Document of

The World Bank

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Report No: 80293-GH

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 64.2 MILLION
(US$97.00 MILLION EQUIVALENT)

TO THE

REPUBLIC OF GHANA

FOR A

eTRANSFORM GHANA PROJECT

September 26, 2013

CURRENCY EQUIVALENTS

(Exchange Rate Effective July 31, 2013)


Currency Unit  =  SDR
0.66082497 SDR  =  US$1
GH₵2.16  =  US$1

FISCAL YEAR
January 1   –   December 31

ABBREVIATIONS AND ACRONYMS


| | |
|---|---|
| AFIS | Automated Fingerprint Identification System |
| ANSI | American National Standards Institute |
| BP | Bank Procedures |
| BPO | Business Process Offshoring |
| CA | Certification Authority |
| CAGC | Controller & Accountant General's Department |
| CPS | Country Partnership Strategy |
| CQS | Consultants Qualifications Selection |
| DPC | Data Protection Commission |
| DTT | Digital Terrestrial Television |
| DVLA | Drivers and Vehicle Licensing Authority |
| e-ID | Electronic Identification |
| eMT | eGhana Management Team |
| ESMF | Environment and Social Management Framework |
| FBS | Fixed Budget Selection |
| FDI | Foreign Direct Investment |
| GAMT | Ghana Association of Math Teachers |
| GASSCOM | Ghana Association of IT and Software Companies |
| GAST | Ghana Association of Science Teachers |
| GAS | Ghana Audit Service |
| GDP | Growth Domestic Product |
| GES | Ghana Education Service |
| GLSS | Ghana Living Standards Survey |
| GIFMIS | Ghana Integrated Financial Management Information System |
| GIMPA | Ghana Institute of Management and Public Administration |
| GP | Good Practices |
| GRA | Ghana Revenue Authority |
| GSGDA | Ghana Shared Growth and Development Agenda |
| GSM | Global System for Mobile Communications |
| IAU | Internal Audit Unit |
| IBRD | International Bank for Reconstruction and Development |

| | |
|---|---|
| IC | Individual Consultant |
| ICAO | International Civil Aviation Organization |
| ICB | International Competitive Bidding |
| ICR | Implementation Completion Report |
| ICT | Information and Communications Technology |
| ICT4AD | Information and Communications Technology for Accelerated Development Policy |
| IDA | International Development Association |
| IEG | Independent Evaluations Group |
| IFC | International Finance Corporation |
| IFR | Interim Financial Report |
| IRR | Internal Rate of Return |
| ISO | International Organization for Standardization |
| IT | Information Technology |
| ITES | Information Technology Enabled Services |
| LCS | Least Cost Selection |
| LTE | Long Term Evolution |
| M&E | Monitoring and Evaluation |
| MDAs | Ministries, Departments and Agencies |
| MMDAs | Metropolitan, Municipal and District Assemblies |
| MoC | Ministry of Communications |
| MOC | Ministerial Oversight Committee |
| MoE | Ministry of Education |
| MoH | Ministry of Health |
| NCA | National Communications Authority |
| NCB | National Competitive Bidding |
| NHIA | National Health Insurance Authority |
| NIA | National Identification Authority |
| NITA | National Information Technology Agency |
| NGO | Non-governmental Organization |
| OGD | Open Government Data |
| OGP | Open Government Partnership |
| OP | Operational Policy |
| PIU | Project Implementation Unit |
| PPP | Public Private Partnership |
| PRAMS | Procurement Risk Assessment & Management Systems |
| PTA | Parent Teacher Association |
| PVC | Polyvinyl Chloride |
| QCBS | Quality and Cost Based Selection |
| RBM | Results Based Management |
| RGD | Registrar General's Department |
| RIC | Regional Innovation Centers |
| SME | Small and Medium Enterprise |
| TVET | Technical and Vocational Education and Training |
| UNDB | United Nations Development Business online |
| UTDBE | Untrained Teacher Diploma in Basic Education |

| | |
|---|---|
| WASSCE | West Africa Senior Secondary Certificate Examination |
| WB | World Bank |
| WBG | World Bank Group |
| WiFi | Wireless Fidelity |
| WIMAX | Worldwide Interoperability for Microwave Access |

| | |
|---|---|
| Regional Vice President: | Makhtar Diop |
| Country Director: | Yusupha B. Crookes |
| Sector Director: | Jose Luis Irigoyen |
| Sector Manager: | Randeep Sudan |
| Task Team Leader: | Mavis A. Ampah |

**GHANA**
**eTransform Ghana Project**

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# PAD DATA SHEET

Ghana

eTRANSFORM GHANA (P144140)

PROJECT APPRAISAL DOCUMENT

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AFRICA

TWICT

|  |  |  |  |
|---|---|---|---|
| .  |  |  |  |
| Basic Information |  |  |  |
| Project ID | Lending Instrument | EA Category | Team Leader |
| P144140 | Investment Project Financing | B – Partial Assessment | Mavis A. Ampah |
| Project Implementation Start Date |  | Project Implementation End Date |  |
| 24 October, 2013 |  | 24 October, 2018 |  |
| Expected Effectiveness Date |  | Expected Closing Date |  |
| 13 January, 2014 |  | 30 June, 2019 |  |
| Joint IFC |  |  |  |
| No |  |  |  |
| Sector Manager | Sector Director | Country Director | Regional Vice President |
| Randeep Sudan | Jose Luis Irigoyen | Yusupha B. Crookes | Makhtar Diop |

| . |
|---|
| Borrower: Ministry of Finance and Economic Planning |
| Responsible Agency: Ministry of Communication |

| Contact: | Kwaku Ofosu-Adarkwa | Title: | Chief Director |
|---|---|---|---|
| Telephone No.: | +233 30 266 8312 | Email: | ofosuadarkwa@yahoo.co.uk, kwaku.ofosu-adarkwa@moc.gov.gh |

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| . |  |  |  |  |  |
| Project Financing Data(US$M) |  |  |  |  |  |
| [ ] | Loan | [ ] | Grant | [ ] | Other |
| [ X ] | Credit | [ ] | Guarantee |  |  |

For Loans/Credits/Others

Total Project Cost (US$M):     97.00

Total Bank Financing (US$M):   97.00

| Financing Source | Amount(US$M) |
|---|---|
| BORROWER/RECIPIENT | 0.00 |
| International Development Association (IDA) | 97.00 |
| Financing Gap | 0.00 |
| Total | 97.00 |

Expected Disbursements (in USD Million)

| Fiscal Year | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Annual | 5.00 | 15.00 | 25.00 | 30.00 | 15.00 | 7.00 | | | |
| Cumulative | 5.00 | 20.00 | 45.00 | 75.00 | 90.00 | 97.00 | | | |

Project Development Objective(s)

The Project Development Objective is to improve the efficiency and coverage of government service delivery using Information and Communication Technologies (ICT).

Components

| Component Name | Cost (USD Millions) |
|---|---|
| Component 1 – Enabling Environment for Electronic Government and Business | 15.45 |
| Component 2 – Support for Upgrading National Identification System and Online Verification Services | 29.15 |

| | |
|---|---|
| Component 3 – Scale up of Applications to improve service delivery in priority sectors | 41.55 |
| Component 4 – Project Management Support | 7.10 |
| Contingency | 3.75 |

| 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 |
| | | | |

Description of Covenant

Recipient shall not later than twelve (12) months after the Effective Date, in form and substance satisfactory to the Association, carry out a gaps analysis of the existing legal and regulatory framework and, thereafter, take necessary remediation measures to ensure appropriate laws and regulations are in place to ensure the Security and Privacy of Individual and Personal Data.

Conditions

| Name | Type |
|---|---|
| Project Implementation Manual | Effectiveness |

**Description of Condition**

Recipient has adopted and submitted to the Association, the Project Implementation Manual, in form and substance satisfactory to the Association.

| Conditions | Type |
|---|---|
| Innovation and Training Grant Manual and Managers | Disbursement |

**Description of Condition**
No disbursements shall be made for the Innovation Grant or Training Grant unless Recipient has: (i) contracted the Innovation and Training Grants Manager(s) with qualifications and terms of reference satisfactory to the Association, in accordance with the provisions of Section III of Schedule 2 to Financing Agreement; and (ii) adopted the Innovation and Training Grants Manual, in a manner acceptable to the Association

| Team Composition | | | |
|---|---|---|---|
| Bank Staff | | | |
| Name | Title | Specialization | Unit |
| Mavis A. Ampah | Senior ICT Policy Specialist | Team Lead | TWICT |
| Zaid Safdar | Operations Officer | Operations Officer – Co TTL | TWICT |
| Michele Ralisoa Noro | Senior Program Assistant | Senior Program Assistant | TWICT |
| Kaoru Kimura | Operations Analyst | Operations Analyst | TWICT |
| Erica Monique Daniel | E T Consultant | E T Consultant | TWICT |
| Xiao Ye | Economist | Economist | AFTPM |
| Eunice Ackwerh | Sr. Education Specialist | Sr. Education Specialist | AFTEW |
| Evelyn Awittor | Sr. Health Specialist | Sr. Health Specialist | AFTHW |
| Beatrix Allah Mensah | Sr. Social Development Specialist | Social Development | AFTCS |

| | | | |
|---|---|---|---|
| Robert De-graft Hanson | Financial Management Specialist | Financial Management | AFTMW |
| Adu-Gyamfi Abunyewa | Sr. Procurement Specialist | Procurement | AFTPW |
| Luis M. Schwarz | Senior Finance Officer | Senior Finance Officer | CTRLA |
| Anders Jensen | Sr. M&E Specialist | M&E | AFTDE |
| Moses Duphey | Consultant | Environment | AFTN3 |
| Edith Ruguru Mwenda | Sr. Counsel | Legal | LEGAM |
| Matthieu Bonvoisin | Consultant | Legal | LEGAM |
| James L. Neumann | Sr. Counsel | Legal | LEGPS |
| Stephen Tettevie | Team Assistant | AFCW1 | AFCW1 |

| Non Bank Staff | | | |
|---|---|---|---|
| Name | Title | Office Phone | City |
| | | | |

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Locations

| Country | First Administrative Division | Location | Planned | Actual | Comments |
|---|---|---|---|---|---|
| | | | | | |

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| Institutional Data |
|---|

Sector Board

Global Information/Communications Technologies

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Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

| Major Sector | Sector | % | Adaptation Co-benefits % | Mitigation Co-benefits % |
|---|---|---|---|---|
| Information and communications | General information and communications sector | 100 | | |

| 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 | % |
| Public sector governance | e-Government | 50 |
| Financial and private sector development | e-Services | 25 |
| Public sector governance | Managing for development results | 25 |
| Total | | 100 |

I.      **STRATEGIC CONTEXT**

 **A.  Country Context**

1.  Ghana has evolved into one of the most stable democracies in Africa, having earned a reputation for peacefully transferring electoral power for more than two decades.  The recent Presidential election held in December 2012 ushered the fourth President of the Republic, John Dramani Mahama, and was considered peaceful by international standards. The results however continue to be contested in court, albeit in an orderly manner.  The country's political institutions continue to ensure that the Government continues to function well, despite the relative uncertainty of the judicial outcome.

2.  Sustained political stability and market reforms have resulted in improved economic performance, with GDP increasing from about US$26 billion to US$35.1 billion between 2010 and 2012, and growth rates remaining above average for the Africa region, at 8.0%, 14.4% and 7%, in 2010, 2011 and 2012 respectively.  The country's economic growth has been largely fueled by strong cocoa production, growth of the construction and transport sectors, increased gold production, and commercialization of oil. Inflation is currently around 9.2 %, having eased in recent months on the back of declining food price inflation.  The proportion of people living in poverty has improved substantially, declining from 52% in 1992 to 29% in 2006 when the most recent available Ghana Living Standards Survey (GLSS 5) was completed.  Estimates by the World Bank suggest that this figure may have further reduced to 26% since 2006.  Even though economic performance was dampened by a large fiscal deficit that reached about 12.1% of GDP during the election period (programmed initially in the budget for 4.8%), the new Administration's commitment to strengthen fiscal reforms, combined with increased oil and gas production and exports, are expected to further improve economic performance.  The combined high growth and income per capita of $1,410 have resulted in the recent classification of Ghana as a lower middle-income country in July 2011.

3.  For Ghana, improved economic performance is coming with the unexpected challenges of rapid urbanization and related increase in unemployment, especially among the youth. It is also coming with an increased 'service divide' between urban and rural communities.  The urban population growth rate of 3.4% has now surpassed that of the rural population according to the 2010 Population and Housing Census[1].  Additionally, a reduction in national poverty headcount masks significant regional and gender disparities, especially between the northern Savannah regions and the rest of the country.   The government is therefore faced with the dual challenge of providing services and enabling job creation , especially for the urban poor and underserved rural communities.  This challenge is further compounded by the inability to accurately identify citizens for targeting the delivery of social and other services.

4.  The current Government of Ghana's Shared Growth and Development Agenda (GSGDA) emphasizes the need for continuous macroeconomic stability; it also emphasizes the need for rapid economic structural transformation to an established middle-income country by

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[1] http://statsghana.gov.gh/. 51 % of Ghana population is urban according to the 2010 Census.

increasing efficiency, transparency, and accountability, and by eliminating geographic disparities. The Government is especially keen to improve the quality and coverage of health and education services in underserved communities, given the importance of these sectors to poverty reduction and accelerated shared growth. Efforts so far include a National Health Insurance Scheme which is expected to provide universal healthcare services to all residents of Ghana, and make modest improvements in the areas of maternal and child mortality. Expansion of educational infrastructure has led to improved enrollment and completion rates of basic education (including of lower secondary and upper secondary level schools) over the past eight years. The Government also realizes that the creation of jobs, especially for the youth, will be a key foundation for the future social stability of the country. A new project - Ghana Youth Employment and Entrepreneurial Development Project, which is expected to be approved in FY 14, will provide some 250,000 youth with education and job information and counseling services.

5.  The Government of Ghana (GoG) recognizes that an accelerated and shared growth can only be achieved through a vibrant private sector, and continues to look towards that sector to play a critical role in driving a transformational agenda that creates more gainful jobs and thus enhances the livelihoods of all Ghanaians. Continued efforts to improve the enabling environment for partnerships between government and the private sector on key infrastructure projects include the recent approval of the National Policy on Public Private Partnerships (PPP) and the establishment of an office under the Ministry of Finance to manage PPP transactions in Ghana. Several PPP projects in the Customs, Revenue, and Water sectors are already in place, with a few being supported by the World Bank; they are yielding positive results and demonstrating the potential benefits of such partnerships. The Government also acknowledges the importance of information and communication technology (ICT) in improving the quality of, and reducing the cost of, service delivery to all citizens. It is estimated, for example, that the e-government PPP for Customs Modernization funded under the World Bank supported Ghana Trade and Investment Gateway Project reduced clearance time to a few days and increased revenue by about 50% within the first 18 months of implementation. The deployment of a similar e-government PPP for automation of the Ghana Revenue Authority and Registrar General's Department funded under the World Bank supported eGhana Project has already yielded results; over 230,000 new company and individual tax payer registrations were processed through the system since December 2011. In his State of the Nation address of February 2013 the President of Ghana, previously a Minister of Communications, acknowledged the potential transformational impact of ICT, and confirmed that "Government will continue with the positive outlook and promote the rapid development of broadband infrastructure to reach all parts of the country to ensure that the improved connectivity provides better access to health care and health information, opportunities for education and training, transportation, protection of environment and management of natural resources, and to support e-government to create transparency in government". The government is keen to work with both the private sector and development partners in leveraging information and communication technology to achieve its shared growth and development agenda.

**B. Sectoral and Institutional Context**

6.  Ghana has been a pioneer in African telecommunications sector reform, as one of the first countries in Africa to liberalize and deregulate the telecommunications market. The industry currently consists of six competing operators, including regional heavyweights such as MTN, Vodafone, Airtel, Millicom (Tigo), Expresso and Glo. Mobile penetration was over 100% as of May 31 2013, with MTN leading in both voice and data with 46.3% and 65% of market share respectively. The country has also become a key hub for submarine cables linking the north and south of Africa to Europe and the rest of the world, resulting in impressive internet bandwidth[2] (leading the continent) and reduced prices.

7.  The government is complementing private sector efforts with additional investments in communications infrastructure to address gaps, especially in the under-served parts of Ghana. This is being done through the construction of a Fiber Optic Broadband Backbone Infrastructure on the Eastern Corridor of Ghana from Ho to Bawku, with a link from Yendi to Tamale, connecting over 120 rural communities along the route, and providing ducts to private operators to further improve connectivity in these areas that have the least connectivity in the country. A northern fiber optic ring linking Kumasi to Bolgatanga has already been completed by Vodafone. A number of completed and ongoing communications infrastructure projects, including an e-government network extending to all the MDAs and MMDAs, will go a long way to ensuring inclusive access to better services through improved communications technology.

8.  Despite these successes and the significant increase of low-priced Internet bandwidth, Ghanaians have not yet fully adopted ICT in their daily lives or in business operations. Mobile phones are used primarily for voice communications. Internet users in Ghana are still less than 15% of the total population, with less than 1.7 % using mobile broadband in 2011.[3] The recent *ICT for Transformation Report,* prepared under a World Bank Technical Assistance, concludes that Ghana has the potential to develop a knowledge-based economy and become a strategic destination for ICT-based business processes in the region. To achieve this, the country needs to create a critical mass of users for e-enabled services[4] by promoting: i) online local content, services and applications (for entertainment, agriculture, health, education, banking, taxes etc.) that are interesting, relevant and affordable to attract enough users (both individual and corporate) to pay for or use these services; and ii) mobile payment systems that offer micro-transactions to facilitate easy payment for services done at scale. The country has also launched a Digital Divide study to take advantage of growing availability of broadband.

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[2] International Internet Bandwidth in Ghana has jumped more than 10 times in the last 4 years: 1,101Mbps in 2009 to 13,262Mbps in 2012 (TeleGeography, Global Internet Geography database). Price of wholesale bandwidth has reduced from US$5,000 per mbps per month to US$750 per mbps per month over the last five years (Ministry of Communication data).
[3] Wireless Intelligence.
[4] Defined as the services or business activities that use internet for communication or transactions.

9. A prerequisite for effective online engagement between government and citizen is the existence of a robust, unified National Identification system that can authenticate users. Electronic identification Systems (e-ID) often play a key role for helping targeting in pro-poor programs. They can help establish the identity of citizens and offer a more secure, robust mechanism for government and businesses to engage with citizens. Businesses can also authenticate customer identity, and develop and offer new products and services through internet or mobile phones. On the demand side, citizens can gain access to a larger universe of online applications and services that can be used more securely in a variety of industries and public services. e-IDs can have potential linkages with downstream applications to support a host of public and private services, including social transfers, travel documents (such as passports), driver's license, taxation, voter registration, financial transactions, health/educational records and services. The multiplicity of the current ID systems in Ghana, fuelled by the inefficiency and delays, is making it impossible for government agencies, businesses and financial institutions to properly authenticate citizens and their data. This, in turn, is contributing to a high cost of doing electronic business in Ghana. The inefficient ID system is also challenging the Government's ability to offer targeted services and generate revenue.

10. Digitizing data is also a critical step in making information-based services available on line. Automated processes and information systems in Ghana, despite the early successes, are still at an early stage, and vast archives continue to be left in paper form, with citizens unable to access data electronically at their convenience. Digitized information can go a long way to improve interoperability across government agencies, upgrade workflow, and achieve business continuity in government agencies by securely retaining important electronic records. The Government is keen to ensure that the public data captured is available for use by its citizens in a user friendly format for easy access. Ghana is one of 5 African countries that has signed on to the Open Government Partnership (OGP) program launched in September 2011 by President Obama to improve transparency, governance and accountability. A key component of this OGP initiative is access to public information in a format that is usable. The Government, through NITA, has initiated a portal with some 100 datasets and an open data application. More public datasets are expected to be made available, with the proliferation of new e-government applications and electronic service delivery.

11. The growth of internet, development of computer networks, advancement of electronic identity systems, and the realization of knowledge-based economy calls for a coordinated approach to infrastructure and services, strengthened provisions for information security and privacy, and improved protection of personal data of citizens. Large amounts of personal data generated from citizens are likely to be kept across servers and networks in different locations and have the potential of being shared by different legal entities and people in ways not fully envisaged at the time when the original data is obtained. In today's digital age, all information systems, especially identification and authentication systems, thus pose considerable legal consequences in the processing of personal information and call for legal cognizance to an individual's right to privacy.

12. Ghana recognized this challenge, and through the World Bank financed eGhana Project, put in place a robust IT architecture and interoperability framework to ensure that the

processes and organizational structures in government are closely aligned to achieve greater efficiency, accountability, responsiveness and transparency. The eGhana Project has supported a number of key pieces of legislation to improve the enabling environment for electronic applications. The first was the Data Protection Act 2012 (Act 843) which protects the privacy of individual data and personal data, regulates processing of personal information, and provides for methods to obtain, hold, use or disclose such personal information. This was complemented by the Electronic Transactions Act 2008 (Act 772) which provides for and facilitates electronic communications and related transactions in public interest and applies to all electronic transactions and electronic records. Additional regulations being finalized for the parliament include: the Electronic Signature Regulations, Electronic Investigations & Interception Regulations, Electronic Payment Medium Regulations and Electronic Waste Regulations. Under the Data Protection and Electronic Transactions Acts, Commissions have been established for oversight but have little or no existing structures to implement the Acts.

13. The eTransform project is expected to assist to put in place these structures and to address key remaining gaps, thus accelerating Ghana's path to a digital and knowledge-based economy. The National Communications Authority of Ghana continues to be seen as one of the strongest regulators in the Africa region in ensuring competition and quality of service.

## C. Higher Level Objectives to which the Project Contributes

14. The eTransform Project is aligned with the three pillars of World Bank Group's Country Partnership Strategy (CPS)[5] for Ghana that focuses on: (1) improving public institutions; (2) fostering competitiveness and employment; and (3) protecting the poor and vulnerable. Project support for innovation centers and digitization will directly affect competitiveness and employment. Support for a national identity system, as well as e-health and e-education, are tools to improving the targeting of the most vulnerable in the society and alleviate poverty in Ghana, with the potential to have significant development impact. Project themes are well aligned with the World Bank's global development strategy of reducing extreme poverty and promoting shared prosperity. In addition, the project is aligned with the Government of Ghana's own GSGDA that seeks to contribute to higher growth and economic opportunities for the poor and create jobs. The eTransform project will improve the reach and efficiency of public and private service delivery through smart use of ICT. The project is also aligned with the World Bank's ICT Sector Strategy, issued in 2012, which emphasizes leveraging of connectivity for innovation and transformation of economies.

15. The interventions under eTransform are expected to lead to: more efficient and transparent targeting and use of limited public resources; improved delivery of public and private sector services, especially in rural and underserved areas; trust in payment systems, and enhanced confidence in electronic business and financial transactions. They would also lead to diversified employment opportunities, and a more integrated and coordinated public sector that is able both to make better policies and to respond effectively to citizens' needs using trusted systems and open data.

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[5] World Bank (2013). *Country Partnership Strategy for the Republic of Ghana for the Period FY13-FY16*. Washington, DC (approved on September 19, 2013).

## II. PROJECT DEVELOPMENT OBJECTIVES

### A. PDO

16. The Project Development Objective is to improve the efficiency and coverage of government service delivery using Information Communication Technologies (ICT).

