Transforming the East African ICT Sector by Creating a Business Engine for SMEs
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The information and communications technology (ICT) sector has been the major driver of economic growth in East Africa over the last decade, growing on average by as much as 40%. To date, growth has largely come from innovation by large multinational and local enterprises. Small and medium-sized enterprises (SMEs) are poised to play a bigger role in the next phase of industry growth. However, they face a multitude of system-wide challenges that must be overcome in order for them to succeed. To understand the interventions required, a consortium comprising InfoDev, UKaid and Hivos funded a detailed, on-the-ground study of the ICT SME landscape in East Africa. This study was performed by the Excelsior Firm, a US and Africa based advisory firm that engaged over 100 policy makers, investors, academics, donors and entrepreneurs. The findings suggest that the vision of a robust and dynamic ICT sector driven by SMEs that create jobs and world-class innovation is possible, and the likelihood of this outcome can be improved with a few targeted interventions. The five proposed interventions consist of the development of a fully connected SME network, filling the skills gap in advanced business and technical knowledge, providing start up and early stage funding for companies, enabling job creation for knowledge workers and upgrading the business environment. Together, these interventions form the components of a potential East African ICT Business Engine that could boost performance, not only within the ICT sector, but also continue to drive the economic development of the region.
This report was prepared by a team from The Excelsior Firm led by Javier Ewing and consisting of Ory Okolloh and Lauren Rawlings. The Excelsior Firm would like to express its appreciation to the numerous individuals and organizations that contributed to this effort. In particular we would like to extend special thanks to the Honorable Bitange Ndemo, Permanent Secretary, Ministry of Information and Communication, Kenya, Dr. Ham Mulira, Presidential Advisor on ICT, Uganda, Mr. Paul Kukubo, CEO, Kenya ICT Board, Ms. Edith Adera, International Center for Development Research, Professor Rajeev Aggarwal of the Kigali Institute of Technology, Ms. Patricia Mwangi of Financial Sector Deepening-Tanzania, and Mr. Theophilus Mlaki, Director of Information at the Tanzania Commission for Science and Technology (COSTECH), Jessica Colaco and the rest of the iHub team, Rakesh Rajani, Lorna Fernandes and their colleagues at Twaweza, and Daniel Stern, Barbara Birungi, and the Hive Colab team.

Of course, this work would not have been possible without the support and input from the sponsoring consortium of Hivos, infoDev, and UKaid. Our findings were greatly enhanced by input and feedback from Ben White at Hivos; Seth Ayers, Tim Kelly, and Paul Scott at infoDev; and Victor Gathara and Mark Povey at UKaid.

We would also like to sincerely thank the more than 100 entrepreneurs, ICT professionals, academics and experts who participated in interviews, workshops and numerous discussions over the past 3 months. We appreciate their dedication to the advancement of the ICT sector in East Africa and their invaluable contributions to this report.

We hope that the findings and recommendations from this report will be used to support further development of this sector that is a vital part of the future economic development of East Africa.
Over the past decade the Information and Communications Technology (ICT) sector has been among the major drivers of economic growth for Sub-Saharan Africa. This sector has witnessed an annual compounded growth rate of 40% within the last five years, the fastest globally. In Kenya, for example, the ICT and mobile sectors have outperformed all other segments of the economy, growing on average by over 20% annually over the last 10 years. It is no surprise then that the ICT sector in Africa continues to garner close attention as a potential driver of fundamental change within the continent. Within the sector, mobile telephony dominates, far outstripping any other mode of connectivity excluding, perhaps, radio, and newspapers. On the other hand, Africa has the lowest computer and Internet usage rates of any region, with only 10% of the continent’s population having access to the Internet – suggesting a reservoir of untapped market potential.

