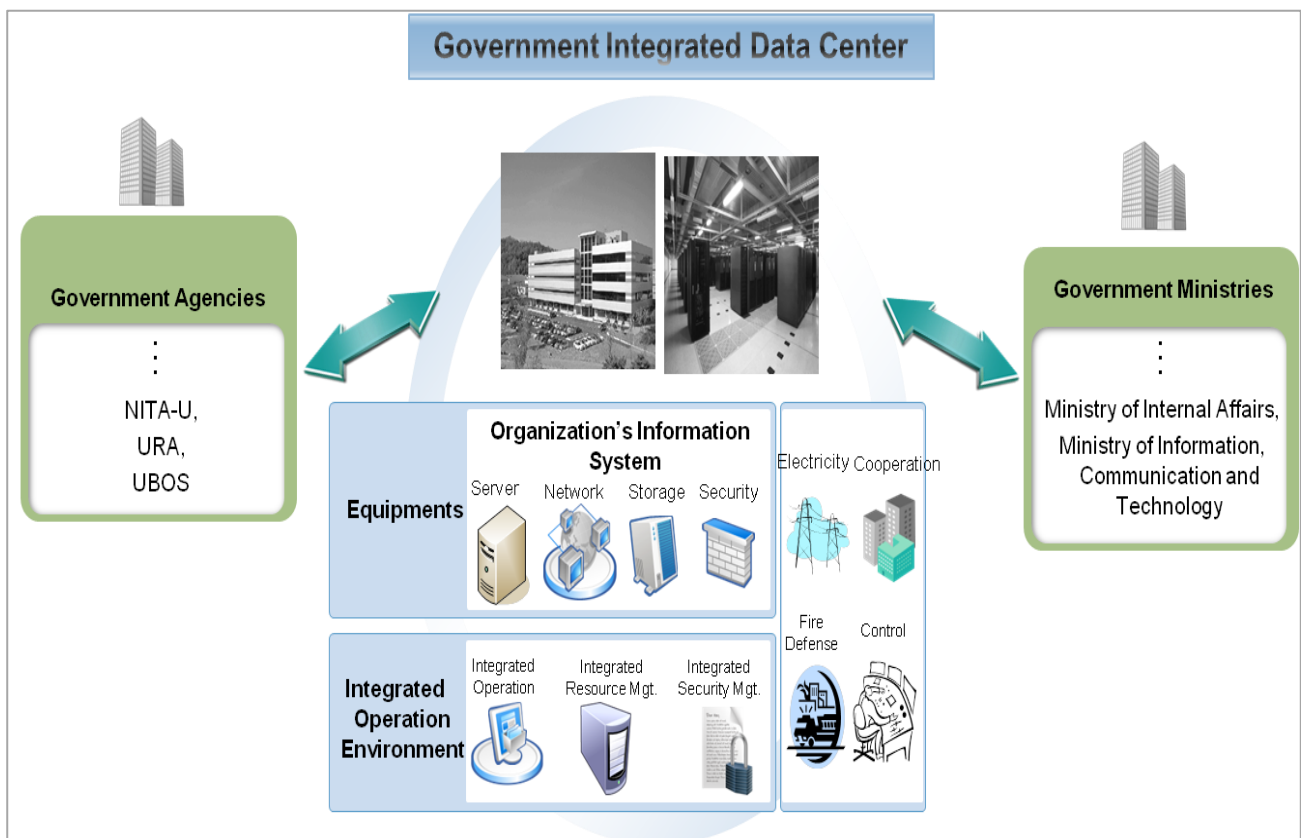
4. Government Information Data Center

4.1 Overview

National data can be managed in order to ensure the safety of national information and to provide integrated services to the citizens.

4.2. Conceptual Image

<Figure 96: Government Data Center>



4.3 Functions

- Integrated operation: Offers interoperability by information sharing and supports sustainability of government's core services
- Integrated resource: Information are shared and managed efficiently via communicating among government institutions
- Integrated security: Integrated security facilities are implemented for information protection and management

4.4. Schedules

<Table 73: Schedule - Government Data Center>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Feasibility Study	←→											
Building Data Center		←→										
1 st Transfer									←→			
2 nd Transfer											←→	
Operation Upgrade									←→			
Improvement in Law		←→										

4.5 Budgets

<Table 74: Expense - Government Data Center>

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 176 M/M	2,288,000
Development	Developer : 1716 M/M	10,296,000
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions (SMS, NMS, FMS, EMS, etc.)	11,441,000
Total		24,025,000

4.6 Expected Benefits

- Efficient allocation of resources and maximize utilization of resources
- Reduce downtime and cost through integration
- Increase interoperability & efficiency of systems through standardization
- A comprehensive management of condition, rules, guidelines, and etc.

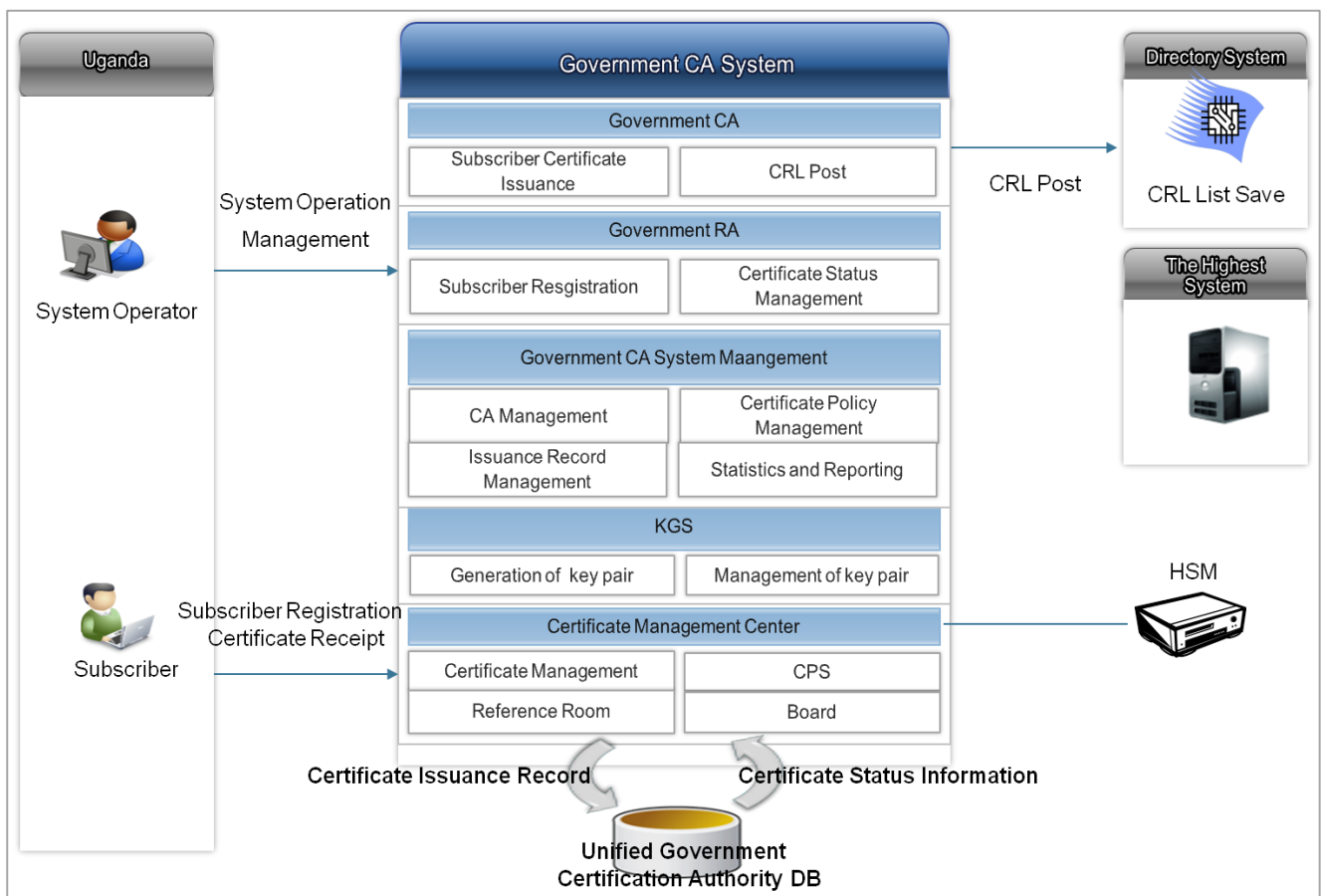
5 Public Key Infrastructure

5.1 Overview

PKI is an electronic certificate of qualification for individuals to access information and it is also the service which helps to define e-Signature and electronic authentication services.

5.2 Conceptual Image

<Figure 97: PKI>



5.3 Functions

- **Encoding Critical Information**: Through encoding · decoding module of GKMI, encodes confidential & critical information
- **Confidential Document Management**: Controlling all of the processes related to confidential document creation · approval · management · transfer
- **Government Key Recovery & Management** : Recovers government key information after loss and damage

5.4 Schedules

<Table 75: Schedule – Public Key Infrastructure>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Feasibility Study	←→											
Implementation			←→									
Improvement in Law			←→									

5.5 Budgets

<Table 76: Expense – Public Key Infrastructure>

Types	Calculation	Amount (USD)
Feasibility Study	Feasibility Study : 13 M/M	133,929
Development	Developer : 59 M/M	3,971,517
Infrastructure	Server, Network, Storage, Solutions	456,161
Total		4,561,607

5.6 Expected Benefits

- Prevention of Data Loss: Prevention of data loss by establishing government recovery system of general & confidential documents
- Convenience & Efficiency: Handling all of the processes of confidential documents through online
- Reliability & Transparency: Unauthorized users cannot access confidential information