**PDO Level Results Indicators**

17. To measure the progress toward achieving the project development objective and outcomes, key indicators were defined along the categories indicated below. Further details on determining specific variables, baselines and target values are included in **Annex 1.**

- Improve efficiency of government service delivery using ICT
  - Average time from initiation of service request to issuance of service (disaggregated by Birth & Death certificates, Company registration, and National passport).
  - New e-government applications providing service to the public (procurement, justice, immigration, parliament).[6]

- Improve coverage of government service delivery using ICT.
  - Number of new e-services available to the public online.[7]
  - Number of teachers or students using education portals including in rural areas.[8]
  - Numbers of health providers or clinics in rural areas using e-health system.

- Direct project beneficiaries, (of which female).

### B. Project Beneficiaries

18. The primary beneficiaries of the eTransform Ghana project will include the government through more efficient, cost-effective service delivery and administration; the business sector through reduced transaction costs; the citizens especially rural women and youth through better government services, including increased access to quality education and health services, and opportunities for training and employment.

## III. PROJECT DESCRIPTION

### A. Project Components

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[6] E-government applications broadly refer to the use of ICT to improve public sector performance, and includes changing the business processes.

[7] E-service is a branch of e-government, referring to provision/communication of service using the internet. In this case, public will be able to have access to e-forms for easier engagement with the government.

[8] For the purposes of this project, rural areas defined as outside of regional and district capitals.

19. The proposed project is structured along four major components to reflect: (a) enabling environment for electronic government and business; (b) foundational systems for electronic identification to promote electronic service delivery and social inclusion; (c) scaling up of ICT applications and services to improve services in priority sectors in Ghana; and (d) effective project management. Detailed project components are provided below:

## Component 1 – Enabling Environment for Electronic Government and Business (US$15.45 million)

20. This component will support policies, laws, regulations and institutional capacity building to stimulate supply and demand of electronic services with the help of a transparent, secure and open environment, and will include revisions to the existing laws and regulations as may be necessary. On the supply side, it will support the enabling environment for digital economy, including facilitating interventions for more efficient storage of electronic data, and opening up of data in a format that is usable by citizens for policy, research, and business development. On the demand side, it will support better leveraging of digital platforms to create job and entrepreneurship opportunities. Details of sub-components are as follows:

21. ***Storage, Protection, and Opening up of Government Data* (US$9.65 million)** – The project will support the development of, and increased access to, open government data with the help of shared infrastructure, institutional development, and related policies and regulations. Project funds will finance the software and hardware for developing cloud storage and a back-up facility that will be managed in partnership with the private sector. The new cloud infrastructure will be suitable for actively used data and will allow organizations such as the National Identification Authority, Births and Deaths Registry and other Ministries, Departments and Agencies (MDAs), to have more security and control over their data. Project funds will also support the development of administrative and institutional arrangements for data protection and electronic transactions as stipulated under the country's legislations. Finally, project funds will finance development of policies, regulations, development of datasets, capacity building for data analytics, upgrade of any shared facilities for open data, and the set up of certification authorities and public key infrastructure (PKI).

22. ***Support for Innovation Centers for Entrepreneurship and Job Creation*** *(US$2.9 million)* - The project will support promotion of an environment where entrepreneurs can participate in launching new products and services, scaling up e-applications and services, and increasing uptake of e-applications. Project funds in the form of grants will be provided to strengthen the entrepreneurial and job-creation potential of the country through the development of innovation hubs, including mHubs and mLabs. Innovation hubs will support young entrepreneurs in Ghana's mobile industry through venture incubation, business and skills development, and will foster multinational and global partnerships. To ensure sustainable operations, *info*Dev will act as a technical adviser through the course of project implementation and will provide technical support in the design of the innovation hubs including the governing structure, management, networking, and performance monitoring.

23. ***Institutional Capacity Building for Policy and Regulatory Institutions (US$2.9 million)*** – The sub-component will provide support for a gap analysis of the legal and regulatory

environment to support electronic applications, and necessary capacity building to key policy and regulatory institutions in areas including content, citizen and cybersecurity, consumer protection, and data protection. Regulating new information and content is a potential challenge for today's policymaking agencies and regulatory authorities in an increasingly converged ICT industry. Regulation of content pushes the boundaries of the traditional role of a telecommunications regulator. The unique role of broadcast signals, for example, is rapidly disappearing amidst the world of convergence and the deluge of alternative content sources and transmission media. Issues such as spectrum management, consumer protection in the commercial mobile and digital space, and protection of increasingly sophisticated networks and infrastructure present new challenges for both policy makers and regulators. Regulators and policy makers have to decide on what or what not to regulate, how to use/manage scarce resources such as spectrum, and how to incentivize further development of the ICT marketplace. The project will support capacity building of policy and regulatory institutions in Ghana to develop necessary capacity to define standards, policies and relevant regulations to protect both government and citizens

## Component 2 – Support for Upgrading National Identification System and Online Verification Services (US$29.15 million)

24. This component will provide support to develop a robust national identification system based on international standards to help prepare Ghana for a modern e-commerce industry, improved e-government services, and alleviate poverty. Support will also be extended to selected agencies and institutions in adopting electronic identification and verification services into their operating processes. The project will assist the government to link key agencies, including the Births and Deaths Registries, the Department of Social Welfare, Electoral Commission, Statistics Department, Social Security and National Insurance, Immigration, Driver and Vehicle Licensing Authority (DVLA), etc., using the national identification number as a common identifier. Details under this component are as follows:

25. ***Support for a National Electronic ID System (US$21.45 million)*** – The National ID system, in its current form with 2D Bar code, has limitations in terms of durability and ability to store information. It also does not conform to some of the specifications provided by international organizations, such as ICAO, ISO and ANSI. The limitation is also preventing a number of potential user agencies, including the financial institutions, from using the current ID card, the Ghanacard. The sub-component will therefore support the government of Ghana to complete implementation and deployment of a well-functioning national electronic ID system. The project will support distribution of 12 million biometric cards, including 3 million cards that have already been printed and 9 million cards that will be printed once citizen data is confirmed. The project will review and update the back-office systems and processes under NIA to ensure that the electronic ID system is properly functioning and the central office interacts seamlessly with field offices and downstream agencies. To improve the speed and reduce the cost of distribution of cards, project funds will finance the deployment of mobile registration workstations, mobile verification systems and related software. Project funds will also support an integrated solution that ensures that new Ghanacards meets international standards. This will include upgrades of: i) the identification system (e.g. Automated Fingerprint Identification System, or AFIS, that allows capturing of 10 instead of the current 4 fingerprints), ii) data center and disaster recovery center, iii) equipment (e.g. printers for smart

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cards), and iv) instant issuance printers to allow on the spot printing of electronic Identification cards. For more efficient operation of the Authority itself, project funds will support the development of a needs assessment, a strategic/business plan and an implementation plan for the National ID Authority.

26. ***Support for Digitization and Integration of Digital Identity and Verification Systems into User Agency Operations (US$7.7 million)*** - A prerequisite for effectively integrating a national identity system is digitizing related paper-based public records such as birth and death certificates, and tax records. The project will support digitization of records at key user agencies such as the Births and Deaths Registry, the Registrar Generals, the Ghana Revenue Authority, and Immigration Services. The opportunity exists to collaborate with the Rockefeller Foundation to scale up the digitization program. There is also potential to use the ten regional innovation centers which were built under the eGhana project, as possible venues for carrying out or administering the digitization work from the districts. The digitization program offers unique employment opportunities for the youth to scan, index, and electronically manage paper records, and to set up searchable and easy-to-use electronic databases. Project funds will also support key user agencies in the public sector to adjust their operating processes and software systems to use e-ID verification services offered by the NIA system. Support to such agencies will be in form of limited equipment, upgrade of databases, and related capacity building. All of these agencies are expected to use the National Identification number as a common identifier.

## Component 3 - Scale up of Applications to improve service delivery in priority sectors (US$41.55 million)

27. In response to the government's request, project resources will also be used to support use of ICT to improve quality and reach of services in the health and education sectors where the Government of Ghana is lagging in achieving MDG goals, as well as to complete key e-applications currently being implemented under eGhana project. The project sub-components are as follows:

28. ***Support for Integrated e-Health System in Ghana – (US$4.0 million)*** – The Ministry of Health has already prepared a comprehensive scan of e-Health solutions and platforms in the country. The project will build on this work to develop a more detailed strategy for using ICT solutions to improve delivery of health services in Ghana. The strategy will aim to consolidate, map and synergize existing infrastructure, systems and solutions (both from the public and private sectors) used for connectivity and e-applications, and recommend a more integrated and interoperable approach for e-Health/mobile-Health. The project will also provide connectivity to priority district and regional health centers in the less developed parts of Ghana. The project will further support the set up of three medical call centers in collaboration with the private sector to provide first response to citizen inquiries about medical and healthcare issues in remote and rural parts of Ghana. The first response may entail providing healthcare advice and giving referral to appropriate health specialists and health centers. In cases of emergencies, the first response may coordinate an emergency response with ambulatory services and healthcare providers. The project will also support digitization of medical records at selected teaching hospitals.

29. *Teachers' Network, Educational Portal and capacity building (US$8.05 million)* – The project will work with the various teachers associations to support the development and maintenance of an educational portal where teachers, students, parents and researchers can have access to good practice lesson plans, curricular content, teaching and learning aids, on-line advice, research etc.  The Portal could also be a platform for knowledge exchange with national and international networks and for participation in relevant discussion forums.  In collaboration with the Ghana-India Kofi Annan Center and other international trainers as needed, project funds will also support intensive training to teachers as a part of a top-up teacher training for new and existing teachers in the use of computer/internet aided education (beyond ICT literacy).  The project will provide connectivity to the least developed 200 secondary schools.

30. *Support for e-Services (US$1 million)* – The project will build on shared pilot e-service applications provided under the eGhana project which included: (i) content management application for hosted services on online portals; (ii) payment gateway to enable electronic payments for online services; (iii) electronic form application to collect citizen information; and (iv) applications to electronically manage documents. Project Funds will support expanded services from these institutions such as online applications for permits and licenses, visas, National ID Cards for Ghanaians resident and abroad, and other services.

31. *Support for existing e-Applications (US$28.5 million)* – This sub-component will be aimed at completing e-government applications for 4 key agencies and departments under the eGhana project for which procurement packages have already been completed and funding is not available or inadequate under the eGhana project. State-of-the-art technology relevant to Ghana will be used to simplify administrative and business processes within and between agencies. Project resources will finance the hardware, software and institutional capacity building for the implementation of: i) an **e-Parliamentary System** (*US$3.5 million)* which will allow a paperless flow of information, ii) *e-Justice system (US$5 million)-* which will improve on the effectiveness and efficiency of justice delivery in Ghana with support to the Ghana Judicial Service and the Ministry of Justice and the Attorney General's office, iii) *e-Procurement (US$5 million)* which will provide a single platform for "e-Sourcing", "e-Tendering", and "e-Purchasing", iv) and an e-*Immigration system – (US$15 million)* which will improve immigration and border control services in Ghana.  e-Immigration is in implementation phase and the tender documents for the remaining 3 e-applications have been completed.

32. *Component 4 – Project Management Support   (US$7.1 million)* - The Ministry of Communication (MoC) will serve as the Project executing agency with overall responsibility for the management of the project.  Given the multi-sectoral nature of the project, the Ministry will work with relevant sector agencies for the effective implementation of the project.  The MoC has had extensive experience in implementing the eGhana Project through a dedicated Project Implementation Unit which is complemented by a core group of technical specialists from the National IT Agency (NITA) and the ITeS Secretariat. The PIU and technical specialists have managed the day-to-day implementation and supervision of the enabling environment, e-Government and ITES components, as well the financial management, procurement, disbursement, monitoring and evaluation, progress reporting and

communication functions. It is expected that the project will leverage the expertise of these experts. Project funds will support the implementation team for the overall project coordination and management, and will provide communication, procurement, financial management, and M& E. Additional resources will be provided to strengthen capacity as needed. In addition, and in view of the innovative and transformative nature of the project, project funds will be allocated to documenting successes and failures, as well as the impact of the project on project beneficiaries.

33. *__Contingency__* - The project includes a contingency/unallocated amount of US$3.75 million for unanticipated project needs during implementation.

B. **Project Financing**

**Lending Instrument**

34. The project is to be supported through a standard International Development Association (IDA) credit of **US$97 million** equivalent. The lending instrument used is Investment Project Financing.

**Project Cost and Financing (US$97 million)**

| Project Components | Project cost | IDA Financing | % Financing |
|---|---|---|---|
| **1.**Enabling Environment for Electronic Government and Business | 15.45 | 15.45 | 100 |
| 2. Support for Upgrading National Identification System and Online Verification services | 29.15 | 29.15 | 100 |
| **3.**Scale up of applications to improve service delivery in priority sectors | 41.55 | 41.55 | 100 |
| **4.** Project Management and Impact Evaluation | 7.1 | 7.1 | 100 |
| 5. Contingency | 3.75 | 3.75 | 100 |
| Total Project Costs | 97 | 97 | |
| Total Financing Required | 97 | 97 | |

C. **Lessons Learned and Reflected in the Project Design**

35. The project design draws on the collective experience of the World Bank's ICT Sector Unit, Finance and Private Sector Development Unit, Public Sector Management Network, Human Development Network, and info*D*ev, in designing and implementing ICT and e-government projects and ICT-enabled activities worldwide. Design was also informed by analytical studies completed as part of eGhana and eTransform projects, along with studies completed by the World Bank on connectivity, innovation, and transformation. Both the World Bank's ICT sector strategy of 2012; and the Independent Evaluation Group's (IEG) assessment of e-government applications during the last 10 years were important inputs to project design.

36. The eTransform project is aligned with the common strategic themes identified in the Ghana Country Partnership Strategy (CPS), in terms of: higher growth and economic

opportunities for the poor, job creation, efficiently and effectively managed public sector and resources, improved health management, service delivery to the poor and the vulnerable, delivery of quality education and vocational training system, and creation of a large pool of middle-level skilled workers. The eTransform project will improve the reach and efficiency of public and private sector service delivery through the smart use of ICT.

37. Several broad lessons have been learned from implementing e-government applications. First, it is important to set up applications keeping in view the country's readiness in terms of policies, laws, local capabilities, complementary investments in infrastructure and training, and project-specific change management procedures. Second, it is useful to support cross-sector enablers, in terms of shared infrastructures and services, along with relevant policies and technical standards, to develop ICT applications across sectors. The work may require creating incentives for collaboration, coordination, and joint approaches. Third, there is a need to ensure that e-government solutions and platforms are part of broader reforms, and interoperable across government agencies, and that requisite capacities are systematically developed. Fourth, procuring of ICT goods and services requires specialized expertise in ICT and beyond, and may require additional work to set up public private partnerships where applicable.

38. Developing an electronic ID (eID) system requires additional considerations, including an enabling environment conducive to the development and use of the eID with clear guidelines on institutional and governance requirements.  A governing board representing stakeholders in identity use and management, and highly skilled management team can help ensure the longer-term financial viability and trust in the operations of eID. Since eID collects sensitive citizen data, information security and privacy requires extra care, and should be supported by enabling policies, laws, regulations, supervision, oversight, compliance, and strong internal controls within the eID agency. eID is a technology-centric exercise, thus, the agency managing eID operations need core expertise and skills in developing state of the art management information systems  and effective operational processes to run the enterprise. Collaboration with the private sector can be a key asset. The availability of affordable high-speed internet is instrumental to connect both the central offices of eID agencies with field offices, and user agencies and the eID agency.

39. The eTransform project has been structured to focus on the critical gaps for developing Ghana's digital economy. The key components identified in the project – shared infrastructure and services, open data, transformational applications, and enabling environment for a digital Ghana – are expected to make a significant contribution to these efforts.

## IV.  IMPLEMENTATION

### A.  Institutional and Implementation Arrangements

40. The project will be implemented under the aegis of the Ministry of Communications (MOC), serving as the Project executing agency. For the day to day implementation of the project, the MOC will continue to be supported by Project Implementation Unit which consists of a Project Coordinator, and M& E specialist and Procurement Specialist and is supported by the technical expert teams in the National Information Technology Agency

(NITA) and Information Technology-Enabled Services (ITES) Secretariat established under the on-going eGhana project. Both teams have gained extensive experience under the eGhana Project and have become regional centers of knowledge. The procurement, financial management, and M&E capacity of MOC are considered satisfactory to IDA. For additional technical and multi-sectoral requirements of the eTransform project, the MoC will constitute a Technical Team which will comprise of the relevant sectors/units, including Ministries of Education and Health, NIA and the key beneficiary institutions. The Technical Team will be headed by the Chief Director of the MoC.

41. Implementation oversight will be provided by a Cross Sectoral Oversight Committee Team which will be chaired by the MoC or Ministry of Finance, and will have the membership of relevant sector and agency units to ensure successful sub-component implementation. The various sector and agency units may be held accountable for additional agreed results and for timely implementation. These additional performance indicators will be articulated in the Project Implementation Manual.

## B. Results Monitoring and Evaluation

42. Monitoring and evaluation of the eTransform project will continue to be embedded in the project's various components: the M&E team at the MoC has gained extensive experience under the eGhana Project working with external consultants and developing robust M&E indicators for managing the project. Given the innovativeness of the eTransform project, the team will be responsible for developing a new evaluation framework for the entire program; they will also design reporting format and reporting frequency and collect, consolidate and disseminate lessons learned with relevant stakeholders, ensuring that stakeholder feedback is captured in project implementation and in the development of a results framework. The team will use new ICT-based tools and mobile-based beneficiary feedback mechanisms to strengthen monitoring facilities of the project and to build citizen engagement. M&E will thus provide a window to illustrate which districts and regions have well-performing programs. The M&E team will work in conjunction with the Policy, Planning and M&E (PPME) Directorate of MoC.

43. The Ministry of Communications will present comprehensive reports reflecting M&E findings to IDA and the oversight committee on a quarterly basis, and a comprehensive report showing progress towards outcomes will be submitted semi-annually. The quarterly report should be tied to the submission of financial and procurement reports. A mid-term review will be undertaken at the end of the second year of implementation. The MoC may contract a third party to undertake an independent analysis of the project progress towards outcomes.
44. The Mid-Term Review will be undertaken at the end of the second year of implementation. The MoC may contract a third party to undertake an independent analysis of the project progress towards outcomes.

## C. Sustainability

45. The Government of Ghana remains committed to using ICT to transform and extend the reach of government services to its citizens. In his State of the Union Address delivered in February 2013, the President of Ghana re-confirmed government's commitment to harnessing

the transformational power of ICT to improve service delivery and stated that the: "Government will continue with the positive outlook and promote the rapid development of broadband infrastructure to reach all parts of the country to ensure that the improved connectivity provides better access to health care and health information, opportunities for education and training, transportation, protection of environment and management of natural resources and to support e- e-government to create transparency in government".

46. The government has already made significant investments in communications infrastructure to complement the work of the private sector, and to address gaps, especially, in under-served parts of Ghana. This has been done through the construction of a Fiber Optic Broadband Backbone Infrastructure on the Eastern Corridor of Ghana from Ho to Bawku linking Tamale, connecting over 120 rural communities along the route and providing ducts to private operators to further improve connectivity in these areas. Vodafone has completed a northern ring which links Kumasi-Suyani-Wenchi-Bamboi-Bole-Sawla-Wa-Hamle-Tumu-Navrongo-Paga-Bolegatanga-WaleWale-Tamale-Buipe-Kitampo-Techiman. A number of completed and ongoing communications infrastructure projects including an e-government network to extend to all the MDAs and MMDAs will go a long way to ensuring inclusive access to state of the art communications technology and services in Ghana. The Bank intervention under the eTransform project is leveraging these investments, as well as those made by the private sector, to ensure that the infrastructure is used effectively to provide services and jobs, improve lives, and make Ghana competitively placed to participate in the global digital economy. The eTransform project and related analytical work will also assist the government to develop a more coherent strategy for diversification of growth through innovation.

47. Specific safeguards are embedded in the project components to ensure sustainability beyond World Bank financing. For example, the National Identification Law requires that citizens receive their first National Identification Card free of charge. However the NIA has managed to secure approval of a Legislative Instrument which allows the institution to charge for special services including expedited and home delivery services, charges for renewal/replacement with advanced eID technologies (e.g. smart cards), and various services for private sector. The project will assist the NIA to develop a good business model for sustainable operations, including exploration of appropriate PPP models for electronic ID and services.

48. Education and Health Sub-Sector Activities. Selected eligible secondary schools and health centers which will benefit from high-speed internet (e.g. WIMAX/LTE) installation will be covered under the project for the project's duration. In order to sustain the installation capacity provided, the capacity of the institutional leadership and the Parents' Teacher Associations will be strengthened during the project's implementation to ensure that the cost of maintaining the facilities are planned for and met when the project ends. During the implementation phase, the project will work with the Ghana National Association of Teachers and the National Association of Graduate Teachers to support the cost of maintaining the teachers' Network and Educational Portal after the project closes. Similar efforts will be made with Health sector providers to develop sustainable models for managing connectivity infrastructure beyond project duration.

49. To ensure more sustainable approach to accessing educational content, the project will promote public-private partnerships in the development of e-textbooks, reading and learning materials which will be made available to schools, teachers and students.

## V. KEY RISKS AND MITIGATION MEASURES

### A. Risk Ratings Summary Table

| Risk | Rating |
|---|---|
| **Stakeholder Risk** | **Moderate** |
| **Implementing Agency Risk** | |
| - Capacity | **Low** |
| - Governance | **Moderate** |
| **Project Risk** | |
| - Design | **Moderate** |
| - Social and Environmental | **Low** |
| - Program and Donor | **Low** |
| - Delivery Monitoring and Sustainability | **Low** |
| - Legal and Regulatory Environment | **Moderate** |
| **Overall Implementation Risk** | **Moderate** |

### B. Overall Risk Rating Explanation

50. The eTransform Ghana Project is leveraging the capacity of the Implementation Unit of the Ministry of Communication which has already developed significant capacity with the implementation of World Bank Projects and has consistently had satisfactory ratings in fiduciary assessments. The overall risk has, however, been rated Moderate in view of the cross-sector nature of the eTransform project, and the involvement of multiple stakeholders. Mitigation measures have been agreed between the World Bank and the Government of Ghana.

## VI. APPRAISAL SUMMARY

### A. Economic and Financial Analyses

51. The eTransform Ghana project is expected to bring significant economic and social benefits to Ghana. Based on the experience from emerging Asian economies, a very conservative estimate indicates that Ghana could generate an additional 0.025 percentage point of growth due to ICT investment, equivalent to 10 million $US (Appendix 6). Individual tax base could be doubled and if tax as percent of GDP recovers from 15 to its historical level of 18% GDP, an additional one billion $US revenue could be generated. Due to the elimination of duplicating efforts among government agencies to register their intended

beneficiaries/clients, it is estimated that the government will save expenditure with a unified electronic ID system. Interventions in secondary education are expected to boost mathematical and scientific learning, especially among girls who are currently lagging behind of boys in these subjects. Additionally, better targeting in health sector will benefit women, especially those living in remote rural areas and the poor. It is also estimated that the project itself will generate a small base of low-skill jobs for disadvantaged youths. Similar IT investments in Southern and East Africa has demonstrated job creations as a result of IT technology upgrade and enabling environment.