East Africa is a region that has globally recognized success in building technology-based local enterprises and developing world-class innovation. Safaricom, a Kenyan company, has seen the market penetration of its M-Pesa money transfer product grow to over 15 million users within 3 years of launch. Mobile service penetration in East Africa is as much as 5 times higher than Internet penetration, such that many applications that are available over the Internet in other parts of the world are available via mobile networks. This is true in spite of the limited computing and transmission capacity. The launch of three underwater cables in the region is only expected to enhance the availability of bandwidth and decrease prices, though progress has been somewhat slower than expected. Aside from mobile telephony, other emerging areas of interest and investment include technology infrastructure and broadband, software development, local content development, and BPO centers.

Much of progress in the ICT sector in East Africa has been driven by larger corporations due to scale requirements that necessitate significant upfront capital expenditure. While this is laudable, the growth of a viable SME segment is fundamental to the long-term sustainability of the ICT sector and for addressing areas of unmet need that may not be lucrative enough for larger corporations.

SMEs in the ICT sector, however, face a set of daunting challenges including access to business and technical skills, access to regional and global markets and limited early stage financing. In addition, these organizations must deal with a complex and immature regulatory environment. Despite these challenges, it is evident that SMEs stand to contribute to several new segments of growth for example value-added locally relevant content, as well as software and mobile applications. The private sector, donors and governments have all instituted several initiatives to address the needs highlighted above. For example, the private sector has partnered with universities in the region to enhance skill-building for entrepreneurs. Donors on the other hand, are channeling their support towards networking havens such as iHub in Nairobi which is funded in part by Hivos, and the infoDev-supported Mobile Monday for East Africa. Finally, governments are also making significant contributions in the development of the sector. The Rwanda government has focused on streamlining the business
registration process, for example, while Kenya’s ICT Board has offered grants to SMEs to develop innovative content. Given the current state of the EAC ICT landscape and the challenges facing SMEs, what interventions are necessary to strengthen the emerging SME sector and boost their participation in economic development?

To address this question, infoDev, Hivos and UKaid commissioned an intensive study of SMEs within the East African ICT sector. The work was conducted by the Excelsior Firm, a US and Africa based advisory group. Rigorous in its approach, the study centered on direct and primary participation of over 100 entrepreneurs, policy makers, donors, investors, and experts in order to understand the interventions and partnerships required to create a favorable environment for SME growth.

The results of this study show that five key interventions are required in order to enable SMEs overcome the challenges they face. These interventions include the development of a fully connected SME network, filling the skills gap in advanced business and technical knowledge, providing early stage funding to companies, enabling job creation for knowledge workers and upgrading the business environment. Together these interventions form the components of a potential East African ICT Business Engine that, if diligently implemented, could boost performance within the ICT sector and support the economic development of the region. While focused on East Africa, the lessons elicited are applicable to other developing regions globally.
Abbreviations and acronyms

BPO Business Process Outsourcing
CAGR Compounded Annual Growth Average
CCK Communication Commission of Kenya
EAC East African Community
EBITDA Earnings before Interest, Tax, Depreciation, and Amortization
GDP Gross Domestic Product
GNI Gross National Income
ICT Information and Communication Technology
ICT4D ICT For Development
IP Intellectual Property
ISP Internet Solution Providers
IT Information Technology
ITU international Telecommunications Union
KICTB Kenya ICT Board
KIST Kigali Institute of Science and Technology
PPP Public-Private Partnerships
SIDA Swedish International Development Agency
SME Small and Medium Enterprises
SSA Sub-Saharan Africa
US United States
USD United States Dollar
WB World Bank
PROJECT SCOPE

InfoDev, UKaid, and Hivos commissioned this project to understand the needs of micro, small, and medium sized enterprises in the East African ICT sector. For the purposes of this project, the East African countries included in the study were Kenya, Rwanda, Tanzania, and Uganda. The focus for this project was SMEs as for-profit or non-profit organizations with less than 50 employees and not exceeding USD 1,000,000 in annual revenues/turnover.