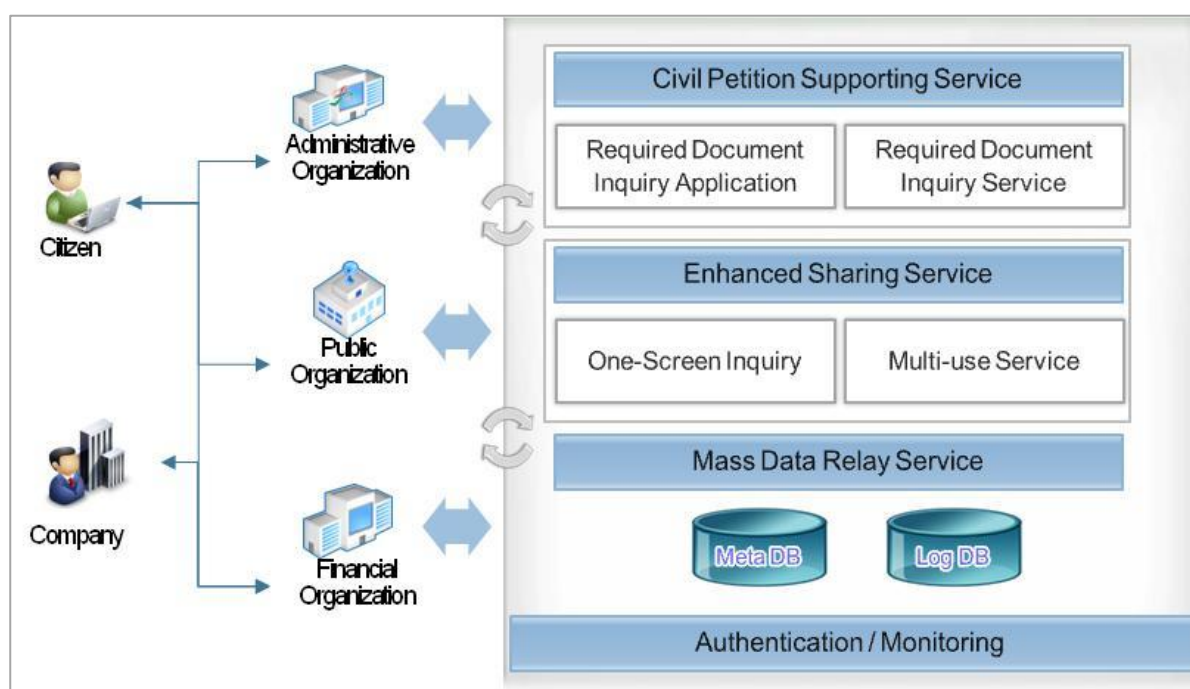
6. Administration Information Sharing Center

6.1 Overview

Sharing administrative information across the government institutions will reduce the citizen's visits to government offices to acquire necessary documents.

6.2 Conceptual Image

<Figure 98: Administration Information Sharing Center>



6.3 Functions

- Tracking & monitoring of data or information which are sharing across the government institutions for private information protection of citizens.
- Managing a comprehensive information by providing necessary information and documents of related government institutions
- Providing an integrated search system for easy access and updating of relevant information. Increase a convenience of sharing information through operating Call Center for citizens

6.4. Schedules

<Table 77: Schedule – Administration Information Sharing Center>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Feasibility Study	←	→										
ISP			←	→								
Implementation						←	→					
Maintenance/ Upgrade											←	→
Improvement in Law				←	→							

6.5. Budgets

<Table 78: Expense – Administration Information Sharing Center>

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 164 M/M	2,133,000
Development	Developer : 3413 M/M	20,477,000
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions (SMS, NMS, FMS, EMS, etc.)	17,918,000
Total		40,527,000

6.6. Expected Benefits

- Reduce the number of forms needed and combines into one simple application
- Reduce the number of office visits
- Simplify and standardize the work process over all the Government institutions
- Seamless paperless government work processing

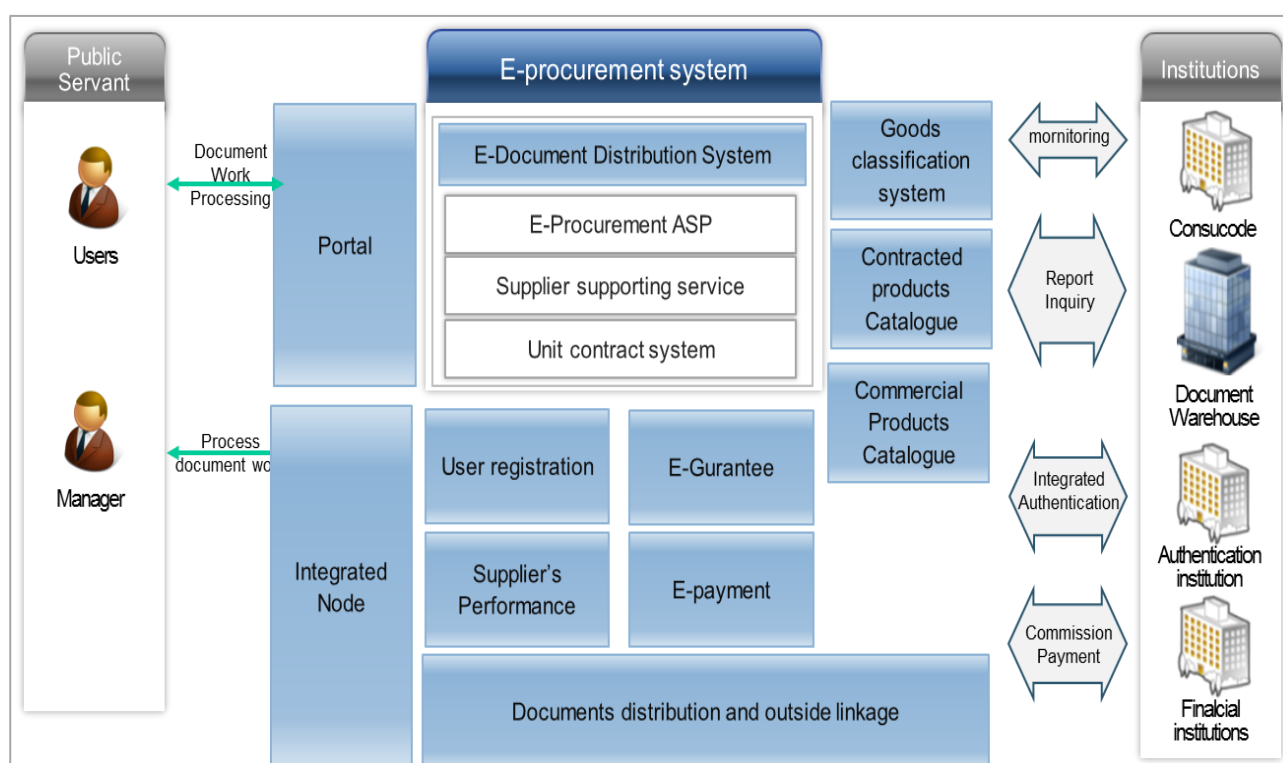
7. e-Procurement System

7.1 Overview

Transparency of the purchasing procedure will be obtained along with cost reduction by digitizing purchasing procedures of all institutions. The informatization level should be elevated by encouraging electronic transactions within Uganda

7.2 Conceptual Image

<Figure 99: e-Procurement System>



7.3 Functions

- Management of suppliers, purchase of list price, and etc,
- Portal of purchaser & supplier, and public notice on the board
- Product categorization, registration, and e-Payment
- e-Document, and management of users

7.4 Schedules

<Table 79: Schedule – e-Procurement System>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Feasibility Study	←	→										
Implementation			←	→	→	→	→	→	→	→	→	→
Improvement in Law				←	→	→	→	→	→			

7.5 Budgets

<Table 80: Expense – e-procurement>

Types	Calculation	Amount (USD)
Feasibility Study	Feasibility : 20 M/M	200,983
Development	Developer : 330 M/M	22,098,214
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions	2,477,679
Total		24,776,786

7.6 Expected Benefits

- Reduce purchasing price of government assets through e- Procurement
- Enhance transparency of procurement work
- Reduce administrative cost of corporation via online transactions
- Government as a large purchaser can contribute to electronic commerce activities

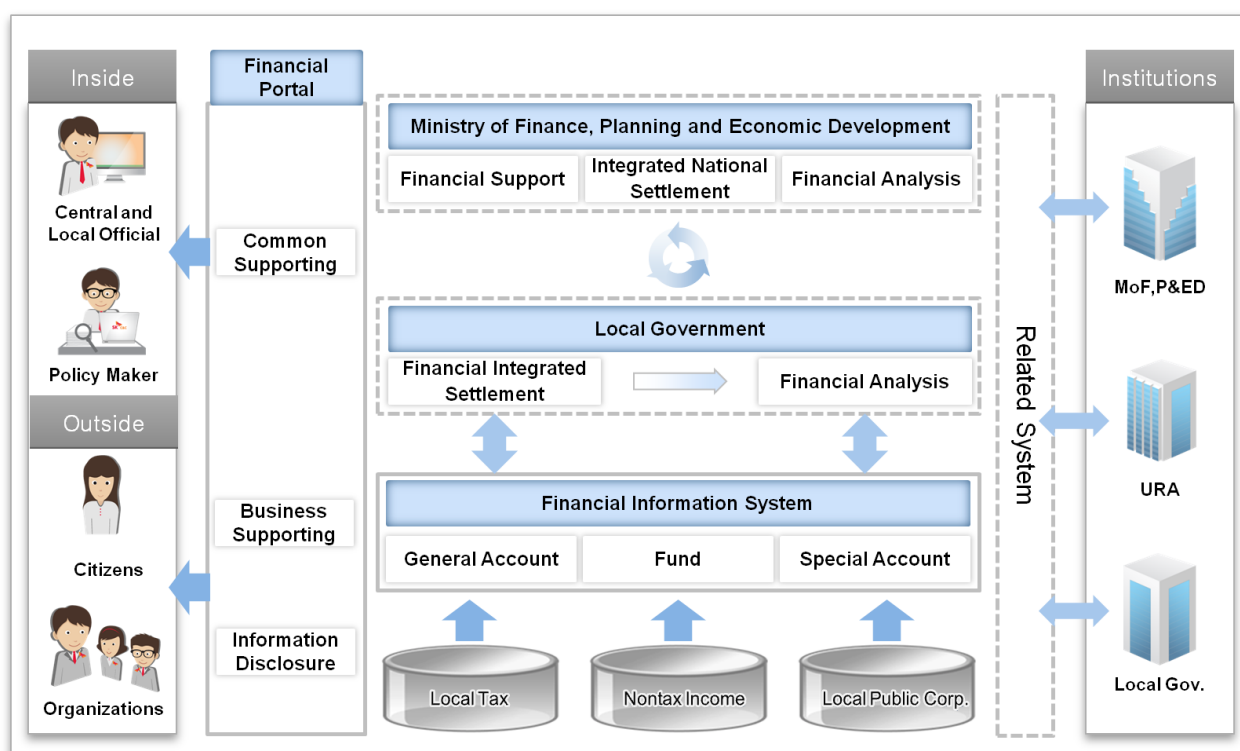
8. National Finance Information System (NAFIS)

8.1 Overview

NAFIS system is a system which assists budget related work from national budget execution to settlement, drastically reducing the amount of manual accounting work.

