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Report No: PAD635

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF 54.4 MILLION SDR
(US$75 MILLION EQUIVALENT)

TO THE

REPUBLIC OF UGANDA

FOR A

REGIONAL COMMUNICATIONS INFRASTRUCTURE PROGRAM PHASE 5 - UGANDA PROJECT

May 1, 2015

Transport and ICT Global Practice
AFRICA

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 31, 2015)

Currency Unit	=	SDR
0.7249 SDR	=	US$1
2972 UGX	=	US$1

FISCAL YEAR

July 1 – June 30

ABBREVIATIONS AND ACRONYMS

3G/4G	Third Generation/Fourth Generation Technology
APL	Adaptable Program Loan
BOU	Bank of Uganda
CAB	Central Africa Backbone
CAS	Country Assistance Strategy
CERT	Computer Emergency Response Team
CO	Country Office
DA	Designated Account
DP	Development Partner
DRC	Democratic Republic of Congo
E&SA	Eastern and Southern Africa
EAC	East African Community
EASSy	East Africa Submarine System
ED	Executive Director
e-GP	e-Government Procurement
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environment and Social Management Plan
FA	Framework Agreement
FINMAP	Financial Management and Accountability Program
FM	Financial Management
FY	Fiscal Year
GDP	Gross Domestic Product
GEA	Government Enterprise Architecture
GIMPA	Ghana Institute of Management and Public Administration
GNI	Gross National Income
GoU	Government of Uganda
GovNet	Government Network
HoA	Horn of Africa
HQ	Headquarters
IaaS	Infrastructure as a Service

IBRD	International Bank for Reconstruction and Development
IC	Individual Consultant
ICB	International Competitive Bidding
ICT	Information and Communication Technology
IDA	International Development Association
IFC	International Finance Corporation
IFMS	Integrated Financial Management System
IFR	Interim Financial Report
IPF	Investment Project Financing
IPPF	Indigenous Peoples Planning Framework
IRR	Internal Rate of Return
IRU	Indefeasible Right of Use
ISP	Internet Service Provider
ISR	Implementation Status Report
IT	Information Technology
ITU	International Telecommunication Union
JLOS	Justice, Law and Order Sector
M&E	Monitoring and Evaluation
Mbit	Megabit
MDAs	Ministries, Departments and Agencies
MICT	Ministry of ICT
MOFPED	Ministry of Finance, Planning and Economic Development
MTEF	Medium Term Expenditure Framework
NBI	National Backbone Infrastructure
NCB	National Competitive Bidding
NDP	National Development Plan
NGO	Non-Governmental Organization
NITA-U	National Information Technology Authority, Uganda
OECD	Organization for Economic Cooperation and Development
OP/BP	Operational Policy/Bank Procedure
OPM	Office of Prime Minister
PaaS	Platform as a Service
PCR	Physical and Cultural Resource
PDO	Project Development Objective
PDE	Procuring and Disposing Entity
PDU	Procurement and Disposal Unit
PEFA	Public Expenditure and Financial Accountability
PFM	Public Financial Management
PIO	Project Implementation Office
PIT	Project Implementation Team
PKI	Public Key Infrastructure
PMO	Project Management Office
PP	Procurement Plan

PPDA	Public Procurement and Disposal of Public Assets Authority
PPP	Public-Private Partnership
PS/ST	Permanent Secretary/Secretary to the Treasury
RAP	Resettlement Action Plan
RCIP	Regional Communications Infrastructure Program
RFP	Request for Proposal
RFQ	Request for Qualifications
RIAS	Regional Integration Assistance Strategy
RPF	Resettlement Policy Framework
SaaS	Security as a Service
SDR	Special Drawing Rights
SEFP	Social and Environmental Focal Point
SME	Small and Medium Enterprises
SSA	Sub-Saharan Africa
TA	Technical Assistance
TOR	Terms of Reference
UCC	Uganda Communications Commission
UGX	Ugandan Shilling
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
VMGF	Vulnerable and Marginalized Groups Framework
WARCIP	West Africa Regional Communications Infrastructure Program

Regional Vice President:	Makhtar Diop
Regional Integration Director:	Colin Bruce
Country Director:	Philippe Dongier
Senior Global Practice Director:	Pierre Guislain
Practice Manager:	Randeep Sudan
Task Team Leader:	Peter Silarszky

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Regional Communications Infrastructure Program Phase 5 - Uganda Project (P130871)

PROJECT APPRAISAL DOCUMENT

AFRICA

Report No.: PAD635

Basic Information		
Project ID	EA Category	Team Leader(s)
P130871	B - Partial Assessment	Peter Silarszky
Lending Instrument	Fragile and/or Capacity Constraints [ ]	
Investment Project Financing	Financial Intermediaries [ ]	
	Series of Projects [X]	
Project Implementation Start Date	Project Implementation End Date	
01-Jul-2015	28-Feb-2022	
Expected Effectiveness Date	Expected Closing Date	
23-Sep-2015	28-Feb-2022	
Joint IFC		
No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Randeep Sudan	Pierre Guislain	Colin Bruce	Makhtar Diop

Borrower: Republic of Uganda			
Contact:	Keith Muhakanizi	Title:	Permanent Secretary/Secretary to the Treasury (PS/ST)
Telephone No.:	256-414-707000	Email:	finance@finance.go.ug
Responsible Agency: National Information Technology Authority, Uganda			
Contact:	James Saaka	Title:	Executive Director
Telephone No.:	256-417-801038	Email:	info@nita.go.ug

Project Financing Data(in USD Million)					
[ ]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[X]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	85.00	Total Bank Financing:	75.00
Financing Gap:	0.00		

Financing Source	**Amount**
BORROWER/RECIPIENT	10.00
International Development Association (IDA)	75.00
Total	85.00

Expected Disbursements (in USD Million)

Fiscal Year	2016	2017	2018	2019	2020	2021	2022			
Annual	2.00	4.00	9.00	15.00	15.00	15.00	15.00			
Cumulative	2.00	6.00	15.00	30.00	45.00	60.00	75.00			

Institutional Data

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Cross Cutting Topics

[ ] Climate Change
[ ] Fragile, Conflict & Violence
[X] Gender
[ ] Jobs
[X] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Information and communications	Telecommunications	50		
Information and communications	Information technology	35		
Public administration, law, and justice	Public administration-Information and communications	15		
Total		100		

☑ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes		
Theme (Maximum 5 and total % must equal 100)		
Major theme	Theme	%
Financial and private sector development	Regulation and competition policy	5
Rural development	Rural services and infrastructure	5
Financial and private sector development	Infrastructure services for private sector development	50
Financial and private sector development	e-Services	10
Public sector governance	e-Government	30
Total		100

Proposed Development Objective(s)

To support the Recipient's efforts to:
(i) lower prices for international capacity and extend the geographic reach of broadband networks (the connectivity development objective); and
(ii) improve the Government's efficiency and transparency through e-Government applications (the transparency development objective).

Components

Component Name	Cost (USD Millions)
Enabling Environment	3.00
Connectivity	36.00
e-Government	40.00
Project Management	6.00

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Substantial
9. Other	
OVERALL	Substantial

Compliance

Policy		
Does the project depart from the CAS in content or in other significant respects?	Yes [ ]	No [X]
Does the project require any waivers of Bank policies?	Yes [ ]	No [X]
Have these been approved by Bank management?	Yes [ ]	No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No [ ]

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	X	
Natural Habitats OP/BP 4.04	X	
Forests OP/BP 4.36	X	
Pest Management OP 4.09		X
Physical Cultural Resources OP/BP 4.11	X	
Indigenous Peoples OP/BP 4.10	X	
Involuntary Resettlement OP/BP 4.12	X	
Safety of Dams OP/BP 4.37		X
Projects on International Waterways OP/BP 7.50		X
Projects in Disputed Areas OP/BP 7.60		X

Legal Covenants

Name	Recurrent	Due Date	Frequency
Procurement Specialist		23-Nov-2015	

Description of Covenant

The Recipient shall, not later than two (2) months after the Effective Date, cause the Project Implementing Entity to recruit a procurement specialist, with qualifications, experience and terms of reference satisfactory to the Association.

Name	Recurrent	Due Date	Frequency
Procurement Training		30-Sep-2016	

Description of Covenant

The Recipient shall, not later than twelve (12) months after the Effective Date, cause the Project Implementing Entity to provide procurement training for staff of its procurement and disposal unit in a manner and substance satisfactory to the Association.

Name	Recurrent	Due Date	Frequency
Project Accountant		23-Mar-2016	

Description of Covenant

The Recipient shall, not later than six (6) months after the Effective Date, cause the Project

Implementing Entity to recruit a Project accountant with qualifications, experience and terms of reference satisfactory to the Association.

Name	Recurrent	Due Date	Frequency
Financial Management Training		23-Mar-2016	

Description of Covenant

The Recipient shall cause the Project Implementing Entity to provide to its Project Implementation Office training on Bank financial management guidelines and procedures, not later than six (6) months after the Effective Date, all in a form and substance satisfactory to the Association.

Name	Recurrent	Due Date	Frequency
Management Contract for NBI	**X**		CONTINUOUS

Description of Covenant

The Recipient shall maintain - or cause to be maintained - the existing private sector management contract or other PPP arrangement satisfactory to the Association for the Recipient's national fiber optic backbone network.

Name	Recurrent	Due Date	Frequency
e-Government Public Service Delivery Platform Utilization		30-Sep-2017	

Description of Covenant

The Recipient shall, not later than two (2) years after the Effective Date, adopt policy and regulation, satisfactory to the Association, to mandate MDAs to utilize the shared e-Government public service delivery platform once it is set up.

Name	Recurrent	Due Date	Frequency
Funding of e-Procurement Operational Costs	**X**		Yearly

Description of Covenant

The Recipient shall allocate sufficient funding within PPDA's annual budget - starting in Fiscal Year 2016/2017 - for operational costs related to e-Procurement to ensure sustainability.

Name	Recurrent	Due Date	Frequency
Procurement Filing and Record Keeping		23-Mar-2016	

Description of Covenant

The Recipient shall, not later than six (6) months after the Effective Date, cause the Project Implementing Entity to update its procurement filing and record keeping system, in form and substance acceptable to the Association.

Name	Recurrent	Due Date	Frequency
Social Scientist		23-Mar-2016	

Description of Covenant

The Recipient shall, not later than six (6) months after the Effective Date, cause the Project Implementing Entity to recruit a Social Scientist on a retainer basis with qualifications, experience and terms of reference satisfactory to the Association.

Name	Recurrent	Due Date	Frequency

Environmental Specialist		23-Dec-2015	

Description of Covenant

The Recipient shall, not later than three (3) months after the Effective Date, cause the Project Implementing Entity to recruit an Environmental Specialist on a retainer basis with qualifications, experience and terms of reference satisfactory to the Association.

Name	Recurrent	Due Date	Frequency
Automated Accounting System		23-Mar-2016	

Description of Covenant

The Recipient shall, not later than six (6) months after the Effective Date, cause the Project Implementing Entity to automate its accounting system in a form and substance satisfactory to the Association.

Conditions

Source Of Fund	Name	Type
IDA	Subsidiary Agreement	Effectiveness

Description of Condition

The Subsidiary Agreement has been executed on behalf of the Recipient and the Project Implementing Entity.

Source Of Fund	Name	Type
IDA	Project Implementation Manual	Effectiveness

Description of Condition

The Project Implementation Manual has been prepared and adopted, in accordance with the provisions of Section I.C.2 of Schedule 2 of the Financing Agreement.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Peter Silarszky	Team Leader (ADM Responsible)	Senior Economist		GTIDR
Grace Nakuya Musoke Munanura	Procurement Specialist	Senior Procurement Specialist		GGODR
Paul Kato Kamuchwezi	Financial Management Specialist	Financial Management Specialist		GGODR
Aly Sanoh	Team Member	Economist/Statistician	Economic and Financial Analysis	GPVDR
Barbara Nalugo	Team Member	Team Assistant		AFMUG
Casey Torgusson	Team Member	Operations Officer		GTIDR
Christiaan Johannes Nieuwoudt	Team Member	Finance Officer	Disbursement	WFALA

Constance Nekessa-Ouma	Safeguards Specialist	Social Development Specialist	Social Safeguards	GSURR
Edwin Nyamasege Moguche	Team Member	Consultant	Financial Management	GGODR
Evarist F. Baimu	Counsel	Senior Counsel		LEGAM
Herbert Oule	Safeguards Specialist	Environmental Specialist	Environmental Safeguards	GENDR
Kaoru Kimura	Team Member	ICT Policy Specialist	Results Framework and Monitoring	GTIDR
Lyudmila Bujoreanu	Team Member	Consultant	e-Government	GTIDR
Sarah Nsibirwa-Nsubuga	Team Member	IT Analyst, Client Services		ITSCR
Tasneem Rais	Team Member	Program Assistant		GTIDR

Extended Team

Name	Title	Office Phone	Location
Sebastian Foo	e-Government Consultant		Singapore

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Uganda	Central Region	Central Region	X		
Uganda	Central Region	Kampala District	X		
Uganda	Eastern Region	Eastern Region	X		
Uganda	Northern Region	Northern Region	X		
Uganda	Western Region	Western Region	X		

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required ? Consultants will be required

I. STRATEGIC CONTEXT

A. Sub-Regional Context

1. Uganda resides within the Horn of Africa (HoA) sub-region,[1] which features some of the fastest growing economies on the continent and globally in recent years.[2] All countries in the region have solid assets on which to base future development progress. They are rich in natural resources including both renewable and nonrenewable sources of energy; they also have vast groundwater reserves, a significant, untapped agricultural capacity, and a business community that is increasingly entrepreneurial, innovative, and vibrant.

2. Despite this rapid growth, benefits have not been spread evenly and many people remain highly vulnerable. The proportion of people living on less than US$1 a day has been declining only marginally and in many countries the absolute number of poor people is increasing, driven by high fertility rates. Access to basic necessities (clean water, food, health care, and education) is limited for many regions and marginalized groups. A complex set of historical, ideological, political, social, economic, territorial and environmental factors have created tensions between and within some neighboring states. Frequent outbreaks of violence, drought and famine have resulted in displacement of millions across the region.[3]

3. Reducing poverty and boosting shared prosperity in the Horn of Africa will require a two pronged approach, as supported by the Horn of Africa Initiative[4] recently launched by the World Bank in partnership with the United Nations (UN), European Commission (EC) and other development partners. This approach consists of: (i) tackling the underlying drivers of instability and vulnerability both within and between countries to prevent recurrent conflicts and famines which disrupt growth and destroy human capital; and (ii) leveraging revenues generated by high growth rates to invest in productivity enhancing infrastructure, skills and services for all citizens. **Widespread deployment and access to Information and Communication Technologies (ICTs) can play a catalytic role in enabling and sustaining efforts in both areas.**

B. Country Context

4. Like its regional counterparts, Uganda has experienced robust GDP growth, averaging 6% from 2005 to 2014, but poverty reduction, while substantial, has not kept pace. Uganda has a record of prudent macroeconomic management and structural reform which has helped the country to overcome exogenous shocks. However, due to high population growth, real GDP growth per capita averaged only about 3.5 percent over the 2005-2014 period. The poverty rate

[1] Defined as Djibouti, Eritrea, Ethiopia, Somalia, Sudan, Kenya, Uganda and South Sudan for this program

[2] For example, Uganda's GDP increased by 5.3 percent in 2013, Ethiopia's GDP growth has been averaging 8.5 percent per annum, and Kenya's nearly 6 percent per annum.

[3] The region has generated over 2.7 million refugees and continues to host over 2 million of them. There are also over 6 million IDPs in the region. Source: UNHCR 2013

[4] The World Bank has committed over US$1.8 billion in new financing and guarantees to support investments in regional programs to address the drivers of fragility and promote resilience and economic opportunity in HoA as announced during a joint trip of World Bank President Jim Yong Kim with the UN Secretary General and other development partners to the region in October 2014

fell from 56.4% in 1992 to 19.1 percent in 2014, but there is substantial and growing urban-rural and regional inequality. This divide is likewise reflected in access to ICT services.

5. Uganda will need to address several challenges in order to enable structural transformation of the economy, strengthen competitiveness and sustain high growth. A rapidly growing population is creating challenges for employment and service delivery. Lack of integration with northern Uganda further creates challenges of social cohesion. Governance and value for money need to be strengthened to enhance service delivery, increase the efficiency of infrastructure investments, and to build a clear and transparent institutional framework to ensure that future oil revenues in particular benefit the entire population. Infrastructure gaps and bottlenecks will need to be addressed to promote greater physical and digital connectivity both within the country, the wider region and to the global markets. Agricultural productivity and value addition need to be strengthened to improve the livelihoods of the average citizen. Rapid urbanization will need to be managed carefully and the human capital base will need to be significantly strengthened to take advantage of new market opportunities. ICT has a potential to play a significant role in tackling these challenges, for example through electronic agricultural extension, weather prediction services and online learning platforms.

6. Uganda's geographic position requires strong regional cooperation and integration to boost its own development and that of its neighbors. As a landlocked country, Uganda is dependent on the good will, infrastructure investments and competitiveness of the logistics and communications sectors of its coastal neighbors. Bordering five countries, Uganda also serves as a strategic transit hub for the region. This position could be further strengthened through deeper trade and investment integration with its neighbors, including customs and regulatory streamlining and harmonization, paired with investments to improve its connective infrastructure and measures to increase the efficiency of its domestic logistics and communications sectors. Such a strategy would benefit not only Uganda, but spillover to its neighbors, particularly eastern DRC, South Sudan, and Rwanda.

C. Sectoral and Institutional Context

Sub-Regional Context

7. Telecommunications infrastructure and use of ICTs have grown dramatically across Sub-Saharan Africa in recent years. Mobile phone subscriptions exceeded 635 million by the end of 2014 and are projected to further increase to 930 million by the end of 2019.[5] Seven major submarine cables have been completed since 2009 and wholesale international bandwidth costs have fallen significantly in line with increased competition. Between 2007 and 2012, the percentage of internet users grew at a compound annual growth rate of 32%, compared with a global average of 12% and 2-4% in the United States and Western Europe.[6] Mobile data traffic is projected to grow 20 fold between 2013 and 2019, with 3G/4G coverage extending to 75% of mobile subscribers.[7]

[5] Ericsson Mobility Report, Sub-Saharan Africa, June 2014
[6] Global Internet Report 2014, Internet Society, http://www.internetsociety.org/sites/default/files/Global_Internet_Report_2014_0.pdf
[7] Ericsson Mobility Report, Sub-Saharan Africa, June 2014

8. Despite recent growth, a tremendous gap persists in access to broadband and provision of electronic services. Twenty-two of the twenty-five countries with the lowest levels of internet user penetration in the world are in sub-Saharan Africa, with an average of only 3% of the population having access compared with 38% globally.[8] Thirty of thirty-one sub-Saharan African countries included in the sample rank in the bottom half of the 2015 World Economic Forum Networked Readiness Index.[9] Limited competition and backbone infrastructure both domestically and regionally continues to prevent the fall in wholesale prices for international connectivity from fully translating into lower prices for consumers, and inhibits faster rollout of broadband infrastructure to rural areas. Limited broadband access and lack of capacity and investment by governments has limited the spread of electronic services.

9. Many countries in the Horn of Africa sub-region lag even further behind, with some of the highest prices for bandwidth and lowest levels of connectivity in the world. This is despite the fact that the Red Sea is a thoroughfare for many major international fiber-optic cables. Challenges include inadequate international and regional connectivity infrastructure and non-competitive markets in several of the countries. Average broadband penetration of 1.5% compares unfavorably to the Africa region's average of 4% and some high performing countries such as Morocco with 12.5% and South Africa with 9.8%.[10] Connectivity is also unevenly distributed in the HoA sub-region. Countries such as Kenya are demonstrating the transformational effect of low cost bandwidth, with Information and Communications Technologies (ICTs) accounting for as much as 30% of overall GDP growth in recent years. [11,12] In contrast, countries such as Eritrea, Somalia and South Sudan have little or no broadband services and infrastructure, with all three plus Ethiopia among the 10 countries with the lowest internet availability in the world. While slightly ahead of some of its neighbors, Uganda also ranks near the bottom of global rankings with a broadband penetration rate of just 1.4%.[13]

10. The infrastructure and broadband access gap presents both a challenge and a tremendous opportunity for rapid catch up growth. Unburdened by sunk costs in legacy technology infrastructure, particularly fixed line services, countries in the region have the potential to leap-frog to new technologies, driving investment, economic growth and innovation. Latent demand suppressed by lack of sector competition and/or incumbent monopolies in many countries can be unleashed through improved policies and regulation to drive rapid convergence in access and adoption rates with more developed countries. With relatively small public

[8] UN Broadband Commission based on ITU 2013 data

[9] Mauritius is the exception, ranked 45th globally. The Network Readiness Index is a composite index measuring: (i) a country's political, regulatory, business and innovation environment with regard to ICTs; (ii) readiness for ICT use including infrastructure, skills, affordability and access; (iii) rates of ICT usage by businesses, consumers and government; and (iv) the economic and social impact of ICTs within the country.

[10] Adapted from Telegeography data and reports

[11] McKinsey Study on the transformative impact of Internet http://www.mckinsey.com/insights/high_tech_telecoms_internet/lions_go_digital_the_internets_transformative_potential_in_africa

[12] http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22779917~pagePK:64257043~piPK:437376~theSitePK:4607,00.html

[13] International Telecommunication Union (ITU)

investments and appropriate incentives for the private sector to invest in rural areas in particular, the connectivity gap between urban and rural populations can quickly be narrowed.

11. In response to these challenges, opportunities and evolving regional context, the Regional Communications Infrastructure Program (RCIP) aims to help address the region's connectivity constraints and to improve transparency and service delivery by leveraging ICTs. The program has been rolled out in countries in East and Southern Africa since 2007 through a phased approach, with specific infrastructure investments and enabling environment reforms adapted to the individual country and sector context, but set within a coordinated regional framework. The resulting impact is greater than the sum of the individual country projects. Not only does each country undertaking investments and reforms benefit directly through greater competitiveness, access, and quality of telecommunications services, but the effect is multiplied by undertaking such interventions in all countries within a region. A regional approach helps ensure that there are multiple competitive and seamless options for international connectivity, especially for landlocked countries such as Uganda, which must rely on transiting traffic through neighboring countries to gain access to submarine cables along the coast. Likewise, increased regional traffic volume enhances the viability of regional infrastructure and allows unit prices to drop.

Country Context

12. Access to and utilization of mobile telephony and mobile based services has increased dramatically in Uganda. The number of mobile phone subscribers in Uganda has grown from just 780,000 in 2003 to approximately 21.6 million in December 2013, or roughly 55% of the population.[14] The cost of both international and domestic calls has fallen sharply. 18.5 million Ugandans used mobile money services in 2014, more than triple the number of traditional bank account holders, with a transaction volume of UGX18 trillion (US$6.2 billion).[15] Focus group studies[16] found that among low and middle-income earners in Uganda, men and women tended to have equal access to phones. However, some households were still found to possess mobiles which were only used by the male partner. Expanding access and use of mobile phones and Internet to more women in Uganda can contribute to meeting their specific needs and create new opportunities for them.