The intention was to identify high impact, sustainable interventions to support growth and innovation in the SME sector that help fuel broader economic growth and development. The project was therefore designed to achieve three objectives:

- Describe the contours of the East African ICT market (size, dynamics, players and trends)
- Understand the challenges and critical success factors for ICT SMEs from the perspective of the region’s entrepreneurs and policymakers
- Integrate feedback from local stakeholders into a set of SME support interventions that will enable donors, governments and the private sector contribute to the transformation of the East African ICT landscape.

The main output of this project was a proposed program of interventions to drive transformational change. To succeed in this ambitious endeavor, the project articulated clear objectives and designed a blueprint for implementation including levels of resourcing, budget and monitoring metrics.

METHODOLOGY

How this study differs in its approach

There are two primary ways in which this project differs from many of the previous efforts that have considered the SME landscape in the EAC ICT sector.

First, the sponsor for this venture was a consortium comprised of three of the leading donor organizations in East Africa – infoDev, Hivos and UKaid. To the best of our knowledge, this is the first collaborative donor-led effort in this area and this combined focus has led to several breakthrough insights.

Second, while the project team conducted secondary research and analyzed existing data, the main focus of consisted of “on the ground” primary research in each of the countries of focus – Kenya, Tanzania, Uganda and Rwanda. During a 3 month period, the consultants conducted surveys, interviewed stakeholders and conducted workshops with over 100 professionals in the ICT sector. The team also interviewed local policymakers, investors, and experts for perspectives on the market and how to improve it.

What did we do?

The team held two rounds of workshops to solicit feedback from entrepreneurs in each of the four countries, understand their
perceptions of the market, as well as their challenges. Based on this input as well as desk based research, the team developed a set of potential interventions that were validated and prioritized in a second round of feedback sessions with entrepreneurs and other major stakeholders.

Whom did we speak to?

Over the course of the project the team conducted brief surveys with over 90 entrepreneurs, over 50% of who had 3-10 years of experience in the ICT sector and primarily worked at companies with 5 employees or less. The majority of participants had software, network, content development, and mobile experience. In addition to the survey and workshops conducted, the Excelsior Firm also interviewed over 20 ICT and SME experts in the region and worldwide.

Exhibit 1: Profile of the ICT SME participants in East Africa

<table>
<thead>
<tr>
<th>Survey participants</th>
<th>ICT experience</th>
<th>Company size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td><strong>Years</strong></td>
<td><strong>Number of employees</strong></td>
</tr>
<tr>
<td>Kenya</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>+21</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>11-20</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>3-5</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>0-2</td>
<td>17</td>
</tr>
<tr>
<td>Tanzania</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Uganda</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Rwanda</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>11-20</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>6-10</td>
<td>22</td>
<td>31</td>
</tr>
<tr>
<td>3-5</td>
<td>29</td>
<td>31</td>
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<tr>
<td>0-2</td>
<td>31</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of ICT services provided</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPO/contact</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Security</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Data centers</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Hardware</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Nontechnical</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td>Mobile</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Content</td>
<td>31</td>
<td>21</td>
</tr>
<tr>
<td>Network</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Software</td>
<td>49</td>
<td></td>
</tr>
</tbody>
</table>
ECONOMIC OVERVIEW OF THE REGION