8.2 Conceptual Image

<Figure 100: National Finance Information System>



8.3 Functions

- e-Payment – Automatic numbering for systematic management of tax papers and documents
- Online money transfer: Provides online transfer function of financial expenditure to the creditor's account
- Integrated management: Allows consolidated information management and computation of financial analysis indexes

8.4 Schedules

<Table 81: Schedule – National Finance Information System>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
BPR/ISP	←				→							
Implementation					←							
Improvement in Law		←			→							

8.5 Budgets

<Table 82: Expense – National Finance Information System >

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 53.3 M/M	1,502,500
Development	Developer : 586 M/M	7,848,750
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions	931,607
Total		9,316,701

8.6 Expected Benefits

- Integrated management of all public systems
- Real-time information collection and updates
- Increased reliability through modernization and reform of the accounting system
- Automated processes which eliminates manual errors
- Automated government processing
- Easy access to statistical information for various finance related research
- Processes integrated with the Board of Audit and Inspection to ensure accountability and transparency

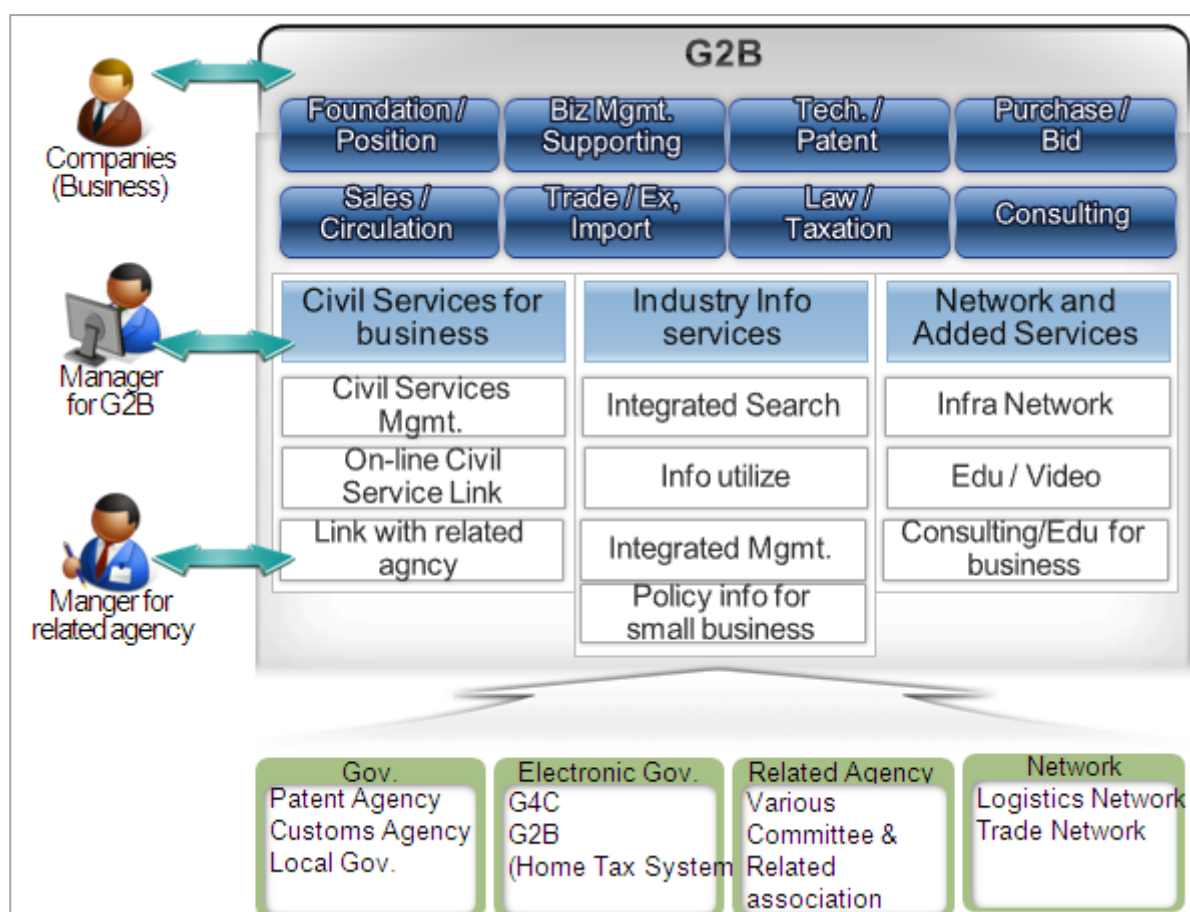
9. Single Window for Online Business Service

9.1 Overview

Single Window for Online Business Service provides a single-window based on integrated services which are necessary for business enterprises, including civil/business affairs and industry-related information.

9.2 Conceptual Image

<Figure 101: Single Window for Online Business Service>



9.3 Functions

- Civil/Biz. Affair Processing: Corporate civil application service (e.g. Licensing and certificate issuance)
- Information Sharing: Provide various information including business civil affairs and industry related information
- Registration Request: Register and request information and service online
- Service Provision: Provision of infrastructure network connection service

9.4 Schedules

<Table 83: Schedule - Single Window for Online Business Service>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
BPR/ISP	←			→								
Implementation and TEST				←								→
Maintenance and Upgrade											←	→
Improvement in Law			←					→				

9.5 Budgets

<Table 84: Expense - Single Window for Online Business Service>

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 66 M/M	864,000
Development	Developer : 400 M/M	2,400,000
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions (SMS, NMS, FMS, EMS, etc.)	1,968,000
Total		5,232,000

9.6 Benefits

- Avoid duplication of service and information processing
- Reduction and efficient use of human resources through centralizing and integrating service and information
- Faster, easier and more convenient online single-window civil/business service process
- Disclosure of service progress, and provision of standardized services

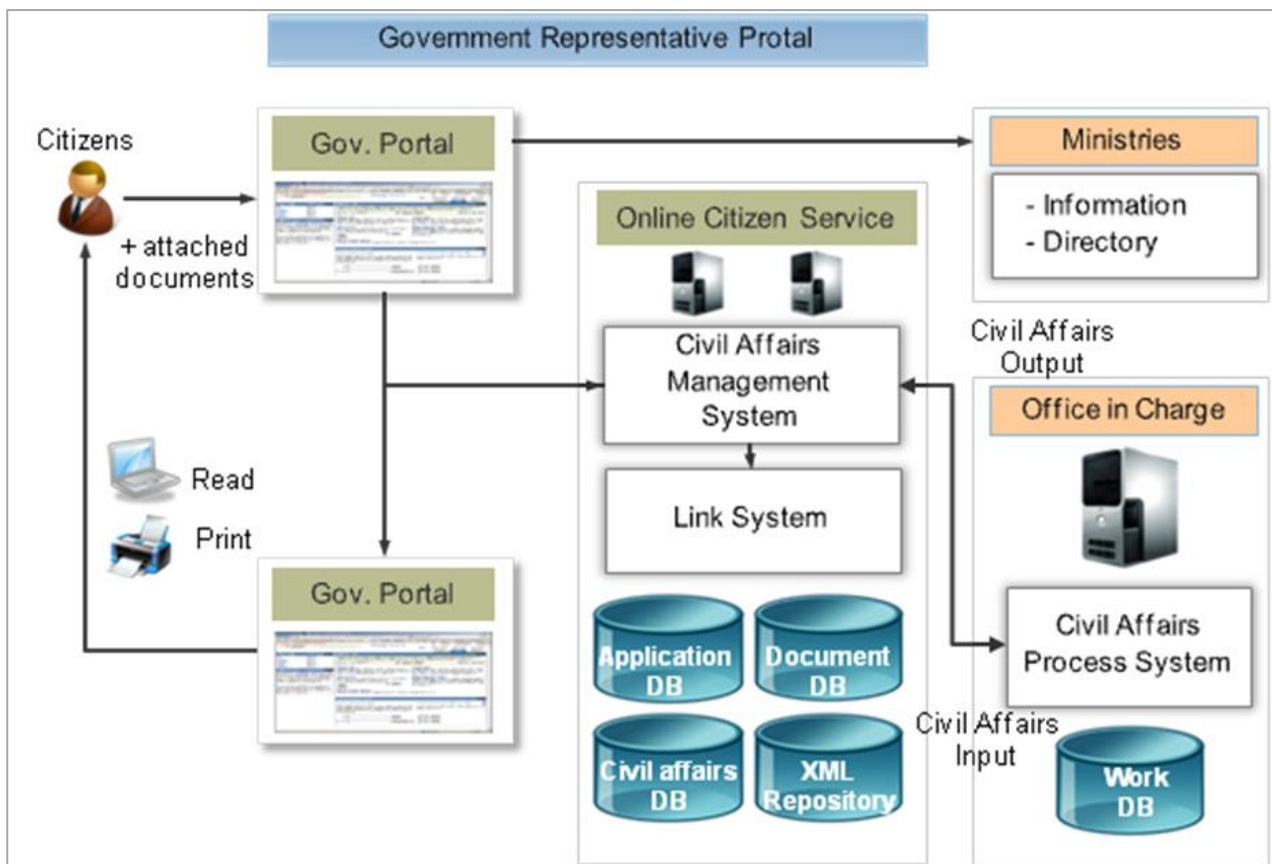
10. Government Representative Portal

10.1 Overview

All government services that can be provided online such as e-application and e-issuance can be accessed through a single window.