13. In contrast, access to broadband remains low, with poor quality and high prices. Entry level mobile broadband service (500MB per month) costs about 19% of the average Ugandan's monthly income,[17] set against the UN Broadband Commission's target of 5%. The high costs are reflected in low broadband penetration rates of just 1.4% (1% mobile and 0.4% fixed), compared with a regional average of 4.3%. The high costs and low penetration result from a number of factors, including Uganda's position as a landlocked country requiring overland access to submarine cables landing in neighboring countries, previous technical problems of the national backbone network, and perceived limited market opportunity by private operators given the high rates of poverty and illiteracy in most rural areas.

[14] Telegeography and ITU
[15] Telegeography, Feb 17, 2015
[16] Gender Assessment of ICT Access and Usage in Africa. Volume One 2010 Policy Paper 5. Research ICT Africa
[17] International Telecommunication Union (ITU) – 18.8% of GNI per capita in 2013 for pre-paid service

Table 1: Uganda's ICT development in Regional Context

Indicator	Uganda	Kenya	Ethiopia	DRC	Tanzania
Mobile voice penetration as % of population (Dec 2013)	55.1%	70.6%	27.3%	42.0%	55.9%
Fixed and mobile broadband penetration as % of population (Dec 2013)	1.4%	28.4%	0.8%	0.7%	6.5%
% of households with internet access (Dec 2013)	5%	14%	2%	n/a	4%
International internet bandwidth (bit/s) per internet user (Dec 2013)	4.2	49.9	6.7	n/a	6.5

Sources: Telegeography and ITU

14. The Government of Uganda (GoU) has implemented major policy reforms in the communications sector, demonstrating its commitment to the promotion of ICTs. These include establishing the Ministry of ICT (MICT) which is charged with providing strategic and technical leadership, overall coordination, support and advocacy on all matters of policy, laws, regulations and strategy for the ICT sector. The GoU has also established an independent regulatory body, the Uganda Communications Commission (UCC), fully liberalized the telecommunications market and implemented a technology-neutral converged licensing framework, all of which has resulted in the increase of (mostly mobile) telephony penetration from below 1% in 2000 to 55.1% as of December 2013.[18]

15. Likewise, the Government has made substantial investments in telecommunications infrastructure, though significant gaps persist. GoU is investing in the development of a National Backbone Infrastructure (NBI) with the aim of bringing reliable, high quality, low cost connectivity to all regions of the country for use by both the Government and the private sector. Phases I and II, comprising over 1,500 km of fiber and funded by a bilateral credit from China, have been completed, with phase III to be completed in 2015 (see Figure 1 in Annex 2). Even with the completion of phase III, large portions of the northeast and northwest of the country will remain without coverage. Initial technical problems with the network have now been overcome, following a technical audit completed in 2011 and subsequent remedial actions. However, additional redundancy (additional links to close loops), international connections, and more stable power supply at transmission hubs is needed to further improve network performance.

16. The NBI is operated in line with "open access" principles, enabling any licensed operator to purchase wholesale capacity on the network on equal non-discriminatory terms. The NBI is fully owned by the Government of Uganda but is operated through a management contract by a competitively selected private company (Soliton of Kenya[19]) responsible for maintenance of the network and sale of capacity to licensed operators and internet service providers (ISP). This successful private management contract will be extended to

[18] Telegeography
[19] Soliton does not participate in the retail telecommunications market in Uganda

all future phases of the NBI, ensuring a seamless and interoperable network. The open access principles apply to regional transit traffic as well, ensuring that lower costs within Uganda translate equally to benefits for neighboring countries, such as South Sudan, which access international connectivity through the NBI.

17. The private sector is leveraging investments in the NBI to roll out complementary infrastructure and services in areas where there is strong demand and commercial viability. For example, a Google subsidiary is building a fiber access network in the greater Kampala metropolitan area; this enables ISPs and mobile operators to provide broadband services at affordable prices to end users in the area.

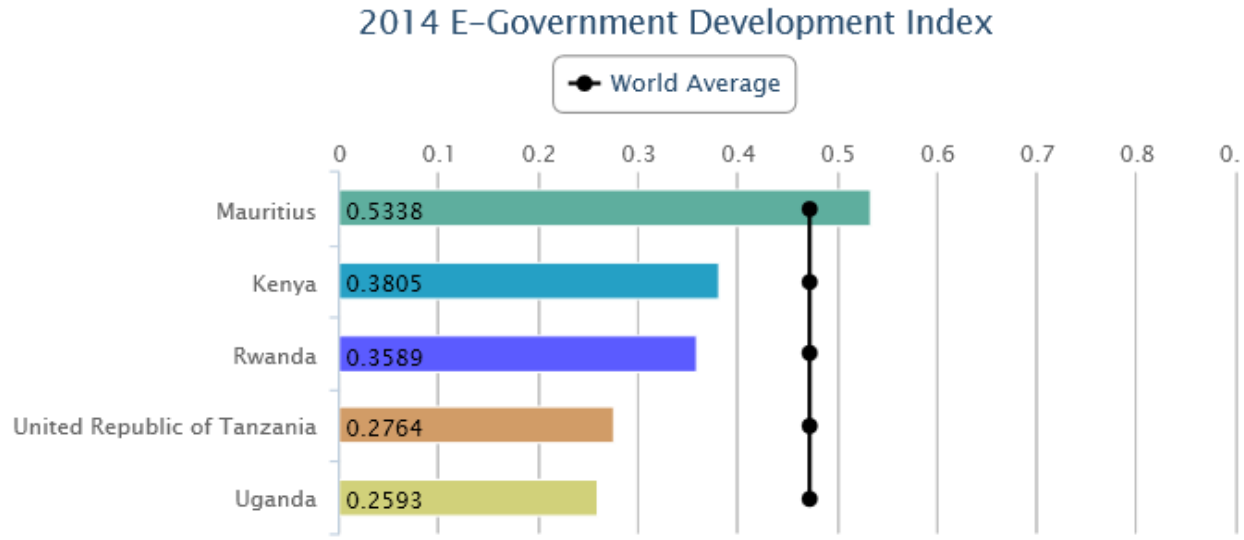
18. However, further investments and incentives are needed to ensure affordable high quality ICT services in all areas of the country and to benefit neighboring countries. Significant private sector investments, such as those in the greater Kampala metropolitan area, are not forthcoming in secondary cities and rural areas where risks are higher and profit margins lower. Extension of the NBI to these areas will help lower the costs and risks of investment to extend commercial services in these areas by private operators. Likewise, additional links to neighboring countries where geography, poverty, fragility and conflict have prevented the private sector from deploying the needed infrastructure on their own, can bring huge benefits.

19. Closing the missing links in the NBI and providing new international connections to neighboring countries will improve access, reliability and competitiveness of broadband services both domestically and regionally. The new links to be funded under RCIP would connect currently underserved areas in the northern and western regions of Uganda as well as South Sudan and eastern DRC, areas which face challenges of connectivity, economic opportunity, fragility and conflict. The new international links will complement the links to Rwanda and Tanzania to be constructed under phase III of the NBI and also the existing connections to Kenya and South Sudan. The additional links will also improve the reliability of the NBI, benefitting users in both Uganda and in the neighboring countries by creating self-healing loops. It will also help to position the country as a regional communications transit hub, including laying the groundwork for an eventual backbone connection between the submarine cables on the east and west coasts of Africa. The proposed routing of the RCIP financed links is detailed in Figure 1 in Annex 2.

20. Significant investments and a coordinated strategy are needed to leverage the growth in connectivity and access to ICTs to improve public services. e-Government services remain highly underdeveloped in Uganda. The 2014 UN e-Government Development Index[20] ranked Uganda 156th out of 193 countries for e-Government development. This ranking also compares poorly with peers in the region (see Figure 1 below). Such underdevelopment presents a missed opportunity to take advantage of increased reach and lower cost of connectivity to develop e-services to boost government efficiency and transparency, to improve service delivery and to reach the poorest citizens and aspiring entrepreneurs.

[20] Composed of three important aspects of e-Government: provision of online services, telecommunications connectivity, and human capacity.

Figure 1: Uganda's e-Government Development in Comparison



Source: 2014 UN e-Government Survey

D. Higher Level Objectives to which the Project Contributes

21. The project contributes to achieving the goals of improving broadband affordability and access to the internet established by the UN Broadband Commission. Specifically, the commission has set a target of lowering the monthly cost of basic broadband services to less than 5% of GNI per capita, and boosting internet penetration to 15% by 2015 in developing countries. The Commission was established and the targets were set in recognition of the potential for leveraging broadband enabled services to help meet the millennium development goals as well as the goals of the post-2015 agenda. Uganda is currently off track to meet these targets, but the project would help to significantly accelerate this process by improving sector competitiveness and addressing gaps in service provision from private providers in regions with less attractive commercial potential.

22. Both of the World Bank's twin goals of reducing extreme poverty and boosting shared prosperity are strongly supported by the project. Increasing affordable access to the internet has been shown to have a transformative impact across nearly all sectors of the economy, boosting overall productivity and GDP growth.[21] By targeting currently underserved and remote areas and improving service delivery in sectors such as agriculture, where the greatest numbers of poor citizens earn their livelihoods, as well as health and education which have a significant impact on their quality of life and future economic prospects, the project also seeks to empower

[21] It is estimated that low-income and middle-income countries experienced "about a 1.38 percentage point increase in GDP for each 10 percent increase in [broadband] penetration" between 2000 and 2006. Similarly, Booz & Company found that "10 percent higher broadband penetration in a specific year is correlated to 1.5 percent greater labor productivity growth over the following five years." Christine Zhen-Wei Qiang and Carlo M. Rossotto, IC4D: Extending Reach and Increasing Impact, Chapter 3: Economic Impacts of Broadband, GICT Dept. World Bank, p. 45 (2009). See also Yongsoo Kim, Tim Kelly and Siddhartha Raja, Building Broadband: Strategies and Policies for the Developing World, GICT Dept. World Bank (Jan. 2010).

marginalized populations with access to new technology, information, e-services and reduced transaction costs, rather than leaving them further behind.

23. The project is fully in line with the World Bank's Regional Integration Assistance Strategy (RIAS) for Sub-Saharan Africa (2008) and the 2011 RIAS Progress Report and Strategic Update "Partnering for Africa's Regional Integration." It contributes to the RIAS priorities of facilitating development of regional connectivity infrastructure, facilitating intra-regional trade and exports, and connecting landlocked countries to regional and global trade routes by reducing barriers to movement of goods and services between countries. The RIAS recognizes the key role ICTs can play in regional integration and increasing competitiveness of African economies and RCIP is featured as a flagship program.

24. The project is also a central component of the Bank's Horn of Africa Initiative which seeks to address some of the underlying drivers of conflict and fragility in the region. It supports both pillars of the initiative, namely (i) reducing vulnerability and promoting resilience; and (ii) promoting economic opportunity through regional integration. The enhanced broadband connectivity is expected to boost overall economic productivity, boost trade, and stimulate job creation, with a particular emphasis on northern and western Uganda and spillover benefits to eastern DRC and South Sudan. It provides jobs directly through the construction and operation of networks and, more importantly, by boosting entrepreneurship and self-employment. It will also enable improved service delivery by both governments and the private sector, including to underserved borderland and rural populations, with knock-on effects for stability and social cohesion.

25. The project is also fully aligned with the World Bank's Strategy for Sub-Saharan Africa: "Africa's Future and the World Bank's Support to It" (2011) and the Country Assistance Strategy (CAS) for Uganda (FY2011-FY2015). By facilitating cheaper access to Internet and supporting the development of national and regional communications infrastructure, RCIP Uganda would promote competitiveness and sustainable employment, contribute to the deployment of ICT infrastructure, support human capital development and improve Government's efficiency and transparency through creating a critical building block for and implementing e-Government applications. The CAS envisages that Uganda would prepare a project under RCIP to access funding for ICT infrastructure and various e-Government activities in order to support the strategic objectives of the CAS.

26. In line with the Government's Vision 2040 and National Development Plans, the project would support the GoU in improving (i) the communications infrastructure in the country and its utilization; and (ii) the efficiency and transparency of the Government. The next National Development Plan (NDP) covering 2015-2020 is currently under development. It identifies the promotion of science, technology, innovation and ICT as one of its eight primary objectives and specifies the need to enhance the use and application of ICT services in business and service delivery. The government is also developing a new ICT Sector Strategy and an ICT position paper which is aimed at identifying the role of ICT in supporting the new development priorities of the country more broadly.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

27. The development objectives of the proposed RCIP Uganda project are consistent with the PDO of the RCIP Program as a whole, namely to support the Recipient's efforts to:

(i) Lower prices for international capacity and extend the geographic reach of broadband networks (the connectivity development objective); and

(ii) Improve the Government's efficiency and transparency through e-Government applications (the transparency development objective).

B. Project Beneficiaries

28. Given the project's scope and potential for improving the country's ICT enabling environment, connectivity and e-Services delivery, it is envisioned that there will be a wide spectrum of beneficiaries. Citizens and businesses will benefit through more affordable and accessible telecommunications services and enhanced public service delivery. Rural, underserved populations, both men and women, in the north-west, north-east, and south-west of the country are specifically targeted by the expansion of the NBI. Lower income citizens will benefit more broadly through access to new electronic services in sectors such as agriculture and health which have a disproportionate impact on their livelihoods and wellbeing. ICT sector firms will benefit from an improved legal and regulatory environment and open access to NBI. Within the Government, nearly all ministries, departments and agencies (MDAs) will benefit from improved quality and lower cost of connectivity, improved efficiency of day-to-day operations through use of electronic platforms and communications, cost savings by leveraging shared infrastructure for data storage and service delivery, and enhanced ICT skills through training programs.

29. For the purposes of the outcome indicator, direct beneficiaries of the project will be calculated as the sum of the direct beneficiaries for some of the project components, namely:

(i) ***Citizens:*** (a) # of unique users of e-services supported by the shared public service delivery platform, (b) # of ICT services subscribers in geographic areas covered by the "missing links" supported by the project, (c) # of students in universities or schools benefitting from connectivity infrastructure/capacity pre-purchase financed by the project. (The figures for (b) and (c) will be reduced by the percentage of the population utilizing e-services under figure (a) to avoid double counting.)

(ii) ***Civil Servants:*** (a) # of civil servants in MDAs receiving improved internet connectivity under the project; and (b) # of unique email accounts provided to civil servants in MDAs not already benefitting from additional connectivity. (To avoid double counting of civil servants benefitting from multiple services, only the number of beneficiaries of additional connectivity and email services are included in this calculation as they cover the largest number of beneficiaries).

C. PDO Level Results Indicators

30. Achievements under the project would be measured by indicators tracking changes in volume and cost of national and international traffic and in the number and quality of electronically processed Government services. The proposed outcome indicators (see Table 2) are based on the framework defined at the time of the RCIP program approval. They have been adapted for specific activities funded under RCIP Phase 5 in Uganda and include several core sector indicators. Citizen engagement will be monitored through an outcome indicator related to user satisfaction with electronic services and gender impact will be measured by counting the number of women beneficiaries and number of e-services with a gender perspective.

Table 2: **Key Results Framework**

Project Development Objective	Outcome Indicators
	1. Direct project beneficiaries (number), of which female (percentage) CORE
Connectivity development objective: To contribute to lower prices for international capacity and extend the geographic reach of broadband networks	Volume of international traffic using proxy 2. International Internet bandwidth Volume of national traffic using 2 proxies: 3. Access to internet services (percentage of individuals using the internet) 4. Access to telephone services (fixed mainlines plus cellular phones per 100 people) CORE Average price of international communications using proxy: 5. Price of wholesale international capacity (per Mbit/s per Month, in US$)
Transparency development objective: To contribute to improved Government efficiency and transparency through e-Government applications	6. Beneficiaries satisfied with quality of e-Government services supported by the project (%) – Citizen Engagement Indicator 7. Number of transactions per year utilizing the shared public service delivery platform

III. PROJECT DESCRIPTION

A. Project Components

<u>Component 1: Enabling Environment (US$3 million IDA)</u>

31. While the Government of Uganda has taken positive steps in recent years toward improving the enabling environment for the ICT sector, substantial work remains if the sector is to thrive. A conducive enabling environment would translate into increased sector investment and competitiveness and improved access to and quality of ICT services for citizens,

businesses and government. This in turn would enable job creation and improved productivity and service delivery across all sectors, both public and private. The benefits of a conducive enabling environment will also spillover to neighboring countries which rely on Uganda for competitive, reliable and high quality international data transit.

32. This component aims to support the capacity of MICT and the National Information Technology Authority, Uganda (NITA-U) to review, develop and implement relevant ICT policies, strategies, laws and technical regulatory frameworks to support a modern and vibrant ICT sector. The objectives include maximizing the coverage, quality, affordability, and security of ICT infrastructure and enabling the delivery of e-Services by both Government and the private sector. It will also seek to promote alignment of Uganda with regional regulatory and policy harmonization efforts among the countries of the East African Community (EAC) and the findings and recommendations of the forthcoming EAC Digital Agenda.[22]

33. Specifically, this component will finance strengthening of the policy, legal and regulatory environment necessary to support a modern and vibrant ICT sector, through the following activities: (i) assessment of the existing ICT policies, strategies, standards, legislation and regulatory frameworks to identify gaps and weaknesses and their harmonization with regional commitments and frameworks; and (ii) based on the findings and recommendations of this assessment, modifications will be proposed to strengthen existing ICT policies, strategies, legislation, regulatory frameworks, and technical standards or develop new ICT policies, strategies, draft legislative bills, regulatory frameworks, and technical standards. The component will also support carrying out a program of activities designed to build the capacity of MICT and NITA-U including activities such as: (i) conducting an ICT skills gap assessment for Government and development of a program to address deficiencies; (ii) supporting the execution of the ICT skills development program including training and certification for officials in NITA-U, MICT, and PPDA; (iii) developing a strategy for institutionalization of the Chief Information Officer role within the Government; and (iv) developing and supporting the execution of awareness and partnership building programs and a communications strategy.

Component 2: Connectivity (US$34 million IDA and US$2 million GoU[23])

34. In addition to improving the enabling environment, complementary infrastructure investments are also needed to ensure greater access to affordable, high quality ICT services, both within Uganda and in neighboring countries. Recognizing this, the Government of Uganda has already developed the first two phases of a national fiber optic backbone network – the National Backbone Infrastructure (NBI). However, its capacity is currently underutilized due to the lack of links to neighboring countries other than Kenya and South Sudan (the latter with no complementary fiber yet in place), limiting the diversity of routes for connection to undersea cables and curbing potential growth of regional traffic. In addition,

[22] The World Bank in coordination with TradeMark East Africa and EAC is currently carrying out analytical work and technical assistance in support of establishing a "Digital Agenda." The agenda will serve as a roadmap for removing the bottlenecks to developing a coordinated digital ecosystem and single digital market in the sub-region, with the aim of driving the growth of ICT and ICT Enabled sectors, promoting innovation and leveraging ICTs to promote citizen welfare.

[23] The US$2 million GoU counterpart financing is to cover import and excise duties and is not allocated to sub-components.

there are significant challenges in terms of quality and reliability due to the fact that many of the branches of the network are not part of self-healing loops.[24] Moreover, significant portions of the country, particularly in rural areas, currently have no access to fiber optic connectivity, either through the NBI or the networks of the private operators; private operators perceive the financial returns insufficient to recoup the needed investments.

35. To address these challenges, the Government of Uganda intends to connect additional underserved regions of the country to the NBI and create new links to neighboring countries. It is envisaged that three new links will be established in rural areas underserved by private operators: a northwestern route through Kamdini, Pakwach, Arua, Yumbe, Moyo, Adjumani, and Nimule with links to DRC and South Sudan,[25] a southwestern link connecting Kasese and Mpondwe, also linking to DRC, and a northeastern route connecting Soroti and Moroto (see map in Figure 1 in Annex 2). In addition, this component will fund a feasibility study for a proposed northern loop, implementation of which is beyond the scope of this project. This is expected to improve the reliability and capacity utilization of the NBI and ensure improved connectivity in the region as a whole. The extension of the NBI will help to boost use of ICTs, enable connectivity to Government offices and public institutions in the regions, and lower the cost of international bandwidth by ensuring a diversity of options for access to submarine cables. The cost of international bandwidth will be further lowered by pre-purchasing bandwidth in bulk for Government and priority target user groups to achieve greater economies of scale.

36. Specifically, this component will finance the implementation of selected activities to further develop the national public ICT infrastructure including: (i) pre-purchase of international bandwidth for Government and priority target user groups (US$6 million); (ii) construction of select missing links in NBI in order to improve regional connectivity and the reach, availability and resiliency of NBI and provision of green energy solutions for new and existing NBI transmission sites to improve power reliability, and reduce costs and pollution (US$18 million); and (iii) extension of the Government Network (GovNet), providing broadband connectivity to MDAs, local governments, schools, hospitals, universities, research institutions, and NGOs (US$10 million). This component will also finance technical assistance related to the design and implementation of these sub-components, a feasibility study for the further extension of NBI in the northern part of Uganda (as noted above), and an analysis of potential environmental and social impacts of the project and support for the implementation of the safeguard instruments (other than the Resettlement Action Plans).

37. Public financing will only be employed to the extent necessary to reach areas where private sector interest is not sufficient to provide connectivity without additional intervention or incentives and Public-Private Partnership (PPP) mechanisms will be employed to leverage financing and expertise from the private sector. In the case of the NBI, operations and maintenance of the network will be managed by a private company which shares profits with the government from the sale of capacity on the network to licensed operators on a non-discriminatory, open access basis. This will enable the government to recoup its initial

[24] Best practice requires fiber optic networks to be deployed in loops, whereby if a line is cut traffic is not disrupted as it can flow in either direction around the loop.
[25] Creating redundancy for the existing link to South Sudan

investments over time and leverage the private sector to cover ongoing operations and maintenance costs. In the case of the Government Network, various PPP modalities will be explored[26] leveraging long term leases/Indefeasible Rights of Use (IRUs) to incentivize the private sector to invest in upgrading their existing network infrastructure and/or building additional infrastructure to provide the needed connectivity to Government sites. Since private operators can also utilize the infrastructure to offer commercial services to businesses and citizens, the cost to the Government is likely to be lower compared with direct Government investment and ownership of the infrastructure. Such strategy would simultaneously contribute to the Government's broadband access objectives by incentivizing the private sector to invest in closing infrastructure gaps in unserved and underserved areas and avoid any displacement of private investment.

Component 3: e-Government (US$35 million IDA and US$5 million GoU[27])

38. Increased access to affordable, high quality connectivity and a conducive enabling environment offer the opportunity to transform public service delivery through use of ICTs to improve the lives of ordinary Ugandans. To achieve this goal, the Government intends to deploy a range of enabling e-Government foundations, i.e., shared infrastructure and services, in order to simplify implementation of sector specific e-Services by MDAs, collectively referred to as a *Shared Public Service Delivery Platform.*

39. The establishment of the *Shared Public Service Delivery Platform* can significantly reduce the cost and time taken by key sectors to develop and maintain new electronic services, utilizing a "build once, re-use always" philosophy. Currently, MDAs planning to offer a service electronically spend considerable time and money to develop, implement and operate their own stand-alone systems. They could significantly speed up the deployment and cut costs by leveraging the shared platform for their data storage, hosting, security, data sharing, citizen authentication, e-payment and other needs. This approach would allow MDAs to focus on developing the sector specific aspects of e-services and citizen interfaces, the areas of their core competency, rather than worry about issues of infrastructure, cybersecurity, etc. With the Shared Public Service Delivery Platform in place, all MDAs in Uganda would be well positioned to accelerate the rollout of sector specific e-Services and to increase overall efficiency of service delivery and transparency of their daily operations.