52. The project supports an enabling environment for opening up data, electronically managing information, entrepreneurship, and jobs. The project supports creating innovation centers, in the form of mHubs and mLabs, that can help convene entrepreneurs, investors, and businesses; create new applications and services; serve consumers; and create jobs. For example, Kenya's mLab has commercialized 213 mobile applications, served 5,300 customers, and created 117 new jobs, in addition to fostering an environment of entrepreneurship and innovation. Ghana's support for open government will boost transparency and accountability in the country. The uptake of online services, leading up to greater e-commerce and more use of ICT by firms and organizations, can bring about greater productivity in Ghana. Assuming that Ghana's investment in ICT will contribute to 0.025 percentage point growth in productivity, it would generate an additional US$10 million of output for the Ghanaian economy.

53. The major thrust of the project is in helping establish a unique identity system in Ghana, along with upstream digitization of relevant public records, and downstream integration with verification services and identification applications. Based on assumptions made (as indicated in Annex 6), the internal rate of return (IRR) for developing an e-ID system, with related enabling environment, is between 6.3% and 11.3%. These IRR estimates are based on very conservative assumptions and do not incorporate the additional revenue generated by verification services as a result of an increased uptake of e-commerce given the availability of improved identification facilities. The project's support for identification system would bring efficiencies in a range of government services, including, but not limited to: delivery of social services to the country's poor, delivery of financial services, growth of mobile banking, growth of fee-based mobile applications, voter registration, tax collection, transport system, and job creation. Digitization efforts will create jobs for the youth in scanning and electronically storing paper records.

54. The project also targets priority areas of the country's development, including health and education, and offers support to ongoing e-applications being developed under the eGhana project. The establishment of the integrated medical call centers will alleviate acute shortages of medical personnel in remote areas, and connecting hospitals and schools to the internet will improve access to services for citizens. The use of ICT in judiciary, parliament, immigration and procurement will improve the way government conducts its business, bring about efficiency, transparency, and effectiveness.

### B. Technical

55. The eTransform Project builds on experiences gained during project preparation and on best practices of similar projects and studies in other countries and regions. Project preparation was carried out with the participation of a number of experts from the Government of Ghana, private sector, the World Bank, and Info*Dev*, all of whom contributed to the design of the activities, using expertise gained from projects related to development of digital identities, business incubation and transformation e-government applications. The project is also benefiting from collaboration with the Rockefeller Foundation which has had extensive experience on developing digital jobs for the bottom of the pyramid.

### C. Financial Management

56. Consistent with the default position of using country systems, the project's financial management arrangement will be mainstreamed, and to a greater extent adopt and rely on the full use of the existing Government of Ghana systems as regulated by the Financial Administration Act (2003) and the Financial Administration Regulation (2004). The MoC is presently involved in the implementation of the on-going eGhana project and it is expected that the financial management function will rely on the existing structures and systems. The MoC is one of the implementing agencies where financial management has been fully integrated into the existing government systems and performed satisfactorily. The FM staffing strength is very strong and made up of highly qualified and competent staff from the Controller & Accountant General's Department (CAGD). In general, the MoC has a good financial management system which can be relied upon to support the proposed project.

57. The Director of Finance & Administration (DFA) of the MoC has oversight responsibility for all financial management functions of all departments and agencies under the Ministry. The responsibility of the DFA is to ensure that there are adequate financial management systems in place which can report adequately on the use of project funds at all levels of implementation. However, in carrying out this mandate, the specific day to day transaction processing and reporting will be assigned to the dedicated Project Accountant- a staff of CAGD of the grade of Principal Accountant.

58. The team's assessment concludes that the existing arrangements for the continuing adequacy and reliance of the financial management systems for the project are adequate and meet the minimum requirement per OP/BP 10.00. Overall the assessment of the control environment indicates that the FM risk is moderate (medium driven by impact). Details of the Financial Management arrangements for this project are included under Implementation arrangements in **Annex 3.**

### D. Procurement

59. Procurement under the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011; "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011; "Guidelines on Preventing

and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15, 2006, and updated January 2011; and the provisions stipulated in the Grant Agreements. The general description of various expenditure categories for items to be financed are described below. For each contract to be financed by the credit, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank project team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

60. The MoC will serve as the Project executing agency and will have overall responsibility for the management of the project, including procurement management. The MoC has had extensive experience in implementing the eGhana project through a dedicated Project Implementation Unit, complemented by core group of consultants from the National IT Agency (NITA) and the ITeS Secretariat who have managed the day-to-day implementation and supervision of the enabling environment, e-Government and ITES components as well the financial management, procurement, disbursement, monitoring and evaluation, progress reporting and communication functions. The eTransform project will continue to use this existing arrangement for implementation.

61. A detailed assessment of the capacity of the Project Implementation Unit of MoC to implement procurement actions for the project was conducted in accordance with the Bank's Procurement Risk Assessment System (PRAMS) on May 13, 2013 and was based on responses by the relevant agencies to questionnaires. This was done as part of the Bank's fiduciary requirements to ensure that implementing agencies have systems, structures and capacity to administer procurement in compliance with the Bank's Procurement and Consultants' Guidelines. The assessment reviewed the organizational structure for implementing the project and the interaction between the implementing units and their staff responsible for procurement. The observations on the assessment of the capacity of each unit to handle procurement under the Bank's Guidelines and procedures are detailed in Annex 3. The assessment rates the overall risk for procurement as moderate on condition that the PIU is maintained to implement the eTransform project. If this is not the case, and procurement for the projects is mainstreamed in the Ministry, the risk is put as high. Implementation of identified mitigation action will at least maintain the risk at the same level.

62. The PIU of MoC has developed a procurement plan for the entire project period which has been agreed at negotiations with the Bank. The procurement plan will be subject to updates at least once a year and if necessary, more frequently, and such updates would be subject to the Bank's review and agreement. Measures that will be required to be undertaken to address procurement issues to be identified have been provided in the PRAMS Summary risk table in Annex 3 of the PAD. In addition to the suggested risk mitigation measures, the Bank will as part of the regular usually twice yearly implementation support missions, ensure that procurement plans are monitored and updated regularly and published on the Banks external website as required by the Bank's disclosure policies.

63. Frequency of Procurement Post Reviews (PPRs) on the project will be based on the assessed agency implementation risk for procurement as project implementation progresses. The Bank will carry out PPRs or Independent procurement Reviews for contracts that are not subject of prior review by the Bank and identified as such in procurement plans. Further details of procurement arrangements and Risk Mitigation Plan developed for the project are included in **Annex 3**.

### E. Social (including Safeguards)

64. The project does not trigger the involuntary resettlement policy since the project activities do not have impacts on land, and do not require land acquisition leading to involuntary resettlement and/or restrictions of access to resources or livelihoods. There is no envisaged civil works, but an ESMF dated July 2013 2013, and published on July 31, 2013 addresses the potential environmental impacts arising from energy and power consumption, use of local resources, and pollution from e-waste material. Some minor construction may take place during project, and the ESMF addresses impacts from such activities as well.

65. From project component description, it is clear that project activities rather have a great potential to be beneficial to people in the rural areas, the urban poor, women and generally, people who do not have access to basic services in health and education and even government services on a daily basis. For instance, the support to the education and health sectors meant to improve efficiency, access and even lower costs will go a long way to enable especially women and children to access basic health care services, get reference and information on needed health practices and support system. It is apparent that one of the most critical needs in the country relates to attention to maternal and child health. With the project's focus on the country's health priority needs, one will assume that women and children will be a key group to benefit from the project activities. Furthermore, the support to the education sector also holds a lot of promise for improved access to services and therefore a widening of their reach. This means that people who may not have been benefiting from the services due to different kinds of reasons, but particularly as a result of inefficiencies and cost could have the opportunity to now benefit.

66. However, given that these potential benefits will not happen by themselves, it is important that the project makes conscious efforts to ensure that the services to be supported by the project: health, education, job creation and employment opportunities specifically target the rural people, the urban poor, women and children and the disabled and other vulnerable groups as part of the implementation arrangement supported by key indicators to ensure tracking. The project will also ensure that the project indicators have gender specific indicators to enable monitoring and evaluation.

67. With regard to security of personal data, the laws on right to privacy and other mechanisms for ensuring safe and secure personal data will be employed and deployed by the project during the implementation. It is important to note that the data is captured on a 'need-to-know-basis'. Nonetheless, mechanisms will be developed to ensure safety and security of personal data and information. The modalities and specifics will be outlined in the project implementation manual based on applicable national and international laws. As part of implementation, there will be strong information, education and campaign (IEC) elements that

will carry out continuous sensitization and education using appropriate approaches for different audiences. This will ensure that the messages are wide- reaching and meaningful. These efforts should be at the level of studies or analysis to be carried out to support activities, the implementation of activities specifically and monitoring and evaluation.

68. In spite of this potential, it should also be noted that, there are limitations to use of ICT to transform businesses and lives, and this should lead to a balanced approach with expectation, available resources and targets. Furthermore, challenges of demand-led approaches, especially in the education and health sub-components, could have implications for poorer communities and their capacity to participate. Implementation arrangements should factor such possibilities so there is no 'elite capture' by well-endowed schools and health facilities.

### E.1 Governance and Transparency

69. Inbuilt into the whole project concept is the issue of transparency and accountability. The supply side governance is strong if project activities are rolled out as expected. Given that there is a strong citizen focus of the project, it is crucial to engage citizens and civil society to support the monitoring of project activities through different forms of third party monitoring with or without ICT platforms. Project teams should be able to work with implementing entities and other NGOs to ensure strong, productive and efficient citizen's engagement during project implementation. This should include a system where citizens or project beneficiaries (as groups or individuals) can seek for information and clarification regarding processes, participation and expected outcomes or share ideas with the implementing team for further consideration. This has the potential of enhancing project results and sustaining outcomes at the community and facilities levels.

### F. Environment (including Safeguards)

70. The project is rated Category B and triggers OP 4.01 (Environmental Assessment). There are no major environmental issues associated with the project, which is an e-development and information and communication technology (ICT) sector reform project, primarily involving policy, provision of software and hardware and institution-building.  For the connectivity of both schools and hospitals, it is expected that the project will leverage a combination of government fiber network already installed and Wireless systems both of which will have minimal environmental and social impacts.  The project however anticipates the establishment of Innovation labs and Medical Call centers which are likely to be set up in existing government buildings. The locations of these facilities are not known yet, and the Government has prepared and disclosed an ESMF prior to Appraisal.  Any construction outside of existing government compounds would proceed only when safeguard instruments required under OP 4.01 have been prepared and consulted upon by the client approved by the Bank, and disclosed.

## Annex 1: Results Framework and Monitoring

### COUNTRY:  GHANA E-TRANSFORM PROJECT
### Results Framework

| Project Development Objective (PDO): To improve the efficiency and coverage of government service delivery using ICT. | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PDO Level Results Indicators*** | **Core** | **UoM** | **Baseline** | **Cumulative Target Values*** | | | | | **Freque ncy** | **Data Source/ Methodology** | **Responsibilit y for Data Collection** | **Description (indicator definition etc.)** |
| | | | | **YR 1** | **YR 2** | **YR3** | **YR 4** | **YR5** | | | | |
| **Indicator One**: *Average time from initiation of service request  to issuance of service – disaggregated by:* • Birth certificate • Company registration • National passport | ☐ | Days | 15 4 22 | 12 3 15 | 10 2 10 | 8 1 8 | 6 1 7 | 5 1 5 | Annual | Baseline: direct observation  Target: electronic tracking, direct observation | MoC M&E function | Annual Target  Baseline is calculated as: duration of all manual steps (including waiting time) from entering respective govt. office to issuance, e.g. additional information required, next meeting, etc.  Target is calculated as: duration from electronic submission of request to issuance of service |
| **Indicator Two:** *New e-government applications providing service to the public* | ☐ | Number | 5 | 5 | 6 | 7 | 8 | 9 | Annual | Electronic tracking/direct observation | NITA/MoC M&E function | Cumulative Target  Four new e-government applications are supported under project: procurement, justice, immigration, procurement |
| **Indicator Three:** *Number of new e-services available to the public online* | ☐ | Number | 8 | 8 | 10 | 12 | 14 | 16 | Annual | Account of new e-services made available online | MoC/NITA | Cumulative Target |
| **Indicator Four:** *Number of teachers or students using education portals* | ☐ | Number (%) | 0 0% | 2000 2% | 10000 5% | 14000 10% | 18000 15% | 20400 20% | Annual | Tracking system for hits on portals | MoC, MoE | Cumulative Target  Targets calculated conservatively as: (2 teachers per school for 200 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *including in rural areas[9] (% of which female)* | | | | | | | | | | | Secondary Schools) + (100 students per school for 200 Secondary Schools). Average school size is about 1,000 students. |
| **Indicator Five:** *Number of health providers or clinics in rural areas using e-health system* | ☐ | Number | 0 | 0 | 3 | 10 | 15 | 20 | Annual | Direct Observation | MoH/MoC | Cumulative Target |
| **Indicator Six:** *Direct project beneficiaries, (% of which female)* | ☒ | Number (%) | 3m 20% | 5m 30% | 7m 35% | 8m 40% | 11m 45% | 13m 50% | Annual | Annual survey, project administrative records | MoC M&E function | Cumulative Target<br><br>Beneficiaries calculated as: Number of trainees, number of persons in temporary employment in digitization, Number of students and teachers having access to educational portal, Number of persons using e-applications, Number of persons with access to ID cards.  Results will be disaggregated by male and female. |
| **INTERMEDIATE RESULTS** | | | | | | | | | | | | |
| **Intermediate Result (Component One): Enabling Environment for Electronic Government and Business** | | | | | | | | | | | | |
| *Intermediate Result* **Indicator One:** Datasets available on the Government Open Data website /portal | ☐ | Number | 100 | 110 | 150 | 170 | 190 | 200 | Annual | Direct observation on government open data website | MoC M&E function, NITA | Cumulative Target |
| *Intermediate Result* **Indicator Two**: Public sector organizations integrated to the cloud storage | ☐ | Number | 50 | 60 | 100 | 150 | 200 | 300 | Annual | Custom made report from cloud storage provider | MoC M&E function, NITA | Cumulative Target<br><br>Public Sector Institutions are MDAs and MMDAs |
| *Intermediate Result* **Indicator Three**: Certification authorities operating in Ghana | ☐ | Number | 0 | 0 | 1 | 1 | 2 | 3 | Annual | Report on certification authorities in Ghana | MoC M&E function, NITA | Cumulative Target |

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[9] Rural areas are considered to be areas outside of district and regional capitals.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Intermediate Result* **Indicator Four**: Innovation centers operating in Ghana | ☐ | Number | 0 | 0 | 1 | 2 | 2 | 3 | Annual | Implementation report | ITES, MoC, *info*Dev | Cumulative Target |
| *Intermediate Result* **Indicator Five:** People trained (of which female) | ☒ | Number (%) | 150 (20%) | 200 (25%) | 300 (30%) | 600 (40%) | 800 (45%) | 1,000 (50%) | Annual | Report of training providers | MoC M&E function | Cumulative Target<br><br>Training at policy institutions, regulatory institutions, and innovation hubs |
| **Intermediate Result (Component Two): Support for Upgrading of National Identification System and Online Verification Services** | | | | | | | | | | | | |
| *Intermediate Result* **Indicator One**: ID cards printed and distributed | ☐ | Number (million) | 3 | 5 | 6 | 8 | 10 | 12 | Semi Annual | Custom made report from NIA | NIA/MoC | Cumulative Target<br><br>Targets defined as number of ID cards made available to citizens. |
| *Intermediate Result* **Indicator Two**: Number of Government records digitized<br>• Birth and deaths<br>• Ghana Revenue Authority<br>• Registrar General's Department<br>• Medical records | ☐ | Number | 17.5m<br><br>6m<br>2.5m<br><br>9m<br><br>0m | 22m<br><br>8m<br>3.5m<br><br>11m<br><br>1m | 28m<br><br>10m<br>5m<br><br>14m<br><br>3m | 33m<br><br>14m<br>5m<br><br>16m<br><br>5m | 37m<br><br>14m<br>5m<br><br>16m<br><br>5m | 40m<br><br>14m<br>5m<br><br>16m<br><br>5m | Semi Annual | Account of digitization | MoC M&E function | Cumulative Target<br><br>Targets defined as total number of records digitized at Births and Deaths, Ghana Revenue Authority, GRA and selected health institutions |
| *Intermediate Result* **Indicator Three**: Number of user agencies linked to national ID system | ☐ | Number | 0 | 0 | 2 | 2 | 3 | 3 | Semi Annual | Custom made report from NIA | MoC M&E function | Cumulative Target<br><br>Targets defined as number of user agencies electronically linked to the national ID system (with an upgrade of their hardware/software) and with the use of NID as a common reference |
| **Intermediate Result (Component Three): Scale up of Applications to Improve Service Delivery in Priority Sectors** | | | | | | | | | | | | |
| *Intermediate Result* **Indicator One:** Strategic plan for integrated eHealth System | ☐ | Number | 0 | 0 | 0 | 1 | 1 | 1 | Annual | Report from MoH | MoC, MoH | Cumulative Target<br><br>Target defined as the delivery of eHealth strategic plan to MOH |

| Indicator | | Unit | | | | | | | Frequency | Data Source | Responsibility | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Intermediate Result* **Indicator Two:** Medical call centers operating in Ghana | ☐ | Number | 0 | 0 | 1 | 2 | 2 | 3 | Annual | Report from MoH | MoC, MoH | Cumulative Target<br><br>Target defined as the setup and launch of a medical call center in different parts of Ghana including in rural areas |
| *Intermediate Result* **Indicator Three:** Schools and healthcare centers with high-speed connectivity | ☐ | Number | 0 | 0 | 100 | 200 | 300 | 400 | Annual | Implementation report | MoC, MoE, MoH | Cumulative Target<br><br>Target defined as number of secondary schools and healthcare providers (or hospitals) that are equipped with wireless networks and high-speed connectivity. Secondary schools are also equipped with computer labs. |
| *Intermediate Result* **Indicator Four:** Number of teachers complete training through computer/internet aided education | ☐ | Number | 0 | 100 | 200 | 400 | 500 | 600 | Annual | Review of training report of Training Provider | MoC/MoE | Cumulative Target Targets defined as number of teachers who have successfully completed computer and internet aided training |
| *Intermediate Result* **Indicator Five:** Improved online access to: educational material, judicial (MoJ and AG) parliamentary e-Immigration Data protection information ) | | Number | 0 | 20,000 | 40,000 | 60,000 | 80,000 | 100,000 | Annual | Tracking system for number of hits on portal | MoC/NITA | Cumulative Target Number of page views (access) on educational portal, e-parliament, eProcurement, data protection etc. |

**Annex 2: Detailed Project Description**

**eTransform Ghana Project**

71. The development objectives of the eTransform Ghana project focus on employing ICT-based interventions, and prudent and efficient use of government resources, to advance shared and accelerated development in Ghana. The project focuses on improving the efficiency and coverage of government services in priority areas of Ghana's development, with particular attention to rural and underserved communities, women and gender parity, and opportunities for the youth. The project employs platforms to nurture new businesses, job opportunities, and ICT-based entrepreneurship. The project's support for electronic identification has the potential to improve the quality and reach of government service delivery, targeting of social protection spending, and electronic commerce. The interventions in electronic applications can yield a multiplier effect in improving delivery of government services, and in promoting entrepreneurship. All activities supported by the project are expected to be underpinned by an open and transparent environment, with provisions for access to open and secure data, and potential for innovative applications employing open data.

72. The project is structured along four areas: (a) enabling environment for electronic government and business; (b) foundational systems for electronic identification to promote electronic service delivery and social inclusion; (c) scaling up of ICT applications and services to improve services in priority sectors in Ghana; and (d) effective project management. Detailed project components are provided below:

## Component 1 – Enabling Environment for Electronic Government and Business (US$15.45 million)

73. This component will support the review, development and revisions to policies, laws, regulations and institutional capacity, as well as cross-government platforms to stimulate the growth of e-services, digital economy, and jobs in Ghana. The component fosters an open and accountable development, and underscores collaboration with the private sector. Details of sub-components are as follows:

74. *Storage, Protection, and Opening up of Government Data* (**US$9.65 million**) – The subcomponent supports the enabling environment for the management, storage, protection, and availability of e-applications and government data in Ghana. The project activities are centered on:

    i)   <u>Shared infrastructure for e-applications and storage:</u> The project will support the National Information Technology Agency (NITA), a government agency under the Ministry of Communications (MoC), to work with the private sector to increase the storage capacity for electronic information. This is in view of the increased activities in electronic identification, digitization, and e-applications which require computing and cloud platforms to host applications and store data. For electronic identification in particular, citizen data must have tight provisions for privacy and security, enabled by policies, laws, governance, technology, processes, operational control, oversight, and disaster protection.

a. Project funds will finance the development of a cloud storage and back-up facility with storage capacity of 4 petabytes[10] or higher, to be built and managed in collaboration with the private sector. The new cloud infrastructure will be shared across government and employed for actively used data. The shared infrastructure will allow organizations, such as the NIA, Births and Deaths Registries, and other MDAs, to have security and control over their data. This will build on earlier World Bank support under the eGhana project for a portal infrastructure which includes a pilot data center, with active storage capacity of 104 terabytes,[11] based in Accra, and back-up storage capacity of 52 terabytes, based in Kumasi. The latter is already being used by 50 government departments today to store information and host applications. The shared infrastructure makes it easier for channel partners to plug into government databases to access, manage, and use information. The project will set up the technology interface for disaster recovery for critical information. The government has expressed interest to have a separate storage system for the digital identification system for security reasons. The shared infrastructure will play a key role in advancing the Government's open data agenda which is being implemented through NITA.

b. To allow the growth of secure electronic transactions in Ghana, the project will also support NITA to facilitate the establishment of public key infrastructure (PKI) and Certification Authorities (CA) in Ghana. Under the NITA Act 771 of 2008, NITA is mandated to facilitate the establishment of CAs, and regulate their activities. NITA will help establish a marketplace of electronic certificates, allowing public and private entities to offer competitively priced offerings and secure certification services in Ghana.

ii) <u>Capacity building for open data and analytics:</u> The project will support the Government of Ghana (GoG) to advance open and accountable government and strengthen the provisions for transparency and accountability. The project will build institutional capacity within NITA to develop the supporting environment for open data. Project funds will be used to prepare standards and regulations for open data, develop content under the open data initiative, and upgrade online presence of open government. Currently, about 100 public datasets in support of open data have been generated for public access. More public datasets are to be generated as new e-government applications are developed and e-services are deployed across the country. The project will also build NITA's capacity to analyze electronic data, in partnership with the private sector, civil society, and academia. Data analytics will help gain useful insights about government programs and performance, and citizen needs. These insights would help establish early warning systems and inform government policy. Capabilities of big data

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[10] Note: 1 Petabyte (TB) = $10^{15}$ bytes
[11] Note: 1 terabyte (TB) = $10^{12}$ bytes.

analytics, exploiting multiple forms of data from a variety of sources, and utilizing historical and predictive analysis, where available, will also be utilized.

iii) <u>Institutional development for data protection:</u> The project will support the institutional development of the newly formed Data Protection Commission (DPC), under the Ministry of Communications (MoC). The DPC is commissioned to protect the privacy of individual and personal data in Ghana, according to: the Data Protection Act, 2012; Electronic Communications Act, 2008; and related Acts of Ghana. DPC regulates the processing of personal information in Ghana, and oversees, manages, and enforces the processes that are required to obtain, hold, use, or disclose personal information in the country. Support for DPC will include rental and office equipment as well as initial operating costs. The project will also assist the DPC with the development of an integrated data protection system to serve as a register to support the oversight and compliance of data protection regulations and standards in Ghana.