10.2 Conceptual Image

<Figure 102: Government Representative Portal>



10.3 Functions

- Offering One-stop access link to all the government resources(information, directory)
- Providing information about offering-possible civil services and administrative process, legislation
- Civil affairs application can be processed and Citizens can read their own affairs through the web site
- Officials can issue public certification to each civil affairs through the internet

10.4 Schedules

<Table 85: Schedule - Government Representative Portal>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Planning	←→											
Implementation		←										
Maintenance / Upgrade									←			→
Improvement in Law		←										

10.5 Budgets

<Table 86: Expense - Government Representative Portal>

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 116 M/M	1,502,500
Development	Developer : 626 M/M	3,756,250
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions (SMS, NMS, FMS, EMS, etc.)	3,005,000
Total		8,263,750

10.6 Expected Benefits

- Through electronic process, government reduce resources to serve visit-citizen and don't need to have paper documents about civil affairs
- Citizens can apply, issue, and read civil affairs that is applied through the internet
- Through electronic transparent civil affairs process, citizens satisfaction and government experience can be improved

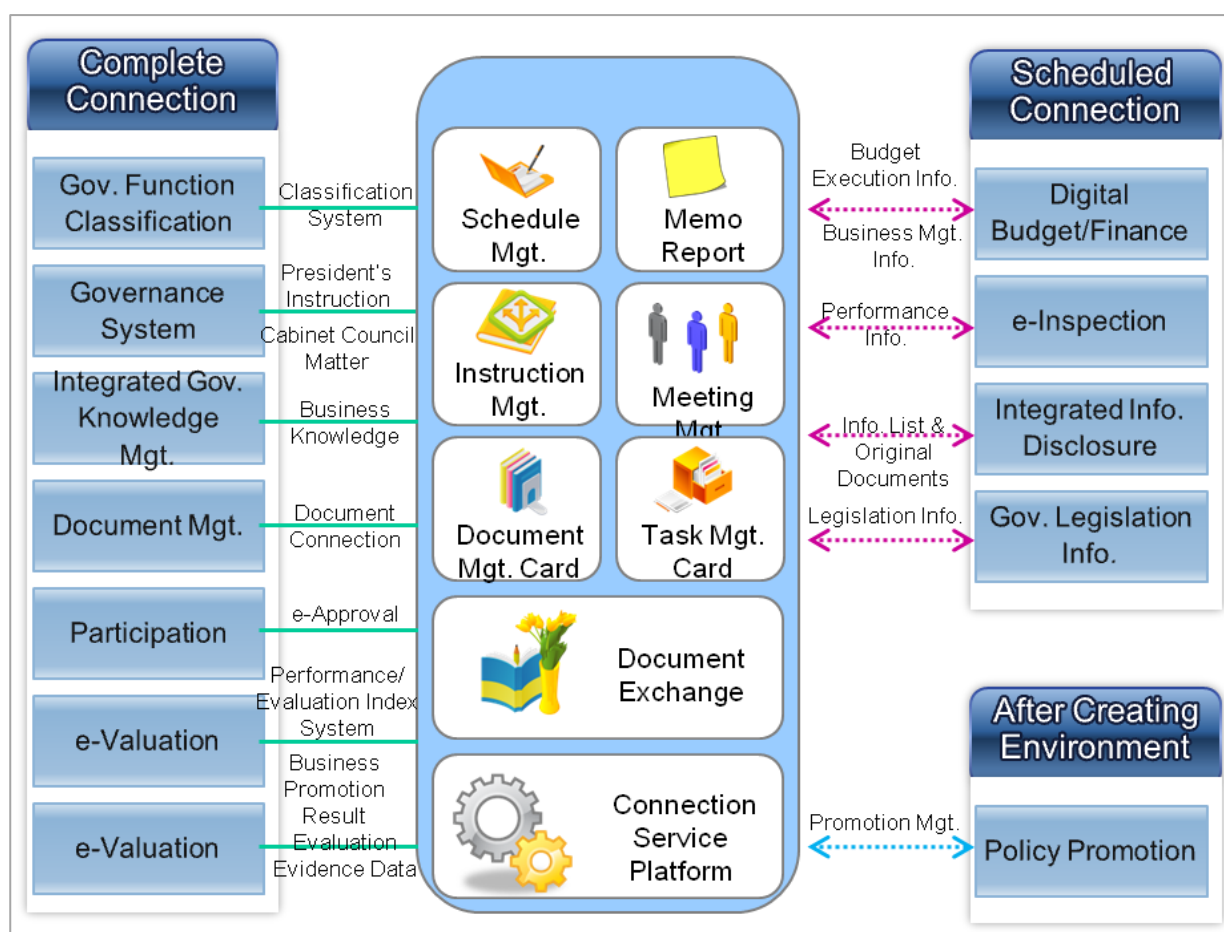
11. Government Work Management System

11.1 Overview

Government Work Management System allows administrative work to become systematic process-based by managing the accumulated knowledge assets from previous experiences.

11.2 Conceptual Image

<Figure 103: Government Work Management System>



11.3 Functions

- Standardization of Business Management: Manage recording, decision making process, and monitoring through improvement of e-Supporting system of government ministries
- Supporting Business Management: Support and monitor business process through accumulating knowledge related to policy making process and record management
- Efficient Decision Making System: Support effective decision making and share policy information through managing the quality of document and policy decision

11.4 Schedules

<Table 87: Schedule - Government Work Management System

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
BPR/ISP	←			→								
Implementation				←						→		
Improvement in Law			←					→				

11.5 Budgets

<Table 88: Expense - Government Work Management System>

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 160 M/M	2,077,000
Development	Developer : 1488 M/M	8,928,000
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions (SMS, NMS, FMS, EMS, etc.)	7,305,000
Total		18,310,000

11.6 Expected Benefits

- Standardization, consolidation, systematization of all processes of government administrative work
- Helps to make a quick policy decision and the better quality with BRM connection
- Increase sustainability of work through systematic management of government administrative work
- Reduce the number of office visits to acquire necessary documents for administrative work process

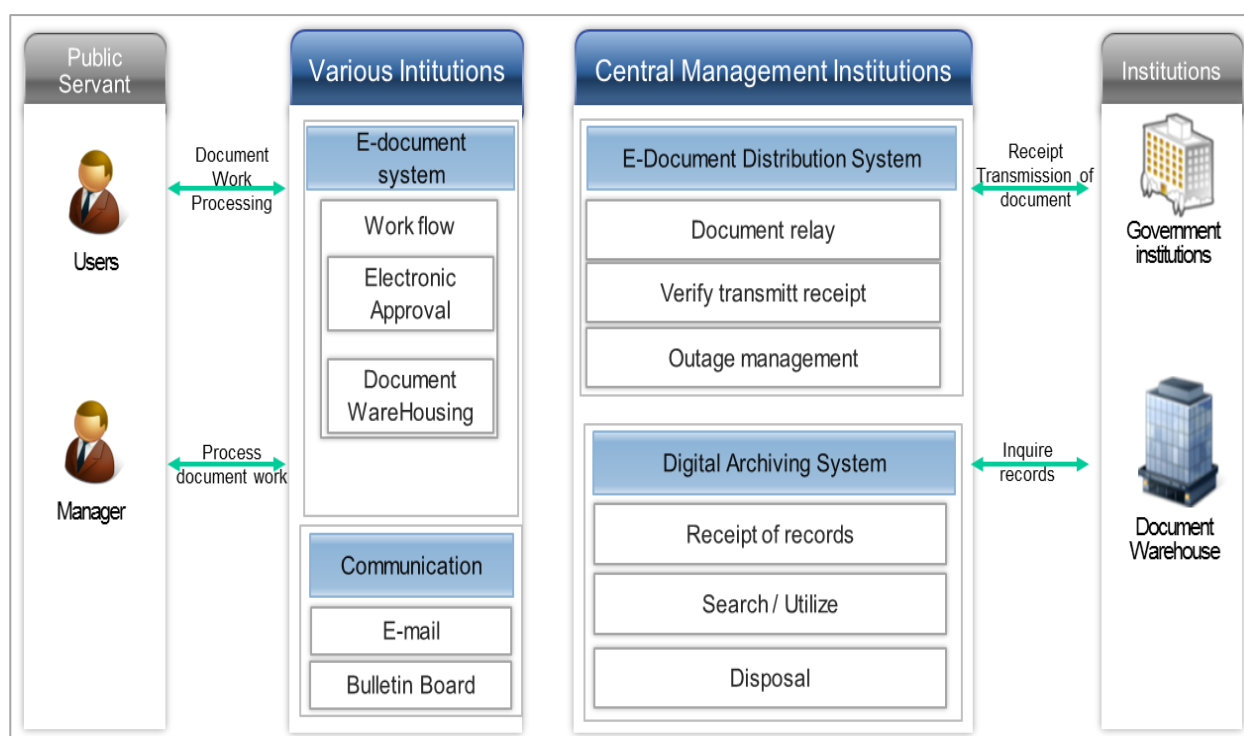
12. Groupware (e-Document, e-Approval, Knowledge Management System)

12.1 Overview

Users (Public officials) in administrative institutions create and share documents through designated work portal and connection with record management system

12.2 Conceptual Image

<Figure 104: Groupware (e-Document, e-Approval, KM)>



12.3 Functions

- Work-Flow: Use of portal system for e-Approval, data management, document management
- Information Exchange: Electronic mail, address book, schedule management, bulletin board, and community management
- e-Document Management: e-Document exchanging across the government institutions
- Management of documentation: Storage, maintenance, management of stored documentations

12.4. Schedules

<Table 89: Schedule – Groupware>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Feasibility Study	←	→										
Implementation			←					→				
Improvement in Law				←				→				

12.5 Budgets

<Table 90: Expense – Groupware>

Types	Calculation	Amount (USD)
Consulting	Feasibility : 50 M/M	645,000
Development	Developer : 215 M/M	1,291,000
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions (SMS, NMS, FMS, EMS, etc.)	1,077,000
Total		3,013,000

12.6 Expected Benefits

- Rapid and easy documentation through standardized form
- Real-time distribution of documents through e-Approval and electronic mail
- Reduce the cost of government administration
- Reduce manual work and provide an efficient operation through innovation of work handling system
- Integration of administrative work processes by setting up integration, security, and standardization among governmental institutions