40. Specifically, this component will finance carrying out a program of activities to set up foundational and enabling shared platform for e-Government, including: (i) development and establishment of appropriate ICT technical standards and frameworks, data models and procedural schemes to enable seamless interoperability across Government ICT systems, including establishing and implementing a Government Enterprise Architecture (GEA) (US$1 million); (ii) setting up a cloud-based infrastructure in the existing national datacenter (Infrastructure as a Service, US$10 million); (iii) establishing a shared platform to improve Government's ability to deploy e-Services (Platform as a Service, US$3 million); (iv) supporting the implementation of elements of the National Information Security Framework (NISF)

[26] A study will be financed by the project to review the options/modalities for private participation.
[27] The US$5 million GoU counterpart financing is to cover import and excise duties and is not allocated to sub-components.

including (a) security incident and event management; (b) distributed denial of service shelter; (c) traffic encryption; (d) intrusion prevention system for the national datacenter; (e) security incident management and response capabilities development involving security certifications, training of Government staff, nationwide awareness campaign; (f) information security status review, implementation of the NISF and compliance review in 15 MDAs; and (g) update of the national cyber-security strategy (US$4 million); (v) supporting the establishment and management of a whole-of-Government data integration and sharing program with the objective to leverage the wealth of public sector data across MDAs through database and system integration (US$5 million); (vi) developing shared services designed to increase the Government's efficiency, including a unified messaging and communications system (US$4 million); (vii) implementing an e-Procurement system at selected MDAs (US$5 million); and (viii) deploying selected e-Services determined in accordance with the criteria established for selection of citizen-centered applications (US$3 million). The project will finance the required hardware and software as well as technical assistance and consulting services related to the implementation of these sub-components.

41. While this component will primarily focus on the implementation of the Shared Public Service Delivery Platform, selected citizen centric e-Services from pre-identified priority sectors will be implemented to demonstrate the effectiveness of this approach and its positive impact on service delivery to ordinary citizens. The e-Services will be selected based on the agreed prioritization criteria including gender impact, taking into account the utility and usefulness of the services to women. Citizens will also be engaged in this selection process through a variety of citizen engagement mechanisms, including ICT enabled platforms such as U-Report rapid SMS survey system in partnership with UNICEF. The selected e-Services will be implemented in close collaboration with relevant MDAs to ensure full ownership.

Component 4: Project Management (US$3 million IDA and US$3 million GoU)

42. This component will finance project management and coordination including procurement, financial management, monitoring & evaluation and environmental and social safeguards management. This will include funding consultancy support for the implementation of the project, institutional strengthening of NITA-U, MICT, and PPDA to improve their capacity to implement the project, logistics, consumables, office equipment, as well as incremental operating costs and audits. This component will also fund technical assistance (TA) to support monitoring and evaluation (M&E) and automation of the accounting system. Finally, the Government will fund the implementation of the Resettlement Action Plans under this component.

B. Project Financing

43. The proposed RCIP Uganda IDA credit is US$75 million equivalent over a period of six years. In addition to the IDA credit, it is estimated that the Government of Uganda will provide counterpart funding of US$10 million. This will include funding (i) for operating costs and any potential resettlement costs (i.e., RAP implementation) of approximately US$3 million and for (ii) import duties and excise duties on equipment of approximately US$7 million.

Table 3: Project Cost and Financing

Project Components	Project cost (in USD)	IBRD or IDA Financing (in USD)	GoU (in USD)	% Financing
1. Enabling Environment	3 million	3 million		
2. Connectivity	36 million	34 million	2 million	
3. e-Government	40 million	35 million	5 million	
4. Project management	6 million	3 million	3 million	
Total Financing Required	**85 million**	**75 million**	**10 million**	

C. Series of Projects Objective and Phases

44. The project is the fifth phase in the Series of Projects (SoP) under the Regional Communications Infrastructure Program (RCIP) that was approved on March 29, 2007. RCIP is a regional program designed as a SoP under Investment Project Financing (IPF), formerly a horizontal Adaptable Program Loan (APL). It is intended to: (a) accelerate the roll-out of the terrestrial backbone infrastructure to ensure access to the submarine cables across the East and Southern Africa (E&SA) region and to extend access to broadband services within countries; (b) finance purchase of broadband capacity (domestic, regional and international) for use by Governments and by other targeted users (schools, universities, hospitals, etc.); and (c) finance related activities such as implementation of e-Government applications and extension of access to Information and Communications Technologies (ICT) services in rural areas. Countries are eligible to join RCIP based on readiness and commitment to "open access" principles for all public infrastructure investments.

45. Closing the terrestrial connectivity gap under RCIP involves a combination of two key interventions: (i) investment support for infrastructure development, potentially based on public-private partnerships, for segments of the infrastructure network which would not be fully commercially viable on a strictly private sector financing model and may benefit from demand-enhancing initiatives (e.g., e-Government applications, mobile money); and (ii) policy and regulatory support to ensure that, once in place, the infrastructure is accessible to all service providers on open, transparent, and non-discriminatory terms, i.e. "open access".

46. The RCIP program and RCIP 5 are part of a wider series of complementary World Bank Group engagements to improve connectivity across the continent. These include the IFC financed Eastern Africa Submarine System (EASSy), the submarine cable providing international connectivity along Africa's eastern coast, as well as the IDA financed Central African Backbone (CAB) program and West Africa Regional Communications Infrastructure Program (WARCIP) which have helped build out national and regional backbone networks and provide connections to submarine cables along the western coast. In the longer term, there are prospects to create a trans-continental cable that would link landing stations in the East with those in the West; this would dramatically increase the transit options and competitiveness of international connectivity across the continent. Building out the network in Uganda is an essential stepping stone towards creating this new trans-continental connection (by linking to DRC).

47. Uganda was identified as a potential program beneficiary in the original program design that included all countries in East and Southern Africa. GoU expressed its interest to be included in the program and its commitment to "open access" principles in an official letter received in May 2012. Implementation of the previous phases of the NBI have demonstrated this commitment as they are currently managed by a private operator tasked with selling capacity on the network to any interested party on equal terms.

48. The objectives of the proposed RCIP 5 are fully consistent with those of the overall program. It draws from lessons learned during the ongoing implementation of previous phases: RCIP 1 (Kenya, Burundi, and Madagascar), RCIP 2 (Rwanda), RCIP 3 (Malawi, Mozambique, and Tanzania), and RCIP 4 (Union of the Comoros). Annex 6 summarizes the current implementation status of the previous phases.

D. Lessons Learned and Reflected in the Project Design

49. One of the most important elements of success, given the multiple stakeholders, the intensive enabling environment reforms and the degree of change management required is Government commitment and ownership of the project. The project design of RCIP Uganda reflects the intent, interest, and priorities of MICT, NITA-U (the implementation agency), PPDA, and other beneficiaries and stakeholders, which ensures ownership of the project. The project is directly in line with the vision of the Government which sees ICT as an enabler for key sectors of economy and priority area as mentioned by the President on different occasions.

50. Strong partnerships and clearly delineated roles are needed between the Government and private sector. The role of the Government is not necessarily to fund and build new infrastructure, but rather (i) to establish a competitive and well regulated environment where operators can operate and provide services under acceptable conditions; and (ii) to provide the right incentives for infrastructure and services to reach areas unattractive for the private sector on a purely commercial basis. The Government may directly finance shared infrastructure in areas with no interest by the private sector even with Government incentives.

51. A number of specific, practical lessons have been identified through implementation experience of RCIP phases 1-4 and have been taken into account in the preparation of RCIP Phase 5:

Table 4: Lessons Learned from Previous RCIP Phases

Lessons learned from RCIP1, RCIP2, RCIP3 and RCIP4	Actions Taken as Part of RCIP Uganda Preparation
Weak implementation capacity	▪ NITA-U is currently understaffed. However, NITA-U's management was able to assign technically capable personnel and a project manager to work specifically on RCIP financed activities during project preparation ▪ Special attention will be provided to on-going capacity building during project preparation and implementation

Lack of procurement readiness and large number of contracts/activities • Lack of procurement readiness at the time of approval can lead to significant delays in implementation • Large numbers of tenders/activities can cause distraction and delays	▪ The World Bank has provided procurement training to NITA-U personnel. ▪ The procurement plan was developed in collaboration with the Bank team, resulting in consolidation of many of the planned procurements into larger, combined tenders where feasible, particularly for the transaction heavy e-Government component. ▪ Additional procurement capacity will be added shortly after effectiveness
Adequacy of the monitoring arrangements • Project documents and monitoring information can be difficult to collect if there are a large number of agencies that provide the data.	▪ MICT and NITA-U will be responsible for collecting data on the sector and monitoring and evaluating the performance of the project activities. ▪ The RCIP Uganda M&E framework and monitoring plan was designed to take into account existing mandates and responsibilities ▪ Capacity building will be provided by the project to support the M&E activities. ▪ The indicators were carefully selected in a way to provide insights into project progress, in order to trigger and inform corrective measures. Also, some of key indicators that were selected are tracked by other international organizations such as ITU.

52. Technical assistance is needed to support implementation of project activities. The project design reflects the need to strengthen the capacity of MICT, NITA-U and PPDA. It also reflects the innovative nature of the activities to be carried out under the project, implying that technical support will be required to ensure that the project is successfully implemented. The project provides financing for technical assistance to allow for detailed design of the components and will also provide support for the development of bidding documents for contracts related to both connectivity and e-Government components.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

53. NITA-U will be the implementing agency for RCIP Uganda and would have overall responsibility for its implementation. A capable project management team has been appointed, which will be supplemented shortly after project effectiveness with additional staff and consultants to support RCIP Uganda implementation. Several measures have been taken during project preparation to increase capacity and readiness for implementation. In April 2013 and October 2013, the Bank organized three training sessions on various aspects of procurement of World Bank financed projects. A procurement specialist with experience in managing and implementing World Bank and other donor funded projects and with an ICT background has been appointed. An FM assessment has been undertaken and recommendations made to NITA-U to strengthen their systems and human capacity. During implementation, technical assistance will be provided to support monitoring and evaluation, through recruitment of an M&E specialist (internal or external). Likewise, social and environmental expertise will be built within NITA-U. A social scientist and an environmental specialist will be hired on a retainer basis to help ensure appropriate and timely implementation, monitoring and reporting of social and environmental aspects of the project.

B. Results Monitoring and Evaluation

54. Monitoring and evaluation of RCIP5 will be embedded in the various components of the project, and technical assistance provided through the project will include support for M&E. The arrangements for results monitoring are detailed in Annex 1. NITA-U will submit bi-annual progress reports detailing project implementation and progress against the identified indicators. A mid-term review will be carried out at the end of the third year of implementation to provide an in depth review of the status of progress against the indicators and identify any adjustments needed in the results framework or overall project design. An Implementation Completion and Results report will be prepared by the Bank within six months of project closing, in consultation with NITA-U.

C. Sustainability

Table 5: Sustainability of RCIP Uganda

Component	Sustainability
Component 1: Enabling Environment	Technical assistance is being provided to improve sustainability through capacity building within MICT and NITA-U.
Component 2: Connectivity	
(a) Pre-purchase of international bandwidth for Government and priority target user groups (MDAs, District Headquarters and target user groups including hospitals).	Bandwidth can be leased (monthly, yearly, etc.) or purchased for the life of the cable, i.e. on an IRU[28] (Indefeasible Rights of Use) basis similar to a capital investment. To improve sustainability of this component, bandwidth will be purchased as much as possible on an IRU basis.
(b) Implementation of missing links to improve regional connectivity and the reach, availability and resiliency of NBI.	NITA-U has contracted a private company for the commercialization, operation, and maintenance of NBI through a management contract which will be responsible for ensuring the sustainability of operation, including sale of capacity on the network to private operators on an open access basis. Once investment and infrastructure are in place, operational costs are relatively low.
(c) Extension of the Government Network, providing broadband connectivity to MDAs, local governments, schools, hospitals, universities, research institutions, and NGOs.	Sustainability risks will be managed through ensuring availability of resources for network maintenance.
Component 3: e-Government	Sustainability is ensured by taking an approach of developing shared government infrastructure, which is centrally managed and can be leveraged by all MDAs for speedy and cost efficient development of citizen centric e-Services.
Component 4: Project Management	For positions created to support the project that may be required beyond project implementation, a declining salary scale will be utilized, with the government gradually overtaking salary costs.

[28] IRU refers to the right to use a specific amount of capacity on the cable for life of the infrastructure.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

Systematic Operations Risk- Rating Tool (SORT)	
Risk Category	**Rating**
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Substantial
9. Other	
OVERALL	Substantial

55. The overall risk rating for both preparation and implementation is assessed as Substantial. The main risks are institutional capacity for implementation, stakeholder, fiduciary, as well as macroeconomic and governance.

56. Project complexity and limited capacity within the Government may present implementation challenges. Based on experience with similar projects, the relatively large number of activities and their technical complexity may pose challenges during implementation. To mitigate this risk, the project design was systematically reviewed with an eye toward reducing the number of activities and focusing on e-Government foundations. Likewise, the number of separate procurement packages will be minimized where possible. Moreover, the project implementation period has been extended to six years instead of the standard five years. The existing project management team is being strengthened through capacity building including on World Bank fiduciary policies and procurement rules and procedures. Close supervision by the World Bank staff and bringing in additional experts will also help to ensure that the project runs as smoothly as possible.

57. The success of the project in effecting long-term change in Uganda might be adversely affected by stakeholder perceptions related to past difficulties with Government ICT projects. NITA-U has now fully operationalized the NBI and rectified previous technical problems. Consultations on how this project would complement and build-on NBI with MOFPED and other key stakeholders during project preparation have further helped address these perceptions, but efforts will need to continue through implementation, both by demonstrating results and through a strategic communications effort.

58. Inadequate buy in by key stakeholders is a critical risk for the project success. To mitigate this risk, key stakeholders will be identified, engaged, and sensitized on their respective

roles. Likewise, policy and regulation will be developed mandating the use of the shared e-Government public service delivery platform by all MDAs once it is operational.

59. The private-sector's limited investment in commercially unviable areas. This may translate into excessive public investment preempting future private investment in the ICT sector. To mitigate this risk, the project will not be investing in infrastructure in geographical locations where private sector operators are willing to invest on their own. Maintaining close contact and appropriate consultation mechanisms with the private sector will help to ensure that public intervention is directed to where it is most needed and that it is complementary to private sector investments. Capacity on NBI will be offered to private operators to enable delivery of commercial services at lower investment cost and risk, encouraging complimentary private investment and service rollout. In addition, the e-Government component is investing in Government infrastructure to improve Government efficiency where opportunities for private investment are limited.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

60. In line with other country projects under RCIP, RCIP Uganda aims to reduce the cost of broadband internet services, expand the reach of broadband networks, and improve Government efficiency and transparency through e-Government applications. The intention is to establish an enabling environment that will be supportive of private sector investments in the ICT sector and to use public private partnerships as a catalyst for infrastructure investments, notably in broadband internet services and international internet connectivity. The expected benefits would manifest in terms of growth in the number of internet users, more intensive use of information-rich services with lower unit prices and greater choice, and the development of locally-relevant content and applications.

61. Expanding access to ICT services is expected to make significant contributions to the overall economy. It is estimated that the RCIP Uganda project will result in the increase of the number of new subscribers to 12.8 million for mobile and 16.5 million for internet users over ten years. ICTs can save travel cost and time by substituting travel by telephone calls or mobile application usage, especially in rural and remote areas where citizens have to travel to urban areas to get a variety of government services. The impact of substituting some travel to phone calls and mobile applications is estimated to be 0.03 percent of GDP over ten years (2016-2025).[29] In addition, productivity income increase through the use of mobile phones in the agriculture sector alone is expected to reach 0.09 percent of GDP over ten years. The project is expected to reduce the poverty headcount rate by 2.8 percentage points over the 10 year period. The expected internal rate of return is 17%.

62. Additional (not quantified) indirect benefits of the investment include but are not limited to: (a) widespread use of ICT services across public institutions and citizens at large will likely

[29] In the economic analysis we assume project starts date of 2016 and project medium term impact of 10 years ending in 2025 using a 10% discount rate.

increase the availability and quality of health related services; (b) access to ICT supports family relationships and maintains social cohesion particularly for low-income families and where transport cost are relatively high as well as connecting with Ugandan diaspora living outside of the country; and (c) better availability of broadband connectivity in rural areas will provide opportunities for better access to and usage of mobile money and mobile based savings accounts for the unbanked population creating the foundation for development of new business, trade opportunities, job creation and ability to save for bigger purchased.

63. The e-Government component is expected to improve the efficiency of Government operations. The shared public service delivery platform will have the following benefits: (i) financial savings from not having to build duplicate infrastructure at individual MDAs; (ii) the ability to capitalize on shared human resources; and (iii) faster and cheaper implementation of e-Government services in various sectors. The e-Government component will also support the implementation of several high priority e-Services which can improve the efficiency of public services, contribute to economic growth, increase international competitiveness, and improve the lives of ordinary Ugandans.

64. There is substantial and persistent urban-rural and regional inequality in Uganda reflected in access to ICT services and poverty rates. Private sector investments are not flowing to rural areas where poverty remains high and therefore profit margins for private investors tend to be lower. Public sector financing for the missing NBI links, particularly towards the border areas in the northern and western regions, will improve access to the backbone in underserved areas, connect to existing and future regional infrastructure, address bottlenecks, and potentially attract private investors to provide additional services. The World Bank's financing will also be used to connect government offices in rural areas, thus, improving efficiency of government operations and to attract additional private investments to the infrastructure in the rural areas, thus, improving the services also to citizens. The investments are expected to result in new opportunities to the underserved and the very poor population. Therefore, the project is both regional and pro-poor in nature.

B. Technical

65. The RCIP Uganda project components were designed as an integrated and interlinked program, in order to ensure long term economic viability of the infrastructure, to maximize the development impact of the investments and to enable the initial investment costs to be recovered. Investment is being complemented by technical assistance in order to ensure that access to these networks is done on an open access basis, and at a reasonable and affordable level. Complementary activities, such as international capacity purchases, have the double objective of increasing viability of the sub-marine fiber optic networks and making capacity available to targeted user groups.

66. The technical design is consistent with international best practice. The design of the project is based on a model of competitive, private-sector delivery wherever possible. This is fully consistent with international experience which shows that this is a more cost-effective way of delivering ICT services than the Government becoming involved in service-delivery itself.

C. Financial Management

67. A financial management (FM) assessment was conducted at NITA-U. The objective of the FM assessment was to determine whether the implementing entities have acceptable financial management arrangements to ensure: (i) project funds are used only for the intended purposes and in an efficient and economical way; (ii) preparation of accurate and reliable accounts as well as timely periodic financial reports; (iii) proper safeguarding of assets of the project; and (iv) that acceptable auditing arrangements are in place. The FM assessment was carried out in accordance with the Financial Management Practices Manual issued on February 4, 2015.

68. The Executive Director NITA-U will be the Accounting Officer for the project. The daily financial management functions will be managed by the Directorate of Finance and Administration headed by a Director. There is a vacant position of an accountant and the recruitment process is ongoing. The Directorate will be further strengthened through the recruitment of a project accountant within 6 months after project effectiveness to support the existing staff. The accounting function will be managed as documented in the Public Finance Management Act, 2015 together with accompanying Treasury Accounting Instructions, the NITA-U Financial Management Manual of May 2013 and the provisions of the Project Implementation Manual that will include requirements specific to the Bank financed projects. NITA-U will also be required to automate its accounting system. The team involved in the project implementation will undergo financial management training within six months after the project becomes effective in order to enhance their capacity under the project.

69. NITA-U will open a designated account denominated in US dollars in the Bank of Uganda (BOU) to which disbursements from the Credit will be deposited and payments in US$ will be made from this account. NITA-U will also open a project account denominated in local currency in BOU into which transfers from the dollar account (for payment of transactions in local currency) will be deposited. The financial management arrangements between NITA-U and PPDA will be detailed in the Project Implementation Manual. The signatories for the project will be done in accordance the Treasury Accounting Instructions.

70. The GOU is rolling out an Integrated Financial Management System (IFMS) and implementing the Treasury Single Account (TSA). The proposed banking arrangements above will be reviewed as the reforms are extended.

71. NITA-U will be using the report-based disbursements with six month cash flow forecasts for project needs based on the work plans including PPDA needs. Withdrawal applications will be submitted to the Bank after the effectiveness of the project. Subsequent withdrawal applications should be submitted quarterly with Interim Financial Reports (IFRs) within 45 days after the end of the quarter.

72. The NITA-U Internal Audit Unit will be required to conduct internal audit reviews and submit semi-annual reports to the bank within 45 days after the end of each half-year. The resources for the reviews by internal audit will be provided for under the project.

73. The Auditor General is primarily responsible for auditing of all government projects and may subcontract to a firm of private auditors, with the final report being issued by the Auditor

General. The Credit may be used to pay the cost of the audit. The external audits are done in accordance with International Standards on Auditing with terms of reference acceptable to IDA. NITA-U will submit the project Audit Report together with the Management Letter to the Bank within six months after the end of each financial year. The financial management arrangements for the project have an overall Substantial residual risk rating.

74. Key actions to recruit the project accountant, automate the accounting system and training of staff in Bank FM/Disbursement procedures will be closely monitored.

D. Procurement

75. Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement under International Bank for Reconstruction and Development (IBRD) Loans and IDA Credits" dated January 2011 and revised July 2014; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated January 2011 and revised July 2014; Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants, dated October 15, 2006 and revised in January 2011; and the provisions stipulated in the Legal Agreement. The capacity assessment of the NITA-U was carried out by the Bank on April 9, 2014 to review the adequacy of the procurement and technical staffing and the adequacy of internal systems and controls. The risk for procurement is High and will reduce to Substantial after mitigation.

76. The national legislation on public procurement as laid out in the Public Procurement and Disposal of Public Assets Act, 2003 is generally consistent with the World Bank's guidelines, except for some provisions that are listed in Annex 3.

77. The key risks for project implementation are: (i) inadequate experience of NITA-U staff in IDA financed procurement management; (ii) inadequate number of technical and procurement staff to manage workload under RCIP; (iii) inadequate seating arrangement for PDU with PDU sharing open office space with other staff; (iv) inadequate record keeping; (v) need for clarity on roles/coordination between user departments and PDU at contract management stage; and (vi) delays in procurement processing.

78. These risks will be mitigated by: (i) recruiting a procurement specialist with ToR acceptable to IDA to provide hands-on coaching and mentoring of PDU staff, and PDU staff attending training at a procurement training institute (GIMPA or other institution acceptable to IDA); (ii) recruiting additional staff/consultants in technical departments to augment existing staffing; (iii) partitioning off space for the PDU to ensure integrity of the procurement records; (iv) PDU ensuring completeness of procurement files particularly to include contract management records, contracts committee minutes and ensuring that bids are well secured; (v) preparing project procurement manual or including a procurement section in the project implementation manual to clarify IDA procedures; and (vi) putting in place a procurement tracking mechanism to monitor the progress by the PDU of processing different contracts.