GDP, GNI per capita, income and literacy

Together, Kenya, Rwanda, Tanzania, and Uganda have a population of more than 120 million people and GDP nearing USD 70 billion. However, the combined GDP of these East African countries is much smaller than that of African giants like South Africa (USD 275 billion) and Nigeria (USD 200 billion)\(^4\). The industrial development of the entire East Region remains heavily dependent on agriculture, but other key industries such as services, manufacturing and ICT have seen recent increases in economic importance. Kenya, which accounts for 32% of the region’s population, is the major economic powerhouse in East Africa accounting for more than 43% of the region’s GDP and also possesses a higher GNI per capita and adult literacy rate than its neighbors. After a decline in 2008, the modest recovery of Kenya’s GDP growth in 2009 can largely be attributed to strong growth in services and construction at 62% and 13% contribution to GDP overall. In fact Kenya was one of the few countries in the world where GDP grew more in 2009 than 2008. The Kenyan ICT Board is committed to further economic growth and specifically in driving the ICT contribution to GDP from 3% to more than 10% over the next three (3) years\(^6\). The Tanzanian economy is dominated by the agricultural sector at 27% of GDP. Nearly 80% of the workforce is continuously employed by this sector. Relative to Kenya the services sector in Tanzania contributes a smaller portion of GDP at 50%. However, like Kenya, the Tanzanian government has been looking for ways to diversify away from agriculture and into services. Uganda’s economy is balanced between agriculture (23%), services (50%) and industry (23%). Rwanda on the other hand remains a primarily subsistence-based economy with agriculture still accounting for over 40% of GDP. Rwanda’s services sector contributes 42% of GDP, the lowest percentage in East Africa, among the four countries we examined in this project\(^4\).

MAPPING THE ICT SECTOR IN EAST AFRICA

Sub-Saharan telecommunications sector growing at 40% CAGR

Overall the telecommunications market in Africa has witnessed tremendous growth in the last decade. According to McKinsey & Company estimates, the overall telecommunications sector in Africa has experienced explosive growth since 2003, with industry revenues growing at a 40% CAGR from 2003-2008. The industry has also seen the overall telecom subscriber base reach over 400 million in 2009 and likely exceed half a billion by 2011\(^1\)\(^5\).

The major driver of this growth has been mobile telephony. The UN’s International Telecommunication Union (ITU) estimated that there were 4.6 billion mobile phone subscriptions globally by the end of 2009, of which around 250 million subscribers are in Africa. In fact, according to ITU estimates, the African continent has the highest annual growth rate in mobile subscribers. East Africa in particular is estimated to have almost 50 million mobile subscribers resulting in a mobile penetration of about 40% of the total population\(^2\).
### Exhibit 2: Selected World Bank Statistics for East Africa

<table>
<thead>
<tr>
<th>Population Millions</th>
<th>GDP USD Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>38.7</td>
</tr>
<tr>
<td>Tanzania</td>
<td>42.5</td>
</tr>
<tr>
<td>Uganda</td>
<td>31.7</td>
</tr>
<tr>
<td>Rwanda</td>
<td>9.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GNI per capita USD</th>
<th>Adult literacy rate Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>730</td>
</tr>
<tr>
<td>Tanzania</td>
<td>440</td>
</tr>
<tr>
<td>Uganda</td>
<td>420</td>
</tr>
<tr>
<td>Rwanda</td>
<td>440</td>
</tr>
</tbody>
</table>

### Exhibit 3: Mobile subscribers in East Africa

<table>
<thead>
<tr>
<th>Mobile subscribers 2009 Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
</tr>
<tr>
<td>Tanzania</td>
</tr>
<tr>
<td>Uganda</td>
</tr>
<tr>
<td>Rwanda</td>
</tr>
</tbody>
</table>
While the growth of mobile subscriptions is well documented, specific data for the ICT sector is less readily available. Experts estimate that given the underlying use of mobile phone infrastructure for ICT within East Africa, the levels of growth seen in mobile subscriptions, mirror the growth of the entire ICT sector. This growth has manifested itself in the creation of new jobs, with World Bank Kenya Economic Update putting the estimates at over 70,000 new ICT jobs in Kenya alone over the past five years.

Large corporations are major drivers of ICT growth

Much of the progress in the ICT market in East Africa to date has been driven by the large corporations. This is mainly due to the large-scale requirements that require significant upfront capital expenditure. Most of the related business technology services such as data storage, cloud computing and software development are all dominated by large foreign entities. As in other developing markets like India, the growth of a viable SME segment will be fundamental to the long-term sustainability of the ICT sector since SMEs are likely candidates for innovative solutions to address unmet needs within the ICT market.