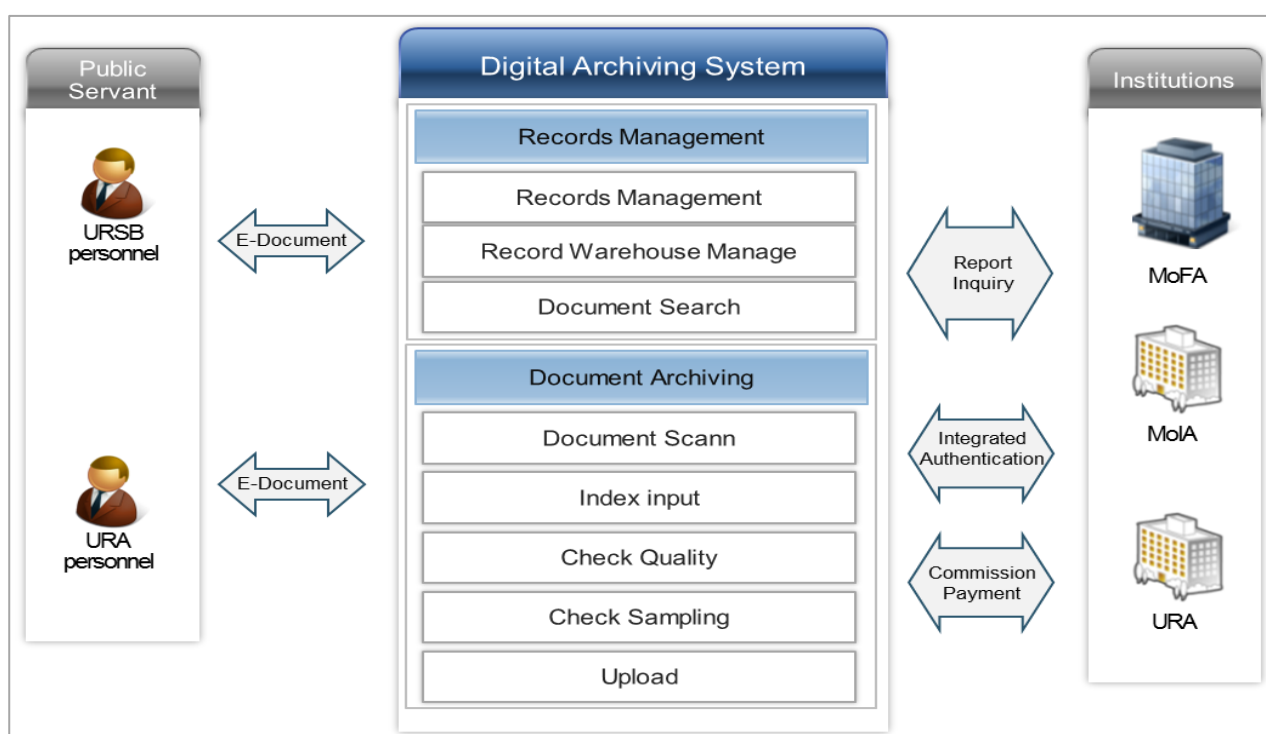
13. Digital Archiving System

13.1 Overview

A system which digitalizes and stores data and information for the condition of quality which declines as times goes by. Any official documents related to citizens or government is digitalized by the system and it is a primer system that must be preceded for infomatization.

13.2 Conceptual Image – Digital Archiving System

<Figure 105: Digital Archiving System>



13.3 Functions

- Digitalization of paper documents and build a Database
- Index of data and search & print-out of scanned documents
- Utilization of common information
- Conformity of scanned documents and data of database

13.4 Schedules

<Table 91: Schedule – Digital Archiving>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
Planning	←			→								
Implementation			←							→		
Improvement in Law		←						→				

13.5 Budgets

<Table 92: Expense – Digital Archiving System

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 154 M/M	1,031,250
Implementation	Developer : 552 M/M	3,346,071
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions	371,785
Total		4,749,106

13.6 Expected Benefits

- Realization of paperless work
- Increase the quality of Citizen/Business service
- Increase Government administration efficiency
- Build a base of National Identification

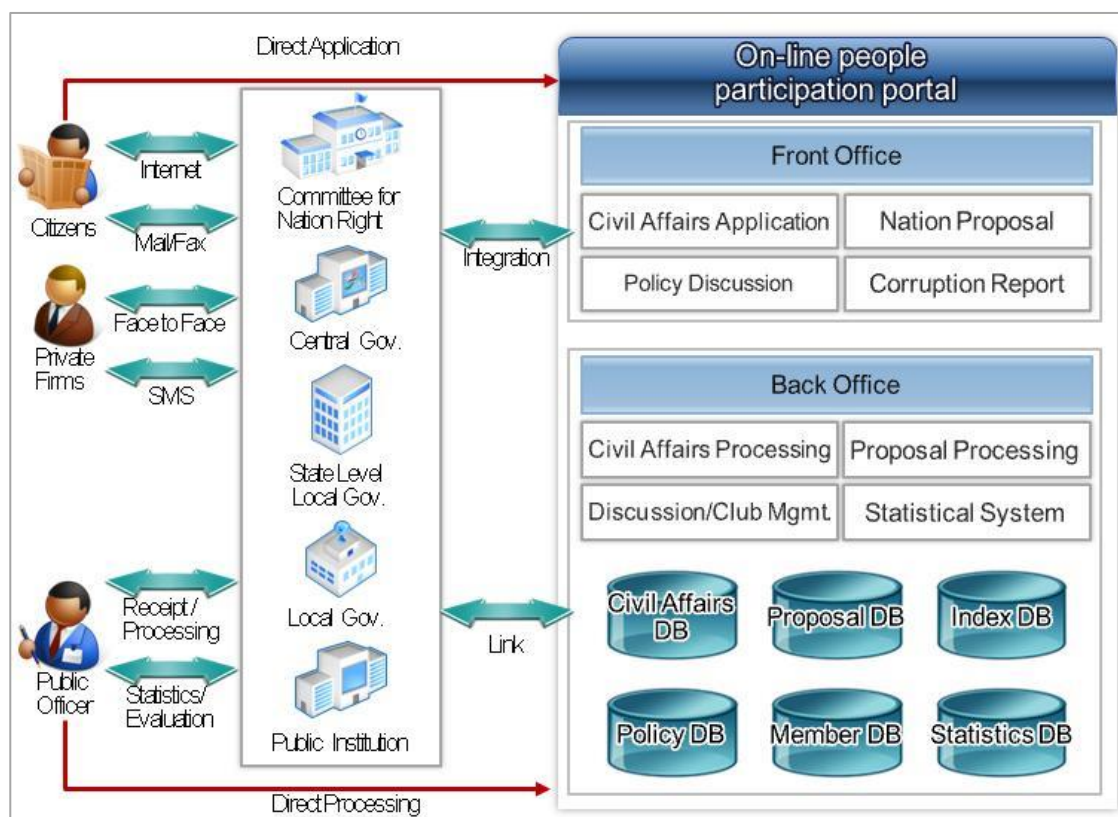
14. Online Citizen Participation Portal

14.1 Overview

The Online Citizen Participation Portal allows citizen services to be provided through a single window.

14.2 Conceptual Image

<Figure 106: Online Citizen Participation Portal>



14.3 Functions

- Online Participation/ Petition Filing: Filing online civil petition, and provision of citizen service and information
- Integration of Citizen Services: Provides integrated civil services of 56 central government, 16 metropolitan councils, 232 local councils and 13 public organizations in Korea

14.4 Schedules

<Table 93: Schedule - Online Citizen Participation Portal>

Task	M+2	M+4	M+6	M+8	M+10	M+12	M+14	M+16	M+18	M+20	M+22	M+24
BPR/ISP	←			→								
Implementation				←					→			
Improvement in Law			←					→				

14.5 Budgets

<Table 94: Expense - Online Citizen Participation Portal>

Types	Calculation	Amount (USD)
Consulting	Consultant for ISP : 75 M/M	971,000
Development	Developer : 460 M/M	2,753,000
Infrastructure [Hardware and Software]	Server, Network, Storage, Solutions (SMS, NMS, FMS, EMS, etc.)	2,252,000
Total		5,976,000

14.6 Expected Benefits

- Citizen services that were managed separately is integrated and managed through a single portal
- Costs of postal and labor are reduced and remove provision of duplicated services
- Civil complaints, policy suggestions can be easily made and processed at home

Bibliography

- Bureau of African Affairs “Background Note: Uganda.” U.S.Department of State 2012. 6 Apr. 2012. 27 May. 2012 < <http://www.state.gov/>>.
- Country Report-Uganda*, London: Economist Intelligence Unit, 2012
- Country/Economy Profiles. “Uganda Key Indicators.” *2012 World Economic Forum*. 3 June 2012.
- Electronic Waste Management Policy for Uganda*, Kampala: Ministry of Information and Communications Technology, 2010
- Govt Expenditure 2012/2013 “How govt is going to spend your money.” *Daily Monitor* 15 June 2012:P.49.
- Information Management Services Policy*, Kampala: Ministry of Information and Communications Technology, 2011
- Information Technology Policy for Uganda*, Kampala: Ministry of Information and Communications Technology, 2010
- Institutionalisation of Information and Communications Technology (ICT) Function in Ministries, Departments, Agencies/Local Governments (MDAs/LGs)*, Kampala: Ministry of Information and Communications Technology, 2011
- Jeff Andrew Lule “UPC welcome Museveni talks with Bishops.” *New Vision* 4 May 2012. 4 June 2012 < <http://www.newvision.co.ug/>>
- Manifesto 2011-2016*, Kampala: NRM, 2011
- Ministerial Policy Statement Vote: 020 Financial Year 2007/2008*, Kampala: Ministry of Information and Communications Technology, 2007
- National Electronic Government (e-Government) Framework*, Kampala: Ministry of Information and Communications Technology, 2011
- National Report “Uganda Sovereign Credit Rating.” *2011 Kexim Overseas Economic Research Institute*. 3 June 2012.
- Palgrave Macmillan. *Human Development Report 2009*. United Nations Development Programme. New Work, NY, 2009.
- Statistical Abstracts. “Statistics a measure for Development.” *Uganda Bureau of Statistics 2008*. 2 June 2012. < <http://www.ubos.org/>>
- Strategic Plan for Five (5) Years (2012-2017)*, Kampala: National Information Technology Authority-Uganda (NITA-U), 2012
- The Republic of Uganda. *National Budget Framework Paper (2012/13)*. Ministry of Finance, 2012/13.
- The Republic of Uganda. *National Development Plan (2010/11-2014/15)*. Kampala: National Planning Authority, 2010.
- Uganda Data. *The World Bank* 2 June 2012 <<http://data.worldbank.org/>>

<Appendix 1> Survey for Technical Staff

Uganda's e-Government Master Plan - Survey for Technical Staff -



Thank you very much for participating in this Survey

NIPA (National IT Promotion Agency) of the Korean government, is conducting a consulting project to establish "Uganda's e-Government Master Plan," a long-term development plan that aims to create the blueprints for a highly effective e-government for the nation of Uganda.

e-Government is defined as, "The use of information and communication technologies in government to provide public services, to improve managerial effectiveness and to promote democratic values." The main goals of e-government can be categorized into the following:

- A. Efficiency in internal work process,
- B. Organizational and administrative reform,
- C. Efficient delivery of public services on-line for citizens and businesses,
- D. Promotion of e-Commerce in transaction between government and businesses,
- E. Participation of citizens in the process of policy-making process.