75. ***Support for Innovation Centers for Entrepreneurship and Job Creation – (US$2.9 million)*** – The subcomponent will support the growth of innovation, entrepreneurship and job creation in Ghana, by helping to develop innovation centers in the country. Innovation centers are being used across Africa, as seen with the iHub[12] in Kenya, ccHub[13] in Nigeria, kLab[14] in Rwanda, and iLab[15] in Liberia. Innovation centers are serving as national systems and digital platforms for ICT-based innovation. They operate across industry verticals, and provide collaborative spaces which encourage entrepreneurship and technological innovation. These centers allow entrepreneurs and start-ups to take technology from ideation to commercialization, using venture incubation, acceleration, mentoring, training and networking, as well as foster multinational and global partnerships. Innovation centers will help the scale up of innovative applications and services to address every day development challenges (eg. sanitation and transportation management, teacher absenteeism, counterfeit drugs etc) in Ghana, and create employment opportunities for the youth.

76. To ensure sustainable operations, the project will collaborate with technical partners, such as *info*Dev, an innovation, technology and entrepreneurship program of the World Bank, as well as with private sector partners (e.g. Google, Blackberry, Nokia) and service providers (e.g. mobile network operators, mobile app industry associations), and academic institutions who have experience in establishing innovation centers. The technical assistance will inform design, governance, management, performance, monitoring, and partnerships of these innovation centers. For longer term capacity building, the project expects to collaborate with the local private sector and reputable public training institutions, academic institutions and industry associations, such as GIMPA, GASSCOM, WASPAG and Kwame Nkrumah Universities of Ghana and Science and Technology etc. These collaborations will help identify future opportunities in emerging technologies and will leverage digital platforms to

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[12] http://www.ihub.co.ke/ (last accessed June 23, 2013)
[13] http://cchubnigeria.com/ (last accessed June 23, 2013)
[14] http://klab.rw/ (last accessed June 23, 2013)
[15] http://ilabliberia.org/ (last accessed June 23, 2013)

accelerate shared growth in Ghana. The project will provide grant funds to equip Innovation Centers, and support operational cost, technical assistance, training, and incubation of start-up businesses.

77. Activities under the Innovation Center are centered on:

     i) <u>Preparation of Physical facilities for innovation centers:</u> The project will provide grants to help equip appropriate physical facilities for the innovation centers. Three innovation centers are envisaged under the project: 1 mLab and 2 mHubs (see the box below for sample activities under mLab and mHubs). Based on experience in Africa and elsewhere, the location of mLabs and mHubs can be critical, and co-location with other support organizations can provide the most value for technology developers and entrepreneurs. If an ICT community of developers, entrepreneurs, industry professionals and investors were to form around the mLab or mHub, they must find activities readily accessible and affordable, including travel time and cost. Given mLabs' open partnership model, it can work well to co-organize trainings, events, competitions, and even incubation with other entrepreneurship support organizations, such as universities, incubators, or private-sector driven innovation centers. For this to function smoothly, co-location in the same building or area of the city can be a catalyst for activities. Further, an inclusive governance structure, allowing for a strong sense of community participation and ownership of the mLabs and mHubs is critical. The Government of Ghana has already secured a US$5 million funding from the World Bank through the eGhana Project to develop a Grade A facility to promote IT enabled business in Ghana. The Rockefeller Foundation is likely to provide additional financial assistance to complement these efforts. The Government intends to use this facility to serve as a mini-ICT Park which can provide quality and affordable office space to IT and IT enabled businesses and to generate some 10,000 jobs. The mLab could be housed at the Center or a similar location. Info*D*ev will assist the government to make this decision as well as provide technical support in the governance, management and monitoring of performance. The two mHubs could be located in the northern and other parts of Ghana which lack such support.

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**Box 1: mHubs and mLabs**

**mHubs** build mobile innovation communities by convening a variety of local stakeholder groups. mHubs organize informal gatherings and events that involve entrepreneurs, developers, mobile operators, device manufacturers, or local businesses. Depending on local needs, they also implement a choice of "lightweight" activities to strengthen the mobile innovation ecosystem, like peer-learning sessions or conferences. Currently there are eight mHubs in Azerbaijan, Georgia, Kenya, Moldova, Nepal, Tanzania, Uganda, and Vietnam.

**mLabs** are specialized mobile business incubation facilities that develop and grow mobile app enterprises. They identify talented entrepreneurs with high-potential app ideas and recruit them for incubation. During incubation, the mLab provides entrepreneur teams with physical workspaces, state of the art equipment and app testing facilities, back-office support, as well as technical and business training. Four regional mLabs are in operation in Armenia, Kenya, South Africa, and Vietnam, and one more planned in Pakistan.

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| Service Portfolio Options | mHubs | mLabs |
|---|---|---|
| Informal community-building and networking events (e.g., thematic presentations & discussions, showcasing events) | ✔ | ✔ |
| Facilitation of online collaboration and learning | ✔ | ✔ |
| Multi-stakeholder conferences | ✔ | ✔ |
| Mentorship by successful entrepreneurs and investors* | | ✔ |
| Technical and business-skill training * | | ✔ |
| Innovation competitions and prototyping events like hackathons for talent-sourcing* | | ✔ |
| Assistance with marketing apps, e.g. advice on pricing, facilitating delivery channels* | | ✔ |
| Contacts to investor networks* | | ✔ |
| Provision of co-creation and ideation spaces | | ✔ |
| Formalized incubation program | | ✔ |
| Free / subsidized office space | | ✔ |
| Mobile app testing facilities | | ✔ |
| Access to early-stage financing and seed-funding | | ✔ |

* Advanced mHubs can implement this activity, for instance, assisted by mLabs.



*Source: Mobile Innovation Project (infoDev, 2013)*

ii) <u>Management team and staffing structure for innovation centers:</u> With technical support from Info*D*ev and other private partners, and in collaboration with the ITES Secretariat, the project is expected to bring on board world-class management teams, with internationally renowned champions (either local expert or expatriate program manager) and lean organizations, to establish, launch, and operate each of the three innovation centers. Again, based on experience in Africa and elsewhere, the choice of mLab and mHub managers, as well as of lead organizations for consortia, is critical. The mLab and mHub managers are responsible for reaching out to local stakeholders, communicating the value of their services, and developing viable governance and business models that yield longer term sustainability. Primary criteria used in the selection of the management team will constitute:

- Prior experience in running innovation centers;
- Proposed business model for the innovation centers in Ghana, with an articulated vision, governing Board, management and organizational structure, strategic plan, financing plan, attractive products and services, and operating plan;
- Deep network of international partnerships and linkages with industry, investors, academia, and organizations; and
- Commercial background in running self-sustained and well-managed operations.

iii) <u>Support for innovation promotion and entrepreneurship:</u> The project will support the management team of innovation centers, once established, to promote innovation and support entrepreneurship in Ghana. Project funds will pay for training, skill development, competitions, mentoring, incubation, and related services, to benefit youth and entrepreneurs in Ghana. MLabs and mHubs are known to provide the most value if they offer a mutually reinforcing set of activities.

Eligibility criteria and selection processes for the grant funds will be described in an Innovation and Grants Manual.  It is expected that Info*Dev* will provide assistance ti Government to prepare the manual.

78. ***Institutional Capacity Building for Policy and Regulatory Institutions (US$2.9 million)*** – The sub-component will provide support for a gap analysis of the legal and regulatory environment to support electronic applications, and the necessary capacity building to key policy and regulatory institutions including the Ministry of Communications (MOC), National Communications Authority (NCA), DPC, GASSCOM, WASPAG, and Ministry of Foreign Affairs (MFA). Several issues require attention, including Ghana's ICT policy for development which requires an update; the transition to Digital Terrestrial Television (DTT) in Ghana which is bringing enormous opportunities, but could also introduce some challenges, especially in the cost and financing of new digital devices; and the need to protect valuable intellectual property and business information in digital form against theft and misuse. The gap analysis which will be supported under this subcomponent will provide guidance on appropriate laws and regulations which need to be in place to encourage use of electronic applications.  It will also assist the NCA and DPC to improve their capacity to manage the ICT sector.  In view of their roles as the Government and Private Sector agencies responsible for nurturing the IT enabled services industry, including electronic business, the sub-component will also finance business plans for the ITES Secretariat and GASSCOM to identify new business opportunities in the e-commerce space. The project will support a needs assessment of e-applications for  the Ministry of Foreign Affairs which serves as the International public face of the country.

**Component 2 – Support for Upgrading National Identification System and Online Verification Services (US$29.15 million)**

79. The component supports the development of a robust, national identification system, built on international standards, to help prepare Ghana for a modern e-commerce industry, improved e-government services, and improved social protection for the vulnerable. Additionally, the component supports digitization of paper records and integration of information systems that provide necessary linkages to national identification and are critical for the rollout of electronic applications and services in Ghana.

80. A recognizable unique ID of a citizen can be instrumental for delivery of public and private services. A modern electronic ID system can help deliver public services more efficiently to intended beneficiaries (safety nets, health insurance, etc.), deliver financial

services to a broader cross-section of the population, expand mobile banking and m-commerce, achieve more effective tax collections and transparent payroll system, and operate a more effective transport system. Annex 6 details the benefits of a modern electronic identification system, illustrating its potential to reduce poverty and provide significant development impact.

81. The National Identification Authority (NIA) of Ghana, is the government's agency under the President's office, established by an Act of Parliament in 2006 to capture and manage the identity of all Ghanaian and non-Ghanaian residents in Ghana. To date, the NIA has had limited success in performing its functions. Over a period of 6 years, NIA has collected data for about 9 million people from eight regions of Ghana (out of ten regions), and printed about 3 million biometric cards (called Ghanacards) for two regions of Ghana (namely greater Accra and parts of Ashanti region). Most of the collected data on citizens are yet to be validated (i.e. de-duplicated) and readied for printing.  And most of the printed cards are yet to be distributed. The delays in printing and distribution result from a combination of factors, including outdated technology, inadequate funding, and weakness in institutional capacity. Additionally, the NIA's Ghanacard does not conform to international standards, as provided by key international organizations, such as International Civil Aviation Organization (ICAO), International Organization for Standardization (ISO), and American National Standards Institute (ANSI).  For example, the current Ghanacard, based on a 2D barcode technology, has a maximum storage capacity of only 1 kilobyte. The storage capacity is inadequate to meet the largely sophisticated requirements of key user agencies such as the National Health Insurance Agency (NHIA), the Electoral Commission, banks, and financial institutions. Furthermore, the Ghanacard is made of Polyvinyl Chloride (PVC) material at the outermost layer which is known to have a shorter life span of three to four years. The preferred standard for national ID cards is Polycarbonate, or PETG material, which is known to have a longer life span of ten years, even for heavy users of identity cards.

82. Competing identity systems have emerged as a result of these inefficiencies, resulting in challenges with authentication and verification, increasing cost of electronic commerce, and slow growth of electronic services in Ghana. Despite the multiplicity of systems, Ghana's current identification system covers less than 5% of population, (includes driver's license, voter's card, passport), and can be expensive (costing up to $50).The challenges and the general mistrust in the national identification system, are making key user agencies reluctant to accept any of the identification cards exclusively as  the primary form of identification. The multi-identification system is therefore creating loopholes and missed opportunities to target populations who are in urgent need of public services.

83. The project envisages the development of electronic identification system in Ghana to take advantage of investments already made by the government and to prepare the country for complying with international standards of electronic identity. Under the project, NIA's equipment, software and operational procedures will be upgraded, and support will be given to selected user agencies to upgrade and link their systems to use the national identification number as a common identifier.  In addition, a more modern eID system based on international standards will be setup. The eTransform project will build on lessons learned

from Ghana's experience in electronic ID, and best practices from countries around the globe in developing electronic ID. Details of project subcomponents are given below:

84. ***Support for a National Electronic ID System (US$21.45 million)*** – The subcomponent will support the NIA to complete the implementation of the current national identification system, and provide identity cards free of charge to citizens, according to the laws of Ghana. Project funds will be used for the distribution of 12 million biometric cards, including 3 million cards that are already printed, and 9 million cards that will be printed once the collected citizen data is validated. The project will also finance an update of the back-office systems, including upgrading the datacenter and setting up a disaster recovery center. To improve the speed and reduce the cost of distribution of cards, project funds will also finance the cost of mobile registration workstations, mobile verification systems, and related software. These systems and workstations will allow NIA offices and related agencies (at the point of registration) to instantly verify the identity of new and existing registrants and issue ID cards on the spot, thus eliminating the challenges associated with the distribution of cards. Project funds will also support NIA to upgrade the national identification system with modern technologies and systems which meet international standards including: (i) upgrade of the identification system (e.g. printing equipment and Automated Fingerprint Identification System (AFIS) to allow 10 fingerprints to be captured, instead of 4 fingerprints, as is done now); (ii) issuance of advanced eID technologies (e.g. smartcards) to allow use of new applications and increase storage capacity; and (iii) and improvement in the delivery of identity cards by using instant-issuance printers to allow on-the-spot printing of electronic identity cards. The NIA expects to offer the additional cards for a fee to citizens, and will provide as replacement cards. In view of the important role that the NIA plays in the digital identification space, the project will also allocate resources for an institutional assessment and provide necessary institutional and capacity building support to improve its performance.

85. ***Support for Digitization and Integration of Digital Identity and Verification Systems into User Agency Operations (US$7.7 million)*** – The subcomponent supports the digitization of paper records and the integration of information systems of user agencies to the national identification system. Specific emphasis will be given to supporting key user agencies, such as the Births and Deaths Registry, the Registrar Generals, the Ghana Revenue Authority, and Immigration Services[16]. Project funds will also help finance the adaptation of the operating processes of these user agencies, and their software systems, to allow e-ID verification services offered by the NIA. Support to these agencies will be in form of limited equipment, upgrade of databases, and related capacity building. The interventions will help user agencies that aim to use the national identity as a common identifier for providing services to citizens, or collecting revenue from citizens, to properly identify people. The digitization assistance will focus on capturing historical data of user agencies that are kept in paper form, as opposed to new data that should be captured electronically. The Government will promote the use of digital platforms and virtualized workforce, where possible, in order to carry out digitization

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[16] Others could include the Department of Social Welfare, Electoral Commission, Statistics Department, Social Security and National Insurance, DVLA, Tertiary Institutions, Passport Office, the National Health Insurance Authority and the Police Services. The NIA is expected to develop service agreements with user agencies to govern the terms of service and the security requirements. The NIA is also expected to extend verification services to private institutions, especially in the financial sector, on commercial basis.

tasks, thus creating job opportunities for the youth in Ghana. Digitization can offer unique employment opportunities for the youth to scan paper records, index and manage the resulting electronic data, and set up searchable and usable electronic databases. Virtualized workforce, as is illustrated by microwork and online contracting, allow the crowdsourcing of a large workforce across the country at competitive rates. The MoC, through the ITES Secretariat will partner with the private sector for setting up technology systems for digitization. The MoC, through the support of the ITES Secretariat will also leverage the ten regional innovation centers, built under the eGhana project, as possible places where digitization work may be carried out. The digitization work builds on earlier work done with the support of the Rockefeller Foundation and in collaboration with the private sector. The work allowed training and employment of disadvantaged youth to digitize the first batch of RGD, GRA and Births and Deaths records through an Impact Sourcing Program. There is opportunity for further partnering with the Rockefeller Foundation to scale up the digitization program.

## Component 3 - Scale up of Applications to improve service delivery in priority sectors (US$41.55 million)

86. The component supports the use of ICT in the priority sectors of health and education where the country lags in the Millennium Development Goals (MDGs), and to complete e-applications already initiated under the current eGhana project. The component focuses on reaching out to the underserved people in remote and rural areas, including the northern parts of Ghana, women and the youth,  and to the disadvantaged and the disabled. Collaboration with the private sector will be a key in the development and delivery of e-applications and e-services. Details of project subcomponents are given below:

87. *Support for Integrated eHealth System in Ghana (US$4.0 million):* The subcomponent will help advance the development and use of eHealth in Ghana by focusing on foundational systems and outreach to the underserved communities in the country. The project activities are centered on:

    i) <u>Situational analysis and strategic plan for eHealth:</u>  The project will support an assessment of the current state of eHealth in Ghana, and help develop a strategic plan for an integrated eHealth system. eHealth can strengthen the existing healthcare systems and facilities in Ghana with the objectives to: (a) extend outreach of medical services to rural and peri-urban areas, using low-cost, mobile-based technologies, and improved training of community health professionals; (b) improve communications between rural and urban healthcare professionals, and extend collaboration between Ghana's medical professionals and counterparts abroad, and within medical community in Ghana; and (c) provide basic information on health information to citizens in local languages using, websites, mobile phones, or call centers, in order to improve access to basic healthcare, hygiene, and public health. Activities under eHealth can be done in collaboration with local and international NGOs already working on e/mHealth and on neo-natal services.

ii) <u>Medical call centers:</u> The project will support the MOH to set up medical call centers in existing hospitals or health facilities, or upgrade the functions of existing call centers, to help patients seeking urgent healthcare. The work will be done in collaboration with the private sector as applicable. 2-3 medical call centers are envisaged under the project, to address the needs of remote and least developed areas of Ghana. These medical call centers will provide essential linkages with physicians and urban healthcare centers, and provide urgent and emergency healthcare advice to patients seeking medical care. Patients in need of medical attention will be able to dial a publicly-advertised citizen access number for assistance. Phone calls will be directed to the nearest medical call centers which are expected to be well-versed in healthcare services, and staffed with nurses, paramedics, emergency medical technicians, or community health workers as needed. The centers will provide immediate medical advice to patients, and necessary referrals to medical experts or healthcare centers. The medical call centers will interface with emergency coordinator centers in Ghana that provide emergency medical services and ambulance dispatches. Project funds will be used for equipment, operating costs, and capacity building for the setup of the medical call centers.

iii) <u>Wireless Networks for Selected District and Regional Health Centers:</u> The subcomponent will address the critical need of connectivity for selected district and regional health centers in Ghana. The project will support NITA to provide connectivity to selected health centers from the least developed parts of Ghana. These health centers face a greater need to improve quality of healthcare. Selected health centers will be eligible for a high-speed internet (e.g. WiMAX/LTE) installation, equipment, devices, and up to 3Mbps of dedicated capacity for the project duration of 5 years.[17] NITA will work with NCA to leverage available spectrum that may be used to cost-effectively provide connectivity to remote hospitals.

iv) <u>Digitizing medical records:</u> The project will support the Ministry of Health(MOH) to digitize health records of selected teaching hospitals or health centers. The modalities for doing this work will be similar to the general digitization work anticipated above. Electronic health records will significantly improve the management and delivery of health care services in targeted facilities in Ghana.

88. ***Teachers' Network, Educational Portal, and Capacity Building (US$8.05 million):*** The subcomponent will support the use of ICT in education, with a focus on teacher training and local content development. The project activities are centered on:

i) <u>Teacher and student education portal:</u> The project will support MOE, GES, and teachers, in collaboration with the private sector, to set up teacher and student portals aimed at improving education quality at secondary level. The portal will

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[17] Estimated that broadband access of more than 2Mbps allows about 20-25 networked computers to use simultaneously web-based content without much disruption.

aggregate and host teaching and learning content for benefit of teachers and students. The content will include locally produced content, and assemble the adaptation of online educational content readily available on the internet. The project will work with the various teachers' associations to support the development and maintenance of the portal where teachers, students, parents and researchers could have access to good practice lesson plans, curricular content such as courses, exercises and quizzes, teaching and learning aids, on-line advice, and educational research. The portals could also be platforms for knowledge exchange with national and international networks and for participation in relevant discussion forums.

ii) <u>Wireless Networks for Selected Secondary Schools:</u> The project will address the critical need of connectivity for selected secondary schools in Ghana. The project will support NITA to provide connectivity to 200 of the most disadvantaged secondary schools. These schools face a greater need to improve quality of teaching. Selected schools will be eligible for a high-speed internet (e.g. WiMax/LTE installation), equipment, devices, and up to 3Mbps of dedicated capacity for the project duration of 5 years. NITA will work with NCA to leverage available spectrum that may be used to cost-effectively provide connectivity to remote schools and hospitals. The project will provide computing equipment for computer labs in secondary schools that have a clear plan for use of ICT in education, and have physical facilities to house computing equipment. Where selected secondary schools already have a functioning computer laboratory, wireless fidelity (WiFi) could be added.

iii) <u>Capacity building for teachers and educational leaders:</u> The project will support training to teachers as a part of in-service teacher training for new and practicing teachers. The training will focus on the use of computer- and internet-aided education (beyond ICT literacy). The project will leverage the facilities of the Ghana-India Kofi Annan Center and other international trainers as needed, for the delivery of ICT training and will determine the minimum ICT competency to be provided under the project which will support project activities. Teachers to be trained will cut across the key subject areas including Science, Mathematics, and other technical subjects. Teachers will be selected from the secondary schools indicated above. Teachers will receive an initial 5-10 days of face-to-face training during the first year, and another 2-5 days of training including virtual training every following year during the project life cycle. The actual time needed for the training will be confirmed during project implementation. The training will ensure that teachers are refreshed and updated on new educational technologies including the use of internet and the ability of parents and guardians to access the educational results of their wards.

iv) <u>Developing digital educational content:</u> The project will support the MOE and GES, in collaboration with the private sector, to develop locally relevant educational content for schools. The work will be done in collaboration with the subject associations, such as GAMT, GAST, and with the wider technology

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developer community. Using open education resources, the project will support the development of state-of-the-art and relevant educational content. Emphasis will be given to the subjects of English, Mathematics, and Science to promote effective teaching and encourage learning.

**<u>Selection of Senior High Schools to benefit under the project</u>**

a.  The project will focus on the senior secondary level of education and will focus on public senior high schools.  The criteria for selection will be schools which have the lowest proportion of candidates obtaining aggregates 6 to 36 on the West Africa Senior Secondary Certificate Examination (WASSCE).  From an initial ranking of schools using the WASSCE results for 2012, schools which could benefit under the project had between zero to 11% of their students scoring aggregate 6 to 36 on the WASSCE.  Given that Senior Secondary Schools are usually district based, it may be possible if this becomes available in time, to include poverty criteria in the selection of schools for e.g. poverty indices at district level.

b.  <u>School Readiness and Needs Assessment</u>
    As part of the selection procedure, technical teams, comprising NITA and the MOE, GES, and others will visit each school with a check-list to collect relevant information about the readiness of the school to benefit from support under the project.  The check list will include but will not be restricted to the existence of a sustainable ICT plan and a budget with potential to maintain the program, existence of power/alternative power, physical security of equipment, strong school leadership, a functioning school board, the existence of internet usage on the time-table, and the appointment of a school coordinating team. The needs assessment would advise on the functionality of existing computers, anti-virus, and ability to support course programs and software propose under the project. The assessment will also advise on the need for networking, the levels of ICT knowledge among teachers and students, the qualification of ICT coordinators in the schools and their ability to handle minor maintenance issues.

c.  <u>ICT Plans and Sustainability</u>
    Beneficiary schools will be required to prepare sustainable ICT plans to be funded under the project and signed off by the school ICT coordinator, the head teacher, a representative of the school's leadership, the chairman of the school board and a representative of the PTA.  The involvement of key representatives is critical for the successful implementation of the plan.  These plans will include identifying the key champions at the school level; providing adequate space for ICT laboratory set-up; identifying and preparing the number of teachers to be trained and the justification for training; planning for the replacement and maintenance of equipment; indicating the recurrent budget for the program i.e. provision of materials; plans for protecting the system and for virus control; facility use time-table for teachers and students; other devises that could be used for teaching and learning e.g. mobile devices; number of mail service users, e.g. teachers, students,

administrative staff etc.; amount and proportion of internally generated funds allocated to maintenance e.g. ICT levy.

d. Ensuring usage of portal, internet

To ensure that teachers and students use the portal and the internet, critical content will be made available on the portal and using the internet. Working with the University of Education, Winneba, the content for the Untrained Teacher Diploma in Basic Education (UTDBE) will be made available on the teacher portal for teachers undergoing the training to access. Messages for teachers and students, including announcements will also be posted on the portal. Beneficiary schools will be grouped and tasked to complete assignments using information from the internet. At the school level, there will be the need to provide internet connectivity in the school staff common rooms so that teachers do not have to go to the computer laboratories if they need to use their computers. Laptops could also be provided to be rotated among subject teachers to facilitate the preparation of lesson notes using information from the internet. Assignments for students will be given by teachers and handed in by students via the internet. Virtual notice boards will be created to provide school and educational information for teachers and students. The academic calendar of the school will include sessions for internet and ICT use.

e. Measuring results

The National Information Technology Authority (NITA) will be tasked to monitor the traffic on the teacher and student portals and on the use of the internet by teachers and student beneficiaries under the project. NITA will also monitor the number of schools with high-speed internet (e.g. WIMAX/LTE) connection. The number of direct beneficiaries including teachers, students and administrative staff will be monitored using data from the Education Management Information System (EMIS) with validation by the schools.

f. Sensitization and IEC

Sensitization and information on the project design and implementation is important for fostering ownership and implementation success. Collaboration among IEC teams in the MOC, MOE, and World Bank colleagues working on communication will be encouraged. An IEC plan for the education sub-component will also be developed and implemented.