Quantifying the number of ICT SMEs

Through our surveys, interviews and secondary research we attempted to determine the number of SMEs and ICT specific SMEs in Africa. What became apparent relatively early in the process was the limited sources of information for the number of SMEs either within a specific country or across the region. While the stated estimates varied widely, our research from expert interviews and sources such as the Kenya ICT Board, show that there are approximately 3,000 - 5,000 ICT SMEs in East Africa today. Kenya alone for example, has least 1,000 - 2,000 ICT SMEs as of 2010. Going forward there is a need for such data to be tracked and monitored more closely.

Mobile technology outstrips other modes of connectivity

Due to very low fixed-line penetration (estimated at around 3 lines per 100 inhabitants), Africa has the lowest computer and Internet usage rates of any region. However, the high mobile cellular penetration relative to fixed line subscriptions combine to make Africa the region with the highest ratio of mobile cellular to Internet users in the world.

While the mobile market is far from saturated, East Africa overall has 40% of the population subscribed to mobile telephones, while the rest of the world is at 67%. The annual growth rate has been high in all of the East African countries studied. From 2003-2008, growth was between 50-70% for each country in the region, with Tanzania in the lead at 68% annual growth.

This difference between fixed line and mobile penetration is further corroborated in recent survey data. The latest TNS Digital Life Kenya Survey shows that 60% of Kenyans

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**Exhibit 4: Mobile, Internet, and fixed broadband subscription penetration**

<table>
<thead>
<tr>
<th></th>
<th>Mobile cellular penetration</th>
<th>Internet users</th>
<th>Fixed broadband subscriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Per 100 inhabitants</td>
<td>Per 100 inhabitants</td>
</tr>
<tr>
<td>World</td>
<td>67</td>
<td>26.0</td>
<td>7.00</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>38</td>
<td>9.0</td>
<td>0.10</td>
</tr>
<tr>
<td>Kenya</td>
<td>49</td>
<td>10.0</td>
<td>0.02</td>
</tr>
<tr>
<td>Rwanda</td>
<td>24</td>
<td>3.0</td>
<td>0.08</td>
</tr>
<tr>
<td>Tanzania</td>
<td>40</td>
<td>1.6</td>
<td>0</td>
</tr>
<tr>
<td>Uganda</td>
<td>29</td>
<td>10.0</td>
<td>0.02</td>
</tr>
</tbody>
</table>
access the Internet through mobile devices, while computer usage was below 40%, whether at home, work, or an Internet café. Furthermore, many applications available over the Internet in other parts of the world are available in East Africa via mobile networks.

High mobile usage rates have spawned a number of remarkable success stories of local innovation within the mobile telephony and data services sectors. In Kenya, for example, Safaricom has seen the market penetration of its M-Pesa money transfer product grow significantly since it was launched. The company has a total of approximately 15 million subscribers today. Out of necessity, mobile application development has become a very active area of development and has become very sophisticated. This is evidenced by Virtual City, a Kenyan company that won the top prize of USD $1 million at Nokia’s Growth Economy Venture Challenge. Nonetheless, East Africa still suffers from a dearth of ICT developers with the necessary skills and resources to convert a good idea or application into a winning business model. Additionally, the requirements of the formal business sector often require more computing and transmission capacity than is available using mobile devices and networks. This is an area of untapped potential for local companies, as foreign companies currently dominate these services.

Infrastructure investment

Common to all countries in East Africa is the massive investment undertaken by both the government and private sector in technology infrastructure, from the landing of the underwater cables in 2009 to last mile initiatives for broadband access. According to Information and Communication for Development 2009 report, every 10 percentage point increase in broadband penetration corresponds to a 1.2 percentage point increase in economic growth. This realization has fueled government and donor-driven activity, as communications infrastructure investments are fundamental to the growth of the economy as a whole.