For success of this project, we kindly request that you provide your experience, needs, future plan, and opinions on the e-government related to your institution. Your cooperation will be highly appreciated. We would like to thank you in advance for your precious time and efforts.

If you find any difficulties or questions related to this survey, please feel free to contact us.



Ministry of ICT

Julius Torach

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Ga-Eon Lee

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Please fill in the following information before you answer the questions.

Your name (Optional): _____

Position/Role: _____

Department/Institution: _____

Section 1. Existing e-Government Projects

- 1.1 Has your institution implemented any e-Government projects since the year of 2005?
- ☐ Yes
- ☐ No (Please skip the following questions and go directly to section2)
- 1.2 How many total projects have you had?
- ☐ 1 project
- ☐ 2 Projects
- ☐ 3 Projects
- ☐ 4 Projects
- ☐ More than 4 projects. Please specify: _____ projects
- 1.3 Please describe the two most significant projects in the shaded boxes below

Existing Project 1

Project Title: _____

In your best judgment, what was the main goal of the project? (Choose just one)

- ☐ Internal work
- ☐ Administrative reform
- ☐ Public services on-line
- ☐ Transaction with businesses
- ☐ Participation of citizens

What is the current status of the project?

- ☐ Planning stage
- ☐ Development stage
- ☐ Operational stage
- ☐ Upgrading stage

How is the system configured? (Choose all that apply is included in the project)

- ☐ Modem/ADSL
- ☐ LAN (local area network)
- ☐ DB (database)
- ☐ Website (portal, blog, etc)
- ☐ Intranet (any internal network services like SMTP, etc)
- ☐ Search engine

Did the project relate to Uganda's ICT development plan?

- ☐ Related
- ☐ Not related and no plan
- ☐ Not related but will be related

How was the project funded?

- ☐ National
- ☐ Local
- ☐ National + local
- ☐ Private (Please Specify Who: _____)
- ☐ Foreign (Please Specify Who: _____)

What were the biggest obstacles upon implementing the system?

- ☐ Insufficient budget
- ☐ Lack of skilled personnel
- ☐ Resistance from users (people reject the implementation of the system)
- ☐ Lack of awareness and support from the leader
- ☐ Absence of supporting legislation

2

Existing Project 2

Project Title: _____

In your best judgment, what was the main goal of the project? (Choose just one)

- ☐ Internal work
- ☐ Administrative reform
- ☐ Public services on-line
- ☐ Transaction with businesses
- ☐ Participation of citizens

What is the current status of the project?

- ☐ Planning stage
- ☐ Development stage
- ☐ Operational stage
- ☐ Upgrading stage

How is the system configured? (Choose all that apply is included in the project)

- ☐ Modem/ADSL
- ☐ LAN (local area network)
- ☐ DB (database)
- ☐ Website (portal, blog, etc)
- ☐ Intranet (any internal network services like SMTP, etc)
- ☐ Search engine

Did the project relate to Uganda's ICT development plan?

- ☐ Related
- ☐ Not related and no plan
- ☐ Not related but will be related

How was the project funded?

- ☐ National
- ☐ Local
- ☐ National + local
- ☐ Private (Please Specify Who: _____)
- ☐ Foreign (Please Specify Who: _____)

What were the biggest obstacles upon implementing the system?

- ☐ Insufficient budget
- ☐ Lack of skilled personnel
- ☐ Resistance from users (people reject the implementation of the system)
- ☐ Lack of awareness and support from the leader
- ☐ Absence of supporting legislation

Section2. Current On-line Public Services List & IT Infrastructure

2.1 Please fill out the on-line service list of your organization operates

Service Name	Functions	Implementation Period	Budget	Service URL	Target User
e-TAX (example)	<ul style="list-style-type: none"> ▪ Users can make online payments for a total of 12 types of tax, including income tax, corporate tax and value added tax ▪ Internet issuance of verification document on tax 	Aug 2004 ~ Nov 2005	12 Million USD	www.hometax.go.kr	Citizens

4

2.2 Please fill out the IT infrastructure list that your institution utilizes

Total Number of PCs	Total Number of Servers	Server OS (Please express as percentages)	DBMS (Please express as percentages)
		Unix (%)	Oracle (%)
		Linux (%)	MS-SQL (%)
		Windows (%)	MySQL (%)
		Other (%)	Sybase (%)
		Total: 100%	Total: 100 %

Section 3. Plan for the Future Project in e-Government

3.1 Does your organization have any plan for e-government project in the near future?

- ☐ Yes
☐ No (Please go directly to section 4)

3.2 How many projects are you currently preparing?

- ☐ 1 Project
☐ 2 Projects
☐ 3 Projects
☐ More than 3 Projects. Please specify: _____ projects

3.3 Please describe the **two most significant** e-government projects below:

Project Plan 1

Project Name: _____

In your best judgment, what was the main objective of the project? (Choose just one)

- ☐ Internal work
☐ Administrative reform
☐ Online public services
☐ Transaction with businesses
☐ Participation of citizens

What is the current status of the project?

- ☐ Idea setting stage
☐ Planning stage

How is the system configured? (Select all that apply to the project)

- ☐ Modem/ADSL
☐ LAN (local area network)
☐ DB (database)
☐ Website (portal, blog, etc)
☐ Intranet (any internal network services like SMTP, etc)
☐ Search engine

How was the project funded?

- ☐ National
☐ Local
☐ National + local
☐ Private (Please Specify Who: _____)
☐ Foreign (Please Specify Who: _____)

What were the biggest obstacles upon implementing the system?

- ☐ Insufficient budget
☐ Lack of skilled personnel
☐ Resistance from users (people reject the implementation or usage of the system)
☐ Lack of awareness and support from the leader
☐ Absence of supporting legislation

Did the project relate to Uganda's ICT development plan?

- ☐ related
☐ not related and no plan
☐ not related but will be related

Project Plan 2

Project Name: _____

In your best judgment, what was the main objective of the project? (Choose just one)

- ☐ Internal work
- ☐ Administrative reform
- ☐ Online public services
- ☐ Transaction with businesses
- ☐ Participation of citizens

What is the current status of the project?

- ☐ Idea setting stage
- ☐ Planning stage

How is the system configured? (Select all that apply to the project)

- ☐ Modem/ADSL
- ☐ LAN (Local Area Network)
- ☐ DB (Database)
- ☐ Website (Portal, Blog, etc)
- ☐ Intranet (Any internal network services like SMTP, etc)
- ☐ Search engine

How was the project funded?

- ☐ National
- ☐ Local
- ☐ National + local
- ☐ Private (Please Specify Who: _____)
- ☐ Foreign (Please Specify Who: _____)

What were the biggest obstacles upon implementing the system?

- ☐ Insufficient budget
- ☐ Lack of skilled personnel
- ☐ Resistance from users (people reject the implementation or usage of the system)
- ☐ Lack of awareness and support from the leader
- ☐ Absence of supporting legislation

Did the project relate to Uganda's ICT development plan?

- ☐ related
- ☐ not related and no plan
- ☐ not related but will be related

Section 4. Human & Organizational Environment

1. How many government employees does your institution have? _____
2. How many employees have a university equivalent (4+ years) or higher education degree in information technology?
 - ☐ Less than 5
 - ☐ 5 to 10
 - ☐ 10 to 20
 - ☐ More than 20
3. Do the leaders in your institution have a strong drive for IT development within your institution?
 - ☐ Yes
 - ☐ No
4. Are there IT training courses for government employees in your institution?
 - ☐ Yes
 - ☐ No
5. In the ICT field, does your institution work collaboratively with other public institutions to deliver services?
 - ☐ Yes
 - ☐ No
6. Has there been a drive since the year 2005 to make your internal or external work procedures simplified or standardized in a means to improve work efficiency?
 - ☐ Yes
 - ☐ No
7. Has the government raised transparency issues by creating programs or regulations?
 - ☐ Yes
 - ☐ No

Section 5. Technical Resources

1. Which of the following telecommunication services does your institution use? (check all that apply)
 - ☐ Telephones (fixed lines or wireless)
 - ☐ Fax machines
 - ☐ Email
 - ☐ World Wide Web (WWW)
 - ☐ Phone conference calls
 - ☐ Videoconferencing
 - ☐ V-SAT satellite terminals
 - ☐ Low speed data connections (dial up modem)
 - ☐ High speed data connections (ADSL, ISDN)
 - ☐ Low earth orbit satellite telephones
 - ☐ Voice over IP (VoIP)
 - ☐ Virtual Private Networks (VPN)
 - ☐ Other. Please specify: _____

2. Does your institution have IT related laws, policies or regulations in your department? If so, please write down the name of the law or regulation. If not, just write down which law, policy or regulations you believe are needed for your institution.