E. Social (including Safeguards)

79. The project will have positive impacts on the population and in the region. It is expected that the project will promote coverage and distribution to regions with low access to communications infrastructure and services. This regional inclusivity will help narrow the gap of exclusion of certain groups and regions. In addition, it will also promote equal access to and increase efficiency of public service delivery in government offices and institutions.

80. The project triggers OP 4.12 Involuntary Resettlement because some of the activities such as transit corridors for the fiber-optic network, routing of the network and auxiliary infrastructure (e.g., antennae, masts, etc.) will involve civil works which may require land acquisition. However, the initial project screening and the nature of proposed activities indicated that there will not be substantial land acquisition and consequent involuntary resettlement of people as the project will mainly follow the existing right of way and road reserves. In unforeseen circumstances, there could be re-alignments. The project takes a framework approach to safeguards, since the specific activities and actual sites especially missing fiber optic links and Government Network connections have not yet been identified and will only be defined during implementation. The project's physical activities will be limited to linear site specific excavation works for the fiber-optic and construction on masts and antennae. The implementing agency NITA-U prepared a Resettlement Policy Framework (RPF) in a consultative manner with all stakeholders. The RPF provides guidance on the process for preparing, reviewing, approving and implementing subsequent Resettlement Action Plans (RAPs) where necessary, for the sections of the (sub)-projects before start of civil works. The RPF also provides guidance on the process of public consultations, establishment of a functional grievance handling mechanism and disclosure requirements. The RPF was prepared in a consultative manner (with both men and women stakeholders) and was disclosed both in-country and at InfoShop on April 7, 2015.

81. The project screening confirmed the presence of Vulnerable and Marginalized Groups (VMGs) in the project areas and triggered World Bank Operational Policy OP 4.10 on Indigenous Peoples. This is based on the fact that the project location may cover the north eastern and south western parts of Uganda inhabited by vulnerable and marginalized groups of people including the Batwa Indigenous Peoples (IPs) in Kisoro, Bundibugyo, Kasese and Kanungu Districts and the Ik and Tepeth in the Karamoja Region. Since the exact routing of the network, especially the missing fiber optic links and government network connections including the auxiliary infrastructure (e.g., antennae, masts, etc.) are not known, a Vulnerable & Marginalized Groups/Vulnerable & Marginalized/ Indigenous Peoples Planning Framework (VMG/IPPF) was prepared in a very consultative process including a social assessment study. The VMG/IPPF sets out culturally appropriate social benefits that the government will need to ensure are delivered/received by the vulnerable and marginalized groups including indigenous people and proposes measures to mitigate any adverse effects by the project. It also outlines the processes and principles of determining the proposed investment impacts on vulnerable groups and how a potential Vulnerable and Marginalized Groups Plan (VMGP) would be prepared. The VMG/IPPF also provides guidance on the necessary steps of undertaking public consultations, establishment and operationalization of grievance handling mechanism and disclosure plan. Community empowerment tools will be specifically tailored to reach and impact the IPs in line with the action plans defined. The VMG/IPPF has been disclosed both in-country and at the World Bank InfoShop on April 7, 2015.

82. As part of project preparation, the capacity of NITA-U to implement, monitor and report on social issues including safeguards was assessed. It was established that NITA-U did not have in-house social safeguards capacity in the areas of: gender, social inclusion, conflict management, involuntary resettlement and vulnerable and marginalized groups.

83. To strengthen the capacity of the organization and implementation of the project in particular, NITA-U will recruit a social scientist on a retainer basis to be responsible for mainstreaming social issues in the project, within six months of the project effectiveness. The social scientist will be charged with preparations and implementation of the RAPs, VMGPs and working closely with the environmental specialist to develop social action plans resulting from the Environmental and Social Management Framework (ESMF) and the Environmental and Social Impact Assessment (ESIA).

84. NITA-U will track and report on the performance of implementation of the social issues including safeguards in all its project progress reports per the terms of the financing agreement.

F. Environment (including Safeguards)

85. The project has been assigned Environmental Assessment category B because the likely environmental and social impacts are site specific and mitigation measures can be readily designed. The project triggers the following environmental safeguard policies: OP 4.01 Environmental Assessment because of the likely environmental impacts, Natural Habitats OP/BP 4.04 because of the likely impacts on forest areas and wetlands, Physical Cultural Resources (PCR) OP/BP 4.11 because of the likely impact on known and un-known PCRs, and Forests OP/BP 4.36. The project component that has a direct bearing on environmental safeguards includes the connectivity component that entails further development of the National Backbone Infrastructure (NBI). Project locations would be concentrated in and around Kampala City and other major urban and peri-urban areas in Uganda, and transit corridors for the fiber-optic network. The exact routing of the network and auxiliary infrastructure (e.g., antennae, masts, etc.) would be determined during project feasibility studies during implementation. For that reason, an ESMF has been prepared in a consultative manner to provide guidance on assessment and management of environmental and social impacts of the project during implementation. The ESMF was disclosed both in-country and at InfoShop on April 7, 2015. During implementation, site specific ESIAs and Environmental and Social Management Plans (ESMP) shall be undertaken and developed respectively.

86. The salient physical characteristics relevant to the safeguards analysis include: telecommunications infrastructure components of the project, particularly associated with the linear excavations for burying fiber-optic cable (alternatively overhead stringing of the cable) and civil works associated with building of national terrestrial backbones and roll-out of wireless networks during the construction phases. These may have impacts on forested areas, wetlands and wildlife; pose health and safety risks to workers and road users; and generate assorted wastes. However, the impact of the project will be reduced by restricting the infrastructure development to the road reserves and implementing mitigation measures that shall be recommended in the ESMP. With improved ICT systems in the country, increased generation and amounts of electronic waste may be realized. NITA-U, in collaboration with other

responsible government agencies, will develop a mechanism of managing e-waste, including e-waste management standards and guidelines. NITA-U will develop short term arrangements for management of the e-waste in the subsequent ESIAs/ESMPs that will be prepared during implementation.

87. NITA-U does not have a unit or a designated staff responsible for implementation of environmental aspects. In order to be able to implement, monitor and report on environmental aspects of the project, and contribute to policy dialogue in sustainable management of ICT industry, NITA-U shall hire on a retainer basis an environmental specialist within three months of the project effectiveness. The environment officers of Districts where the project activities fall shall assist in monitoring and supervising project civil works.

G. World Bank Grievance Redress

88. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

UGANDA: Regional Communications Infrastructure Program Phase 5 – Uganda Project

Results Framework

Project Development Objectives

PDO Statement

To support the Recipient's efforts to:
(i) Lower prices for international capacity and extend the geographic reach of broadband networks (the connectivity development objective); and
(ii) Improve the Government's efficiency and transparency through e-Government applications (the transparency development objective).

These results are at | Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values									
		YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	End Target
Direct project beneficiaries (Number) - (Core)	0.00	0.00	1000.00	15000.00	60000.00	520000.00	5060000.00				5060000.00
Female beneficiaries (Percentage - Sub-Type: Supplemental) - (Core)	0.00	0.00	30.00	30.00	33.00	36.00	40.00				40.00
International Internet Bandwidth (Mbps)	25679.00	27000.00	30000.00	35000.00	40000.00	45000.00	50000.00				50000.00

(Number)											
Access to Internet Services (percentage of individuals using the Internet) (Percentage)	16.20	18.00	21.00	24.00	27.00	30.00	35.00				35.00
Access to Telephone Services (fixed mainlines plus cellular phones per 100 people) (Number) - (Core)	51.90	55.00	58.00	62.00	66.00	70.00	75.00				75.00
Price of wholesale international capacity (per Mbit/s per Month, in US$) (Amount(USD))	97.00	90.00	80.00	70.00	60.00	50.00	40.00				40.00
Beneficiaries satisfied with quality of e-Government services supported by the project (%) – Citizen Engagement Indicator (Percentage)	0.00	0.00	0.00	20.00	30.00	40.00	50.00				50.00

Number of transactions per year utilizing the shared public service delivery platform (Number)	0.00	0.00	0.00	100000.00	200000.00	1000000.00	15000000.00				15000000.00

Intermediate Results Indicators

		Cumulative Target Values									
Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	End Target
Retail Price of Internet Services (Mobile Broadband, 500MB prepaid bundle, in US$) (Amount(USD))	7.73	7.50	7.00	6.50	6.00	5.00	4.00				4.00
Length of Fiber Optic Network Built (km) (Kilometers) - (Core)	0.00	0.00	0.00	200.00	520.00	670.00	670.00				670.00
Availability of NBI (%) (Percentage)	97.00	97.00	98.00	98.00	99.80	99.80	99.80				99.80
Average Price of Wholesale, Protected Capacity on NBI (per Mbit/s	20.90	20.00	19.00	18.00	16.00	14.00	12.00				12.00

per Month based on STM-16 purchase, in US$) (Amount(USD))											
Number of Connections to Government MDAs, Local Governments, Schools, Hospitals and NGOs Supported by the Project (Number)	0.00	0.00	0.00	20.00	80.00	200.00	400.00				400.00
Percentage of MDAs using the Shared Public Service Delivery Platform (Percentage)	0.00	0.00	0.00	5.00	10.00	20.00	50.00				50.00
Number of e-Services Implemented with Project Funding (Number)	0.00	0.00	0.00	2.00	4.00	6.00	10.00				10.00
Percentage of e-Services Implemented with Project Funding Which Take Into	0.00	0.00	0.00	0.00	25.00	25.00	30.00				30.00

Account a Gender Perspective (Percentage - Sub-Type: Supplemental)											
Percentage of Total Expenditure on Eligible Goods, Works and Services Procured Utilizing e-Procurement System in the Pilot PDEs (Percentage)	0.00	0.00	0.00	10.00	20.00	40.00	60.00				60.00

Annex 2: Detailed Project Description

UGANDA: Regional Communications Infrastructure Program Phase 5 – Uganda Project

COMPONENT 1: ENABLING ENVIRONMENT (US$3 MILLION IDA)

1. While the Government of Uganda has taken positive steps in recent years toward improving the enabling environment for the ICT sector, substantial work remains if the sector is to thrive. A conducive enabling environment would translate into increased sector investment and competitiveness, and improved access to and quality of ICT services for citizens, businesses, and government. This in turn would enable job creation and improved productivity and service delivery across all sectors. The benefits of a conducive enabling environment will also have positive spillover effects in neighboring countries which rely on Uganda for competitive, reliable and high quality international data transit.

2. This component aims to support the capacity of MICT and NITA-U to review, develop and implement relevant ICT policies, strategies, laws and technical regulatory frameworks to support a modern and vibrant ICT sector. The objectives include maximizing the coverage, quality, affordability and security of ICT infrastructure and enabling effective delivery of e-Services by both the Government and the private sector. It will also seek to promote alignment of Uganda with regional regulatory and policy harmonization efforts among the countries of the East African Community (EAC) and the findings and recommendations of the forthcoming EAC Digital Agenda.[30]

3. Sub-component 1.1: Policy, Legal, Strategy and Technical Frameworks (US$2 million). This sub-component will finance the following activities: (i) review and assessment of existing ICT policies, strategies, standards, and legal and regulatory frameworks to identify gaps and weaknesses as well as harmonization with regional commitments and frameworks; and (ii) based on the findings and recommendations of this assessment, propose modifications to strengthen existing ICT policies, strategies, legislation, regulatory frameworks, and technical standards or develop new ICT policies, strategies, draft legislative bills, regulatory frameworks, and technical standards.

4. Sub-component 1.2: Institutional Strengthening and Development (US$1 million). This sub-component will support capacity development activities aimed at ensuring that there are sufficient technical skills within the government to manage backbone network and e-Government infrastructure, as well as to deliver e-government services more effectively. It will also support change management activities, including awareness campaigns and other incentives or policies to encourage widespread adoption and utilization of the newly available IT systems and platforms within MDAs and local governments. Specific activities will include (i) an ICT skills gap assessment for Government to identify training requirements; (ii) development of a capacity building program to address deficiencies that will guide the Civil Service College,

[30] The World Bank in coordination with TradeMark East Africa and EAC is currently carrying out analytical work and technical assistance in support of establishing a "Digital Agenda." The agenda will serve as a roadmap for removing the bottlenecks to developing a coordinated digital ecosystem and single digital market in the sub-region, with the aim of driving the growth of ICT and ICT Enabled sectors, promoting innovation and leveraging ICTs to promote citizen welfare.

MDAs and local governments on training requirements; (iii) training and certification of MICT, NITA-U, and PPDA officials; and (iv) development of a strategy for institutionalization of the Chief Information Officer role within the Government.

5. Communications and Strategic Partnerships. To encourage a greater understanding of the opportunities made possible through enhanced connectivity, electronic service delivery, access to information and growth of IT and IT enabled jobs and businesses, a robust communications and awareness campaign is needed. Likewise, partnerships will be important to leverage additional financial, technical and knowledge resources to more fully utilize the connectivity and shared service platform to maximize impact. At a more practical level, it will also be important to alert the population when new e-Services become available and explain how to take advantage of them. With these objectives in mind, the project will support: (i) the development and execution of a strategic communications program and tools; (ii) the creation and management of strategic partnerships with local and foreign government agencies, donors, NGOs and other entities, to raise additional funding and other support; and (iii) the organization of knowledge-sharing seminars, workshops, conferences, and other similar initiatives.

COMPONENT 2: CONNECTIVITY (US$34 MILLION IDA AND US$2 MILLION GOU[31])

6. In addition to improving the enabling environment, complementary infrastructure investments are also needed to ensure greater access to affordable, high quality ICT services, both within Uganda and in neighboring countries. Recognizing this, the Government of Uganda has already developed the first two phases of a national fiber optic backbone network – the National Backbone Infrastructure (NBI) and is in the process of constructing a third phase. However, its capacity is currently underutilized due to the lack of links to neighboring countries other than Kenya and South Sudan (the latter with no complementary fiber yet in place), limiting the diversity of routes for connection to undersea cables and curbing potential growth of regional traffic. In addition, there are significant challenges in terms of quality and reliability due to the fact that many of the branches of the network are not part of self-healing loops.[32] Moreover, significant portions of the country, particularly in rural areas, currently have no access to fiber optic connectivity, either through NBI or the networks of the private operators.

7. To address these challenges, the Government of Uganda intends to connect major regions of the country to NBI and create additional links to neighboring countries. This is expected to improve the reliability and capacity utilization of NBI and ensure improved connectivity to neighboring countries and in a region as a whole. The extension of NBI will help to boost the use of ICTs, enable connectivity to Government offices and public institutions in the regions, and lower the cost of international bandwidth by ensuring a diversity of options for access to submarine cables. The cost of international bandwidth will be further lowered by pre-

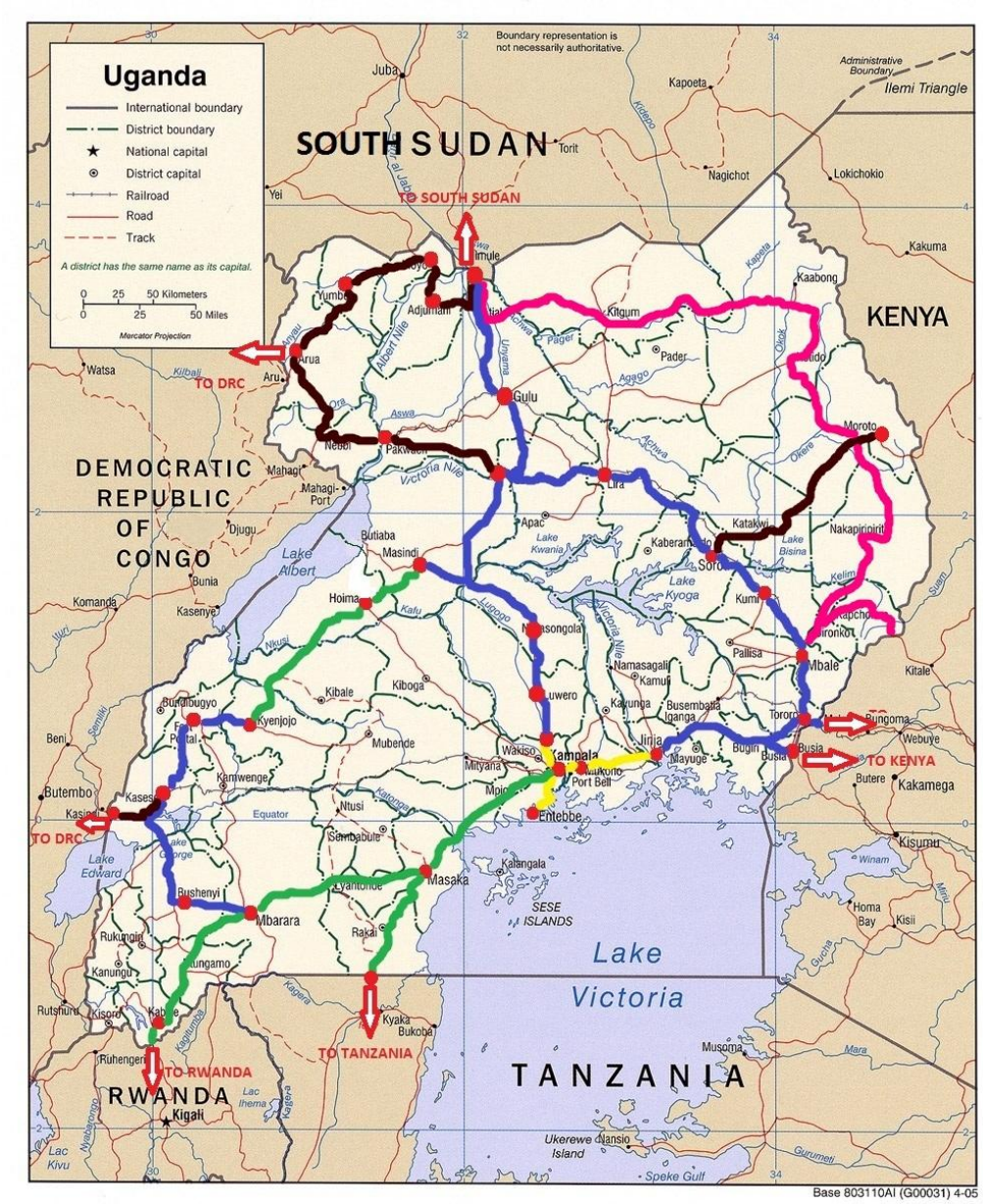
[31] The US$2 million GoU counterpart financing is to cover import and excise duties and is not allocated to sub-components.

[32] Best practice requires fiber optic networks to be deployed in loops, whereby if a line is cut traffic is not disrupted as it can flow in either direction around the loop.

purchasing bandwidth in bulk for Government and priority target user groups to achieve greater economies of scale.

8. It is envisaged that three new links will be established in rural areas underserved by private operators: a northwestern route through Kamdini, Pakwach, Arua, Yumbe, Moyo, Adjumani, and Nimule with links to DRC and South Sudan, a Southwestern link connecting Kasese and Mpondwe, also linking to DRC, and a northeastern route connecting Soroti and Moroto (see map in Figure 1 below). In addition, this component will fund a feasibility study for the northern loop implementation of which is beyond the scope of this project.

Figure 1: Uganda's National Backbone Infrastructure (NBI)



Source: NITA-U

Legend: Phase I (yellow); Phase II (blue); Phase III (green); missing links financed by RCIP (dark brown); Northern Loop for which a Feasibility Study will be funded under RCIP (pink); transmission sites (red)

9. Sub-component 2.1: Pre-purchase of international bandwidth for Government and priority target user groups (US$6 million). The main objective of this subcomponent is to leverage economies of scale to deliver high quality, affordable internet bandwidth for distribution through the NBI and the Government Network to MDAs, District Headquarters and target user groups including hospitals. Increased availability of low cost, high quality connectivity is expected to enable rollout of e-Government services and private sector development in the regions and towns connected by the NBI. The funds will be used to (i) procure bulk internet bandwidth for government from upstream providers on an IRU basis, and (ii) to procure hardware and software for monitoring and for security of the system. In addition, the subcomponent will finance (iii) training of NITA-U staff to support provision and maintenance of internet bandwidth.

10. Sub-component 2.2: Construction of missing links of the NBI (US$18 million). The main objective of this subcomponent is to improve regional connectivity and the reach, availability and resiliency of the NBI. Specifically, the funds will be utilized to finance: (i) installation of fiber optic cable, transmission sites and other network equipment to complete missing links in the northeastern, northwestern, and southwestern regions of the country currently unconnected to the NBI, including links to the border posts in South Sudan and DRC; (ii) provision of green energy solutions for new and existing NBI transmission sites to improve the reliability of the power supply by adding solar generation equipment to replace or supplement existing generators and/or grid power connections; (iii) consultancy services to facilitate the implementation and to prepare a feasibility study for the further extension of NBI in the northern part of Uganda; and (iv) analysis of potential environmental and social impacts of the project and supporting the implementation of the safeguard instruments (other than the resettlement action plans) as relevant. The closed network loops to be created by completing the missing links, in addition to the improved reliability and redundancy of power sources at existing transmission sites, is expected to help increase the availability and resiliency of the NBI to a best practice standard of 99% up time.

11. Sub-component 2.3: Government Network providing broadband connectivity to MDAs, local governments, schools, hospitals, universities, research institutions, and NGOs (US$10 million). The objective of this subcomponent is to connect end-users across the country to the NBI for access to high quality, low cost bandwidth. The sub-component will finance (i) varied broadband connectivity solutions (hardware and software) based on the specific locality and need and (ii) consultancy services for the design and implementation of the solutions, including leveraging private sector participation. It is envisaged that sites in Kampala, Entebbe, Mukono, Jinja, Mbale, Mbarara, Gulu and Masaka will be connected utilizing fiber optic cables on a long-term lease or IRU basis. Connections in the rest of the country will likely utilize wireless broadband technologies. It is expected that 400 sites will be connected under the project. The additional connectivity is critical to utilize the pre-purchased international capacity and backbone infrastructure (subcomponents 2.1 and 2.2), to enable delivery of e-government services across the country and to improve the efficiency and productivity of government operations.

12. Public financing will only be employed to the extent necessary to reach areas where private sector interest is not sufficient to provide connectivity without additional

intervention or incentives; Public-Private Partnership (PPP) mechanisms will be employed to leverage financing and expertise from the private sector. In the case of the NBI, operations and maintenance of the network will be managed by a private company which shares profits with the government from the sale of capacity on the network to private operators on a non-discriminatory, open access basis. This will enable the government to recoup its initial investments over time and leverage the private sector to cover ongoing operations and maintenance costs. In the case of the Government Network, various PPP modalities will be explored[33], leveraging long term leases/IRUs to incentivize the private sector to invest in upgrading their existing network infrastructure and/or building additional infrastructure to provide the needed connectivity to government sites. Since private operators can also utilize the infrastructure to offer commercial services to businesses and citizens, the cost to the Government is likely to be lower compared with direct government investment and ownership of the infrastructure. Such a strategy would simultaneously contribute to the government's broadband access objectives by incentivizing the private sector to invest in closing infrastructure gaps in unserved and underserved areas and avoid any displacement of private investment.