OPPORTUNITIES FOR ICT SMES IN EAST AFRICA

Based on interviews and market research, we uncovered several high potential areas within the ICT sector that are suitable for SMEs participation. These include:

1. Design and user interface development:

   As more people in the region access applications on computers and smart phones, well designed websites with intuitive user-friendly interfaces will become increasingly important, particularly as they drive traffic and encourage the use of e-commerce. Examples of companies already offering these services include Pamoja Media and Digital Squad in Kenya and Design Kingdom in Uganda.

2. Remote delivery of services (education and healthcare):

   There is a growing shift from building simpler applications aimed at social networking to those that use technology in sectors such as education and healthcare – the so-called ICT4D applications. Examples include Applab in Uganda which has deployed applications to rural areas, focused on weather and agricultural services. Many such applications aim to expand the benefits of ICT use beyond urban sectors and into rural areas.

3. Linking mobile payment solutions to commerce:

   There is increased demand to link mobile payment systems like M-Pesa with online based e-commerce and trading platforms. E-commerce websites such as Amazon, iTunes, Facebook (Facebook Credits), and Google Checkout are difficult to use in East Africa due to the lack of integration between desktop and mobile platforms. As a result, there are opportunities for e-commerce and commercial application development. Pesapal in Kenya is one company in Kenya attempting to bridge this divide.

4. Content generation:

   As use of the Internet matures in East Africa, content generation will become more important. Several companies have emerged in this area, especially related to search products. These include Google Baraza, Eatout.com, and e-government sites like that of the Kenyan government.

5. Software development:

   While established companies like Microsoft and SAP dominate the software development market, there is demand for cheaper products and products that specifically address local needs, such as applications in local languages. For example, Craft Silicon is one of the largest local software companies in East Africa, focusing on financial services for local use. SMS Media in Uganda is another example of a vendor differentiating itself with local language content.

Opportunities in BPO and contact centers

Conditions may now be ripe for the BPO and contact
centers to fully achieve their promise. Earlier efforts may have been hampered by lack of adequate infrastructure and limited use by customers in the local market. That said, a few companies have emerged as solid service providers, including KenCall and Skye in Kenya. As the overall ICT sector continues to develop, the prospects for this segment will continue to improve.

Opportunity to improve regional integration and technology policy in EAC

The East African Community has largely focused on the macro-integration issues that enable broad economic activity, including those of the ICT sector. Examples include improvements in trade, immigration, tariffs, and infrastructure. There is nonetheless an opportunity to do more to craft a specific ICT agenda for the EAC, enabling SMEs in particular. Executives of the EAC have indicated an openness to building on insights from this report to assist in preparing, driving, and communicating an SME focused agenda. For example, the Kenya ICT is considering a national software standards project in which EAC executives have also expressed interest. Another avenue could include the development of common security standards. Such issues call for further and more ICT-specific engagement by the EAC to develop an integrated policy framework for the East African Community.

CHALLENGES FOR ICT SMES IN EAST AFRICA

As seen above, ICT markets in the four countries studied – Kenya, Tanzania, Uganda and Rwanda – are at different stages with respect to their overall size, level of development, education, skill level of the work force and infrastructure. As a result, the primary challenges facing ICT SMEs as they attempt to launch and grow may vary significantly depending on the country.

While the challenges of each country are different, there also common themes across the entire region. These fall into four main categories.

Challenges related to business environment

The first challenges common to ICT SMEs in the region, regardless of size or sector, are related to the overall business climate, particularly with regard to the regulatory regime. The World Bank’s Doing Business report for 2010 ranks the four East African countries from a high of 67 for Rwanda to a low of 131 for Tanzania, out of 183 countries assessed. Rwanda’s relatively high ranking is a new phenomenon, representing a significant improvement from its 2009 ranking of 143. The general difficulties of doing business were manifest in stakeholder comments related to poor intellectual property (IP) protection. Many entrepreneurs also noted the difficulty and cost of officially registering a business, saying this process requires too many unautomated and redundant steps.