Existing law(s): _____

Necessary law(s): _____

3. Does your institution have technical solutions for network security?
 - ☐ Yes
 - ☐ No

4. Please give the information about the rate of PC equipment in your institution. (if this information is not available, please give an estimation based on your own observation)

Top leaders	___ %
Middle managers	___ %
Staff members (and other employees)	___ %

5. Please give the information about the rate of Internet usage in your institution (if it is not available, please give an estimation based on your own observation)

Top leaders	___ %
Middle Managers	___ %
Other staff members	___ %

6. Please give the information about the rate of E-mail usage in your agency (if it is not available, please give an estimation based on your own observation)

Top leaders	___ %
Middle Managers	___ %
Staff members (and other employees)	___ %

Section 6. Evidence of Citizen-Centered Government

1. Are the general public (citizens) able to access online documents related to issues currently being decided by the government?

- ☐ No
☐ Yes

If you answered yes please provide a URL. <http://>_____

2. Are citizens able to communicate directly with government officials?

- ☐ No
☐ Yes

If you answered yes please provide a URL. <http://>_____

Section 7. Organizational Structure of Institution

For us to better understand where the IT department in your institution is please *attach a copy of your institution's organizational structure*. If your organizational chart is not available, please use the space below to illustrate how your institution is organized.

Thank you very much for your cooperation.
Your information and answer to this questionnaire will be kept secret
and not be used in any other purpose other than for this project.

11

<Appendix 2> Survey for Citizens

Uganda's e-Government Master Plan -Survey for Citizens-



Thank you for taking time in participating in this survey.

The results of this survey will be used in the research for creating "Uganda's e-Government Master Plan" a long term development plan that aims to create the blueprints for a highly effective e-Government for the nation of Uganda. This research is conducted by MICT(*Ministry of Information, Communication and Technology*) of the Uganda government in conjunction with NIPA (*National IT Industry Promotion Agency*) of the Korean government.

Your answers will be used for the sole purpose of the project under authority of MICT and used for statistical analysis. Therefore, we can assure you, that you will not suffer any penalties for your responses.

Thank you very much for your cooperation.



Ministry of ICT

If you have any question, please contact Julius Torach of NITA-U

Julius Torach

Email Address: Julius.Torach@nita.go.ug

Section 1. Current Digital Maturity Assessment

This section deals with questions that address the nation's preparedness for an electronic government. Please read the questions carefully and select the number that best answers the question. If you can't find an appropriate answer, please use the space provided to write out the correct answer.

1. Where do you mainly connect to the internet?
 - ① Home
 - ② Office (work space)
 - ③ Library
 - ④ Public office
 - ⑤ School
 - ⑥ Café
 - ⑦ Internet Café
 - ⑧ Other, Please specify: _____

2. How much time do you spend on a computer each day? (Home or at work, average time).
 - ① Less than 30 min
 - ② 30 minutes to 1 hour
 - ③ 1 to 2 hours
 - ④ 2 to 3 hours
 - ⑤ More than 3 hours, Please specify: _____ hours

3. What is your main purpose of internet usage?
 - ① Information gathering
 - ② Education
 - ③ Entertainment (games, listening to music)
 - ④ Communication (mail, SNS etc.)
 - ⑤ Internet Transaction (e-Commerce etc.)
 - ⑥ e-Government services
 - ⑦ Other, Please specify: _____

4. How do you access the Internet?
 - ① Modem (56kb)
 - ② Cable (128kb to 1Mb)
 - ③ Broadband (1 Mb+)
 - ④ LAN (local area network)
 - ⑤ Access to the internet is unavailable
 - ⑥ Other, Please specify: _____

5. What information is most important to you? (Check 2 options)
- ① Political Information
 - ② Educational information
 - ③ Economical information (foundation, employment, real-estate etc.)
 - ④ Culture/tour information
 - ⑤ Weather information (weather, disaster etc.)
 - ⑥ Health/medical information
 - ⑦ Taxation information
 - ⑧ Traffic information
 - ⑨ Other. Please specify: _____
6. Where are your primary sources for receiving information relevant to your work? (Please select the 2 most significant sources)
- ① Newspaper
 - ② TV/Radio (broadcast)
 - ③ Internet
 - ④ Word of mouth
 - ⑤ Mobile devices (smartphone, tablet PC)
 - ⑥ Books
 - ⑦ Other. Please specify: _____
7. Does your department provide IT training? If so, what is the duration of the training and how many times a year is it provided?
- ① Yes (Frequency: _____ times a year, for _____ hours)
 - ② We receive no IT training
8. If you could receive IT training, what kind would you like to receive?
- ① Training on how to use the Internet
 - ② Training on how to use PCs
 - ③ Programming courses (Java, Visual Basic, PHP, ASP, etc)
 - ④ Training on office programs (Word, Excel, etc)
 - ⑤ Other. Please specify: _____

Section 2. Efficiency of National Administrative Work

This section deals with questions that address the improvement of services provided by the government. Please read the questions carefully and select the number that best answers the question. If you can't find an appropriate answer, please use the space provided to write out the correct answer.

1. What government administrative service do you use most frequently?

- ① Resident registration
- ② Real-estate service
- ③ Immigration/trade
- ④ Taxation
- ⑤ Vehicle registration
- ⑥ Public healthcare
- ⑦ Licensing system
- ⑧ Employment information system
- ⑨ Social security (welfare)
- ⑩ Postal Services
- ⑪ Disaster information
- ⑫ Education
- ⑬ Other, Please specify: _____

2. What method do you primarily use when you need to attend to government administrative work?

- ① Visit the relevant institution
- ② Telephone
- ③ Fax
- ④ Mail
- ⑤ Visit the institution's website
- ⑥ Other, Please specify: _____

3. Are you satisfied with the current government's administrative services?

- ① Very satisfied
- ② Satisfied
- ③ Neutral
- ④ Dissatisfied
- ⑤ Very dissatisfied

4. In what area do you feel the national administrative services needs to improve?

- ① Provision of online civil services and applications (registration, taxes, etc)
- ② Disaster management, public safety and security management
- ③ Expansion of citizen's communication channels
- ④ Day to day citizen support (welfare, health, employment, residents, etc)
- ⑤ Other, Please specify: _____

5. Why do you believe this process or service needs improvement?

- ① Lack of supporting technologies
- ② Complex procedure
- ③ Lack of knowledge sharing
- ④ Absence of authority delegation
- ⑤ Lack of a service mind
- ⑥ Other, Please specify: _____

6. In your opinion, what electronic administrative service should be created first by the government?

- ① Resident registration
- ② Real-estate service
- ③ Immigration/trade
- ④ Taxation
- ⑤ Vehicle registration
- ⑥ Public healthcare
- ⑦ Licensing system
- ⑧ Employment information system
- ⑨ Social security (welfare)
- ⑩ Postal Services
- ⑪ Disaster information
- ⑫ Education
- ⑬ Other, Please specify: _____

7. How aware are you of the IT projects initiated by government?

- ① I am aware of all the government IT projects
- ② My awareness is above average
- ③ My awareness is average
- ④ My awareness is below average
- ⑤ I am not aware at all about government IT projects

8. What do you believe are the two most important projects that the government must initiate for economic development? (Please select two, and number them by priority, 1 and 2)

- ① Deregulation ()
- ② Increasing efficiency of government administrative work ()
- ③ Provision of online government services ()
- ④ Improving transparency (reduction of corruption and bribery) ()
- ⑤ Improvement of education ()
- ⑥ Security/safety of the nation (against natural disasters) ()
- ⑦ Improvement of infrastructure ()
- ⑧ Other, Please specify: _____ ()

9. What two things do you believe should be priorities in creating e-Government? (Please select two, and number them by priority, 1 and 2)

- | | |
|--|--------|
| ① Expansion and improvement of the telecommunications infrastructure | () |
| ② Internet based administrative services | () |
| ③ Modification of e-Government related laws and regulations | () |
| ④ Establishment of regional IT centers | () |
| ⑤ Expansion of educational opportunity | () |
| ⑥ Single access points for multiple administrative tasks (ie. Single Window) | () |
| ⑦ Provision of IT devices (ie. PCs, cell phones, etc.) | () |
| ⑧ Computerization of administrative tasks (ie. paperless government) | () |
| ⑨ Other: _____ | () |

10. If you have any opinions related to e-Government projects, please use the box provided below.

Section 3. General Information

This section acquires information about you, the survey participant, to maintain the objectiveness of this survey. Please read the questions carefully and answer them the best you can. If you can't find an appropriate answer, please use the space provided to write out the correct answer.

1. Are you male or female?

- ① Male
- ② Female

2. What is your age?

- ① Under 20
- ② 20 ~ 29
- ③ 30 ~ 39
- ④ 40 ~ 49
- ⑤ 50 ~ 59
- ⑥ above 60

3. What industry is your occupation?

- ① Agriculture/Fishery
- ② Natural resources (Mining, oil, etc)
- ③ Financial services (banking, insurance, etc)
- ④ Education (faculty members, professors, etc)
- ⑤ Hospitality services (hotelier, tourism etc)
- ⑥ Manufacturing (production or factory worker)
- ⑦ Office Worker (private sector)
- ⑧ Office Worker (public sector)
- ⑨ Student
- ⑩ Homemaker (housewife)
- ⑪ Other. Please specify: _____

4. What is your educational background?

- ① Completion of elementary school
- ② Completion of middle school
- ③ Completion of high school
- ④ Completion of college (2 years)
- ⑤ Completion of university (4 years)
- ⑥ Other. Please specify: _____

- This ends the survey, thank you very much for your cooperation -

<Appendix 3> Survey for Business & Enterprises

Uganda's e-Government Master Plan -Survey for Business & Enterprises-



Thank you for taking time in participating in this survey.

The results of this survey will be used in the research for creating "Uganda's e-Government Master Plan" a long term development plan that aims to create the blueprints for a highly effective e-Government for the nation of Uganda. This research is conducted by MICT(*Ministry of Information, Communication and Technology*) of the Uganda government in conjunction with NIPA (*National IT Industry Promotion Agency*) of the Korean government.

Your answers will be used for the sole purpose of the project under authority of MICT and used for statistical analysis. Therefore, we can assure you, that you will not suffer any penalties for your responses.

Thank you very much for your cooperation.



Ministry of ICT

If you have any question, please contact Julius Torach of NITA-U

Julius Torach

Email Address: Julius.Torach@nita.go.ug

Section 1. Current Digital Maturity Assessment

This section deals with questions that address the nation's preparedness for an electronic government. Please read the questions carefully and select the number that best answers the question. If you can't find an appropriate answer, please use the space provided to write out the correct answer.