COMPONENT 3: E-GOVERNMENT (US$35 MILLION IDA AND US$5 MILLION GOU[34])

13. Increased access to affordable, high quality connectivity and a conducive enabling environment offer an opportunity to transform public service delivery through use of ICTs to improve the lives of ordinary Ugandans. To achieve this goal, this component will support development of a "Build Once, Reuse Always" *Shared Public Service Delivery Platform* in order to enable MDAs to deliver e-government services to citizens in a fast and cost efficient manner. The shared public service delivery platform will have several advantages over traditional systems including: (i) financial savings from not having to build duplicate infrastructure at individual MDAs; (ii) the ability to capitalize on shared human resources; and (iii) faster implementation of e-Government services in various sectors. Once the shared platform is in place, MDAs will not need to set up individual data centers or independently develop common elements, such as authentication and payment mechanisms that are needed to deploy e-services. In addition, the shared government cloud will provide data back-up for many of the existing ministries that already have data centers.

14. Sub-component 3.1: ICT Technical Standards & Frameworks for Electronic Service Delivery (US$1 million). Robust ICT standards and frameworks are needed to safeguard the Government and its citizens during e-Government transactions and ensure that services can be delivered in a seamless and efficient manner across multiple MDAs and their IT systems. This sub-component will provide technical assistance (TA) to: (i) undertake a gap analysis (together with sub-component 1.1); (ii) update existing e-government legislation as needed; and (iii) develop missing or outdated e-government policies, regulations or laws, including those related to data and infrastructure sharing. This sub-component will also support (iv) the design, development and implementation of a Government Enterprise Architecture (GEA) to achieve interoperability amongst Government ICT systems, including establishing an interoperability

[33] A study will be financed by the project to review the options/modalities for private participation

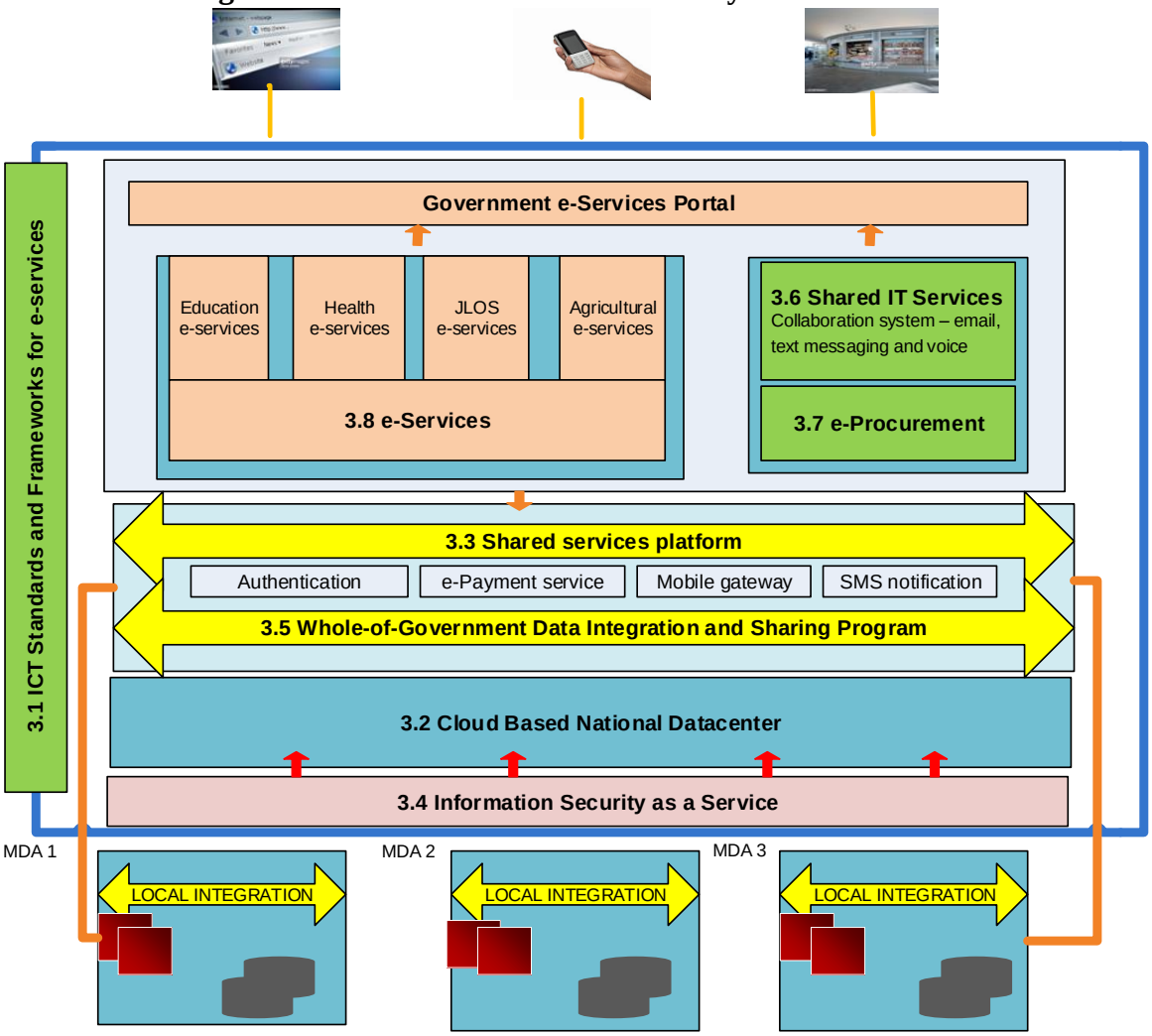
[34] The US$5 million GoU counterpart financing is to cover import and excise duties and is not allocated to sub-components.

framework and capacity building for the appointed GEA staff, with the goal of making GEA staff the "practice-leaders" within their MDAs.

Shared Public Service Delivery Platform

15. RCIP will finance the design and implementation of the Government's Shared Public Service Delivery Platform that is graphically presented on Figure 2 below and described in the following paragraphs.

Figure 2: Shared Public Service Delivery Platform



16. Sub-component 3.2: Cloud-Based Infrastructure in the Existing National Datacenter (Infrastructure as a Service (IaaS)) (US$10 million). The cloud based infrastructure will be based in the existing National Datacenter currently operated by NITA-U. The Government has already completed Phase Zero of the datacenter, which was focused on upgrading of premises that would host government cloud. For back up and to ensure business continuity, the government plans to use the existing disaster recovery center, located 80 km from Kampala, currently used by IFMS. Project financing will be used to (i) strengthen the support environment

for the data center; and (ii) install additional ICT hardware and software for the cloud-based infrastructure in the existing national datacenter. To realize the full benefits of data center and cloud innovation, it is essential to be able to deploy sector services rapidly and securely.

17. Sub-component 3.3: Shared platform to improve Government ability to deploy e-Services (Platform as a Service (PaaS)) (US$3 million). PaaS as an e-Service Delivery Platform aims to establish a whole-of-government ICT application infrastructure to complement the Government Datacenter's hosting services. This will enable MDAs to develop and deploy their electronic services and mobile applications in a cost-effective and rapid manner. The project will finance the design and implementation of Shared e-Service Delivery Platform, which would allow MDAs to quickly and efficiently deploy sector specific e-services by leveraging common ICT enablers needed by most electronic services, such as, authentication, electronic ID integration, mobile delivery platform, electronic payment services, SMS notification services, etc.

18. The e-Service Delivery Platform aims to be integration ready and should be fully compatible with all major databases of MDAs, operating systems, and application servers. MDAs can benefit from lower operating costs through economies of scale and at the same time be assured of system availability. This way, the MDAs will not need to invest in their own e-Services infrastructure but instead focus on serving their constituencies by leveraging shared platform.

19. This sub-component will also finance the development of the National e-Services Portal as a single point of entry for citizens, businesses, and Government officials to access a variety of information and e-Services. The vision is to include links not only to information and e-Services planned to be developed under RCIP but also to other e-Services that would be developed by various MDAs, with or without assistance of NITA-U. It would serve as the first-stop-shop to access information and e-services and is envisioned to aid users in identifying relevant information and services they require. The ability of the portal to operate across the internet and mobile platforms, would serve various groups of users, regardless of physical location or mode of access. Progressively over time, the portal aims to reduce the need for citizens to travel to physical Government offices to receive information and services and increase the efficiency of Government operations.

20. Sub-component 3.4: Information Security as a Service (US$4 million). To facilitate the ease of implementing secured electronic services, there is a need to establish a set of common security enablers. These common security enablers would adopt industry standards, government-grade encryption technologies, including advanced algorithms such as DES, MD5, and RSA. The project will support the implementation of elements of the National Information Security Framework (NISF), including but not limited to funding for a security incident and event management solution; distributed denial of service shelter; traffic encryption solution; intrusion prevention system for the national datacenter; security incident management and response capabilities (CERT); security certification of the Shared Public Service Delivery Platform (ISO27001, PCIDSS), training of GoU staff; nationwide awareness campaigns on information security; information security status review, implementation of NISF and compliance review in 15 MDAs; and update of the National Cyber-security Strategy.

21. Sub-component 3.5: Whole-of-Government Data Integration and Sharing Program (US$5 million). Currently, MDA officers face a series of challenges in accessing data from other MDAs for policy and day-to-day operations work, including: (i) unclear protocol for data exchange, (ii) limited awareness of what data exists and where it resides; and (iii) the high cost of obtaining data even between government MDAs. Citizen and businesses are required to submit duplicate information and documents when interacting with different public agencies which causes unnecessary burden and inconvenience. This subcomponent will finance hardware, software, and associated technical assistance to support the establishment and management of a whole-of-Government data management program. The objective is to leverage the wealth of public sector data across MDAs through database and system integration, gain critical insights to inform policy making from data analysis and to deliver a seamless and convenient user experience with e-Services.

22. Sub-component 3.6: Shared IT services to improve Government efficiency (Software as a Service (SaaS)) (US$4 million). This sub-component will support the development of services designed to increase the government's efficiency, including a unified messaging and communications system (inclusive of email, voice services and other modes of communications). These services will be designed to be used by all MDAs and deployed as software as a service (SaaS) model in selected MDAs and will run out of the national cloud based datacenter. A shared IT service adoption strategy will be developed to ensure optimized usage by MDAs.

23. Sub-component 3.7: e-Procurement, US$5 million. RCIP will also finance the implementation of the Government wide e-procurement system, which is envisioned to streamline procurement processes and practices and improve efficiency of Government procurement. The project will finance the procurement of the e-Government Procurement (e-GP) solution and its pilot implementation including stakeholder engagement. Expected benefits of the e-GP system include: (i) improved transparency in procurement procedures and practices; (ii) efficiency throughout the procurement process and minimization of the procurement cycle time; and (iii) confidentiality, integrity and authenticity of all transactions and data between the procurement entities and the suppliers. The Public Procurement and Disposal of Public Assets Authority (PPDA) has engaged a consultancy firm to carry-out business process re-engineering of procurement process and practices, development of standard catalogs of common use items, preparation of e-GP Guidelines, and e-GP technical requirements and bidding documents, which are expected to be ready by June 30, 2015. PPDA shall be responsible for approval of system design and bidding documents, technical oversight, and signing off on the deliverables for this component. In this regard, PPDA will consult appropriately with the e-GP Steering Committee and e-GP Technical Committee.

24. Sub-component 3.8: e-Services, US$3 million. As stated in its Vision 2040 blueprint, Uganda aims to transform its society and provide citizens with a better standard of living by focusing on improving the quality of health and education services. Therefore, this sub-component will finance the identification and deployment of selected e-Services aimed to improve service delivery in these two sectors as well as in agriculture and Justice, Law and Order Sector (JLOS). All four have been identified as priority sectors through a consultative process during project preparations. e-Services will be implemented to: (i) demonstrate cost-

effectiveness and value of using ICT in public service delivery; (ii) produce demonstration effect of leveraging the Shared Public Service Delivery Platform and Whole-of-Government Data Integration and Sharing Programs; (iii) develop trust and confidence amongst the citizens regarding e-Government services; (iv) allow risk-taking within the Government whereby public service officials take calculated risk to implement new services on the shared ICT platform; and (v) take advantage of the vibrant innovation ecosystem in Uganda.

25. When selecting e-Services for funding, the government will apply the following criteria: (i) number of beneficiaries covered, especially women; (ii) back-office readiness at MDAs; (iii) legal framework readiness; (iv) leadership, political will and level of ownership at MDAs; and (v) sustainability. U-report, an existing SMS citizen feedback platform developed by UNICEF will be leveraged to seek citizen feedback on priority e-Services. The selected e-Services will be planned and project managed together with MDAs to ensure sector specific requirements are considered and ownership stays with MDAs to improve sustainability of the results. e-Services may also be developed by leveraging the existing innovation ecosystem, using co-creation and design thinking approaches to make sure that implemented e-Services are citizen-centric solutions, gender specific (taking into account the utility and usefulness of the services to women), and contribute to improving service delivery especially in health and education. Innovative solutions may also come out of Government's Open Data initiative. The implementation of e-Services may also require setting up a Government Innovation Center of Excellence to foster ICT innovation.

26. The timeline for the implementation of the Government's *Shared Public Service Delivery Platform* is indicated in Figure 3 below:

Figure 3: Timeline for the Implementation of the Shared Public Service Delivery Platform

	Sub-component	2015	2016	2017	2018	2019	2020	2021
		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
3.1	Development of ICT standards and frameworks, including GEAIF	Hire consultants	Gap analysis	Development of missing legislation		Enforcement of policies and standards		
3.2	Cloud based national datacenter	Upgrade of existing data center	Design and procure Gov. cloud		Implementation of Gov. cloud		Data center consolidation	
3.3	Shared platform to improve Gov. ability to deploy e-Services	Hire consultants	Design and procure		Implementation	MDAs leverage shared services platform to deploy e-services		
3.4	Information Security as a Service	Hire consultants	Design	Implementation of CERT		ISO 27001 Certification		Enforcement
3.5	Whole-of-Government data integration and sharing program	Finalize design	Procure	Implementation		Enforcement and Support		
3.6	Shared IT services to improve Government efficiency		Design and procure		Implementation and roll out in key MDAs		Support and roll out to more MDAs	
3.7	e-Procurement	Finish design	Procure	Implementation of eGP in pilot MDAs		Roll out and support		
3.8	Citizen centric e-Services	Finish prioratization	Design and procure	Implement a few new e-services each year, provide maitenance and support				

COMPONENT 4: PROJECT MANAGEMENT (US$3 MILLION IDA AND US$3 MILLION GOU)

27. This component will finance project management and coordination including procurement, financial management, monitoring & evaluation, and environmental and social safeguards management. This will include funding consultancy support for the successful implementation of the project, institutional strengthening of NITA-U, MICT, and

PPDA to improve their capacity to implement the project, logistics, consumables, office equipment, as well as incremental operating costs and audits. This component will also fund technical assistance (TA) to support monitoring and evaluation (M&E) and automation of the accounting system. Finally, the Government will fund the implementation of the resettlement action plans under this component.

Annex 3: Implementation Arrangements

UGANDA: Regional Communications Infrastructure Program Phase 5 – Uganda Project

Project Institutional and Implementation Arrangements

1. The institutional arrangements for RCIP project implementation will be in line with current government structures. MOFPED will be responsible for aligning the project objectives with national planning priorities and ensuring that project resources are budgeted for and disbursed within the national medium-term expenditure framework. MICT will provide overall policy guidance to the sector as well as general supervision and monitoring of project implementation. The Office of the Auditors General will be responsible for the project accounts and annual statutory audits. UCC will be responsible for regulating the communication aspects of the RCIP project infrastructure. Other government MDAs shall be direct beneficiaries of RCIP project and will drive implementation of sector specific e-Services.

Project administration mechanisms

2. A Steering Committee (SC) will be formed to ensure that the RCIP Uganda project meets its project development objectives. The SC will meet quarterly to discuss progress of project implementation and make necessary decisions and approvals. The SC will be comprised of Permanent Secretary/Secretary to the Treasury (PS/ST) MOFPED (Chairman); PS of the Office of Prime Minister (OPM), PS of MICT, Executive Director (ED) of NITA-U, ED of PPDA, and the Solicitor General.

3. NITA-U is the implementing agency for RCIP Uganda and will have overall responsibility for project implementation. NITA-U will coordinate all activities under RCIP's components and will be responsible for accounting for and reporting on project funds, project progress and results. PPDA will be responsible for the implementation of the e-Procurement sub-component in close cooperation with NITA-U who will be responsible for all procurement processes.

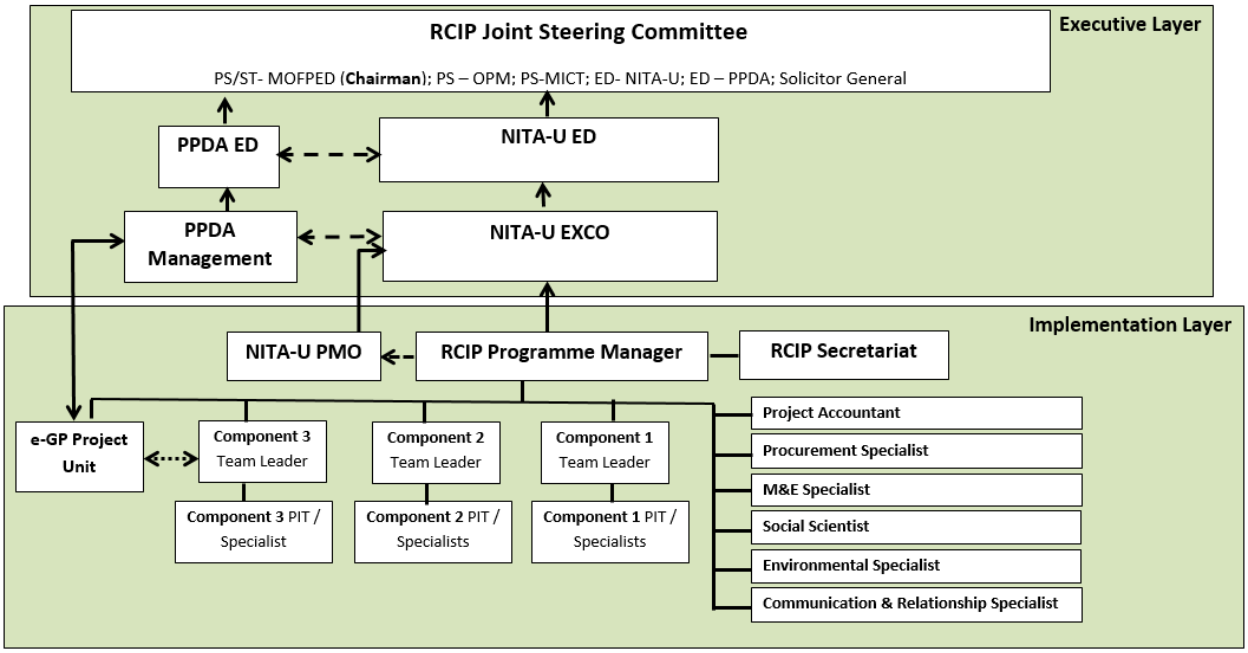
4. Project implementation activities will be mainstreamed within the current NITA-U structures. However, to ensure effective and efficient project implementation, a dedicated RCIP project implementation office (PIO) will be created and staffed within NITA-U. The PIO will work closely with the existing directorates/departments on project issues integral to NITA-U's day-to-day operations and core functions. There will be a need to hire some additional individual consultants to support project implementation. These consultants will be hired at salaries comparable with the salaries of NITA-U staff whenever possible. Institutional strengthening will be provided to MICT, NITA-U, and PPDA in order to improve their capacity to implement the project.

5. A project implementation manual is being prepared by NITA-U to guide execution of each component and the implementation of the project as a whole. It will contain detailed arrangements and procedures for implementation of the Project including (a) institutional coordination and day-to-day implementation; (b) disbursement, procurement, and financial management arrangements; (c) environmental and social safeguards management; (d) monitoring

and evaluation, reporting and communication, including performance indicators; (e) a capacity building program for designated Project implementation staff and (f) such other administrative, financial, technical and organizational arrangements and procedures as shall be required.

6. The Project Implementation Arrangements are depicted in Figure 1 below.

Figure 1: RCIP Uganda Implementation Arrangements



7. RCIP Uganda project staff will include:

(a) Existing NITA-U staff (not paid from the proceeds of the IDA Credit) – RCIP Programme Manager, human resources development specialist, ICT standards & frameworks specialist, Component 2 team leader, IT services administrator, Component 3 team leader, system analyst, business analyst;

(b) Consultants to be hired at NITA-U – Component 1 team leader, legal expert, system engineer OFC, systems engineer WAN, network administrator, enterprise architect, senior system analyst, senior business analyst, senior information security specialist, data center and integration expert, business analyst (RCIP Secretariat), project accountant, procurement specialist, M&E specialist, social scientist, environmental specialist, communication & relationship specialist, internal auditor, 2 drivers; and

(c) Staffing of the e-GP unit at PPDA – e-GP project manager, procurement systems analyst, network engineer, systems/database administrator, quality assurance consultant, web-based developer, help desk officer.

Financial Management, Disbursements and Procurement

Financial Management and Disbursement

8. An assessment of NITA-U's financial management arrangements was carried out to determine: (a) the adequacy of the financial management arrangements in ensuring project funds will be used for purposes intended in an efficient and economical way; (b) whether project financial reports will be prepared in an accurate, reliable and timely manner; (c) whether the project's assets will be safeguarded; and (d) whether the auditing arrangements are acceptable to IDA. The assessment was carried out in accordance with the Financial Management Practices Manual issued on February 4, 2015.

9. Actions outlined in the Financial Management Action Plan as identified during the assessment will be undertaken by NITA-U to strengthen the financial management system. The actions required before negotiations, i.e., to agree on the Interim Financial Report (IFR) formats and ToRs for external audit, have been completed. There are no conditions of effectiveness related to financial management.

10. In order to ensure that the project is effectively implemented, NITA-U will ensure that appropriate staffing arrangements are maintained throughout the life of the project.

11. The conclusion of the assessment is that the financial management arrangements for the project have an overall Substantial residual risk rating. However, the proposed financial management arrangements together with proposed action plan satisfy the Bank's minimum requirements under OP/BP 10.0 and are adequate to provide, with reasonable assurance, accurate and timely information on the status of the project resources required by IDA.

Country Issues

12. The Public Expenditure and Financial Accountability (PEFA) Report of 2012 indicates that the Government has carried out key reforms including public service reform, decentralization and public financial management. The National Development Plan 2010-2015 provides the overarching strategy for all GoU reforms. The Government's public service reforms aim to improve services delivery by instilling modern management practices into Uganda's public service and properly motivating and equipping the public servants. Decentralization is meant to improve the services delivery that local governments provide to the people by taking services close to the people and empowering them to have a say in deciding and monitoring the services that are provided to them. The Office of the Prime Minister coordinates all GoU programs and MDA activities and carries out an annual performance management assessment to ensure that they are achieving their agreed objectives and outputs. Public financial management reforms support and benefit all the other GoU reforms because they provide the means of ensuring that the resources allocated to the various reforms are applied effectively and efficiently to achieve the intended purposes and attain value for money. The PFM reforms cover the whole of the budgeting cycle functions: budget preparation, budget execution and oversight and scrutiny. The reforms have been pursued since the early 1990s and are continuing. The current reforms build on past achievements and are currently concentrating on: improving the credibility of the budget;

ensuring that public financial management legislation is complied with; and ensuring that audit recommendations are implemented. GoU is carrying out the PFM reforms with the support of several donors. The more notable reforms include the review and revision of the Public Finance Management Act in 2015, the upgrade of the IFMS, additional initiatives supported by FINMAP in the implementation of the PFM reform strategy and implementation of a High Level Matrix to address corruption challenges identified by the Auditor General.