89. *Support for e-Services (US$1.0 million)* – The project will support NITA to build on e-services piloted under eGhana project. The e-services include: (i) content management application for hosted services on online portals; (ii) payment gateway to enable electronic payments for online services; (iii) electronic form application to collect citizen information; and (iv) ICT applications to electronically manage documents. Project funds will support expanded services from these institutions such as online applications for permits and licenses, visas, National ID Cards (both internally and externally), and other services.

90. *Support for Existing e-Applications (US$28.5 million)* – The subcomponent supports NITA to complete existing e-government applications being developed for four government agencies and departments under the eGhana project. Procurement packages of these e-applications have already been completed, and adequate funding is not available under the eGhana project. Project resources will finance the hardware, software, change management, and institutional capacity building for the implementation of: (i) **an e-Parliamentary System (US$3.5 million)** that will allow a paperless flow of information within the Parliament; (ii) **an e-Justice system (US$5 million)** that will improve on the effectiveness and efficiency of justice delivery in Ghana. It is expected that the e-justice system will be interfaced with the Ministry of Justice and Attorney General's Department to improve efficiency of the justice delivery system in Ghana ; (iii) **an e-Procurement system (US$5 million)** that will provide a single platform for "e-Sourcing", "e-Tendering", and "e-Purchasing" within government in Ghana; and  (iv) **an e-Immigration system (US$15 million)** that will improve immigration and border control services in Ghana. e-Immigration is in implementation phase and the tender documents for the remaining 3 e-applications have been completed. Additional details on the four e-Applications under eGhana project are given in the box below.

*Existing e-Applications under eGhana*

- *e-Parliament -* The Ghana Legislative Assembly will soon implement the 'e-Parliamentary System', marking a high-tech shift in the way business is conducted in the Parliament House. "Under the e-Parliamentary System, the members will be able to file their queries to the government 'online', leading to speedy and paperless flow of information. Other important features of the initiative will be the digitization of the state Assembly Library and the ability of members of parliament to vote on-line on important issues, even when they are out of out of the house. A contract awarded under the eGhana Project has completed the requirements specification and draft bidding documents. Project funds will support hardware, software and institutional capacity building for the implementation of the e-Parliament system.

- *e-Justice* - The Ministry of Communications has initiated a process to assist the Judicial Service in developing an e-Justice System to improve on the effectiveness and efficiency of justice delivery in Ghana. Project funds will support the role out of an integrated solution for the Ghana Judicial Service and Ministry of Justice and Attorney General's department which will include an Integrated Criminal Justice Information and core Court Management System, and institutional capacity building for the implementation of the CMS and CJI. Draft Tender documents have already been prepared for this activity. Project funds will also support the development of videoconferencing facility for selected centres of Judicial Service and Ministry of Justice and Attorney General's departments.. The interface between the Judicial Service and the Attorney General's office will improve the efficiency of the justice delivery system in Ghana.

- *e-Procurement* - The objective is to develop a plan for the phased development of an e-procurement strategy and design that will enable the PPA to provide a single platform for "e-Sourcing", "e-Tendering", and "e-Purchasing". Project funds will support hardware, software and institutional capacity building for the implementation of the e-Procurement solution. Draft Tender documents have already been prepared for this activity.

- *e-Immigration* - The e-immigration system scope includes the provision of full business solution (hardware, software and communications with first year support and maintenance) for the Headquarters and the six major points of entry into the country. System functionality is expected to include, but not necessarily limited to efficiency improvements in: arrivals and departure controls including identity and document verification; Extensions of Stay and Permits processing; and Border control systems. The system is in the process of being deployed.

## Component 4 – Project Management Support  (US$7.1 million)

91. The MoC will be the executing agency of the project, and will have the overall responsibility for overseeing the implementation of the project. Given the multi-sectoral nature of the project, the MoC will work with relevant sector agencies for effective implementation. The MoC has had extensive experience in implementing the World Bank

financed eGhana Project through a dedicated Project Implementation Unit (PIU). The PIU which consists of a Project Coordinator, M&E Specialist and Procurement Specialist, has been complemented by a core group of technical consultants from NITA and ITES. The PIU has managed the day-to-day implementation and supervision. The PIU and consultants have also conducted financial management, procurement, disbursement, monitoring and evaluation, progress reporting, and communication functions. It is expected that the project will leverage the expertise of these experts. Project funds will support the implementation team for the overall project coordination and management, and will provide communication, procurement, financial management, and M&E. Additional resources will be provided as needed, to strengthen capacity. In view of the innovative and transformative nature of the project, funds will be allocated to effective communications, documenting successes and failures, as well as assessing the impact of the project on project beneficiaries.

92. The project allocates a contingency of US$3.75 million for expenses not envisaged for the implementation of project.

# Annex 3: Implementation Arrangements

## Overall coordination and oversight

93. **Project timeline:** The implementation period of the eTransform project is five years between September 2013 and September 2018.

94. **Implementing agency and organization:** Ministry of Communications (MoC) will serve as the executing agency of the eTransform project and will liaise with sectoral Ministries and implementation partners (see figure below). A Project Implementation Unit (PIU) within MOC will serve as the unit responsible for implementation and coordination. Several organizations and government agencies will support project implementation as follows:

    i)   Inter-Ministerial Oversight Committee – for strategic guidance to government and MoC to ensure effective coordination across government;

    ii)  Project Implementation Unit (PIU) within MoC – for overall implementation and coordination of the project;

    iii) National Information Technology Agency (NITA) within MoC – for technical support to agencies across government;

    iv) Information Technology Enabled Services (ITES) Secretariat within MoC – for coordination and facilitation of IT-enabled services industry and innovation centers in Ghana;

    v)  Data Protection Commission (DPC) within MoC – for overseeing the protection of personal data of citizens and organizations in Ghana; and

    vi) Technical Committee –The MoC will constitute a Technical Committee which will comprise of the relevant sectors/units, including the National Identification Authority (NIA), Ministry of Education (MoE), Ministry of Health (MoH), Ministry of Justice, Attorney General's Office, Ministry of Foreign Affairs (MoFA) and other key beneficiary institutions, and the private sector. The Technical Committee will be headed by the Chief Director of the MoC. The committee will assist the PIU with implementation and review of various sub-components.

**Implementation Arrangement of eTransform Ghana**
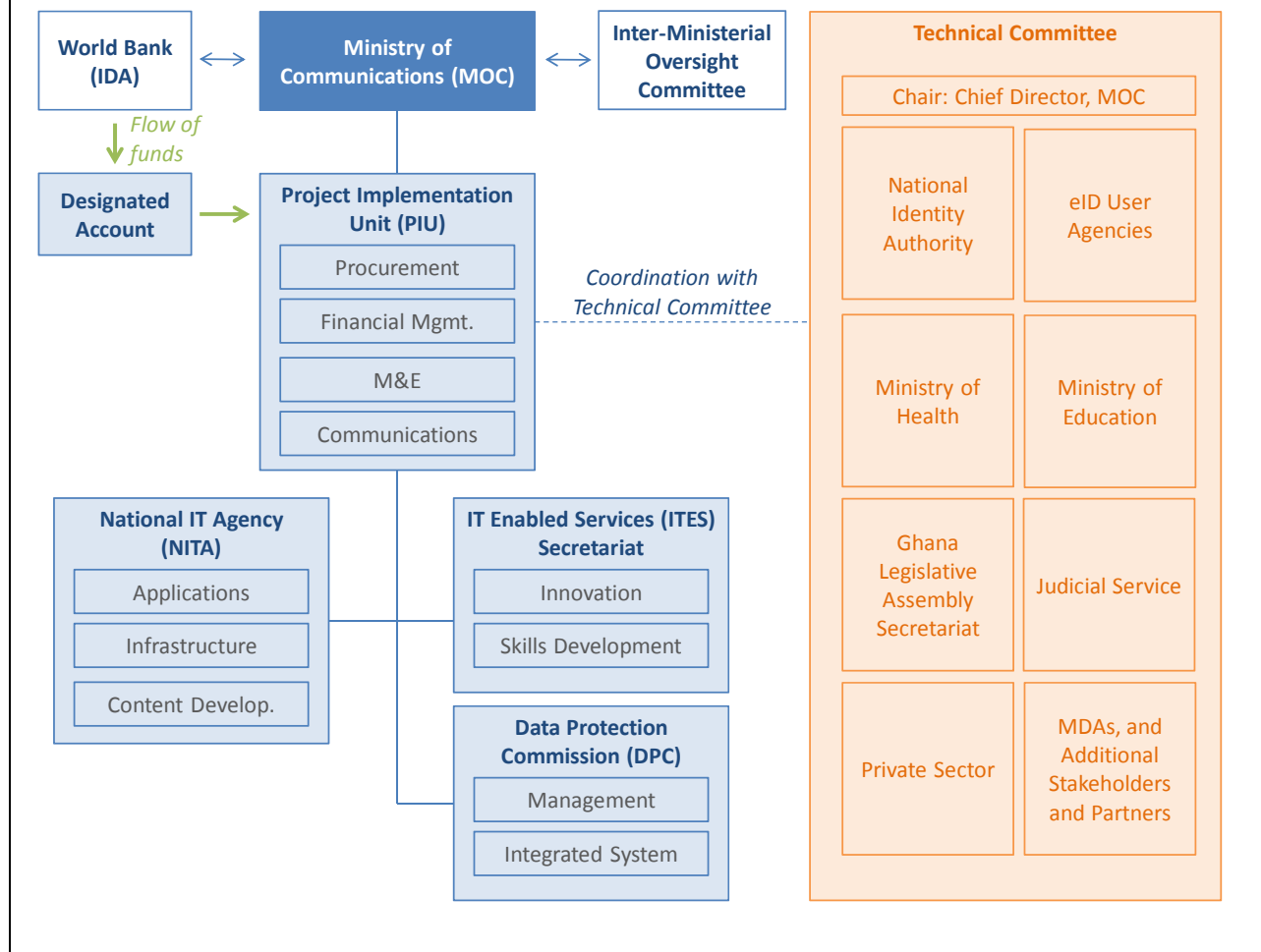


95. ***Inter-Ministerial Oversight Committee:*** To ensure that the eTransform project continues to receive priority government attention and has requisite support and oversight, the MoC has re-constituted the Ministerial Oversight Committee established during the implementation of the eGhana project into an Inter-Ministerial Oversight Committee which is chaired by the Deputy Minister for Communications and consists of representatives from the various line Ministries and agencies being supported under eTransform project. These include the National Identification Agency (NIA), Ministry of Health (MoH), Ministry of Education (MoE), Ministry of Justice (MoJ), Attorney General's (AG) Office, and Ministry of Foreign Affairs (MoFA). The Committee will provide strategic guidance to the government and MoC to ensure effective coordination across the various MDAs, Ministries, the private sector, and stakeholders. It will be responsible to ensure that the Project Development Objectives (PDO) are achieved, and will take key decisions to ensure smooth implementation of the project. The Committee will be supported by the PIU of the MoC on operational matters, and by NITA, the ITES Secretariat, and technical focal points of line Ministries on relevant technical matters. The Committee will report implementation progress to the Chair and will meet at least four

times a year (at the end of every quarter) to guide and maintain the progress of the project and make high-level decisions that facilitate project performance.

96. ***Project Implementation Unit:*** A Project Implementation Unit (PIU) within MoC will oversee the implementation of eTransform project, and coordinate activities across implementing partners, stakeholders, and organizations. As part of World Bank eGhana Project, the MoC had put in place a PIU responsible for the overall coordination and management of the eGhana Project. The PIU has also been responsible for the procurement, financial management, and M&E functions. The eTransform Project will leverage the existing expertise of the PIU, and strengthen capacity as needed. The PIU team will be composed of:

- Project Coordinator who will report to the Minister of Communications through the Chief Director of the MoC;
- Procurement, financial management, legal, policy and M&E specialists;
- ICT experts (multi-sectoral under NITA and ITES Secretariat); and
- Support staff.

Most of the staff have already been hired under the eGhana project. There will be further capacity strengthening as needed.

97. The PIU will serve as the administrator of, and fiduciary agency for, the funds received under the eTransform project, and will handle all administrative matters in accordance with the Project Implementation Manual (PIM). It will ensure financial management, handle all project disbursements, including the preparation and submission of replenishment requests to IDA. The PIU will be responsible for maintaining all management information systems (MIS) of the project for tracking progress of components, as deemed required in the PIM, in terms of financial performance, meeting implementation targets, monitoring the performance of the project. Furthermore, the PIU will prepare annual work programs and budgets and, if necessary, review the reallocation of resources across the various components of the project in consultation with IDA, as lessons emerge during the course of project implementation.

98. The main functions of the PIU will include, *inter alia*, the following:

- Carrying out procurement of goods and services under the project. In doing so, the PIU will work closely with technical experts from within MoC, the ITES Secretariat, NITA and relevant beneficiary agencies;
- Providing assistance to ITES Secretariat and NITA on project management, procurement, implementation supervision, and technical advice as required;
- Monitoring overall progress of implementation on a monthly basis and evaluating project performance using ICT-based tools and mobile-based beneficiary feedback mechanisms;
- Acting as the focal point for communication with the World Bank supervision missions;
- Acting as the focal point with technical teams within respective Ministries and MDAs
- Compiling and furnishing Interim Unaudited Financial Reports to the World Bank on a quarterly basis; and

- Communicating project results to the stakeholders, including the inter-Ministerial Oversight Committee, Technical Committee, development partners, and the general public.

Additional details of the PIU's responsibilities will be included in the Project Implementation Manual.

99. *National Information Technology Agency (NITA):* As part of the implementation arrangements under eGhana, the MoC had established the National Information Technology Agency (NITA, previously known as GICTED) to provide technical support to agencies across government. The National Information Technology Agency Act, 2008, passed by the Parliament, authorizes NITA as the government agency responsible to regulate the provision of ICT, ensure the provision of quality ICT, promote standards of efficiency, and ensure high quality of ICT service for government institutions. Under eTransform Ghana project, the MoC will delegate the day-to-day implementation and supervision for the e-Government applications components to NITA. NITA will be responsible for technical support for the e-Government applications in partnership with the private sector. NITA will report to the Ministry through the PIU. NITA will liaise with the Project Coordinator of the PIU on technical terms of references, and provide implementation support on the e-Government applications components. Project funds will provide support for key activities of NITA including targeted operating costs, and salaries of Technical Officers who are responsible for looking after applications, infrastructure, and relevant programs and projects as indicated in the Project Appraisal Document and Implementation Manual.

100. *Information Technology Enabled Services (ITES) Secretariat:* The ITES Secretariat within MoC has had prior experience in coordinating IT-enabled industry development under eGhana. The ITES Secretariat has also gained significance experience partnering with the Rockefeller Foundation to undertake a pilot program to digitize records of some key MDAs, and develop training programs for BPO agents. Under the eTransform Project, the ITES Secretariat will be responsible for managing the sub-components to advance innovation and IT-based entrepreneurship in Ghana, and collaborate with organizations including the Ghana Multimedia Incubator Center (GMIC) in nurturing young entrepreneurs in the IT industry. The ITES Secreteriat will lead the government's digitization efforts, assist with the development of mhubs and mlabs, and provide training support for medical call centers, as well as coordinate training for secondary school teachers.

101. To ensure that the eTransform Project is able to directly engage with the IT/ITES industry, eTransform project will provide minimum operational support for Industry Associations in the IT and Value Added Services space in Ghana.

102. *Data Protection Commission (DPC):* The Data Protection Act, 2012, passed by the Parliament, authorizes the establishment of the Data Protection Commission (DPC) under MoC to protect the privacy of individual and personal data in Ghana. The DPC regulates the processing of personal information in Ghana, and oversees, manages, and enforces the processes that are required to obtain, hold, use, or disclose personal information in the

country. The MoC will help facilitate the development of the institutional systems and capacity of the newly created DPC under the eTransform project.

103. ***Technical Committee:*** The PIU will coordinate activities under the project components with several implementation partners, including, but not limited to:

- The National Identification Authority, under the Office of the President
- The Ministries of Health and Education
- The Ministry of Justice and Attorney General's Department
- The Ghana Judicial Service
- The Ghana Immigration Services
- e-ID user agencies, the Births and Deaths Registry, the Registrar Generals Department, and the Ghana Revenue Authority
- Digitization user agencies including those above and the Department of Social Welfare, Electoral Commission, Statistics Department, Social Security and National Insurance, the Drivers and Vehicle Licensing Authority, Passport Office, the National Health Insurance Authority and the Police Services.

104. Each implementation partner will provide a representative or expert to serve as focal point. The representatives or experts will be responsible for providing necessary data and inputs, in coordination with their respective Ministries. They may also represent their agency on the technical committee as determined by the MoC. The PIU and Technical Committee will meet on a regular basis, and prepare quarterly and biannual briefs of implementation progress as determined in the PIM.

**Financial Management, Disbursements and Procurement**

*Financial Management*
## A. Introduction

105. As part of the fiduciary responsibilities, a preliminary FM assessment was done on the Ministry of Communication (MoC), the lead implementing agency for the e-Transform Ghana Project. The preliminary assessment concludes that the existing arrangements for the continuing adequacy and reliance of the financial management systems for the project are adequate and meet the minimum requirement per OP/BP 10.02. Overall, the assessment of the control environment indicates that the FM risk is moderate (medium driven by impact).The MoC is presently involved in the implementation of the on-going eGhana project and it is expected that the financial management function will continue to reside within MoC and rely on the existing structures and systems.

**Assessment of the FM Sub Units**

## B. Budgeting
106. The MoC follows the budget preparation guidelines as per the Financial Administration Act (2003), the Financial Administration Regulation (2004) and also the annual budget guidelines issued by the Ministry of Finance. It is expected that the budgeting for the IDA

project will follow the same process and include discussion with stakeholders i.e. the participating agencies and MDAs. The budgets are work plan based and fully integrated into the MoC planning processes.

107. During implementation, the MoC and the beneficiary agencies will work together to prepare a consolidated annual budget and work plan based on the agreed program to be financed as per the PAD and Financing Agreement. The annual work plan will be reviewed and approved by the Project Technical Committee and subsequently forwarded to IDA for reference purposes. The budget submission will also be supported by procurement plan thus giving management indications of expected project cash flow needs. The project's budget will be incorporated into the quarterly interim un-audited financial statements for comparison and monitoring with actual expenditure. The current budgetary control processes used mostly for the government's discretionary budget are capable of monitoring commitments and outstanding balances and this helps to reduce risk of multiple payments.

## C. Accounting

108. The DFA at the MoC, working under the direct supervision of the Chief Director is responsible for overall fiduciary aspects of the Project. The Accounts Unit, under the DFA has direct functional responsibility for maintaining the accounting records of the ministry. The Unit is headed by the Principal Accountant. However, in carrying out this mandate, the specific day to day transaction processing and reporting for the project will be assigned to the dedicated 'Project Accountant' of the grade of Principal Accountant. The Accountant, a staff of CAGD, is a qualified chartered accountant with relevant years of experience, having worked at different MDAs within the government service.

109. In terms of systems, the MoC currently relies on a combination of spreadsheets and manual ledgers and though this is fairly adequate it can be made more efficient through acquiring an automated accounting software. Presently the GoG is in the process of rolling out an automated integrated financial management system (GIFMIS) using Oracle Financials and is currently transitioning from a manual based system to an automated accounting system. Until such time that the roll out is fully completed, accounting for use of the project funds, using a cash basis of accounting, is expected to be carried out by the MoC using the present manual systems. However should there be any delays, and in order to improve upon the level of efficiency of the staff, it has been recommended that the project procures a suitable accounting package and rely less on excel based spreadsheets.

## D. Internal Controls

110. In adopting country systems for implementation, the project's internal controls will be based on the government established accounting and internal control guidelines as documented in the Financial Administration Act (2003) and the Financial Administration Regulation (2004), and informed by the Internal Audit Agency Act (2003). The ministry has laid down internal control procedures and processes that ensure that transactions are approved by appropriate personnel and ensure adequate segregation of duties between approval, execution, accounting and reporting functions. The MoC has a functioning Internal Audit Unit

(IAU) headed by a Director, Internal Audit who is responsible for ensuring compliance to established internal controls. The internal audit functions will be supplemented by periodic reviews and field visit to the beneficiary agencies. Our assessment indicated that though the internal audit and control environment is adequate for project implementation; the role of the internal audit will have to be enhanced in order to ensure the risk is mitigated at all levels of implementation by adopting a risk based approach and a more proactive approach to monitoring with a focus on systemic checks and controls rather than transactional.. As part of project management, funds must be made available to support the training and capacity needs of the internal audit units. The assessment of the internal audit and control environment concludes that it is satisfactory and can be relied upon to safeguard the use of project funds.

### E. Funds Flow & Disbursements

111. The proposed financing instruments is an investment lending operation of an amount estimated at US$97 million to be implemented by the MoC over a five year period. Funds for implementing the project will all be disbursed to a segregated designated account managed and operated by the Principal Accountant under the direct supervision of the DFA. Although implementation activities will occur at the agency level, there will be a single designated account maintained at the headquarters from where further transfers/payments will be processed. This arrangement to use a central account is important to ensure that the Accounts Unit has oversight responsibilities over transfers and payments related to the implementation of program activities. As part of fund flow design it has been agreed that in order to facilitate payment of certain local expenditures, the project may operate a local currency bank account on an imprest system.