1. How many computers (PC or laptops) are used in your company?
 - ① Less than 50
 - ② 50 to 100
 - ③ 100 to 300
 - ④ 300 to 500
 - ⑤ 500 to 1,000
 - ⑥ More than 1,000. Please specify: _____

2. How do you access the Internet?
 - ① Modem (56kb)
 - ② Cable (128kb to 1Mb)
 - ③ Broadband (1 Mb+)
 - ④ LAN (local area network)
 - ⑤ Access to the internet is unavailable
 - ⑥ Other. Please specify: _____

3. From the list below, which does your company handle through IT services? (ie. using groupware, ERP, CRM systems, etc, please select all that apply)
 - ① Sales/marketing
 - ② Manufacturing/production
 - ③ R&D
 - ④ Purchasing
 - ⑤ Supporting activities (HR, finance, accounting)
 - ⑥ Communication and collaboration (messenger, e-mail, portal etc.)
 - ⑦ Other. Please specify: _____

4. Which from the list below does your company plan to computerize? (Switch from paperwork to a digital format, or automate using IT, check only 2 options)
 - ① Sales/marketing
 - ② Manufacturing/production
 - ③ R&D
 - ④ Purchasing
 - ⑤ Supporting activities (HR, finance, accounting)
 - ⑥ Communication and collaboration (messenger, e-mail, portal etc.)
 - ⑦ Other. Please specify: _____

5. What information from the list below is most relevant to the work that your company does? (Check only 2 options)

- ① Trading information (import & export)
- ② Sales information (government procurement etc.)
- ③ Industrial information
- ④ Patent information
- ⑤ Financial information
- ⑥ Technical information
- ⑦ Human resource information
- ⑧ Taxation/customs information
- ⑨ Other. Please specify: _____

6. Where is your primary source of receiving information relevant to your work? (Please select the 2 most significant sources)

- ① Newspaper
- ② TV/Radio (broadcast)
- ③ Internet
- ④ Word of mouth
- ⑤ Mobile devices (Smartphone, Tablet PC)
- ⑥ Books
- ⑦ Other. Please specify: _____

7. Does your department provide IT training? If so, what is the duration of the training and how many times a year is it provided?

- ① Yes (Frequency: _____ times a year, for _____ hours)
- ② We receive no IT training

8. If you could receive IT training, what kind would you like to receive?

- ① Training on how to use the Internet
- ② Training on how to use PCs
- ③ Programming courses (Java, Visual Basic, PHP, ASP, etc)
- ④ Training on office programs (Word, Excel, etc)
- ⑤ Other. Please specify: _____

9. Does your company have an IT department? If it does, what is the size of the department?

- ① Yes (Size of department: _____ employees.)
- ② No

Section 2. Efficiency of National Administrative Work

This section deals with questions that address the improvement of services provided by the government. Please read the questions carefully and select the number that best answers the question. If you can't find an appropriate answer, please use the space provided to write out the correct answer.

1. What government administrative service do you use most frequently?
 - ① Human resource information (ie. labor related information)
 - ② Real-estate service
 - ③ Taxation
 - ④ Customs
 - ⑤ Trade services (import/export)
 - ⑥ Logistics services
 - ⑦ Licensing system
 - ⑧ Food and medical service
 - ⑨ Services for agriculture & fisheries
 - ⑩ Other. Please specify: _____

2. What method do you primarily use when you need to attend to government administrative work?
 - ① Visit the relevant institution
 - ② Telephone
 - ③ Fax
 - ④ Mail
 - ⑤ Visit the institution's website
 - ⑥ Other. Please specify: _____

3. Are you satisfied with the current government's administrative services?
 - ① Very satisfied
 - ② Satisfied
 - ③ Neutral
 - ④ Dissatisfied
 - ⑤ Very dissatisfied

4. In what area do you feel the national administrative services needs to improve?
 - ① Enhancement of business supporting services (factory registration, procurement, etc)
 - ② Provision of e-Transaction services and commercial information
 - ③ Support for import/export and logistics & trade
 - ④ Other. Please specify: _____

5. Why do you believe this process or service needs improvement?

- ① Lack of supporting technology
- ② Complex procedure
- ③ Lack of knowledge sharing
- ④ Absence of authority delegation
- ⑤ Lack of a service mind
- ⑥ Other. Please specify: _____

6. In your opinion, what electronic administrative service should be created first by the government?

- ① Human resource information (ie. labor related information)
- ② Real-estate service
- ③ Taxation
- ④ Customs
- ⑤ Trade services (import/export)
- ⑥ Logistics services
- ⑦ Licensing system
- ⑧ Food and medical service
- ⑨ Services for agriculture & fisheries
- ⑩ Other. Please specify: _____

7. How aware are you of the IT projects initiated by government?

- ① I am aware of all the government IT projects
- ② My awareness is above average
- ③ My awareness is average
- ④ My awareness is below average
- ⑤ I am not aware at all about government IT projects

8. What do you believe are the two most important projects that the government must initiate for economic development? (Please select two, and number them by priority, 1 and 2)

- ① Deregulation ()
- ② Increasing efficiency of government administrative work ()
- ③ Improving transparency (reduction of corruption and bribery) ()
- ④ Improvement of education ()
- ⑤ Security/safety of the nation (against natural disasters) ()
- ⑥ Improvement of infrastructure ()
- ⑦ Other. Please specify: _____ ()

9. What two things do you believe should be priorities in creating e-Government? (Please select two, and number them by priority, 1 and 2)

- | | |
|--|--------|
| ① Expansion and improvement of the telecommunications infrastructure | () |
| ② Internet based administrative services | () |
| ③ Modification of e-Government related laws and regulations | () |
| ④ Establishment of regional IT centers | () |
| ⑤ Expansion of educational opportunity | () |
| ⑥ Single access points for multiple administrative tasks (ie. Single Window) | () |
| ⑦ Provision of IT devices (ie. PCs, cell phones, etc.) | () |
| ⑧ Computerization of administrative tasks (ie. paperless government) | () |
| ⑨ Other: _____ | () |

10. If you have any opinions related to e-Government projects, please use the box provided below.

Section 3. General Information

This section acquires information about you, the survey participant, to maintain the objectiveness of this survey. Please read the questions carefully and answer them the best you can. If you can't find an appropriate answer, please use the space provided to write out the correct answer.

1. What industry is your company in?

- ① Manufacturing
- ② Finance (banking, insurance, etc)
- ③ Electronics, IT, or telecommunications
- ④ Services
- ⑤ Agriculture/Fisheries/Forestry
- ⑥ Mining
- ⑦ Petroleum/Chemistry
- ⑧ Other. Please specify: _____

2. How many employees does your company have?

- ① Less than 10
- ② 10 ~ 100
- ③ 100 ~ 300
- ④ 300 ~ 500
- ⑤ 500 ~ 1,000
- ⑥ More than 1,000. Please specify: _____

3. Which department are you in?

- ① General affairs/human resources/personnel
- ② Finance/accounting
- ③ PR (promotion or brand management)
- ④ Marketing and sales (trade)
- ⑤ Production or manufacturing
- ⑥ Research and development
- ⑦ IT
- ⑧ Other. Please specify: _____

- This ends the survey, thank you very much for your cooperation -

<Appendix 4> Interview Survey for Ministry of Uganda

Uganda e-Government Master Plan (Interview Survey for Ministry of Uganda)



Thank you for taking time in participating in this survey.

The results of this survey will be used in the research for creating "Uganda's e-Government Master Plan" a long term development plan that aims to create the blueprints for a highly effective e-Government for the nation of Uganda. This research is conducted by NIPA (*National IT Industry Promotion Agency*) of the Korean government.

Your answers will be used for the sole purpose of the project and used for statistical analysis. Therefore, we can assure you, that you will not suffer any penalties for your responses.

- Main Questions:
 - Main work statue
 - Major issues of each of the departments
 - Coordination with other departments and means of coordination
 - e-Government
 - Main objective of e-government
 - Main system used internally and main function of the system
 - The biggest obstacles of e-government
 - Key success factors of e-government

Thank you very much for your cooperation.



If you have any question, please contact NIPA Consultants

Project Manager: Mr. Sung-Won Yoon

Phone Number: +82-010-4458-3989

Email Address: munso39@naver.com

Ministry Interviews (Minister)

General

1. What are the biggest issues/obstacles you are facing within your ministry?
(Example: dependency on paper document, information security, lack of coordination within the ministry, information sharing within ministries etc.)
2. What other institutions do you work primarily with, and how do you work with them?
(Example: agencies, ministries, private organizations etc.)
3. Do you experience problems collaborating cross-divisionally with these institutions? Please elaborate.

E-Government

4. Explain major and applicable administration services (for citizens and enterprises) which are provided by your ministry. Or main system used internally.
(Example: e-Payment, e-Approval, Groupware, Electronic Document Management System, any other kinds of IT Systems or Services)
5. In your opinion, what is the main reason of executing e-Government (or Computerization) in Uganda? (Example: Process Innovation, Enhancement of service to citizen, etc.)
6. In your opinion, what is the key factor to enable e-Government?
(Example: Top management support/willingness, consensus of opinion, budget etc.)
7. Explain the direction of information (or Computerization) in your Ministry (Example: Small Government, Economy Development etc.)

Ministry Interviews (Working Group)

General

1. What are the biggest issues/obstacles you are facing within your ministry?
(Example: dependency on paper document, information security, lack of coordination within the ministry, information sharing within ministries etc.)
2. What other institutions do you work primarily with, and how do you work with them?
(Example: agencies, ministries, private organizations etc.)
3. Do you experience problems collaborating cross-divisionally with these institutions? Please elaborate.

E-Government

4. Explain major and applicable administration services (for citizens and enterprises) which are provided by your ministry. Or main system used internally.
(Example: e-Payment, e-Approval, Groupware, Electronic Document Management System, any other kinds of IT Systems or Services)
5. In your opinion, what is the main reason of executing e-Government (or Computerization) in Uganda? (Example: Process Innovation, Enhancement of service to citizen, etc.)
6. In your opinion, what is the key factor to enable e-Government?
(Example: Top management support/willingness, consensus of opinion, budget etc.)