Risk Assessment and Mitigation

13. The following are necessary features of a strong financial management system:

- an adequate number and mix of skilled and experienced staff in the accounting and internal audit unit;
- the internal control system should ensure the conduct of an orderly and efficient payment and procurement process, and proper recording and safeguarding of assets and resources;
- the accounting system should support the project's requests for funding and meet its reporting obligations to fund providers including Government of Uganda, IDA, other donors, and local communities;
- the system should be capable of providing financial data to measure performance when linked to the output of the project; and
- an independent, qualified auditor should be appointed to review the Project's financial statements and internal controls.

Strengths and Weaknesses of the Management Unit

14. The following salient features are the main ***strengths*** of the project's financial management system: (i) qualified and experienced accounting personnel heading the accounting department; (ii) use of the Public Finance Management Act, 2015 together with accompanying Treasury Accounting Instructions, and NITA-U Financial Management Manual of May 2013

15. The following salient features are the project financial management ***weaknesses:*** the Authority (i) is fairly new as an independent entity and therefore some of the structures are still being developed, (ii) is operating a manual accounting system that is subject to errors, and (iii) some core positions like Head of Human Resource, and Project Accountant are yet to be filled.

16. The overall residual risk is assessed as **Substantial** upon the mitigation of identified risks in the risk assessment and mitigation table below.

Table 1: FM Risk Assessment and Mitigation Measures

Risk	Risk Rating	Risk Mitigation measures incorporated into project design	Risk after Mitigation
Inherent Risk			
Country-The 2012 PEFA report identified weaknesses in government PFM systems. Challenges in enforcement of	**High**	To address the high level of country risk, a government led PFM reform program is under implementation which addresses issues of financial management and procurement and its related enforcement. Payroll and pension	**Substantial**

Risk	Risk Rating	Risk Mitigation measures incorporated into project design	Risk after Mitigation
procurement and payroll rules and procedures still exist. Budget credibility is still a challenge across most MDAs. Governance challenges include the corruption scandals in OPM and Ministry of Public Service. Non adherence to approved budget and diversion of funds experienced across ministries is also a problem.		reforms are ongoing under Ministry of Public Service. Governance and corruption are also being addressed through a high level matrix agreed between the development partners and the government. In addition, the National ID project is being implemented and will be integrated with the payroll system to further reduce the residual risk.	
Entity level- The NITA-U is fairly new and may have capacity challenges in implementing the project as the activities will substantially increase. The entity has also not been involved in a Bank financed project but has experience with other development partners. NITA-U is also operating a manual accounting system. It also has a staffing challenge across departments; staffing level is 27% of the approved establishment positions.	**Substantial**	The Authority is staffed with professional and experienced staff in finance and accounting. An additional project accountant will be recruited to support the existing staff. The NITA-U project team will be supported by the Bank team on the implementation of the project through training and advisories.	**Substantial**
Project level- The project management will be from the center with minimal decentralization. Implementation delays may be experienced due to slow execution by various government departments as noted in past similar projects involving more than one department / institution.	**Substantial**	Engagement of all government agencies and departments to be involved in the implementation of the project from the project design stage as documented in the NITA-U IT Project Management Methodology which has a provision for multi – institution project management.	**Moderate**
Overall inherent risk			**Substantial**
Control risk			
Budgeting Under-costing of ICT infrastructure components due to design omissions. Cost escalation of project elements due to delayed execution of project activities. Low MTEF	**Substantial**	Detailed design to be conducted with adequate provision for price changes. Project budget plans to be prepared in sufficient detail and be used as a management tool. The IFRs will be used to monitor budget variance. Project funds under GoU to be ring fenced. NITA-U to follow up on MTEF ceiling adjustment by	**Moderate**

Risk	Risk Rating	Risk Mitigation measures incorporated into project design	Risk after Mitigation
ceilings affecting implementation of activities including staff recruitment.		MOPS and MOFPED.	
Accounting There is high staff turnover with changes in director of finance, finance manager and accountant. Position of accountant is vacant. Further staffing gap in accounting is expected due to increase in resources and activities once project is on board. The Authority is on a manual accounting system which is prone to errors and omissions as noted in the audit report.	**Substantial**	Recruitment to fill vacant position ongoing. NITA-U will recruit an additional qualified and experienced project accountant within 6 months after project effectiveness. The Bank will also carry out FM training on key project staff on Bank FM and Disbursement Guidelines within six months of project effectiveness. The Authority will automate its accounting system within 6 months after the project effectiveness.	**Substantial**
Funds Flow Disbursement delays due to slow project execution. Delays in making payments to contractors.	**Substantial**	Commence preliminary project activities in advance of project approval. The method of Direct Payments for major suppliers and contractors will be used when appropriate.	**Moderate**
Financial Reporting Delays in submission of accurate and reliable quarterly reports. Delays in preparation of annual financial statements for audit.	**Substantial**	Project accountant will be adequately trained on the preparation of the IFRs within 6 months of effectiveness. The automation of the accounting system will enhance accuracy and reliability of the financial reports. Project accountant to adhere to reporting deadlines including for the annual financial reports. Other project team members will also be trained on WB financial management and disbursement guidelines.	**Moderate**
Internal control: Could be compromised by parties involved in contracting or collusion to inflate prices for ICT infrastructure works, goods and services. There is also a risk of collusion between the parties to certify incomplete or poor quality work. There is also staffing gap in internal audit and capacity to carry out technical audits. The	**Substantial**	Detailed designs and price surveys to inform and guide the Authority. Authority and stakeholders to have close supervision of the infrastructure works and delivery of goods and services. The Internal Audit department of the Authority will cover the activities of the project in their annual work plans. The audit committee should incorporate a financial management expert in their meetings to add value to their deliberations.	**Substantial**

Risk	Risk Rating	Risk Mitigation measures incorporated into project design	Risk after Mitigation
audit committee also lacks a member with the required accounting / financial management background.			
External Audit Delays in the submission of financial statements to the Auditor General may lead to delays in submission of audited financial statements to the Bank. The audit report for FY June 30, 2013 was unqualified. It highlighted major staffing vacancies including finance manager and accountant.	**Substantial**	The project will submit the annual financial statements to the Auditor General within the submission deadline of August 31st every year and to the Bank within 6 months after the end of the FY. The vacant position of finance manager has been filled. Recruitment of accountant ongoing.	**Moderate**
Overall control risk			**Substantial**
Overall Project Residual Risk Rating			**Substantial**

Institutional and Implementation Arrangements

17. The project financial and other resources will be managed through the existing financial management arrangements in NITA-U as established under the Directorate of Finance and Administration. During project execution the NITA-U shall coordinate project implementation and manage: (a) project monitoring, reporting and evaluation; (b) contractual relationships with IDA and other co-financiers; (c) procurement and (d) financial management and record keeping, accounts and disbursements.

18. The Executive Director NITA-U will be the "Accounting Officer" for the project, assuming the overall responsibility for accounting for the project funds.

19. A designated Programme Manager will be appointed who will be responsible for the day to day co-coordination of project activities in close collaboration with the relevant NITA-U Technical Departments.

Budgeting Arrangements

20. The project will follow the government planning and budgeting procedures documented in the government's Public Finance Management Act, 2015 together with accompanying Treasury Accounting Instructions, and NITA-U Financial Management Manual of May 2013. These arrangements have been found to be adequate. Under the project, this will be coordinated by the Programme Manager and director of finance and administration who will align the project estimates as provided in the cost tables to the GoU budget. The June 30, 2013 audit report notes

that MTEF ceilings have hindered NITA-U from utilizing available resources to recruit more staff. The authority is following up with MOFPED to have this increased.

Accounting Arrangements

21. Books of Accounts: The books of accounts to be maintained specifically for the project should be set up and should include: a cash book, ledgers, journal vouchers, fixed asset register, advances ledger and a contracts register.

22. Staffing Arrangements: The daily financial management functions will be managed by the Directorate of Finance and Administration headed by a director who is assisted by a finance manager. There is a vacant position of an accountant and the recruitment process is ongoing. The Directorate will be further strengthened through the recruitment of a project accountant when project is on board to support the existing staff within 6 months after project effectiveness. There has been high staff turnover with changes in Director Finance and Administration, Finance Manager and Accountant in less than one year.

23. Information system: The Authority uses Integrated Financial Management System (IFMS) for budgetary control and payments purposes. The project module is still being developed and therefore financial reporting for projects is a challenge. The Authority is currently preparing financial reports through a manual system. This is subject to errors as pointed out in the June 30, 2012 audit report. The Authority will automate its accounting system within 6 months after project effectiveness.

Bank Accounts

24. The following bank accounts authorized by the MOFPED will be maintained by NITA-U in Bank of Uganda for purposes of implementing the project: (i) designated account (DA): denominated in US dollars where disbursements from the IDA will be deposited and payment in USD will be made from; and (ii) project account: denominated in local currency. Transfers from the designated account (for payment of transactions in local currency) will be deposited on this account in accordance with project objectives.

25. The GOU is rolling out IFMS and implementing the Treasury Single Account (TSA). The proposed banking arrangements above will be reviewed as the reforms are extended.

26. The signatories for the project accounts will be in accordance with the Public Finance Management Act, 2015 together with accompanying Treasury Accounting Instructions, and the National Information Technology Authority Act, 2009.

Flow of Funds and Disbursements

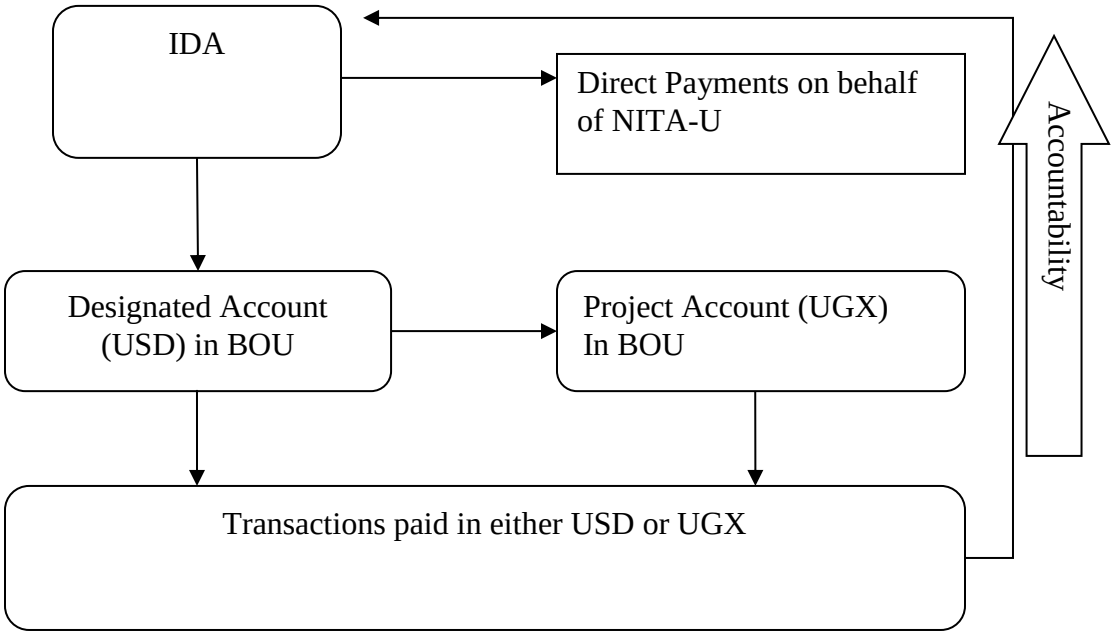
27. The project will be on a Report Based Disbursement Method. An initial disbursement will be deposited in the project DA based on a six month cash flow forecast for the project based on the approved work plan for both NITA-U and PPDA. Subsequent disbursement will be based on the quarterly IFRs submitted to the Bank together with the relevant WA. The IFRs will be submitted

for disbursement on a quarterly basis. In compliance with the report based guidelines, the project will be expected to, (a) sustain satisfactory financial management rating during project supervision; (b) submit IFRs consistent with the agreed form and content within 45 days of the end of each reporting period, and (c) submit a project audit report by the due date.

28. Direct payment method may be used for payments to contractors or service providers upon recommendations of their satisfactory performance by the project authorized officials. Payments may also be made for expenditures against special commitments. The project may also use the reimbursement method. The Accountant General in the MOFPED together with his delegated officials shall be co-signatories for disbursement/withdrawal applications. IDA's disbursement letter will stipulate a minimum application value for direct payment and special commitment procedures.

29. If ineligible expenditures are found to have been made from the DA, the Client will be obligated to refund the same. If the Designated Account remains inactive for more than six months, the Client may be requested to refund to IDA amounts advanced to the Designated Account. IDA will have the right, as reflected in the Financing Agreement, to suspend disbursement of the Funds if reporting requirements are not complied with.

Figure 2: Funds Flow Chart



Financial Reporting Arrangements

30. NITA-U will submit quarterly interim financial report (IFR) in an acceptable format to the Bank within 45 days after the end of each calendar quarter. The report will include; (i) A consolidated statement of Sources and Uses of Funds (ii) A statement of uses of funds by project activity/component including PPDA activities.

31. In addition to the above reports, the NITA-U will submit to the Bank: (i) DA activity statement; (ii) DA and project account bank statements; (iii) summary statement of DA expenditures for contracts subject to prior review; and (iv) summary statement of DA expenditures for contracts not subject to prior review.

32. The annual financial statements should be prepared in accordance with International Financial Reporting Standards (IFRS). The IDA Financing Agreement will require the submission of audited financial statements to the Bank within six months after the financial year end.

Internal Controls

33. Internal Controls: The internal controls as documented in the Public Finance Management Act, 2015 together with accompanying Treasury Accounting Instructions, and Financial Management Manual May 2013 are adequate for the purposes of the project.

34. Internal Audit: Both NITA-U and PPDA have internal audit departments. There are approved audit committees, internal audit charter and internal audit manuals. There is a board audit committee in place. However, NITA-U committee does not have a member with financial management/accounting qualification/profession. This negatively affects the committee effectiveness in addressing financial management and audit matters. The committee will be expected to co-opt a financial management expert during committee deliberations. The internal audit at NITA-U is headed by an audit manager with another one staff. The department lacks the capacity to carry out technical audits and will be supported in the short run by use of consultants as it plans to recruit own technical audit staff. The project will be incorporated in the internal audit work plan and semi-annual reports submitted to the Bank within 45 days after end of semester.

External Auditing Arrangements

35. The Auditor General is primarily responsible for the auditing of the project. Occasionally, the audit may be subcontracted to a firm of private auditors acceptable to the Bank, with the final report being issued by the Auditor General. In case the audit is subcontracted to a firm of private auditors, IDA funding may be used to pay the cost of the audit. The audits are done in accordance with international standards on auditing. The ToRs for the external audit have been agreed between the Bank and NITA-U. The project specific audit report will be required to be submitted by the NITA-U within six (6) months after the end of each financial year, i.e., December 31 given that the accounts will be prepared for the year ended June 30.

36. The first audit report for NITA-U for FY ended June 30, 2013 was ***unqualified.*** It identified key weaknesses that included major understaffing with only 27% of approved establishment positions filled. Some core positions like head of human resource, finance manager and accountant are yet to be filled. The vacant positions are crucial for the achievement of the objectives of the Authority and for the effectiveness of internal controls. The position of the finance manager has been filled while the recruitment of the accountant is ongoing.

Financial Management Action Plan

37. The action plan below indicates the actions to be taken for the project to strengthen its financial management system and the dates that they are due to be completed by:

	Action	**Date Due**	**Responsibility**
1	Agreement on external audit ToRs and format of IFR	Agreed	NITA-U/Bank
2	Recruitment of project accountant	Within six (6) months of effectiveness.	NITA-U
3	Automation of the accounting system	Within six (6) months of effectiveness.	NITA-U
4	Training of project team on Bank financial management guidelines and procedures.	Within six (6) months of effectiveness.	NITA-U/Bank

Financial Covenants

38. Financial covenants are the standard ones as stated in the Financing Agreement Schedule 2, Section II (B) on Financial Management, Financial Reports and Audits and Section 4.09 of the General Conditions.

Supervision Plan

39. A supervision mission will be conducted at least twice every year based on the risk assessment of the project. The mission's objectives will include that of ensuring that strong financial management systems are maintained for the project throughout its life. Reviews will be carried out regularly to ensure that expenditures incurred by the project remain eligible for IDA funding. The Implementation Status Report (ISR) will include a financial management rating for the components.

Conclusion of the Assessment

40. A description of the financial management arrangements above assesses the financial management risk as Substantial while the mitigated residual risk rating remains Substantial but with the proposed actions and improvements satisfies the Bank's minimum requirements under OP/BP10.00 for the system to be adequate to provide, with reasonable assurance, accurate and timely accounts/information on the status of the Project as required by the Bank. The recommended improvements are detailed in the Financial Management Action Plan above.

Procurement

Background

41. The proposed RCIP Uganda will be implemented by NITA-U. NITA-U was established by an act of Parliament (the National Information Technology Authority Act, 2009) and began operations in August 2010. Execution of the NITA-U mandate is guided by a 5 year strategic plan as well as relevant national laws and regulations.

A. Applicable Guidelines

42. Procurement for the proposed project will be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated January 2011 and revised July 2014; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated January 2011 and revised July 2014, Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants, dated October 15, 2006 and revised in January 2011, and the provisions stipulated in the Legal Agreement. The items under different expenditure categories to be procured, are indicated in the "Scope of Procurement under the project" section.

B. Applicable Procedures

43. Advance Contracting and Retroactive Financing shall apply for this project which allows the Borrower to proceed with the initial steps of procurement before signing the related Bank loan. In such cases, the procurement procedures, including advertising, shall be in accordance with the Guidelines in order for the eventual contracts to be eligible for Bank financing, and the Bank shall review the process used by the Borrower. A Borrower undertakes such advance contracting at its own risk, and any concurrence by the Bank with the procedures, documentation, or proposal for award does not commit the Bank to make a loan for the project in question.

44. Use of National Procurement System. All contracts procured at the national level following National Competitive Bidding (NCB) and other lower procurement procedures such as Shopping, may follow the national public procurement law (the Public Procurement and Disposal of Public Assets Authority Act, 2003) and attendant regulations. These procedures have been reviewed by the Bank and found to be acceptable, except for the following provisions, *which will not be applicable under this project*:

a. Domestic preferences shall not apply under NCB;

b. The charging of fees for dealing with bidder complaints at procuring entity level shall not be permitted;

c. Firms or individuals debarred or suspended by the [World Bank] shall not be eligible (in addition to firms or individuals suspended by PPDA);

d. Disqualification of bidders for not purchasing bidding documents from the [Recipient] shall not apply;

e. Paragraph 6(1)(b) of the Fourth Schedule of the PPDA Act, restricting contract amendments to an aggregate amount of 25% of the original contract amount, shall not apply;

f. Regulation 53(9) of the PPDA Act, restricting the use of bid securing declarations to restricted domestic bidding and quotations procurement, shall not apply; and

g. In accordance with paragraph 1.16(e) of the Procurement Guidelines, each bidding document and contract shall provide for the following: (i) the bidders, suppliers, contractors and subcontractors shall, on request, permit the [World Bank] to inspect the accounts and records relating to the bid submission and performance of the contract, and shall have the accounts and records audited by auditors appointed by the [World Bank]; and (ii) any deliberate and/or material violation of such provision by any bidder, supplier, contractor or subcontractor may amount to an obstructive practice provided for in paragraphs 1.16(a) and (v) of the Procurement Guidelines.

45. Under the proposed project, procurement processing under the project shall also in addition to the World Bank guidelines comply with the national approval system except where the two conflict, when the World Bank Guidelines will take precedence. Specifically, the Contracts Committees shall perform their oversight functions at every key procurement stage as required by the PPDA Act, and contracts shall be subjected to the Solicitor General's clearance where applicable.

46. ***Procedure for Shopping:*** Shopping shall follow the Request for Quotation (RFQ) procedures as defined in the PPDA Act and attendant regulations. These procedures have been reviewed by the Bank and found to be satisfactory subject to the exceptions under para 44.

47. Use of Framework Agreements(FAs): Common supplies, for example, stationery and consumables will be aggregated and procured through framework contracts to enable implementing agencies place orders for urgently needed supplies at short notice, at a competitive price. FAs shall not restrict foreign competition, and should be limited to a maximum duration of 3 (three) years. FA procedures applicable to the project are those of the Borrowers that have been deemed acceptable by the Bank, and shall be described in the Loan Agreement.

48. It has been agreed with the Borrower, that bidding documents under NCB procedures include a clause rendering ineligible for Bank financing a firm, or an individual, of the Borrower country that is under a sanction of debarment from being awarded a contract by the appropriate judicial authority of the Borrower country and pursuant to its relevant laws, provided that the Bank has determined that the firm, or the individual, has engaged in fraud or corruption and the judicial proceeding afforded the firm or the individual adequate due process.

49. The Consultant Guidelines shall apply for the selection of Procurement Agents and Construction Managers, as well as inspection services providers. The cost or fee of the Procurement Agents and Construction Managers or inspection services providers (see paragraph 3.12) is eligible for financing from the Bank loan, if so provided in the Loan Agreement and in the Procurement Plan, and provided that the terms and conditions of selection and employment are acceptable to the Bank.

C. Solicitation Documents to be used

50. ***Goods, Works and Non-consulting services:*** The Bank's standard bidding documents and standard bid evaluation forms will be used for procurement under ICB.

51. Under NCB, the standard tender documents for procurement of supplies prepared and issued by the PPDA may be used subject to modifications acceptable to the Bank and those indicated under subject to the exceptions under para 46 above.

52. ***Consulting Services:*** The Bank's Standard Request for Proposal document and sample form of evaluation report will be used in the selection of consulting firms. The PPDA procedures for selection of Consultants including bidding documents, evaluation forms, etc., shall not apply.

D. Record Keeping

53. The head of the Procurement and Disposal Unit of the NITA-U will be responsible for record keeping and shall open a procurement file for each contract processed. The file should contain all documents on the procurement process in accordance with the requirements and as described in the PPDA Act. NITA-U will ensure that there is adequate lockable storage space for active files, and for archiving.

E. Scope of Procurement under the Project

54. ***Procurement activities*** to be financed by the Bank identified prior to and during appraisal include goods, works, and consulting and non-consulting services indicated in the procurement plan under Section J of this annex, while additional activities will be identified during project implementation.