112. **Disbursement arrangements and use of funds-** Proceeds of the facility will be used for eligible expenditures as defined in the Financing Agreement. Disbursement arrangements have been designed in consultation with the Recipient after taking into consideration the assessments of MoC financial management and procurement capacities, the procurement plan, and cash flow needs of the operation. To ensure flexibility during implementation, the proposal is to have two broad omnibus disbursement categories aligned to the components and parts of the project as defined in the Financing Agreement.

| Category | Amount of the Credit Allocated (expressed in SDR) | Percentage of Expenditures to be Financed (inclusive of Taxes) |
|---|---|---|
| (1) Goods, non-consulting services, consultants' services, Training and Operating Costs for Parts A (except Part A.2), B, C and D of the Project | 62,200,000 | 100% |
| (2) Works, goods, non-consulting services and consultants' services required for Innovation or Training Plans under Innovation and Training Grants for Part A.2 of the Project | 2,000,000 | 100% of the amount disbursed |

113. Based on the assessment of financial management, the proceeds of the credit will be disbursed to the project using report based disbursement (Interim Financial Reports) arrangement. Subsequent replenishments of the DA would be done quarterly based on the forecast of the **net** expenditures for the subsequent 6 months after the first quarter, and on duly approved withdrawal applications submitted by the MoC and supported by Interim Financial Reports (IFRs). Additional instructions for disbursements will be provided in a disbursement letter issued for this project.

114. **Retroactive Financing** – Retroactive financing not exceeding US$5,000,000 will be considered eligible for expenses incurred under all components and not later than the agreed date in the Financing Agreement.

**Competitive Grants**

115. Under Component 1, the project will provide funds for supporting activities including mHubs and mlabs, in collaboration with World Bank's info*D*ev, to promote ICT-enabled entrepreneurship and innovation in Ghana. These funds will be granted on a competitive basis and the criteria for eligibility and modalities for accessing and reporting will be detailed in the Innovation and Grants Fund Manual. In addition, as part of the fiduciary responsibilities of the MoC, the terms of reference for the annual audit will include a verification of the funds transferred to and the expenditure incurred by beneficiaries.

### F. Financial Reporting

116. The Project Coordinator at the MoC and the DFA are responsible for ensuring that the project is able to prepare and report on the financial transactions. During implementation the Project Accountant will be required to prepare and submit separate quarterly Interim Unaudited Financial Reports (IFRs) to account for activities funded under the project. IFRs for the project are expected to be submitted not later than 45 days after the end of each calendar quarter. These reports must cover all IDA funds received for the project as a whole as well as government counterpart funds, if any. The formats and content of reporting will be agreed prior to negotiations.

117. Additional annexes to the quarterly project IFRs, that will be submitted shall include (a) source and uses of funds (b) actual and forecast cash flow statements according to components, sub components and activities; (c) use of funds by activity within a component, including transfers made under the competitive grants; and (d) designated account reconciliation statement. In addition to the quarterly reports, the Director of Finance would prepare and submit to the IDA, the project's annual audited financial statements.

### G. External Audit

118. In line with its mandate, the Auditor General, as per the Ghana Audit Service Act (Act 584) is solely responsible for the auditing of all funds under the Consolidated Fund and all public funds as received by government ministries, agencies and departments. As is the practice, due to capacity constraints, it is usual for the audits to be contracted out to private firms. During implementation of the eGhana Project this arrangement worked satisfactorily;

and the project consistently complied fully with the audit requirements and has never had an adverse opinion issued. In this regard, and consistent with the use of country FM systems, the Ghana Audit Service (GAS) will conduct the audit of the project's financial statements and furnish copies to IDA within 6 months of the end of each fiscal year of the GoG. However if the GAS is unable to conduct the audit, in collaboration with the GAS the audit will be outsourced on a competitive basis to private firms subject to the Bank's necessary procurement and technical clearance of the terms of reference (TOR).

## H. Conclusion

119. A description of the project's overall financial management arrangements above indicates that they satisfy the Bank's minimum requirements under OP/BP10.02. In line with the Bank's ORAF rating the FM risk is assessed as Medium (medium driven by impact).

## I. Supervision Plan

120. Based on the risk rating of the project and the current FM arrangement, it is expected that in the first year of implementation there will be two onsite visits to ascertain adequacy of systems and how effective the country systems are being used to support implementation. The FM supervision mission objectives will include ensuring that strong financial management systems are maintained throughout project tenure. In adopting a risk-based approach to FM supervision, the key areas of focus will include assessing the accuracy and reasonableness of budgets, their predictability and budget execution, compliance with payment and fund disbursement arrangements, and the ability of the systems to generate reliable financial reports.

*Procurement*
## A. General

121. *Applicable Guidelines:* Procurement under the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011; "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011; "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15, 2006, and updated January 2011; and the provisions stipulated in the Grant Agreements. The general description of various expenditure categories for items to be financed are described below. For each contract to be financed by the credit, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Borrower and the Bank project team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

122. *Exceptions to National Competitive Bidding Procedures -* For National Competitive Bidding (NCB) for goods and works, the Borrower may follow its own national procedures

that are governed by the Ghana Public Procurement Act 663 of 2003, with the following exceptions noted below:

(a) foreign bidders shall be allowed to participate in National Competitive Bidding procedures;
(b) bidders shall be given at least one month to submit bids from the date of the invitation to bid or the date of availability of bidding documents, whichever is later;
(c) no domestic preference shall be given for domestic bidders and for domestically manufactured goods; and
(d) in accordance with paragraph 1.14(e) of the Procurement Guidelines, each bidding document and contract financed out of the proceeds of the Financing shall provide that: (i) the bidders, suppliers, contractors and subcontractors shall permit the Association, at its request, to inspect their accounts and records relating to the bid submission and performance of the contract, and to have said accounts and records audited by auditors appointed by the Association; and (ii) the deliberate and material violation by the bidder, supplier, contractor or subcontractor of such provision may amount to an obstructive practice as defined in paragraph 1.14(a)(v) of the Procurement Guidelines.

123. *Advertising procedures:* In order to get the broadest possible interest from eligible bidders and consultants, a General Procurement Notice (GPN) will be prepared by each participating country and published in United Nations Development Business online (UNDB online), on the Bank's external website and in at least one national newspaper, or technical or financial magazine of wide national circulation in the Borrower's country, or a widely used electronic portal with free national and international access; after the project is approved by the Bank Board, and/or before Project effectiveness. The borrower will keep a list of received responses from potential bidders interested in the contracts.

*Procurement Strategy*

124. To ensure that procurement does not become a bottleneck and to assure the achievement of economy and efficiency, a strategy for managing likely difficult and complex procurement has been developed to guide implementation as follows:

a. The project consists of Large Information Technology (IT) and Systems (IS) contracts whose technical content is diverse and complex and could pose procurement challenges if not well managed. Thus, at appraisal the Borrower and the Bank team developed and agreed on strategies to mitigate any possible delays in the procurement processes by using single-responsibility contracting as follows:
   • Given that under the eGhana, the project supported the Borrower to set up National Agencies to be responsible for handling all IT issues and provided funds for capacity building, these agencies are now mature and are capable of managing complex IT issues including defining the scope of various IT services and developing supporting technical requirement and specifications for open competitive bidding process. The eTransform project will continue to support these agencies and rely on them to provide technical support and solutions as much as possible. Where specific capacity is found lacking, consultants will be engaged to provide required input as support.

Therefore, the preparation of terms of references and technical specifications and requirements shall be developed by NITA and ITES

- The Bank's standard bidding document for Supply and Installation of Information System will be used for all the large scale and complex IT systems contracts to be implemented under the project to ensure that suppliers assume responsibility for the supply and installation of functional IT facilities or systems well defined by the purchaser mainly in terms of performance specifications. Depending on the specific situation, single-stage or two-stage procurement processes will be adopted. Where the purchaser has the ability to define clear technical product or service specifications for the bidding process, and bidders have no real design discretion and Purchasers are not likely to benefit from technical solutions not already widely known, single-stage procurement will be adopted, even for complex procurements. The two stage-stage process will be adopted for situations where the purchaser cannot define explicitly clear technical product or service specifications and suppliers will have to assume responsibility for the design, supply, and installation of a facility defined by the Purchaser mainly in terms of performance specifications. Contracts likely to use Bank's standard bidding document for Supply and Installation of Information System include the (i) the cloud storage system, integrated system for data development, the e-government applications for which bidding documents are ready.

b. Under component 1, project funds will be provided to support and strengthen the entrepreneurial and job-creation potential of the country through the development of innovation hubs, including mHubs and mLabs. Innovation hubs will support young entrepreneurs in Ghana's mobile industry through venture incubation, and foster multinational and global partnerships. To ensure sustainable operations, *info*Dev will act as a technical partner through the course of project implementation and will provide technical support in the design of the innovation hubs, including the governing structure, management, and performance monitoring. The process of selection of the private sector firms to benefit from the grants will be done through calls of proposals in an open, competitive and transparent manner from private sector firms that meet certain required minimum criteria including necessary basic infrastructure and capacity to be agreed upon between the Bank and the Borrower. Details of the criteria for selection and procedures for the grant will be described in the Grants Manual, and agreed with the Bank. The procedures should be simple and participatory with suitable mechanism for checks and balances which infoDev will help the Borrower prepare. The manual will also provide for disclosure of information on the selection and grievance mechanism.

c. The steps for implementing the WAN connectivity for 200 schools will be carried out in two stages. The first stage which does not involve procurement will define clearly the process of selection of the schools that will benefit from the project, given that the demand will be more than the available budget under the project. The PIU in collaboration with the GES will develop criteria for the selection of the schools and agree with the Bank. The next stage which will be mainly procurement will define the number of schools per lot to be bided for. The packaging and slicing will be such as to make implementation easier for suppliers and also attract the needed competition.

d. The establishment of medical call centers to serve the poor may be done through Contractual arrangements for public-private partnership (PPP) through a competitive selection process for existing telcos or applications service providers to participate. In that case, contracts will be awarded in accordance with the provisions of paragraphs 3.14 and 3.15 of the Guidelines for Procurement under IBRD Loans and Credits issued by the WB in January 2011. Since the Bank does not have standard bidding documents for this type of procurement, the Bidding Documents will be prepared by the Borrower in consultation with the Bank and must be satisfactory to the Bank. In line with the national PPP policy, the MoFEP Public Investment Department, which is responsible for providing technical support for PPP within GoG and currently being supported under another Bank project, Ghana PPP Project, will provide technical support to the project in procuring the PPP contract.

125. **Procurement of Works**: At project preparation, no plans for works procurement under this project have been identified. In case of the need for minor works like rehabilitation of office buildings as part of installation of IT equipment, the use of shopping procedures will be adopted for works estimated to be less or equal to US$200,000. NCB procedures will be used for works costing more than US$200,000. For NCB, National Standard Tender Documents satisfactory to the Bank will be used while shopping procedures will be in accordance with paragraph 3.5 of the Procurement Guidelines and based on a model request for quotations satisfactory to the Bank. Direct contracting may be used in exceptional circumstances with prior approval of the Bank, in accordance with paragraphs 3.7 and 3.8 of the Procurement Guidelines.

126. **Procurement of Goods (approximately US$60.8 million):** Goods procured under the project would include specialized IT equipment and soft wares, office equipment, technical books, furniture, vehicles, computers and accessories, etc. Contracts for goods estimated to cost US$3,000,000 equivalent or more per contract shall be procured through ICB. Goods orders shall be grouped into larger contracts wherever possible to achieve greater economy. Contracts estimated to cost less than US$3,000,000 but above US$100,000 equivalent per contract may be procured through NCB. The procurement will be done using Bank's Standard Bidding Documents (SBD) for all ICB and for all others the National Standard Tender Documents satisfactory to the Bank. Contracts estimated to cost less than US$100,000 equivalent per contract may be procured using shopping procedures in accordance with paragraph 3.5 of the Procurement Guidelines and based on a model request for quotations satisfactory to the Bank. Direct contracting may be used in exceptional circumstances with the prior approval of the Bank, in accordance with paragraphs 3.7 and 3.8 of the Procurement Guidelines.

127. **Procurement of non-consulting services (approximately US$13 million):** Procurement of non-consulting services such as services for provision of internet connectivity and bandwidth, digitization of records, provision of SMS platform, distribution of printed National Identification Cards, servicing of office equipment etc. will follow procurement procedures similar to those stipulated for the procurement of goods, depending on their nature. The applicable methods shall include ICB, NCB and shopping.

128. **Selection of Consultants (approximately US$8.3 million):** Services of both national and international consultants will be required under the project carry out assignments in various areas of expertise, including: development of various applications, drafting policies and regulations to promote electronic delivery of services, certification, provision of various technical assistance; public-private partnerships in e-government; audits, etc.

    i)  <u>Firm</u> - Consultancy services which through firms would be selected using Request for Expressions of Interest, short-lists and the Bank's Standard Requests for Proposal, where required by the Bank's Guidelines. The selection method would include Quality and Cost Based Selection (QCBS), Quality Based Selection (QBS), Fixed Budget (FBS), Least Cost Selection (LCS), Single Source Selection (SSS) as appropriate. Contracts for consulting services will generally be procured through Quality and Cost Based Selection (QCBS) method. However, depending on the complexity and cost of the assignment other selection method could be used. Procedure of Quality-Based Selection (QBS) would be followed for assignments which meet the requirements of paragraph 3.2 of the Consultant Guidelines; Procedure of Fixed Budget(FBS) would be followed for assignments which meet the requirements of paragraph 3.5 of the Consultant Guidelines; and Procedure of Single-Source Selection *(SSS)* would be followed for assignments which meet the requirements of paragraphs 3.10-3.12 of the Consultant Guidelines and will always require the Bank's prior review regardless of the estimates cost. Consulting services estimated to cost less than $ 300,000 per contract under this project may be procured following the procedures of Selection Based on Consultants' Qualifications (CQS). Least-Cost Selection (LCS) would be used for assignments for selecting the auditors. For all contracts to be awarded following QCBS, QBS, LCS and FBS, the Bank's Standard Request for Proposals will be used.

    ii)  <u>Individual Consultants</u> - Specialized advisory services and technical assistance to MoC and other beneficiary agencies may be provided by individual consultants. Procedures of Selection of Individual Consultants (IC) would be followed for assignments which meet the requirements Section V of the Consultant Guidelines

129. Assignments estimated to cost the equivalent of US$300,000 or more would be advertised for expressions of interest (EOI) in United Nations Development Business (UNDB) online, in the Bank's external website through client connection, and in at least one newspaper of wide national circulation. In addition, EOI for specialized assignments may be advertised in an international newspaper or magazine. Shortlist of firms for assignments estimated to cost less than US$300,000 may be composed entirely of national firms in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines provided a sufficient number of qualified national firms are available and no foreign consultants desiring to participate has been barred. In such instances, the requests for expression of interests would be advertised nationally.

130. The procedure of Single-Source Selection (SSS) would be followed for assignments which meet the requirements of paragraphs 3.8-3.11 of the Consultant Guidelines and will always require the Bank's prior review regardless of the amount. Procedures of Selection of

Individual Consultants (IC) would be followed for assignments which meet the requirements of paragraphs 5.1 and 5.6 of the Consultant Guidelines. For all contracts to be awarded following QCBS, LCS and FBS, the Bank's Standard Request for Proposals will be used.

131. The use of civil servants as individual consultants or a team member of firms will strictly follow the provisions of paragraphs 1.9 to 1.13 of the Consultants Guidelines.

132. **Grants (approximately US$2.9 million):** The project intends to provide funds to support and strengthen the entrepreneurial and job-creation potential of the country through the development of innovation hubs, including mHubs and mLabs. Innovation hubs will support young entrepreneurs in Ghana's mobile industry through venture incubation, and foster multinational and global partnerships. To ensure sustainable operations, *info*Dev will act as a technical partner through the course of project implementation and will provide technical support in the design of the innovation hubs including its governing structure, management, and performance monitoring. The process of selection of the private sector firms to benefit from the grants will be done through calls of proposals in an open, competitive and transparent manner from private sector firms that meet certain required minimum criteria including necessary basic infrastructure and capacity to be agreed upon between the Bank and the Borrower. Details of the criteria for selection and procedures for the grant will be described in the Grants Manual, and agreed with the Bank. The procedures should be simple and participatory with suitable mechanism for checks and balances which info*Dev* will help the Borrower prepare. The manual will also provide for disclosure of information on the selection and grievance mechanism.

133. *Capacity Building, Training Programs, Workshops, Study Tours* **etc. (approximately US$4.2 million)***:* A number of target trainings and workshops are anticipated under the project to build capacity of MOC and other beneficiary agencies to assure efficient implementation, provide required knowledge and ensure sustainability. All training and workshop activities would be carried out on the basis of approved annual programs that would identify the general framework of training activities for the year, including: (i) the type of training or workshop; (ii) the personnel to be trained; (iii) the selection methods of institutions or individuals conducting such training; (iv) the institutions which would conduct the training; (v) the justification for the training, how it would lead to effective performance and implementation of the project and or sector; and (vi) the duration of the proposed training; (vii) the cost estimate of the training. Report by the trainee upon completion of training would be required.

134. **Incremental Operating Costs (approximately US$4 million)**. Operating Costs financed by the project are incremental expenses arising under the Project, and based on Annual Work Plans and Budgets approved by the Association to cover project implementation related expenditures such as office supplies, vehicle operation and maintenance, maintenance of equipment, communication and insurance costs, office administration costs, utilities, rental, consumables, accommodation, travel and per diem, but excluding the salaries of the Recipient's civil service.

135. The procedures for managing these expenditures will be governed by the Borrower's own administrative procedures, acceptable to the Bank.

*Assessment of the Agency's Capacity and Risks to Implement Procurement*

136. **Institutional Responsibilities for Procurement:** The MoC will serve as the Project executing agency and will have overall responsibility for the management of the project, including procurement management. The MoC has had extensive experience in implementing the eGhana project through a dedicated Project Implementation Unit, complemented by core group of consultants from the National IT Agency (NITA) and the ITeS Secretariat who have managed the day-to-day implementation and supervision of the e-Government and ITES components as well the financial management, procurement, disbursement, monitoring and evaluation, progress reporting and communication functions. The eTransform project will continue to use this existing arrangement for implementation. A detailed assessment of the capacity of the Project Implementation Unit of MoC to implement procurement actions for the project as part of the Bank's fiduciary requirements to ensure that implementing agencies have systems, structures and capacity to administer procurement in compliance with the Bank's Procurement and Consultants' Guidelines has been conducted.

137. **Capacity Assessment:** An assessment of the capacity of the MoC to implement procurement for the Project was carried out in accordance with the Procurement Services Policy Group (OCSPR) guidelines dated August 11, 1998, and the newer Procurement Risk Assessment & Management System (PRAMS). The objectives of the assessment were to (a) evaluate the capacity of the executing agency and the adequacy of procurement and related systems in place, to administer procurement; (b) assess the risks (institutional, political, organizational, procedural, etc.) that may negatively affect the ability of the agency to carry out procurement; (c) develop an action plan to address the deficiencies detected by the capacity analysis and to minimize the risks identified by the risk analysis; and (d) propose a suitable Bank procurement supervision plan for the project compatible with the relative strengths, weaknesses and risks revealed by the assessment. PRAMS organize the assessment into eleven risk factors that relate to controls at the level of the Implementing Agency (i.e. MoC).

138. The assessment concludes that the Ministry is in compliance with the country's procurement law, having a procurement unit in the permanent organization, having adequate internal technical and administrative controls and anti-corruption measures, and satisfactory appeal mechanisms for bidders. Given that procurement and other technical capacity presently in the permanent organization is low, the Ministry set up a dedicated Project Implementation Unit, complemented by core group of consultants from the National IT Agency (NITA) and the ITeS Secretariat to implement the eGhana project. The PIU now has extensive experience and has been proposed to implement the eTransform project.

*Key Procurement Risks and Mitigation Measures*

139. The assessment rates the overall risk for procurement as Moderate on condition that the PIU is maintained to implement the eTransform project, else the risk is high for the mainstream Ministry. The key risks identified for the mainstreamed set up in implementing procurement activities under the project relates mainly to (i) the lack of adequate capacity to manage procurement; (ii) the lack proficient skill and experience to undertake and manage normal and complex procurement; (iii) the lack of in-house experience with World Bank procurement procedures; (iv) lack of capacity to manage contracts and (iii) lack of internal audit procedures for donor funded projects.

140. The Table below summarizes key risks identified and proposed mitigation measures and/ or actions to be agreed upon to reduce the risk from high to moderate.

**Table A: Key Procurement Risks and Mitigation Measures**

| No | Key risks | Mitigation Actions | By Whom | By When |
|---|---|---|---|---|
| 1 | Inadequate Procurement Capacity in Mainstream MoC | Maintain present PIU staff arrangement under eGhana after the project closes in June 2014.<br><br>PIU shall remain staffed with the required capacity satisfactory to the Bank at all times during Project implementation.<br><br>PIU Procurement Consultant to offer hands-on/mentoring training to mainstreamed procurement staff to be recruited | Chief Director MoC | Before Project Effectiveness<br><br>In the course of project implementation<br><br>During project implementation |

| No | Key risks | Mitigation Actions | By Whom | By When |
|---|---|---|---|---|
| 2 | Lack of internal manual to guide procurement. Only Ghana Procurement law and Bank Guidelines in place. Agency staff may not understand fully the roles and responsibilities | Prepare Project Implementation Manual for the general project with clear procurement procedures and responsibilities.<br><br>Organize a project launch workshop for key staff of MoC and its agencies like NITA and ITeS Secretariat and other beneficiary agencies | MoC/PIU | Before Effectiveness<br><br>Before Effectiveness |
| 3 | Possible delays in processing procurement and payments. | Prepare and get first batch BDs, TORs and RFPs ready prior to project effectiveness<br><br>Setting of standard processing times<br>Continuous tracking and monitoring of contract performance.<br>Undertake yearly post-reviews in addition to compliance audit by Internal Audit Agency. | MoC/PIU | Continuous |
| 4 | Weak contract management at beneficiary agency level. | Identify and appoint qualified and experience focal persons from each beneficiary agency to oversee contract administration and coordinate activities with central PIU | Head of Beneficiary Agencies | Prior to project effectiveness |
| 5 | Record need to be protected from loss and unauthorized access | Develop good filing and data management system and give consideration to electronic data management. Carry out training in data management and filing | Project Coordinator | Within first year of project implementation |
| 6. | Realistic procurement plans covering the entire project not in place | At appraisal, a comprehension procurement plan covering at least 18 months should be developed and bidding documents for the initial contracts prepared to ensure readiness and avoid delays | MoC/PIU | Before Negotiations |
| 7 | Unaligned NCB procedures | Agree with the Bank a list of unacceptable NCB issues and remove them from documents to be used for Bank financed procurement. | MoC/PIU | At Negotiations |
| 8 | Fraud and Corruption (Kick-backs) | Enforce provisions of World Bank Guidelines, the Public Procurement Act, the Financial Administration Act and Internal Audit Agency Act on Fraud and Corruption.<br>Observed cases to be referred to Auditor General for further investigations.<br><br>Annual project audit including procurement and financial management | MOC Chief Director<br><br><br><br><br>External Auditors | Throughout project life |

141. The overall Project risk for procurement is Moderate, prior to mitigation

142. **Procurement Documents:** The procurement will be carried out using the latest Bank's Standard Bidding Documents (SBD) or Standard Request for Proposal (RFP) respectively for all ICB for goods and recruitment of consultants. For NCB, the borrower shall submit a

sample form of bidding documents to the Bank prior review after incorporating the exceptions listed above and will use this type of document throughout the project once agreed upon. The Sample Form of Evaluation Reports developed by the Bank, will be used. NCB SBD will be updated to include clauses related to Fraud and Corruption, Conflict of Interest and Eligibility requirements consistently with the World Bank procurement guidelines dated January 2011.

**Procurement Plan**

143. The Borrower has developed a procurement plan for activities identified upfront and this provides the basis for the procurement methods. This plan has been agreed between the Borrower and the Bank and is made available in the image bank and will also be made publicly available online. The plan will be updated at least annually, or as and when required to reflect the latest circumstances. It will also be available in the project's database and in the Bank's external website and also available in the Project's database.

144. **Prior-Review Thresholds:** The Procurement Plan sets forth those contracts which are subject to the World Bank's Prior Review. All other contracts shall be subject to Post Review by the World Bank. However, relevant contracts below prior review thresholds listed below which are deemed complex and/or have significant risk levels will be prior-reviewed. Such contracts will also be identified in the procurement plans. Summary of Prior-review and procurement method thresholds for the project are indicated in Table A below. All terms of reference for consultants' services, regardless of contract value, shall also be subject to the World Bank's prior review.

**Table 2: Thresholds for Procurement Methods**

| Expenditure Category | Contract Value (Threshold) (US$) | Procurement Method | Contract Subject to Prior Review |
|---|---|---|---|
| **1. Works** | ≥ 15,000,000 | ICB | All Contracts |
| | < 15,000,000 | NCB | Specified contracts as indicated in the procurement plan |
| | <200,000 | Shopping | None |
| | No threshold | Direct Contracting | All |
| **1. Goods and Non-Consulting Services** | ≥ 3,000,000 | ICB | All contracts |
| | <3,000,000 | NCB | Specified contracts as indicated in the procurement plan |
| | < 100,000 | Shopping | None |
| | No threshold | Direct contracting | All contracts |
| **2. Consultancy Services** | ≥ 300,000 | QCBS, QBS, FB | All contracts |
| | <300,000 | QCBS; QB, FB, LCS; CQ; Other | First 2 contracts or Specified contracts as indicated in the procurement plan |
| | ≥50,000 | IC | All contract of 50,000 and more |
| | <50,000 | IC | Specified contracts as indicated in the procurement plan |
| | No threshold | Single Source (Selection Firms & Individuals) | All contracts |
| **4. Training** | Annual Plan | | All Training |
| **All TORs regardless of the value of the contract are subject to prior review** | | | |

ICB – International Competitive Bidding    QCBS – Quality and Cost-Based Selection method
NCB – National Competitive Bidding    CQS – Consultants' Qualification Selection method
IC – Individual Selection method

## Frequency of Procurement Supervision

145. In addition to the prior review supervision which will to be carried out by the Bank, the procurement capacity assessment recommends at least, one supervision mission each year to visit the field to carry out post-review of procurement actions and technical review. The procurement post-reviews and technical reviews should cover at least 20% of contracts subject to post-review. Post review consist of reviewing technical, financial and procurement reports carried out by the Borrower's executing agencies and/or consultants selected and hired under the Bank project according to procedures acceptable to the Bank.

*Details of the procurement arrangements involving international competition*

### (a) Goods and Non Consulting Services

**Table 1 List of contract packages to be procured following ICB and direct contracting by country**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| Ref. No. | Contract (Description) | Estimated Cost | Procure-ment Method | -Q | Domestic Preference (yes/no) | Review by Bank (Prior / Post) | Expected Bid-Opening Date | Comments |
| | Design, Supply & Installation for Cloud Storage System | 4.50 | ICB | o | No | Prior | 15-Mar-14 | |
| | Mini Data center for NIA | 1.50 | ICB | o | No | Prior | 10-Mar-14 | |
| | Supply/Installation of an Integrated System for Data Protection Commission | 1.00 | ICB | o | No | Prior | 1-Aug-14 | |
| | Mobile Registration /Verification Workstations | 6.00 | ICB | o | No | Prior | 30-Mar-14 | |
| | Printers for instant card issuance | 2.90 | ICB | o | No | Prior | 15-Jan-14 | |
| | Upgrade of AFIS (Automated Fingerprint Identification System) | 2.50 | ICB | o | No | Prior | 30-Aug-14 | |
| | About 200,000 Blank Cards for first batch of printing of replacement | 1.00 | ICB | o | No | Prior | 30-May-14 | |
| | Upgrade of the existing central printing equipment to facilitate printing of smart card | 2.00 | ICB | o | No | Prior | 5-Jan-14 | |
| | Hardware and Software Upgrade for Electronic Data Capture and Interface | 2.50 | ICB | o | No | Prior | 20-Jan-14 | |
| 0 | Computing equipment, LAN, and bandwidth costs for school Labs | 3.50 | ICB | o | No | Prior | 2-Mar-14 | |
| 1 | e-Parliament | 3.50 | ICB | o | No | Prior | 18-Jul-13 | Draft BD ready |
| 2 | e-Justice | 5.00 | ICB | o | No | Prior | 15-Dec-13 | Draft BD ready |

| 3 | e-Procurement | 5.00 | ICB | o | No | Prior | 1-May-14 | Draft BD ready |
| 4 | e-Immigration | 15.00 | ICB | o | No | Prior | N/A | Contract already awarded |

146. ICB contracts estimated to cost the equivalent of US$3,000,000 and above for all other countries per contract, for Goods and non-consulting services, and all Direct Contracting will be subject to prior review by the Bank.

### (b) Consulting Services

**Table 2 List of consulting assignments with short-list of international firms by country**

| 1. | 2.        2 | 3.        3 | 4.        4 | 5.        5 | 6.        6 | 7. |
|---|---|---|---|---|---|---|
| 8. Ref. No. | **Description of Assignment** | **Estimated Cost** | **Selection Method** | **Review by Bank (Prior / Post)** | **Expected Proposals Submission Date** | **Com ment s** |
| | Development of content for Open Government | 0.50 | QCBS | Prior | 1-Jun-14 | |
| | Impact assessment of digital switchover | 0.30 | QCBS | Prior | 1-May-16 | |
| | TA for review and update of ICT policy | 0.30 | QCBS | Prior | 15-Jun-14 | |
| | Needs Assessment/business plan for NIA | 0.30 | QCBS | Prior | 1-Mar-14 | |
| | Strategy and Standards for Consolidated Digital Identity and Verification Systems | 0.30 | QCBS | Prior | 15-Mar-14 | |
| | Situational Analysis and Strategic Plan for Integrated eHealth System in Ghana | 1.00 | QCBS | Prior | 0-Mar-14 | |
| | Development of Educational Portals for Teachers and Students | 0.30 | QCBS | Prior | 1-Feb-14 | |
| | Development of Digital Content for Schools | 0.75 | QCBS | Prior | 1-Mar-14 | |
| | M&E data Collection | 0.30 | QCBS | Prior | 1-Mar-14 | |

147. Consultancy services estimated to cost US$300,000 equivalent or more per contract with firms and US$100,000 or more per contract with individual consultants and all Single Source Selection of consultants will be subject to prior review by the Bank.

148. Shortlists of consultants for services estimated to cost less than US$500,000 for design and supervision assignment and US$300,000 for other consultancy assignments per contract

may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

**Publications of Awards and Debriefing**

149. For all ICBs, request for proposal that involves the international consultants and direct contracts, the contract awards shall be published in *UN Development Business online* and on *the Bank's external website* within two weeks of receiving IDA's "no objection" to the recommendation of contract award. For works, goods, and non-consulting services, the information to publish shall specified (i) name of each bidder who submitted a bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each bid that was evaluated; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. For Consultants, all consultants competing for an assignment involving the submission of separate technical and financial proposals, irrespective of its estimated contract value, should be informed of the result of the technical evaluation (number of points that each firm received), before the opening of the financial proposals. Furthermore, the following information must be published : (i) names of all consultants who submitted proposals; (ii) technical points assigned to each consultant; (iii) evaluated prices of each consultant; (iv) final point ranking of the consultants; and (v) name of the winning consultant and the price, duration, and summary scope of the contract. The same information will be sent to all consultants who have submitted proposals. The Borrower's implementing agency will be required to offer debriefings to unsuccessful bidders and consultants, should the individual firms request such a debriefing.

150. NCB and other post review contracts shall be published in national gazette or on a widely used website or electronic portal with free national and international access within two weeks of the Borrower's award decision and in the same format as in the preceding paragraph.

**Fraud, Coercion and Corruption**

151. All procurement entities as well as bidders and service providers, i.e., suppliers, contractors, and consultants shall observe the highest standard of ethics during the procurement and execution of contracts financed under the project in accordance with paragraphs 1.16 and 1.17 of the Procurement Guidelines and paragraph 1.23 and 1.24 of the Consultants Guidelines, in addition to the relevant Articles of the Ghana Public Procurement Laws which refer to corrupt practices.

*Role of Partners*

152. The World Bank is expecting to collaborate internally with Info*Dev*, and externally with the Rockefeller Foundation on ICT – Enabled entrepreneurship development and digitization of government records. The structure of the partnership with the Rockefeller Foundation will be finalized during project implementation. The respective roles will be included in the Project Implementation Manual.

# Annex 4: Operational Risk Assessment Framework (ORAF)

## GHANA:  eTransform Ghana Project

| 1.   Project Stakeholder Risks | Rating | Moderate |
|---|---|---|

| Description: | Risk Management: |
|---|---|
| 1) Though the Ministry of Communications is the executing Ministry responsible for managing most of government ICT/IT business, different Ministries and Agencies will likely be direct beneficiaries of the project.  Collaboration amongst MoC and beneficiary agencies could be challenging.<br><br>2) Ghana currently has multiple electronic ID systems. Coordination of the parallel eID systems may be challenging. Linking the various systems for interoperability may have financial implications since other agencies operating ID systems may require to upgrade systems for interconnection.<br><br>3) NITA provides an important role in supporting government agencies in technical implementation of ICT-based programs, and supporting MOC in coordinating activities across government agencies. A central agency can pose the risk of delays in implementation, and a government-run operator bears the risk of crowding out private sector in providing ICT-based products and services. | The project expects to mitigate this challenge by enhancing the capacity of the National IT Agency of Ghana (established by law under the MoC to be the primary coordinating agency to manage Government's IT business) to increase its technical expertise.  Under the eGhana project, capacity has already been developed for NITA which managed the technical specs (with support from Consultants) for the e-immigration, e-Govt PPP for GRA, e-Procurement, e-Parliament and e-Justice. The project will use an Inter-Ministerial Oversight Committee and a Technical Committee to guide the progress of ICT implementation across government agencies.<br><br>The project has provisioned for downstream integration of eID system, and sequenced upgrades and consolidation of the existing parallel systems. MoC and NIA will facilitate the establishment of a unified platform, based on national data center, in order to allow interoperability across related services (such as between birth and death, and driver's license).<br><br>NITA serves as the central government agency for supporting ICT-based development, as stipulated by the laws of Ghana. The project will support NITA's capacity in providing timely and effective support to government agencies. NITA will work in collaboration with the private sector in providing necessary support to government agencies. |

| | Resp: | Stage: | Due Date : | Status: |
|---|---|---|---|---|

| 2.   Implementing Agency Risks (including fiduciary) | | |
|---|---|---|
| 3.1.   Capacity | Rating: | Low |

| Description : | Risk Management : |
|---|---|
| The Ministry of Communication has extensive experience implementing the eGhana Project and Additional Financing which include innovative applications.  Some sub agencies which were created as a result of the scope of eGhana project may not be necessary for this new project. Some streamlining is required to ensure efficient use of funds.<br><br>Developing eID system may require additional capacity (technical, management, and legal) in building a well-functioning eID system. | The Bank team has worked with the Implementing agency to assess capacity required for this new project.  The eGhana Project closes in 2014.  Additional assessment will be undertaken to confirm the skills requirements going forward. MoC will coordinate implementation across government agencies, with support from NITA. Additional support will be as needed.<br><br>The project is also providing capacity building support to the National Identification Authority in the implementation of the eID system |

| Resp: | Stage: | Due Date : | Status: |
|---|---|---|---|
| | | | |

| 3.2.  Governance | Rating: | |
|---|---|---|
| | | **Moderate** |

| Description : | Risk Management : |
|---|---|
| Procurement: Performance of procurement management under the currently on-going eGhana and the Additional Financing for eGhana projects have been satisfactory and efficient. It is recommended that the present arrangement for project implementation be maintained, including the staffing arrangement. Procurement risk rating based on an initial simplified P-RAM assessment estimates procurement risk as moderate which can be reduced to residual rate of Low provided the current arrangement for project implementation, including staffing, is maintained, and country systems are adhered to.<br><br>Financial Management: Based on a review of the financial management systems in place at the PIU during the on-going eGhana project, the financial management arrangement have been rated as satisfactory over the period and the project has complied with all financial | The Bank team has undertaken additional assessments as part of appraisal to confirm proficiency of fiduciary team. The project provides resources for additional capacity building of fiduciary staff. |

| Resp: | Stage: | Due Date : | Status: |
|---|---|---|---|
| | | | |

| covenants. It is expected that this will be reflected on the new project. The preliminary FM risk rating is rated as medium I (medium driven by impact). | | | | |
|---|---|---|---|---|
| **4.   Project Risks** | | | | |
| **4.1.   Design** | **Rating:** | **Moderate** | | |
| **Description :**<br>The project has a broad scope with multiple e-government applications, to be implemented across various government agencies. The scope puts a potential stress on the project implementation unit (PIU) to effectively procure multiple ICT systems, conduct timely implementation, and coordinate efforts with other government agencies.<br><br>Moving from the current environment of multiple Identification systems to a unified system requires a solution that is comprehensive, albeit scalable and allows interoperability of existing systems.<br><br>Risk of failing to re-engineer government service delivery (e-govt. applications) within relevant GoG agencies | **Risk Management :**<br>The project implementation builds on eGhana, with an emphasis on utilizing expertise and experience of ongoing World Bank financed project which included implementation of e-government applications. Additional specialized experts on given applications will help on design and supervision during implementation.<br><br>Bank and Govt teams will work with e-ID specialists to finalize design of system and ensure best practice solutions.<br><br>Provision of consultancy support for re-engineering, use of PPP with incentives to private sector players. | | | |
| | **Resp:** | **Stage:** | **Due Date :** | **Status:** |
| **4.2.   Social & Environmental** | **Rating:** | | | |
| **Description :**<br>The project consists largely of IT applications and services which are not likely to have any environmental impact. | **Risk Management :**<br>An ESMF has been prepared and published on July 31, 2013 to address potential environmental impacts, albeit, minimal. | | | |
| | **Resp:** | **Stage:** | **Due Date :** | **Status:** |
| **4.3.   Program & Donor** | **Rating:** | **Low** | | |
| **Description :**<br>A few donors expressed interest in supporting electronic applications to transform delivery of government services. | **Risk Management :**<br>Coordination is being done with infoDev and Rockefeller on common initiatives being undertaken under the project. | | | |
| There is significant interest from Infodev and Rockefeller Foundation to collaborate on ICT enabled entrepreneurship programs. | **Resp:** | **Stage:** | **Due Date :** | **Status:** |
| **4.4.   Delivery Monitoring & Sustainability** | **Rating:** | **Low** | | |
| **Description :**<br>Involvement of multiple beneficiaries require diligent coordination and monitoring. | **Risk Management :**<br>Robust implementation arrangements have been put in place in the form of an experienced PIU and technical experts.  These are complemented by inter-ministerial Oversight committee and technical committee. | | | |
| | **Resp:** | **Stage:** | **Due Date :** | **Status:** |
| **4.5.   Legal and Regulatory Environment** | **Rating:** | **Moderate** | | |

| Description : Failure to implement (in a timely manner) and comply with legal/regulatory framework necessary to ensure effective implementation of National Identification System and Online Verification Services and to protect the rights of users. | Risk Management : Technical assistance will be provided to support (1) a review of the existing legal and regulatory framework, emphasizing safeguards needed for protecting personal data security and privacy; and (2) revisions to the existing legal and regulatory framework as needed. Bank and Government teams will also work together closely to ensure consistency between the legal/regulatory instruments and the technical rules which govern the operation of the National Identification System and Online Verification Services. | | | |
|---|---|---|---|---|
| | **Resp:** | **Stage:** | **Due Date :** | **Status:** |
| **4.6. Other** | **Rating:** | | | |
| **Description :** | **Risk Management :** | | | |
| | **Resp:** | **Stage:** | **Due Date :** | **Status:** |
| **5. Overall Risk Following Review** | Moderate | | | |

**Annex 5: Implementation Support Plan**

**GHANA:  eTransform Ghana Project**

153. The Implementation Support Plan (ISP) focuses on mitigating the risks identified in the ORAF, and aim at making implementation support to the client more flexible and efficient. It also seeks to provide the technical advice necessary to facilitate achievement of the PDO (linked to results/outcomes identified in the result framework), as well as identify the minimum requirements to meet the Bank's fiduciary obligations.

- **Procurement.** Implementation support will include: (a) leveraging the existing PIU in the Ministry of Communication; (b) providing additional staff and training as needed to the PIUs; (c) reviewing procurement documents and providing timely feedback to the PIUs; (e) providing detailed guidance on the Bank's Procurement Guidelines to the PIUs; and (f) monitoring procurement progress against the detailed Procurement Plan.
- **Financial management.** Implementation support will include: (a) reviewing of the country's financial management system, including but not limited to, accounting, reporting and internal controls; (b) leveraging the existing PIU; (c) hiring additional staff and providing training as needed to the PIUs; and (d) reviewing submitted reports and providing timely feedback to the PIUs.
- **Environmental and Social Safeguards.** The Bank team will supervise the implementation of the agreed Environmental and Social Management Frameworks and Plans and provide guidance to PIUs and government.
- **Other Issues.** Sector level risks will be addressed through policy dialogue with the governments' Ministries and Regulatory Authorities.

**Implementation Support Plan**

154. While Ghana has adequate experience in implementing World Bank Projects, and despite the Bank's own experience in preparing similar projects, the relative complexity of structuring and implementing e-government solutions will require fairly intensive supervision, especially during the first two years of implementation. The Bank team members will be based either in Washington DC, or in the Country Office, and will be available to provide timely, efficient and effective implementation support to the clients. Formal supervision and field visits will be carried out at least 2 times annually in the first 2 years, with possibility for annual visits in later years of the project. These will be complemented with monthly video conferences to discuss project progress. Detailed inputs from the Bank team are outlined below:

- **Technical, Policy and legal/Regulatory inputs**. Technical, policy and legal/regulatory 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 Government' ICT and growth strategies.
- **Fiduciary requirements and inputs**. Training will be provided by the Bank's financial management and procurement specialists as needed. The Bank team will also help identify capacity building needs to strengthen financial management capacity and to improve procurement management efficiency. Financial management and the procurement specialists will be based in the region to provide timely support. Formal

supervision of financial management will be carried out semi-annually or annually, while procurement supervision will be carried out on a timely basis as required by the client.

- **Safeguards**. Inputs from environment and social specialists will be provided as needed.
- **Operation**. 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 specialists will be identified as needed.

Implementation Support Plan

| Time | Focus | Skills Needed | Resource Estimate | Partner Role |
|---|---|---|---|---|
| First twelve months | Finalization of Technical Specifications/TORs, legal/ procurement arrangements | Procurement, legal, and Technical Specialists | ICT Policy & Specialists 10SWs Legal Specialist 5 SWs Procurement Specialists – 10SW FM Specialist 5SW | Lead in drafting technical specs/TORs |
| 12-48 months | Procurement, Deployment of Electronic Applications/Solutions, Innovation Hubs | Procurement, FM, Technical, Safeguard/Environment Specialists | Procurement specialist(s) 10SWs Safeguards/Env Specialists – 3SW | Lead in completing the tendering process for activities |
| Other | | | | |

*Skills Mix Required*

| Skills Needed | Number of Staff Weeks | Number of Trips | Comments |
|---|---|---|---|
| Task team leaders | 10 SWs annually | Fields trips as required. | DC or Country office based |
| Procurement | 10 SWs annually | Fields trips as required. | Country office based |
| FM Specialist | 5 SWs annually | Fields trips as required. | Country office based |
| Social specialist | 2 SW annually | Fields trip as required. | Country Office based |
| Environment specialist | 1 SW annually | Field trip as required. | Country office based |
| Legal Specialist | 2SW annually | Field trip as required | DC based |

*Partners*

| Name | Institution/Country | Role |
|---|---|---|
| Kwaku Ofosu-Adarjwa | Ministry of Communication Ghana | Chief Director |

**Annex 6: Economic and Financial Analysis**

<u>Overview</u>

155. With 85% of the world population having access to mobile phone, 100% mobile subscription in Ghana and cost effective mobile access to internet, the mobile platform offers the largest communication and transaction platform today. This era of rapid technology advancements provides unparalleled opportunities to use electronic and mobile technologies for economic growth, job creation, government transparency, and access to better and cheaper services that would not be otherwise available in developing countries. Two main components of e-Transform will contribute to updating technology for public service provisions and governance.

156. Ghana eTransform Project fully supports all three pillars of the Ghana Country Partnership Strategy (CPS), including (1) improving public institutions, (2) fostering competitiveness and employment, and (3) protecting the poor and vulnerable, under which the Livelihood Empowerment Against Poverty Program (LEAP) provides support for better targeting beneficiaries. A unified electronic ID system and e-applications supported by the eTransform project will become a vehicle for a more transparent and efficient government, with more effective targeting mechanism to provide services and social benefits to the vulnerable and the poor. Some of the innovative applications to improve services will have distinct gender targeting features because certain health services are demanded primarily by women, and girls are disadvantaged in mathematical and scientific fields in secondary education. The enabling environment and IT infrastructure to be built by the eTransform project will foster competitiveness of the private sector and there will be direct and indirect employment creation associated with the project.

157. Due to the benefits reaped by e-government investments in developed countries, many developing countries have joined efforts in modernizing their governments using ICT in recent years. An ICT investment is however different than a traditional one in that an ICT investment yields both direct and indirect benefits, as well as spillover effects to private sectors. Often, indirect benefits outweigh direct ones in such cases. This analysis evaluates the PDO from two perspectives. It measures the immediate, direct benefits, as well as long-term, indirect benefits of the outcomes that can be attributed to the project.

158. For the financial analysis, the internal rate of return (IRR) is calculated for components where NPV can be estimated. For economic analysis, the direct and indirect benefits of the project are estimated from the perspective of three main beneficiaries: (a) the government since it benefits through more efficient and cost-effective service delivery and improved administration; (b) the business community since it benefits from reduced transaction costs (direct benefits) and possibly more conducive environment for starting and operating businesses (indirect benefits); and (c) Ghanaian citizens since they benefit from availability of new applications and services (direct benefits), cost savings with the use of e-services (direct benefits), and the value of better access to higher quality education and health services, as well as training and employment activities (indirect benefits).

159. The eTransform project is expected to bring significant economic and social benefits to Ghana. The project aims to develop a robust digital identity system, improved access to online services and records, connected rural hospitals and schools, and improved opportunities for digital employment, especially for the bottom of the pyramid and women. The combined benefits reaped by the project are expected to outweigh costs. Project components supporting policy and regulatory environment, and institutional capacity building, would help create better governance and an environment conducive for better business. E-government applications, including those for digital identity, digital content and online services, would generate revenue, paving the way for sustainable project operations. The project would generate substantial indirect benefits, in the form of increased productivity, knowledge and efficiency gains, through the use of ICT.