55. ***Operating Costs:*** The Project will finance costs of NITA-U, MICT, and PPDA that directly relate to project implementation. The Project's operating costs include expenditures for maintenance of equipment, facilities and vehicles used for Project Implementation, fuel, routine repair and maintenance of equipment, vehicles and office premises, communication costs, use of internet costs, stationery and other office supplies, utilities used for project implementation, consumables, travel per diems, accommodation expenses, workshop venues and materials, and costs of translation, printing, photocopying and advertising. These will be procured using IDA procedures or the Borrower's procurement, financial and other administrative procedures, acceptable to the Bank. Salary top-ups, meeting allowances, sitting allowances and honoraria to civil/public servants and contracted consultants shall not be financed by the project.

56. ***Training:*** The project will formulate an annual training plan and budget which will be submitted to the Bank for its prior review and approval. The annual training plan will, inter alia, identify: (i) the training envisaged; (ii) the justification for the training, how it will lead to effective performance and implementation of the project and or sectors; (iii) the personnel to be trained; (iv) the selection methods of institutions or individuals conducting such training; (v) the institutions which will conduct training, if already selected; (vi) the duration of proposed training; and (vii) the cost estimated cost of the training. Upon completion of training, the trainee

shall be required to prepare and submit a report on the training received. A copy of the training report will be kept for IDA review. Additionally, the Project Implementation Manual shall specify how candidates eligible for the training shall be selected. These procedures shall ensure equal opportunity to all eligible participants.

F. Capacity Assessment of NITA-U

57. A procurement capacity assessment for NITA-U was carried out April 9, 2014. Capacity of the procurement and technical staff to fulfill their role in the procurement cycle, and the quality and adequacy of internal systems and controls was assessed.

58. Procurement processing in NITA-U is in general compliant to PPDA procedures and the requisite structures of a Procurement and Disposal Unit (PDU) and contracts committee are in place. A detailed procurement capacity report has been prepared, but highlights areas of improvement indicated below; the agreed mitigation measures are indicated in para 65.

a. Delays at Bid Evaluation: There are delays of up to 1 month at bid evaluation attributed to the heavy workload, with Staff assigned to 2-3 evaluations teams at the same time which also affect the quality of evaluation.

b. Quality of Response to Bidders: In the last 3 years there have been 2 complaints which were resolved at NITA-U level. However, it was noted that the NITA-U PDU should ensure that the response to clarifications and requests for information from bidders is comprehensive, complete, and cognizant of the risk of complaints arising from incomplete, non-clear responses.

c. Contract management reports were missing in all files, and going forward ensuring that there are contract management reports in place should be an area of focus for NITA-U.

d. NITA-U Procurement and Disposal Unit (PDU) Staffing: The NITA-U structure provides for 5 staff in the PDU, however, only 3 are in place due to funding constraints. The PDU staff have adequate educational qualifications, and experience in handling PPDA contracts with very limited experience in IDA financed procurement management gained from processing for the 3 consultancy contracts during RCIP preparation stage which have provided staff some basic skills in selection of consultants though suffered major delays of up to six months.

e. The NITA-U budget for FY 12/13 was approximately UGX 10 billion (about US$4 million) funded by the Government of Uganda out of which 65% (UGX 6.5 billion) was expended through Procurement. NITA-U expects to collect Non-Tax Revenue of up to UGX 20 billion (about US$8 million) starting FY14/15 making a total budget of about UGX 30 billion (about US$12 million) in the coming financial years. The NITA-U procurement budget of about US$8 million is less than 10% of the USD 85 million under proposed project. NITA-U agreed to hire a procurement specialist with experience and skills in IDA funded procurement management under the project to bridge the understaffing gap and ensure adequate procurement capacity for RCIP for timely procurement processing.

f. Records Management: (i) A sample of procurement files reviewed were found to be missing payment and contract management documents as well as contracts committee minutes, and the different stages of the procurement cycle were not demarcated in the files. It was also noted that copies of bids and copies of contracts were loosely inserted in the box file, posing a high risk of misplacement, loss or compromising the integrity/completeness of these documents. The contracts register format will be modified to include contract details which will ensure completeness of the record. The PDU agreed to address the weaknesses noted in the record keeping; (ii) The PDU "office" is in an open space shared by 20 staff from other directorates, as well as 2 meeting areas. The current seating arrangement thus poses a high risk to the integrity and safety of the procurement records, and indeed the procurement function. The cabinets are lockable but due to open space, risk of loss of confidentiality is heightened. This is a high risk to procurement records, and NITA-U shall partition off space for the PDU to ensure integrity of the procurement records.

g. Staffing in Technical Departments: The proposed contracts under the RCIP are similar to the normal activities under the respective departments in NITA-U. However, the current NITA-U staffing is on average 27% of those provided in the structure with high vacancy rate of 73%. NITA-U thus has inadequate staff numbers to handle the proposed project tasks in addition to their existing workload, which poses a high risk to the project implementation, and impedes the capacity of the technical departments to carry out their role in the procurement cycle in a timely and efficient manner. It was agreed that any identified capacity gaps with regard to implementation needs for the RCIP, will be filled through recruitment of Individual Consultants under RCIP.

G. Frequency of Bank Supervision

59. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended at least bi-annual supervision missions to visit the field, at least one of which shall include carrying out post review of procurement actions.

H. Prior Review Thresholds

60. The prior review thresholds are as follows:

Procurement of Goods, Works and Non-consulting services			
Expenditure Category	Contract Value (Threshold) USD	Procurement Method	Contracts Subject to Prior Review
1. Works	>=10,000,000	ICB	All Contracts
	< 10,000,000	NCB	Selected Contracts as indicated on PP
	<200,000	Shopping	First Contract under this method

2. Goods and Non-consulting services	>=1,000,000 <1,000,000 <100,000	ICB NCB Shopping	All Contracts Selected Contracts as indicated on PP First Contract under this method
All categories	All values	Direct Contracting	All Contracts
Selection of Consultants[35]			
Expenditure Category	Contract Value (Threshold) USD	Selection Method	Contracts Subject to Prior Review
	>=300,000 <300,000	QCBS, QBS, FBS, LCS CQS/Other Selection Methods	All Contracts Selected Contracts as indicated on PP
(b) Individual	>=100,000 <100,000	ICS ICS	All Contracts Selected Contracts as indicated on PP
Firms and Individual	All values	SSS	All Contracts

I. Procurement Plan

61. The Borrower, at appraisal, developed a procurement plan for project implementation which provides the basis for the procurement methods. The Plan was prepared in a format acceptable to IDA. This plan was agreed between the Borrower and the Project Team on April 15, 2015 and is available at the NITA-U offices on Palm Courts, Plot 7A, Rotary Avenue (Former Lugogo Bypass) in Kampala. It will also be available in the project's database and in the Bank's external website. The procurement plan will be updated in agreement with the project team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

J. Details of the Procurement Arrangements Involving International Competition

62. ***Procurement Packages with Methods and Time Schedule.*** List of contract packages to be procured following ICB and Direct Contracting:

1	2	3	4	5	6	7	8	9

[35] All Terms of Reference regardless of cost will be subject to clearance by the Bank.
[36] A shortlist of consultants for services estimated to cost less than US$300,000 equivalent per contract may consist entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Ref. No.	Contract (Description)	Estimated Cost ($ mill) – excludes local taxes	Procurement Method	Pre-qualification (yes/ no)	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date	Comments
1.	e-Government Service Delivery Platform Lot 1 - Cloud Infrastructure and Data Center and Disaster Recovery site hardware (3.2) Lot 2 - Shared Platform (Authentication service, Payment Gateway, Mobile Gateway, e- Services Portal, Government of Uganda Enterprise Service Bus (3.3)(3.4) Lot 3 – Shared IT Services (3.6) (Collaboration system)	16.7	ICB	No	No	Prior	May 18, 2016	
2.	Internet bandwidth	5.0	ICB	No	No	Prior	Nov 5, 2015	
3.	Equipment to facilitate Internet bandwidth Network Management System (2 routers, 2 Firewalls and Network Management System)	1.0	ICB	No	No	Prior	Nov 5, 2015	
4.	Supply and installation of optic fiber and transmission sites	16.7	ICB	No	No	Prior	Nov 5, 2015	
5.	Solar panels and accessories for NBI transmission sites	1.0	ICB	No	No	Prior	Nov 5, 2015	
6.	Whole of government data integration and sharing	5.0	ICB	No	No	Prior	May 18, 2016	
7.	e-Procurement Solution	1.5	ICB	No	No	Prior	Jan 8, 2016	

63. ***Selection of Consultants.*** Consultancy Assignments with Selection Methods and Time Schedule

1	2	3	4	5	6	7

Ref. No.	Description of Assignment	Estimated Cost (US$ mill)	Selection Method	Review by Bank (Prior / Post)	Expected Proposals Submission Date	Comments
1	Assessment for Certification ISO 270001 and PCIDSS	0.3	QCBS	Prior	Dec 20, 2016	
2	Certification of ISO 270001 and PCIDSS	0.4	QCBS	Prior	May 18, 2017	
3	Consultancy for Development of ICT Standards and Frameworks	1.0	QCBS	Prior	July 12, 2016	
4	Technical advisory services for e-government services delivery platform	0.5	QCBS	Prior	Oct 20, 2015	
5	Consultancy services for establishing Framework for secure application design and development of Business continuity plans for MDAs (3.4)	0.4	QCBS	Prior	Mar 16, 2016	
6	Review and assessment of the existing ICT policies, strategies and legal and regulatory frameworks to identify gaps for harmonization with regional commitments and frameworks	0.3	QCBS	Prior	Nov 12, 2015	
7	Developing new ICT legal and regulatory frameworks and technical standards as identified by the Gap Analysis.	0.7	QCBS	Prior	Oct 20, 2016	
8	Development of Broadband Strategy and Action Plan	0.7	QCBS	Prior	Nov 15, 2015	
9	Enterprise Architecture and Interoperability Framework	1.0	QCBS	Prior	Oct 20, 2015	
10	Consultancy services for supervision of laying of optic fiber: Kamdini - Pakwach - Nebbi - Arua - Yumbe - Moyo - Adjumani - Atiak - Nimule link; Kasese - Mpondwe	0.3	QCBS	Prior	Oct 20, 2015	

1	2	3	4	5	6	7
Ref. No.	**Description of Assignment**	**Estimated Cost** (US$ mill)	**Selection Method**	**Review by Bank (Prior / Post)**	**Expected Proposals Submission Date**	**Comments**
	link; and Soroti-Moroto link					
11	Design of the Government Network	0.6	QCBS	Prior	Nov 12, 2015	
12	Feasibility study for NBI Northern Loop	0.55	QCBS	Prior	Nov 12, 2015	
13	Consultancy services for quality assurance of implementation of e-Procurement system	0.5	QCBS	Prior	Nov 12, 2015	
14	RCIP Secretariat (Business Analyst)	0.2	ICS	Prior	Nov 12, 2015	
15	Procurement Specialist	0.24	ICS	Prior	Nov 12, 2015	
16	Communication & Partnership Specialist	0.14	ICS	Prior	July 12, 2016	
17	Project Accountant	0.24	ICS	Prior	Nov 12, 2015	
18	Senior System Analyst	0.14	ICS	Prior	July 12, 2016	
19	Senior Business Analyst	0.14	ICS	Prior	July 12, 2016	
20	Senior Information Security Specialist	0.25	ICS	Prior	Nov 12, 2015	
21	Data Center and Integration Expert	0.16	ICS	Prior	July 12, 2016	
22	Network Administrator	0.17	ICS	Prior	Nov 12, 2015	
23	e-Procurement Coordinator/Head of Unit	0.33	ICS	Prior	Nov 12, 2015	
24	Procurement Systems Analyst	0.2	ICS	Prior	Nov 12, 2015	
25	Systems/Database Administrator	0.17	ICS	Prior	Nov 12, 2015	

K. Procurement Risk Assessment and Rating and Action Plan *to mitigate overall Risk*:

64. In light of the following: (i) the quantity, nature and size of procurements to be made under the project; (ii) the PDU staff's lack of proficiency in IDA financed procurement; (iii) the inadequate staff numbers in the technical Departments; (iv) inadequate record keeping; and (v) delays in procurement processing, the overall risk of NITA-U procurement management for the proposed RCIP is **High**. The risk will reduce to Substantial after mitigation.

65. Action Plan *to mitigate overall Risk*. The World Bank team held a meeting with the NITA-U team on April 1, 2015 to discuss the Procurement Capacity Assessment report, and consequently agreed on the following Action Plan to mitigate the overall risk as indicated in the matrix below:

Action Plan to Mitigate the Procurement Risks

Risk	Action	Completion Date	Responsible Entity
National procurement procedures are not fully consistent with Bank procedures	Financing Agreement shall include the exception provisions	Completed	IDA/ NITA-U
Inadequate experience of NITA-U staff in IDA financed procurement management and inadequate number of procurement staff to manage workload under RCIP	Recruit a Procurement Specialist with ToR acceptable to IDA to provide hands-on coaching and mentoring of PDU staff	Two months after project effectiveness	NITA-U
	PDU staff to attend training at a procurement training institute (GIMPA or other institution acceptable to IDA) in procurement of works and selection of consultants	By one year after project effectiveness	NITA-U
Inadequate number of Technical Staff to handle RCIP work load	Recruit additional staff / consultants in technical departments to augment existing capacity	By six months after project effectiveness	NITA-U
Inadequate seating arrangement for PDU with PDU sharing office space with other staff	NITA-U shall partition off space for the PDU to ensure integrity of the procurement records	By six months after project effectiveness	NITA-U
Inadequate record keeping due to incomplete records, and improper securing of bids	PDU will ensure completeness of procurement files particularly to include contract management records, contracts committee minutes and to ensure bids are well secured	By six months after project effectiveness	NITA-U
Clarity on roles/coordination between user departments and PDU	Prepare Project Procurement manual or include Procurement section in Project Implementation Manual to clarify IDA procedures	By six months after project effectiveness	NITA-U
Delays in procurement processing	Put in place a procurement tracking mechanism to monitor the progress by the PDU of processing different contracts	By six months after project effectiveness	NITA-U

Environmental and Social (including safeguards)

66. In general, the likely impacts are site specific and can be easily managed, and consequently the project is assigned Environmental Assessment category "B". The salient physical characteristics relevant to the safeguards analysis include: telecommunications infrastructure components of the project, particularly associated with the linear excavations for burying fiber-optic cable (alternatively overhead stringing of the cable) and civil works associated with building of national terrestrial backbones and roll-out of wireless networks. These may generate environmental and social impacts that include vegetation clearance along road reserves including impacts on forest areas, wetlands, health and safety of workers and the general public, generation of waste, and so on. With improved ICT systems in the country, increased generation and amounts of electronic waste may be realized. NITA-U in collaboration with other responsible government agencies will develop a mechanism of managing e-waste. NITA-U will develop both short term and long term arrangements for management of the e-waste and incorporate these in the subsequent ESIAs that will be prepared during implementation. As part of the project, NITA-U will develop e-waste management standards and guidelines.

67. Since the specific sites where the project will be implemented are not known at this stage, an Environmental and Social Management Framework was prepared. The following institutions were consulted:

- District local governments of Jinja, Bugiri, Mbarara, Nakasongola, and Gulu;
- Regional referral hospitals of Entebbe, Jinja, Hoima, Mbarara and Gulu;
- Educational institutions namely Hoima School of Nursing and Midwifery, Bishop Stuart College Kibingo in Mbarara District, Bulega Core Primary Teachers College (Hoima District), Mbarara University of Science & Technology, Gulu Core Primary Teachers College, Gulu University;
- The central Government agencies of Ministry of Water & Environment, Uganda National Bureau of Standards, Ministry of Local Government, National Forestry Authority, MICT, Uganda National Roads Authority, Uganda Wildlife Authority, Ministry of Education, Sports, Science and Technology; and
- The local communities that may be affected by the project infrastructure.

Institutions that were invited to the National Stakeholders meeting but did not attend and sent apologies include: National Environment Management Authority, Ministry of Health, UCC and Ministry of Works and Transport. These institutions shall be further consulted and involved in the project during implementation. Focused group discussions were held with different groups at their respective places of work or abode. Local communities were mobilized by their local leaders. The national stakeholders meeting was held centrally through a workshop that was organized and facilitated by NITA-U. The ESMF was reviewed and cleared by the Bank, and disclosed both in-country and at InfoShop on April 7, 2015. During project implementation, site specific ESIAs shall be prepared, as applicable, cleared by the Bank and disclosed both in-country and at InfoShop.

68. The safeguards capacity assessment of NITA-U as an implementing agency, indicates lack of in-house capacity required to implement the safeguard requirements. NITA-U, will hire on a

retainer basis an environmental specialist and a social scientist to undertake implementation of safeguard requirements of RCIP. The respective district environment officers and community development officers through which the NBI passes shall be involved in monitoring and supervision of RCIP.

69. The project is expected to have substantial positive social impacts on improving access to and use of ICT in Uganda as well as improving regional connectivity to neighboring countries. In addition, the project will support the Government Network in providing broadband connectivity to MDAs, local governments, schools, hospitals, universities, research institutions and NGOs. The project design includes mechanisms of ensuring Government Network connections to communities improving access and use of ICT, which in turn will increase community access and improve people participation in the project.

70. The project triggers OP 4.12 Involuntary Resettlement because some of the activities such as transit corridors for the fiber-optic network, routing of the network and auxiliary infrastructure (e.g., antennae, masts, etc.) will involve civil works which may require land acquisition. The exact routing of the NBI extension has not been defined. Therefore, the GoU prepared a Resettlement Policy Framework (RPF) to guide the assessment and management of sub-project and activity site specific risks and impacts. The RPF provides guidance on the process of preparing, reviewing, approving and implementing resettlement action plans when necessary, including mechanism of public consultations, establishment of a functional grievance handling mechanism and disclosure requirements before commencement of civil works. Particular attention will be placed in addressing any gender specific land issues that may arise in the context of any resettlement as women and children are at risk of being dispossessed of any opportunity to take part in the decision making process on issues affecting them as a result of the implementation of the resettlement and their immovable and productive assets as a result of the compensation process that may solely benefit the male household head. The RPF was cleared by the Bank and disclosed both in-country and at InfoShop on April 7, 2015.

71. The project also triggers World Bank Operational Policy OP 4.10 on Indigenous Peoples because the project may be implemented in north eastern and south western parts of Uganda. In these sub-regions the project may be implemented in areas inhabited by most vulnerable and marginalized groups of people including the Batwa Indigenous Peoples (IPs) in Kisoro Bundibugyo, Kasese and Kanungu Districts and the Ik and Tepeth IPs in Karamoja. Since the exact routing of the network especially the missing fiber optic links and government network connections including the auxiliary infrastructure (e.g., antennae, masts, etc.) have not been identified; a Vulnerable & Marginalized Groups/Vulnerable & Marginalized/ Indigenous Peoples Planning Framework (VMG/IPPF) was prepared in a very consultative manner. It outlines the processes and principles of determining the proposed investment impacts on vulnerable groups and how Vulnerable and Marginalized Groups Plan (VMGP) would be prepared. The VMG/IPPF provides guidance on the process of preparing VMG/IPP action plans including public consultations, grievance redress mechanism and disclosure plan. The VMG/IPPF sets out the measures that the government will implement in order to avoid, minimize and remediate any adverse impacts on the vulnerable and marginalized groups including indigenous people and ensure they receive culturally appropriate social benefits. Community empowerment tools have

been specifically tailored to reach and impact the IPs in line with the action plans defined. The VMG/IPPF was disclosed both in-country and at InfoShop on April 7, 2015.

Summary description of Environmental and Social Safeguard Policies Triggered:

Safeguard Policies Triggered	Yes	No	TBD
Environmental Assessment (OP/BP 4.01)	**X**		
OP/BP 4.01 is triggered because the project will entail civil works (e.g. construction of base stations and trenches for optical fiber cables). In all districts of Uganda (project Area) trenching for the cables and for selected districts-construction of base stations is planned. Construction of base stations will require materials such as sand, aggregates, cement and timber among others and use of water. Project construction and operation phases will generate waste. Management measures of materials source and transportation, and waste generated will be guided in the ESMF and ESMPs. All the structures to be constructed and trenching shall follow national construction standards, including gender and disability requirements. RCIP 5 is assigned to Environmental Assessment category B due to the project's site specific and easily manageable impacts. An ESMF that sets forth the basic environmental principles and guidelines to be followed during project implementation has been prepared in a consultative manner. The ESMF was reviewed and cleared by the World Bank and publicly disclosed both in-country and at InfoShop on April 7, 2015. During project implementation, ESIAs and/or ESMPs shall be prepared where applicable before start of any civil works.			
Natural Habitats (OP/BP 4.04)	**X**		
The project may cross natural habitats such as forests, wetlands, rivers and wildlife conservation areas. Assessment and mitigation of any likely impacts on natural habitats has been covered under the project ESMF and shall be done as part of ESIA/ESMP compilation during implementation.			
Forests (OP/BP 4.36)	**X**		
If optical fiber cables are to be laid along highways, there are some major roads that pass through forest reserves. These include for example the Mabira Forest along Jinja Highway. Assessment and mitigation of any likely impacts on forests has been covered under the project ESMF.			
Pest Management (OP 4.09)		**X**	
N/A because the project will not involve procurement and/or use of pesticides.			
Physical Cultural Resources (OP/BP 4.11)	**X**		
This is triggered because project investments involve civil works and may encounter known or chance finds/ un-known PCRs. The project ESMF has included a chance finds management procedure (Annex 5) but any subsequent ESIAs to be undertaken for any component or facility of this project will include Physical Cultural Resources investigation, assessment and management measures.			
Indigenous Peoples (OP/BP 4.10)	**X**		
This policy has been triggered because some project districts have indigenous peoples: such as Ik in Kaabong District, Tepeth in Moroto District and Batwa in Districts of Kisoro, Bundibugyo, Kasese and Kanungu Districts. Therefore, an Indigenous Peoples Planning Framework has been prepared in a consultative manner for this purpose and has been disclosed both in-country and at InfoShop on April 7, 2015.			
Involuntary Resettlement (OP/BP 4.12)	**X**		
The project will involve construction of base stations which may require land for siting. There may be displacement of land uses due to civil works. Therefore, a resettlement policy framework (RPF) has been prepared for RCIP 5 Uganda project. The FPF has been prepared in a consultative manner and disclosed both in-country and at InfoShop on April 7, 2015.			
Safety of Dams (OP/BP 4.37)		**X**	
The project will not support or depend on dams.			
Projects on International Waterways (OP/BP 7.50)		**X**	
The project does not depend or support developments related to International Waterways.			

Safeguard Policies Triggered	Yes	No	TBD
Projects in Disputed Areas (OP/BP 7.60)		**X**	
The project will not be implemented in disputed areas.			

Monitoring & Evaluation

72. NITA-U will establish an effective Monitoring and Evaluation system, following the established Government of Uganda M&E framework, to track progress towards achieving development objective. Indicators and targets were discussed and agreed during appraisal. Progress will be measured on annual basis by measuring intermediate outcomes (results) of project interventions to inform corrective measures during project implementation.

Role of Partners

73. The Government of Uganda has entered into a bilateral relationship with the Government of Korea. The feasibility studies funded through this relationship have informed the design of the e-Government component. NITA-U will partner with the private sector during project implementation to leverage the vibrant ICT sector and innovation ecosystem in Uganda. If feasible, the implementation of missing links of NBI will be coordinated with other World Bank and other donor financed infrastructure projects to leverage cost-saving opportunities.

Annex 4: Implementation Support Plan

UGANDA: Regional Communications Infrastructure Program Phase 5 – Uganda Project

Strategy and Approach for Implementation Support

1. The Implementation Support Plan focuses on mitigating the risks identified in the PAD and building capacity within the implementation unit to meet the World Bank's fiduciary and policy obligations. This will enable a flexible and efficient response to challenges as they arise and ensure that the project is well positioned to meet its development objectives. The World Bank will contribute timely and independent analysis and expertise, drawing from experience throughout its global portfolio. The support plan recognizes the technical complexity of the operation as well as the high volume of distinct activities, while acknowledging the financial and logistical limitations of providing support from a primarily HQ based task team. Given the complexity, the focus of implementation support will be sequential, with priority activities singled out for more intensive support early on, rather than adopting a more general approach covering all activities and capacity building simultaneously.

Implementation Support Plan

2. The World Bank will conduct three review missions per year during the first two years of project implementation, with two review missions per year thereafter. A mid-term review will be carried out at the end of the third year of implementation to identify any major changes needed to the project design, financing, and results framework. The Government will provide the World Bank a Project Completion Report six months prior to Project closing and inputs to the Implementation Completion Report to be prepared by the World Bank. The World Bank will support public dissemination of project information.

3. In order to provide robust implementation support, the following team and skills would be envisaged:

a. **Task Team Leader,** responsible for overall support and supervision to ensure that the operations are on track to achieve the objective, and compliance with the financing agreements.
b. **e-Government Specialist,** responsible for providing technical advice and supervision of the e-Government components as well as outreach to partners.
c. **Operations Officer,** responsible for supporting the TTL and e-Government specialist with overall supervision.
d. **Financial Management (FM) Specialist,** based in the country office, providing real-time guidance as needed to NITA-U, as well as regular monitoring and supervision.
e. **Procurement Specialist,** based in the country office, providing real-time guidance as needed to NITA-U, as well as regular monitoring and supervision.
f. **Environmental Specialist,** based in the country office, providing real-time guidance as needed to NITA-U, as well as regular supervision.
g. **Social Development Specialist,** based in the country office, providing real-time guidance as needed to NITA-U, as well as regular supervision.

4. Technical and Policy Support. Technical and policy related inputs will be required to review bid documents to ensure fair competition, sound technical specifications and assessments, and confirmation that activities are in line with the Government's ICT and growth strategies.

5. FM and Procurement Support. Training will be provided by the World Bank's FM and Procurement Specialists as needed. The World Bank team will help identify capacity building needs to strengthen FM capacity and to improve procurement management efficiency. The FM and Procurement Specialists will be based in the region to provide timely support. Formal FM supervision will be carried out semi-annually or annually, while procurement supervision will be carried out on a timely basis as required by client needs, as well as through a formal, semi-annual review.

6. Safeguards Support. Inputs from Environment and Social Specialists will be provided as needed, particularly with regard to the procurement process and construction of the missing NBI links and GovNet.

7. Operational Support. The task team will provide day-to-day supervision of all operational aspects, as well as coordination with the clients and among Bank team members. Relevant technical specialists will be identified as needed.

Main focus in terms of support to implementation:

Time	***Focus***	***Skills Needed***	***Resource Estimate***
First twelve months	Finalize project specific staffing within NITA-U (individual consultants) Execute legal, regulatory, and policy gap analysis Finalize procurement for pre-purchase of bandwidth Select vendor for implementation of missing NBI links Finalize the design and approach for GovNet Finalize procurement for upgrade of data center	Training and capacity building for procurement and FM Support with drafting TORs and procurement processes Technical expertise including guidance based on global best practice	45 staff weeks
12-48 months	General implementation support on an ongoing basis Finalize development of draft legal, regulatory and policy instruments Finalize implementation of the NBI missing links	Support with drafting TORs and selection processes Technical expertise including	35 staff weeks per annum

	Finalize procurement processes and implementation for the shared services platform Launch capacity development program Finalize procurement and implementation of GovNet	guidance based on global best practice	

Skills Mix Required

Skills Needed	***Number of Staff Weeks***	***Number of Trips***	***Comments***
Task Team Leader	16 weeks annually (first 2 years); 12 thereafter	3 annually (first 2 years); 2 thereafter	HQ Based
e-Government Specialist	12 weeks annually (first 2 years); 8 thereafter	3 annually (first 2 years); 2 thereafter	HQ Based
Operations Officer	12 weeks annually (first 2 years); 8 thereafter	3 annually (first 2 years); 2 thereafter	HQ Based
Program Assistants	1 week annually	0	HQ & CO Based
Financial Management Specialist	2 weeks annually	0	Country Office Based
Procurement Specialist	4 weeks annually	0	Country Office Based
Environmental Specialist	1 week annually	0	Country Office Based
Social Development Specialist	1 week annually	0	Country Office Based
Country Lawyer	1 week annually	0	HQ Based
Disbursement Officer	1 week annually	0	CO Based
Communications	1 week annually	0	Country Office Based

Annex 5: Economic and Financial Analysis[37]

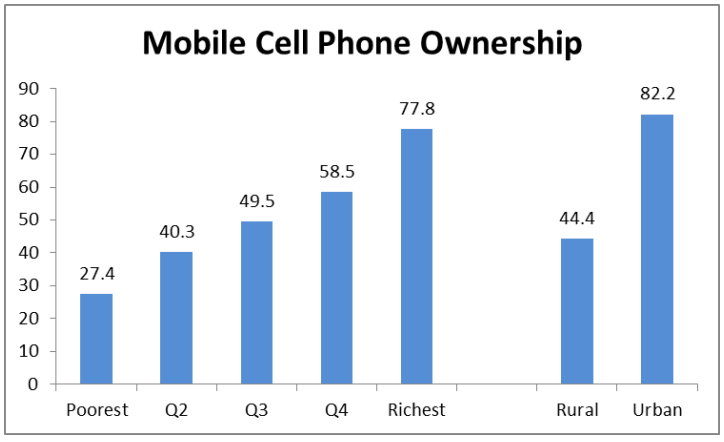
UGANDA: Regional Communications Infrastructure Program Phase 5 – Uganda Project

1. The aim of RCIP Uganda is to lower the cost and expand the access to ICT services particularly in rural areas, and to improve Government efficiency and transparency through e-Government applications. This will support rural growth, strengthen public institutions and increase opportunities for private sector participation. Consequently, it will reduce the cost of doing business in Uganda and will have economic impact through increased investment, job creation, and improved public service delivery.

2. The current status of ICT services availability and affordability[38] in Uganda is as follows:

(a) Mobile in Uganda: There were 16.5 million mobile subscribers in the country as of 2013 with a mobile penetration rate at 44% which is lower than Tanzania (55.7%), Rwanda (56.8%), Mozambique (48%) and Kenya (70.5%) but higher than Malawi (32%). In 2014, Uganda's penetration rate is at 58% with 21.6 million subscribers. Despite universal mobile network coverage and low prepaid mobile cellular tariffs (Purchasing Power Parity $/min 0.23),[39] there are wide rural-urban and wealth gaps in households mobile cellphone ownerships. From the 2010 household panel budget survey, mobile phone ownership is 82% in urban areas compared to 44% in rural areas. In addition, only 27% of the poorest household own at least one mobile cell phone compared to 77% for the richest households.

Figure 1: Household Mobile Cell Ownership, 2010



(b) Internet and Broadband in Uganda: Households access to personal computers and internet is estimated at 4% in 2012 with only 15% of individuals in the country using internet. The international internet bandwidth is 4.7 kb/s per user and the fixed broadband Internet

[37] This Annex summarizes the World Bank analysis of the economic and financial benefits of the proposed project.
[38] Data from the Uganda National Household Survey and the International Telecommunication Union (ITU)
[39] The Global Information Technology Report, 2014. For some operators such as Uganda Telecom, tariff is as low as 11 US cents.

tariffs is 34 Purchasing Power Parity $/month[40]. This relative high cost maybe one of the reasons for the lack of access to internet in rural areas and among poor households.

(c) Fixed line services in Uganda: There are 274,000 fixed lines subscribers in 2013 down from a peak of 464,000 in 2011. In 2013, the fixed line penetration rate is around 0.55 percent which is higher than Tanzania (0.34%), Rwanda (0.38%), Mozambique (0.30%), Malawi (0.21%), and Kenya (0.46%). Fixed lines in Uganda as in most SSA countries are on decline while mobile penetration is steadily increasing.

3. Expected effects on increased access. The RCIP Tanzania project (P111432) which has been in implementation since 2009 was used as benchmark to estimate the numbers of new subscribers that would be added due to RCIP Uganda.[41] In the base case scenario we simply project the number of new fixed and mobile subscribers using the average growth rates of the last 3 years (2011-2013) in Uganda. In 2010, Tanzania had 21 million mobile subscribers which is close to the current 21.6 million subscribers in Uganda. Specifically, we estimate the number of new subscribers added as a result of the project, by using the annual growth rate of subscribers in Tanzania which has been on average 19% for the last three years. These estimates are equivalent to an increase of **12.8 million** more new mobile subscribers and **16.5 million** internet users over 10 years.

Figure 2: Fixed and Mobile Telephone Subscribers

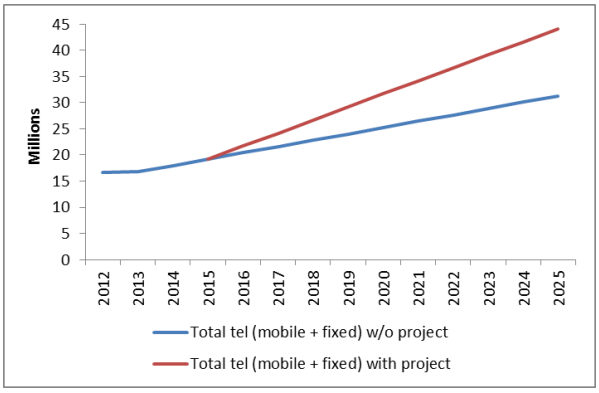
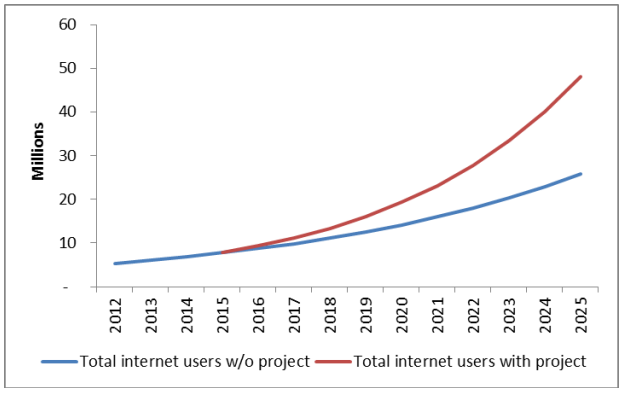


Figure 3: Internet Users



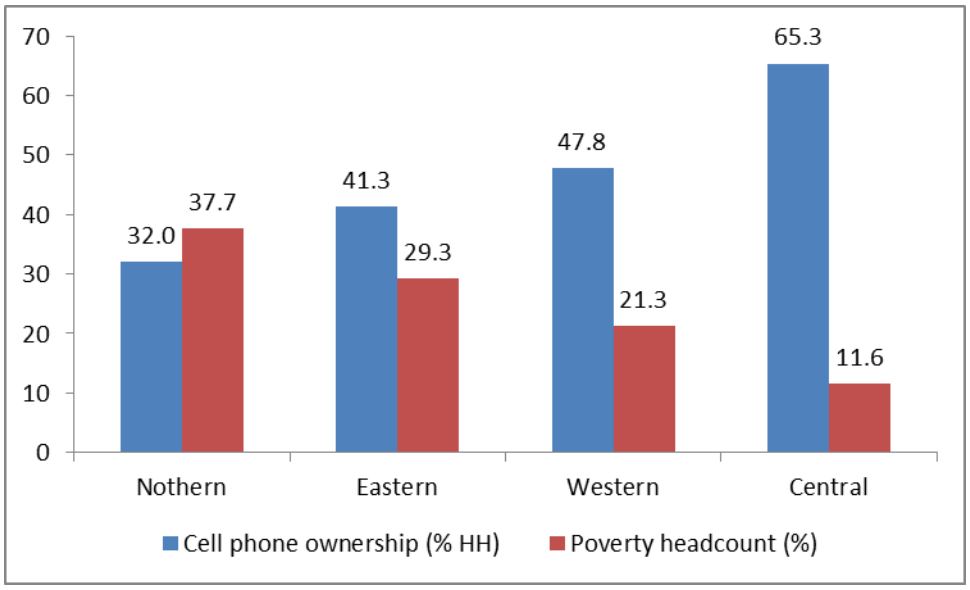
4. The RCIP Uganda project will expand access to ICT services in rural areas and the poorest regions. Uganda has been one of the best performers in poverty reduction in sub-Saharan Africa in the past two decades with the monetary poverty headcount rate declining from 56.4 percent in 1992/93 to 24.5 percent in 2009/10 and further to 19.1 percent in 2014. However, this performance hides tremendous spatial differences. The poverty headcount is 29.1 percent in rural areas compared to 9.1 percent in urban areas. In addition, of the 7.5 million poor in 2009/10, the northern and eastern regions accounted for two thirds of the poor with low access to infrastructure services. Using RCIP Uganda funding, the GoU will construct additional missing links in the National Backbone Infrastructure, particularly towards the border areas in the northern and western regions. By creating these links through major towns and connecting to existing and future regional infrastructure, the connectivity component will be both regional and

[40] The Global Information Technology Report, 2014

[41] We also look at the other RCIP countries such as Rwanda and Kenya but Tanzania was used as benchmark because its starting network penetration in 2010 is similar to that of Uganda now.

pro-poor in nature. Investments in ICT infrastructure in these areas would allow bringing in opportunities to the underserved and the very poor population.

Figure 4: Uganda regional poverty rates and mobile ownership, 2010



5. Substitution of travel to phone calls and mobile applications is expected to result in savings close to 0.03 percent of GDP over ten years (2025). In 2010, the average Ugandan household spent annually 170,000 and 257,000 shillings on communication and transportation expenditures respectively.[42] These expenditures represented respectively 3.3 and 4.5% of total households' annual expenditure.[43] ICT can reduce travel cost and time by substituting the travel by telephone calls or the use of mobile based applications to receive government services, especially in rural and remote areas where, for example, the traders and producers have to travel to urban areas to get market information, mothers have to travel distances to receive health related advise, and parents have to travel to receive school exam results for their children. With a conservative assumption that new subscribers will substitute 10 percent of their expenditures on transportation by telephone calls, the saving benefit is estimated to be 0.03 percent of GDP over ten years.[44] Taking into account the opportunity cost for travel time and handset sharing with family, neighbors, and friends, the actual impact is likely to be even higher than this estimate.

6. The productivity income increase through the use of mobile phones in agriculture sector is expected to reach 0.09 percent of GDP over ten years. Over a half of the poverty reduction that Uganda has experienced since 2005 has occurred amongst households that are primarily in agriculture.[45] The calculation conservatively assumes that income[46] of farmers will

[42] Uganda National Household Survey 2010
[43] Per capita annual transportation expenditure is 57,406 shillings
[44] Assuming a 10% discount rate
[45] Christiaensen and Kaminski (2014)
[46] Annual per capital food and non-food expenditure is (1,284,056 shillings) but we use as proxy for income the per capita expenditure of the lowest quintile (177,080 shillings) who are mostly farmers living in rural areas

rise by 10 percent through the use of mobile phones and that 20 percent of new subscribers would be involved in this activity.

7. Other economic benefits not covered in this analysis. ICT investments are, however, different from other investments as ICT investment yields both direct and indirect benefits and allow for positive spillover effects onto private sector development. Often, these indirect benefits outweigh direct ones. These include but are not limited to:

(a) Access to Health Services. Through the RCIP Uganda project, the widespread use of ICT services across public institutions and citizens at large will likely increase the availability and quality of health related services. There are already good examples of effective use of ICT in health sector in Uganda, such as the mTrack initiative by UNICEF.

(b) Social-Cohesion. Studies have found that access to ICT supports family relationships and maintains social cohesion particularly for low-income families and where transport cost are relatively high. In addition, ICT play a great role in connecting with Ugandan diaspora living outside of the country.

(c) New Services (e.g., mobile money and mobile banking). Better availability of broadband connectivity in rural areas will provide opportunities for better access to and usage of mobile money and mobile based savings accounts for the unbanked population. This in turn will create the foundation for development of new business, trade opportunities, job creation and ability to save for bigger purchased, including by community members.

(d) Improved e-Government ranking. Currently, Uganda is ranked very low in respect to e-Government development by well-known and respected sources (e.g., the 2014 UN's e-Government Development Index ranks Uganda 152nd and 156th out of 193 countries for citizen e-participation and e-Government development respectively). It is expected that as a result of the RCIP Uganda project, Uganda would move up in the rankings, which would provide global visibility to government's efforts to improve service delivery for the poor.

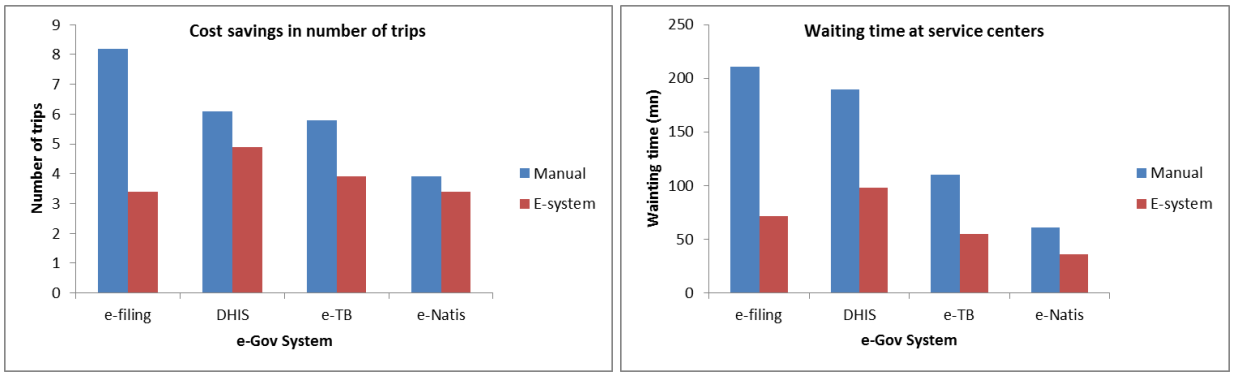
8. The e-Government component is designed to leverage advances in ICT with the aim to transform public service delivery. It supports the establishment of the shared ICT infrastructure that can be used by all MDAs to simplify the deployment of sector specific e-Services and to reduce the associated costs and time taken. By establishing the enabling environment, Shared Public Service Delivery Platform and Whole-of-Government Data Integration and Sharing Programs, all MDAs will be well positioned to benefit from the economies of scale and improve their ability to effectively deliver visible benefits to ordinary Ugandans through e-Services.

9. The project would generate substantial indirect benefits in the form of increased Government productivity and efficiency gains, and will lead to substantial savings of government resources resulting from making good use of shared ICT infrastructure. A recent study[47] that looks at the

[47] Willard Munyoka and Mungofa Manzira, 2013. Assessing the impact of e-government projects: The case of Limpopo province in South Africa.

benefits of e-Governance in an African context found that it has substantial impact on decreased cost to users, improved customer satisfaction, or even corruption (Figure 5).

Figure 5:



10. Many studies have attempted to measure the impact of e-Government on macroeconomics level as well as on microeconomic level. However, quantifying the economic and financial impact is challenging because of insufficient data in Uganda as well as in other countries.

11. To estimate the impact of mobile and internet access on poverty we first compute their impact on annual real GDP per capita growth to which we apply the growth elasticity of poverty. The number of additional mobile user (12.8 million) and internet users (16.5 million) are used to obtain the incremental penetration rates over the period 2016-2025.[48] Studies in the literature indicate that a 1% increase in mobile penetration increases GDP per capita growth by 0.06 percentage point[49] while a 1% increase in broadband access increases GDP per capita growth by 0.13 percentage point[50].We estimate the incremental penetration rates due to this project to be 11% and 30% respectively for mobile and broadband access. The growth elasticity of poverty reduction in Uganda is about -1.5 compared to -0.63 for Sub-Saharan Africa.[51] Using a conservative growth elasticity of -0.63, we expect this project to reduce headcount poverty rate by 2.8 percentage point or about 200,000 people from the 7.5 million poor people in 2009. The overall economic benefit of the project will increase government revenues. With a total project investment of US$78 million and industry benchmark annual maintenance and operation expenses of 7% and a government revenue of 13.7% of the additional GDP generated,[52] the expected rate of return on the project is 17%.

[48] We assume a population growth rate of 3% over the period 2016-2025
[49] Waverman, L., Meschi, M., Fuss, M. A., 2005. The Impact of Telecoms on Economic Growth in Developing Countries, in The Vodafone Policy Paper Series 3, Vodafone, 10-24.
[50] Qiang, C. Z. W., Rossotto, C.M., 2009. Economic Impacts of Broadband, in Information and Communications for Development 2009: Extending Reach and Increasing Impact. World Bank.
[51] Africa's Pulse, October 2014, Volume 10
[52] We use the average of tax revenue as share of GDP over the period 2010-2013

Annex 6: Status of Current RCIP Projects

UGANDA: Regional Communications Infrastructure Program Phase 5 – Uganda Project

Project	Approval date	Funds disbursed / total revised project value (USD million)	Physical status
RCIP 1 – Kenya, Burundi, Madagascar	Mar 2007	95.4 / 155.0	- Kenya: technical support given to the regulator, the ICT Incubator, the ICT Center of Excellence, etc. Prices of ICT services have dropped significantly and internet penetration has grown exponentially. - Burundi: Project is completed, national backbone network in place and operational, as well as a network linking universities and educational institutions. - Madagascar: most of the backbone infrastructure is in place (towers where operators will install antennas)
RCIP 2 – Rwanda	Sep 2008	11.0 / 15.3	International capacity provided since 2012 has translated into cheaper and faster internet service; technical assistance and capacity building has been provided to the Ministry of Youth and ICT, regulatory authority and Rwanda Development Board
RCIP 3 – Malawi, Mozambique, Tanzania	Jun 2009	33.4 / 101.4	- Malawi: international connectivity contract signed with a major provider, revised Communications Act and e-legislation Bills drafted, connectivity and equipment provided to 145 governmental and educational establishments - Mozambique: competition in the sector has increased, capacity available to the Government Network tripled, 12 research and educational institutions connected - Tanzania: International capacity provided to government institutions, contribution to the implementation of the national ICT broadband backbone, implementation of the Government Network started, 50 rural areas connected to mobile network through the implementation of the first phase of the universal access program, preparatory works for government e-services

RCIP 4 – Union of Comoros	Sep 2013	1.3 / 14.3	Early stage of the project, no physical infrastructure yet in place. Ongoing tasks include the establishment of a consortium for the financing and construction of the cable to Mayotte, the review of the business plan, selection of a second operator, etc.

Annex 7: Map

UGANDA: Regional Communications Infrastructure Program Phase 5 – Uganda Project