## Component 1 – Enabling Environment for Electronic Government and Business

160. Component 1 support activities for an enabling environment for e-government, e-commerce and e-services. A conducive and enabling environment for open data, entrepreneurship, and jobs can be instrumental for opening up data, electronically managing information, creating jobs, and promoting small enterprise development in Ghana. The interventions included under the eTransform project seek to create a sound enabling environment that will improve the institutional and governance arrangements for these areas and support the necessary policy and regulatory environment. The enabling environment will support privacy of citizen data; protect civil liberties; and provide opportunities to citizens to develop and adapt applicable content, and use public data for personal and commercial benefits.

161. A public expenditure tracking survey (PETS) conducted in 2007 has shown that there are significant shortfalls in distributing certain variable funding to schools and clinics, varying from 10 to 55%, affecting significantly the quantity and quality of service provision. One of the recommendations by PETS is to improve transparency of resource flows by publishing budget allocations due to service providers. The Open Government Data initiative supported by the Government of Ghana will make budget allocation and disbursement publicly trackable. Under the scrutiny of the public, the Open Government Data should significantly increase the percent of public resources provided to frontline service providers.

162. While project support for mHub and mLab accrue direct economic benefits, the overall economic and social impact of an enabling environment goes far beyond these specific direct benefits and can be only qualified based on experience elsewhere. mHubs offer tremendous opportunity to create new products and services for citizens, and jobs for the job seekers. They build mobile innovation communities by convening a variety of local stakeholders, including developers, investors, mobile operators, device manufacturers, mobile users and local businesses. mLabs are specialized business incubation facilities providing entrepreneurs with state-of-the-art equipment, app-testing facilities, and training opportunities. mLabs also connect incubatees with angel investors, academic experts, private sector companies, as well as public sector leaders. Currently, *info*Dev is operating four regional mLabs, including in Armenia, Kenya, South Africa and Vietnam. For the Kenya East Africa mLab, 213 mobile apps have been commercialized serving 5,300 customers and 117 new jobs have been created.

For the South Africa mLab, 14 mobile apps have been commercialized, which have generated $280,000 revenue so far, and 1,120 entrepreneurs and developers have been reached.[18] Based on experience from East and Southern Africa, mHubs and mLabs supported by eTransform Ghana will serve as incubators to nudge Ghanaian technology upgrade in private sector.

163. However, an IRR analysis for mLab demonstrates the needs for government intervention in this area. As business incubators mLab in developing countries bear high risks and have a clientele with much less ability to pay for services than their counterpart startups in developed countries. Table 2 shows that a 10 seat mLab will not break even in 10 years even with subsidies for staff salaries. Only with a 95% subsidy of initial investment, a mLab has an IRR of 8.3% at year 10. Although after year 10, an mLab could generate much higher profit, the medium-term return to investment requires a public private partnership (PPP). For example, while both Kenya and South Africa mLabs raised significant capital from private investors, gaps exist that requires public investments. It should be noted that although IRR is low for an mLab in the medium term, the externality of its operations is expected to be significant.

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[18] Source: *info*Dev [reference to report?].

# Table 1: Internal Rate of Return (IRR) for a 10 seat-mLab

| mLab, 10 seats<br><br>**Nominal cash flow, $000** | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Year6 | Year7 | Year8 | Year9 | Year10 | IRR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fixed investment | -1,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| **Operating cost** | | | | | | | | | | | | |
| Three staff at annual salary of 6000 with annual 5% increase | | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 | -27 | -28 | |
| Rent and utilities, $1,000 a month with annual 10% increase | | -12 | -13 | -15 | -16 | -18 | -19 | -21 | -23 | -26 | -28 | |
| Incidental spending, 15 percent | | -5 | -5 | -5 | -6 | -6 | -6 | -7 | -7 | -8 | -8 | |
| **Revenue** | | | | | | | | | | | | |
| Subsidy for staff salary, 100 percent first year, reduction of 10% each year after | | 18 | 17 | 16 | 15 | 13 | 11 | 10 | 8 | 5 | 3 | |
| Number of seats rented out at 50% of capacity first year, 100% thereafter | | 5 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| Revenue, $100 per seat/month, 15% annual increase | | 6.0 | 13.8 | 15.9 | 18.3 | 21.0 | 24.1 | 27.8 | 31.9 | 36.7 | 42.2 | |
| Event organization fees, $500 a month starting on year two, at 25% annual increase | | | 6.0 | 7.5 | 9.4 | 11.7 | 14.6 | 18.3 | 22.9 | 28.6 | 35.8 | |
| **Total Nominal cash flow, net, $1000** | **-1,000** | **-11** | **0** | **0** | **0** | **0** | **2** | **4** | **6** | **10** | **16** | |
| | | | | | | | | | | | | |
| **NPV cash flow, $000 (**8% of annual inflation) | | | | | | | | | | | | |
| Fixed investment | -1,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total operating cost | 0 | -32 | -31 | -31 | -30 | -30 | -29 | -29 | -29 | -28 | -28 | |
| Total revenue | 0 | 22 | 31 | 31 | 30 | 30 | 30 | 31 | 32 | 33 | 35 | |
| NPV cash flow | -1,000 | -10 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 5 | 7 | -36% |
| NPV cash flow with 95 percent subsidy for initial investment | 0 | -10 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 5 | 7 | 8.3% |

Source: staff calculation.

164. With greater use of ICT in firms and organizations and with greater adoption of ICT-enabled services, it is well documented that the overall economic impact of ICT investments is significant, known to contribute to productivity increase. Based on a research paper entitled "*Contributions of Information and Communication Technology to Growth*", between 1995 and 2000, the contribution of ICT to Total Factor Productivity (TFP) growth ranges from 0.05 to 3.47% points for five Asian countries (India, Indonesia, Malaysia, Philippines, and Thailand).[19] In 1995, Ghana's GDP per capita was slightly lower than that of India's, but today Ghana's GDP per capita is only 65% of India's. It is widely recognized that ICT development in India has contributed significantly to the country's rapid growth performance.

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[19] Qiang and Pitt, 2004, World Bank Policy Working Paper Series 27716.

Today, Ghana's mobile access is much more superior to what India had in 1995. Therefore, an enabling environment would provide the right conditions under which a more competitive marketplace can develop, new industrial players can be brought into the marketplace, the quality of exiting services can be improved, and new ICT products and services can be introduced. Assuming that Ghana's ICT investment will contribute to 0.025 percentage point growth to productivity, estimated to be half of India's, it would generate additional US$10 million annually for the Ghanaian economy.

165. The following additional benefits are expected from a sound enabling environment for electronic government and businesses:

a) <u>Strong government institutions and regulations:</u> Using technical assistance and capacity building for a Certification Authority, Data Protection and Electronic Transaction Commissions, the project would strengthen the institutional framework, develop standards and guidelines for more secure data capture and use, as well as resolution of citizen complaints. Stronger regulatory environment/institutions will lead to: increased citizen privacy/data protection and redress mechanism; more coherent and integrated regulatory environment; confidence in the use of digital identification and services; and confidence in the acceptance of digital identification for formal business and social transactions.

b) <u>Promoting innovation:</u> The enabling environment can provide incentives to entrepreneurs, SMEs and businesses to work towards new products, services, technologies and processes that can unlock the potential for greater electronic services in Ghana.

c) <u>Greater investor confidence:</u> A regulatory environment displaying predictability and a level playing field for market players can give greater confidence to businesses and investors to spend capital in offering new online services. Similarly, investors may be more willing to support entrepreneurs who show promising businesses to offer new services in Ghana.

d) <u>Capacity building:</u> The combined impact of the mobile revolution, and demand for online services and transformational applications, is creating unprecedented opportunities for business development and job creation in the content and applications industries, particularly for the youth. Mobile Application Labs (mlabs), are specialized mobile business incubation facilities that are increasingly becoming the platforms for nurturing innovative enterprises in the mobile content and applications area, and ensuring that locally relevant applications are created to meet growing developing country user demands. The mlabs provide services both locally, serving the local entrepreneurial market, and regionally, providing resources to the mobile applications developers elsewhere in the region. The benefits of entrepreneurship through mlabs and other development spaces include: increased opportunities for small innovative enterprises to develop applications for market; and increased competiveness of existing enterprises.

**<u>Component 2</u> – Support for Upgrading National Identification System and Online Verification services**

166. Component 2 helps develop a unified e-ID system for all Ghanaian citizens and residents, with an enabling environment supported by Component 1. Both are critical steps that would enable Ghana to modernize its governance, economic growth, and service deliveries.

167. A recognizable unique ID can be instrumental for access to public and private services, as well as for the right to vote. The current Ghana National biometric Identification cards cover only less than 5% of population. In the absence of a wide spread unified identification system, multiple identification cards are accepted as validation methods, including the driver's license, voter's card, and passport. These cards and documents range in fees from free of charge to up to $50 dollars. This multi-identification system creates loopholes and missed opportunities for targeting populations who are in urgent need of public services. The immediate, direct economic benefits of a unified, more efficient and effective ID system, with an enabling environment supporting secured internet transmission of identification information, are numerous, including lower transaction costs, availability of new online and mobile services, and time savings for card holders, businesses, and government agencies.

168. Table 2 gives two scenarios of IRR for enabling environment and e-ID (Components 1 and 2). Based on very conservative estimates, the IRR is between 11.3 (charge a one-time application fee for $3.00) to 16.6% (charge a one-time application fee for $3.50). The initial fixed investment for the Components 1 and 2 is $45 million and an annual operating budget of $5.0 million is assumed. Assumptions are 90% of Ghanaian population is to be issued e-ID in 5 years (4.5 million annually) and additional 500,000 e-ID to be issued after year five. It should be noted that even the high fee scenario of $3.50 is well below most of biometric application card fees ranging from $5 to $50. The variable revenue generated from using e-ID for transactions between government and citizens, and between business and citizens, is set with very conservative assumptions, at an average of 2 transactions per month and $0.02 fee per transaction. In reality, if the unified e-Card takes off and has a wide coverage of population, e-commerce is likely to take off. The number of transactions is likely to increase rapidly and the fee probably can be set at above $0.02 per transaction given the enormous convenience that e-transactions provide and given Ghana's lower middle income level status.

# Table 2: Internal Rate of Return (IRR) for Components 1 and 2

**Scenario 1, ID issuing fee = $3.00**

| | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Year6 | IRR |
|---|---|---|---|---|---|---|---|---|
| **Nominal cash flow, $million** | | | | | | | | |
| Fixed investment | -45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Operating cost, 10% of fixed capital | 0.0 | -4.5 | -4.5 | -4.5 | -4.5 | -4.5 | -4.5 | |
| Number of e-ID cards issued, million | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 0.05 | |
| Revenue, fee for issuing e-ID $3 | 0.0 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 0.2 | |
| Revenue: digital identification fees, $0.02 per transaction, average twice usage per month | 0.0 | 2.2 | 4.3 | 6.5 | 8.6 | 10.8 | 10.8 | |
| Nominal cash flow, $million | | 11.2 | 13.3 | 15.5 | 17.6 | 19.8 | 6.5 | |
| **NPV cash flow (**8% of annual inflation) | | | | | | | | |
| Fixed investment | -45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Operating cost, 10% of fixed capital | 0.0 | -4.1 | -3.8 | -3.5 | -3.2 | -3.0 | -2.7 | |
| Revenue, fee for issuing e-ID $3 | 0.0 | 12.4 | 11.4 | 10.5 | 9.7 | 8.9 | 0.1 | |
| Revenue: digital identification fees, $0.02 per transaction, average 10 times per year | 0.0 | 2.0 | 3.7 | 5.0 | 6.2 | 7.1 | 6.6 | |
| *NPV variable cash flow, $m55 initial investment is excluded* | | 10.3 | 11.3 | 12.1 | 12.6 | 13.0 | 3.9 | |
| **NPV cash flow (8% of annual inflation)** | **-45.0** | **10.3** | **11.3** | **12.1** | **12.6** | **13.0** | **3.9** | **11.3%** |

**Scenario 2, ID issuing fee = $3.50**

| | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Year6 | IRR |
|---|---|---|---|---|---|---|---|---|
| **Nominal cash flow, $million** | | | | | | | | |
| Fixed investment | -45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Operating cost, 10% of fixed capital | 0.0 | -4.5 | -4.5 | -4.5 | -4.5 | -4.5 | -4.5 | |
| Number of e-ID cards issued, million | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 0.05 | |
| Revenue, fee for issuing e-ID $3.50 | 0.0 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 0.2 | |
| Revenue: digital identification fees, $0.02 per transaction, average twice usage per month | 0.0 | 2.2 | 4.3 | 6.5 | 8.6 | 10.8 | 10.8 | |
| Nominal cash flow, $million | | 13.4 | 15.6 | 17.7 | 19.9 | 22.1 | 6.5 | |
| **NPV cash flow (**8% of annual inflation) | | | | | | | | |
| Fixed investment | -45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Operating cost, 10% of fixed capital | 0.0 | -4.1 | -3.8 | -3.5 | -3.2 | -3.0 | -2.7 | |
| Revenue, fee for issuing e-ID $3.50 | 0.0 | 14.5 | 13.3 | 12.3 | 11.3 | 10.4 | 0.1 | |
| Revenue: digital identification fees, $0.02 per transaction, average 10 times per year | 0.0 | 2.0 | 3.7 | 5.0 | 6.2 | 7.1 | 6.6 | |
| **NPV cash flow (8% of annual inflation)** | **-45.0** | **12.3** | **13.2** | **13.8** | **14.2** | **14.5** | **3.9** | **16.6%** |

Source: Staff calculations.

169. The component 2 will help develop foundational infrastructure and services that are requisite to both electronic services and digital government in Ghana. The additional benefits envisaged by the project under the component are as follows:

a) <u>Establishing citizen identity:</u> The project will make a significant step by giving formal identity to citizens and residents in Ghana. Since the identity information will be retained electronically, people in Ghana will over time be able to secure better social and financial services, obtain improved terms for purchasing land or opening a new business, and travel inside or outside the country. National ID cards, and their related back-end electronic systems, are used in varying forms in countries worldwide. In the US, social security number is an electronic repository of citizen identification that is a required for opening a bank account, securing credit, or obtaining a driver's license. In Colombia, ID cards are required to enter public places such as subway stations, courtrooms and airports. In Belgium, ID cards are used as work permits or temporary residence permits. In Malaysia, smart identity cards have brought automation and improved service delivery requiring an average time to less than 40 seconds to access bank statements, compared to queuing up at a physical bank branch.

b) <u>More efficient public services to reach intended beneficiaries:</u> The government can use identify information of citizens to better gauge people who are deserving of government support. Electronic ID can help the government improve targeting citizen groups for social safety nets, and use card or mobile phone mechanisms to deliver actual services to citizens. In Ghana, virtually all services can be expedited by using the National Identification card, including essential ones, such as National Health Insurance Scheme (NHIS), acquisition of passport and driver license, clearing customs, banking, business registration, school enrollment, claim health insurance benefits and free health care services (for people under 18 or above 70 years old), securing an employment, claiming pension, traveling, SIM card registration, and e-commerce. The pilot e-Services supported by eGhana project have already benefited citizens. With e-Services, Ghanaians can apply for passports, food importers' registration, marriage registration, registration of accommodation and catering establishments, renewal of drivers' license, criminal check, and prospecting/reconnaissance licenses on line 24/7. Additionally, with e-ID system, government will be able to provide innovative e-services in education and health sector, including improving access and quality to underserved populations. Similar e-ID applications are being used in countries ranging from India and Pakistan to Malaysia in providing better social services to citizens.

c) Reduction of administrative cost and elimination of duplications: because only a small fraction of Ghanaians are the National ID card holders, many other government agencies have to provide their own identification cards with their own serial numbers in order to function. For example, National Health Insurance Authority has registered close to 70% of total population to participate the NHIS while 2012 election registered 13.6 million voters. Greater coordination or simplification could have been achieved in the multi-identity regime if a unique national ID registration were available. .

d) <u>Better financial services to populations:</u> With a unified e-ID system, commercial banks can reduce the administrative cost of ID verifications and expand electronic and mobile banking services rapidly. Banks are required by government to collect detailed information about account holders at the bank, as part of regulations known as "Know Your Customer" (KYC), and anti-money laundering and combating financing for terrorism (AML/CFT). Electronic ID can help banks comply with KYC terms, achieve better monitoring of AML/CFT, and gain better understanding of consumers for sake of credit evaluation and loan provisioning. The advent of mobile phones offering financial services further underscores the need for identity systems that can inform banks and regulators about people using financial transactions. ID systems can allow banks to expand their services to new customers who currently do not have banking accounts and provide better services to existing customers. Currently, about 35% of Ghanaian adults have commercial Banking accounts. Given 52% of urban population and the country's lower-middle income status, this percentage of commercial banking penetration is low and could be easily expanded to at least 65%. Experience from other countries demonstrates that easy identification can expand banking service rapidly. For example, Scotia Bank signed 32,000 customers in 6 months after launching its digital certificate-based online banking service.

e) <u>Expanding m-Banking and m-Commerce:</u> The improved access to banking services will in turn boost mobile-commerce and banking activities. Ghanaians' access to internet is still very low at 14% (2011 figure) but its mobile cellular network coverage is extensive at 85%. An e-ID system will enable leapfrog progress for Ghana to enter a rapid expansion of m-banking and m-commerce in spite of its low internet coverage. This will boost revenue of mobile service providers, as well as develop commercial services in new areas.

f) <u>Market development:</u> With a wide-spread m-banking access and e-ID system, many new fee-based mobile services will be possible for market development. For example, services to farmers associations and other trade associations can hire more professionals to provide valuable information to targeted population. These identifications of new business opportunities could be supported by the mHub and Living Lab serving as incubators to entrepreneurs.

g) <u>More efficient voter registration and transparency in vote results:</u> Due to the fact that only less than 5% of population has Ghana National ID, the procedures of voter registration are very labor intensive, requiring physical presence of voters and the registration officials. With a unified e-ID, voter registration would require physical presence of neither voters nor registration officials, which could reduce the election cost significantly. It can provide greater transparency and efficiency during electoral processes.

h) <u>More efficient and effective tax collections:</u> Ghana has been experiencing a robust growth for more than a decade but tax collection has not kept up with the growth. In

early 2000s, Ghana's tax revenue was around 18% of GDP or so, but today it is only 15%. A unified digitized citizen/resident database will allow government to accurately identify taxpayers, register eligible tax payers under the tax bracket, and ensure compliance with tax collection laws. Currently, only about 1.5 million citizens and foreign residents pay tax while there are about 3 million of Ghana Social Security and National Insurance Trust participants, who should pay for tax. One of the main reasons behind the ineffective tax collection is the lack of a unified national id. Currently, the Ghana Revenue Authority (GRA) relies on self-registration and accepts national ID, Voter's card, Driver's license or Passport as valid identification card. This weakens GRA's ability to enforce tax collections due to duplication and loopholes created by the multi id system. It is anticipated with the e-ID system the GRA will be able to enforce the tax laws and the number of tax payers should increase by at least one million.. If Ghana can recover its tax revenue from 15% to 18% of GDP, government will gain additional $1 billion revenue per year

i) <u>More effective and transparent payroll system:</u> In 2009, a headcount exercise was conducted in Ghana for teachers. It was found that about 1% of teachers on the government payroll were non-existent ("ghost" teachers) and another 4% teachers were not at post during the headcount period. Based on a 2009 Public Expenditure Review by the World Bank, the public wage bill was about $3 billion. Assuming a 1% ghost employees cross all agencies, elimination of ghost employees would save government $3 million per year. This does not include the additional 4% of absent teachers who merited additional investigation. An e-ID system will be able to eliminate majority of ghost employees since all death and emigration information will be uploaded immediately to the central database and the accounting agency can easily verify public employees' information on a monthly basis.

j) <u>More effective transport system:</u> In-country transport relies on a government-issued driver's license that allows a citizen to operate a vehicle. Similarly, travel requires a passport document that is used at entry and exit points of the country. Electronic ID greatly improves the capacity of a transport authority to issue authentic driver's licenses and passports to citizens, to efficiently track compliance of transport rules amongst drivers, and improve and streamline the processes for fast and effective entry/exit in Ghana.

k) <u>Job creation:</u> The digitization of government data will generate low skilled jobs for scanning and indexing government paper records, as well as educational and medical records into searchable and re-usable electronic database. Based on the experience of Rockefeller Foundation, which has trained and hired disadvantaged youths to digitize government records, it is estimated that an additional 333 jobs for a year could be created in digitization assuming a monthly salary of $500.

l) <u>Making information available easier and faster:</u> Digitizing and classifying paper records are first steps to online service delivery and improved reporting and monitoring. The digitization sub-component is an essential link to verifying electronic

identity against the birth and death records of citizens. Digitization will also provide backward compatibility of new online systems.

## Component 3 – Scale up of Applications to improve service delivery in priority sectors

170. The project component will help growth of applications spanning education, healthcare and a number of other government services.

a) <u>More equity and quality for health service provisions with a gender focus:</u> Women need special health care that are often not available to them. An IT intervention in health sector will clearly benefit women and the poor when the health care services needed by women are targeted. For example, the current maternal death ratio in Ghana is high at 350/10,000, almost twice of the target ratio of 180/10,000. Access to health service is poor in rural areas, especially in the three northern regions. While births in rural areas accounted for two thirds of total births in 2003, only less than 30% of them were attended by skilled professionals. In the Northern region only 11% births were assisted by professionals. In comparison, 80% of births in urban areas were attended by skilled professionals (WHO, Ghana Country Profile). The establishment of Integrated Medical Call Centers will alleviate acute shortage of medical personnel in remote rural areas by providing professional advices over mobile phones. This will improve health services in remote areas within a short time frame without incurring big infrastructure and personnel cost. Connecting district hospitals to internet will improve information flow for health workers, thus improve the quality of health services. Digitizing medical records will support 166 low skilled jobs for a year in healthcare assuming a monthly salary of $500.

b) <u>Improve education quality and expand secondary education:</u> Based on experience from other emerging economies, broad access to quality secondary education is a precursor for an economy to diversify and grow, thus generating good paying jobs and creating a shared prosperity. Access to secondary education in Ghana is still low relative to its economic development stage and goals. Although the gender gap in enrollment has closed, it still exists in terms of studying subjects, and the quality gap between the well-endowed and less-endowed schools is acute. Of 619 Senior Secondary Schools in 2012, the passing rate for West African Senior School Certificate Examination (WASSCE) ranges from zero percent for the least endowed schools to 100% for the well-endowed schools. The targeting of the 200 least endowed schools will target 25% of bottom secondary schools attended by students mostly from poor families. The reasons for the low education quality are multiple. But teachers' absenteeism and lack of trainings are identified as two main reasons. The ICT enhancement of the bottom 200 schools connectivity and development of digital contents will allow teachers to exchange their teaching experience and provide students with multimedia learning environment. This will prepare students from young age for employments in an e-Economy. ICT applications will improve the quality of education provided to students, improve the caliber of teachers, and, ultimately, lift the level of skills in the workforce emanating from educational institutions. ICT applications can also help extend the reach of educational

institutions with the help of distance learning. Online content, whether accessed based on what is available on the internet or is created locally within Ghana, will greatly improve the educational experience of students and complement the educational facilities available in Ghana.

c) <u>Improved monitoring and evaluation:</u> Mobile phones and ICT applications will further strengthen the ability of the government to track performance of their educational and health services and develop stronger linkages with citizens. Government can crowd-source feedback using mobile phones and thus use simple, cost-effective means for gauging the level of quality in the services being delivered.

d) <u>Efficiency of government:</u> The use of ICT in judiciary, parliamentary and procurement will improve the way government conducts its business, manages trials and records judgments, manages and captures parliamentary processes, and runs a transparent and effective system to procure goods and services for government.