Challenges related to levels of business skills among entrepreneurs

In order to develop world class ICT SMEs, East Africa will need to cultivate entrepreneurs with world-class knowledge and training. Currently, across the four countries there is are few skills development training programs to help young entrepreneurs develop the necessary marketing, finance and operational tools needed to launch successful ICT enterprises.

Challenges related to access to finance

Micro, small, and medium sized companies all face broadly similar challenges accessing finance, although their specific needs are different. Three types of financing gaps need to be addressed: start-up, working capital, and capital expenditure. Available financing tends towards investment levels greater than USD 500,000 which is far higher than the typical SME requirement, which may range from USD 25,000 – 100,000. There is significant interest in the East African ICT sector from local governments, multinational corporations and the donor community to address this issue.

Challenges related to the lack of a connected network of entrepreneurs

A hallmark of a thriving entrepreneurial community such as the Silicon Valley in the United States is a robust community of entrepreneurs that exists within a larger “network of trust”. This network enables mentoring, idea exchange, and sharing of practical advice that make for successful industries. This network is further augmented by a self-sustaining ecosystem of universities for providing talent and venture capitalists for funding. Currently such networks of entrepreneurs are in a very nascent stage in East Africa, hampering the growth of SMEs.
### Exhibit 5: Highlighted country strengths and challenges

<table>
<thead>
<tr>
<th>Country</th>
<th>Strengths</th>
<th>Areas for improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>• Strong physical space and network capability</td>
<td>• Few trusted networks and mentorship</td>
</tr>
<tr>
<td></td>
<td>• Government involvement through ICT Board</td>
<td>• Finance for seed stage entrepreneurs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Onerous regulatory regime</td>
</tr>
<tr>
<td>Rwanda</td>
<td>• Best-in-Africa business set-up process</td>
<td>• Focus on BPO and contract services</td>
</tr>
<tr>
<td></td>
<td>• Highly engaged government support for ICT</td>
<td>• Access to markets for local SMEs</td>
</tr>
<tr>
<td></td>
<td>• Educational anchor through KIST</td>
<td>• Limited trusted networks and mentorship</td>
</tr>
<tr>
<td>Tanzania</td>
<td>• Upcoming infoDev supported incubator</td>
<td>• Community for entrepreneurs</td>
</tr>
<tr>
<td></td>
<td>• Emerging grassroots entrepreneur network</td>
<td>• Technical skills and practical experience gap</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Limited market and investment funding</td>
</tr>
<tr>
<td>Uganda</td>
<td>• Wide set of active business networks and associations</td>
<td>• Lack of incubation facilities for early stage companies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Limited “hands on” government involvement</td>
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</tbody>
</table>
Several interventions already exist to support East African SMEs as well as companies within the technology sector. However, very few of these interventions are specific to SMEs in the ICT sector.

We segmented the currently available interventions in three areas.

- Donor-supported interventions
- Private sector driven interventions
- Government initiatives

**DONOR-SUPPORTED INTERVENTIONS**

**Overview**

To date, the donor community has supported several efforts focused on building the skills and networks required for successful ICT entrepreneurship. The current need is on how to expand the impact to a broader set of enterprises. The interventions have been far less successful on improving access to finance, particularly for startup and early stage enterprises. Furthermore, coordination between local government and donors has been could be improved.

**Donor supported interventions: what is working?**

**Access to technical skills**

Donor-sponsored interventions have been successful in supporting competitions aimed at spurring innovation in the technology sector including among SMEs. These are typically run in conjunction with private sector companies. Examples include the Apps for Africa contest; the G-20 SME finance challenge; the Enablis sponsored Chora Bizna competition; and the Tandaa local digital content competition sponsored by the Kenya ICT Board. There is also a focus on education and training including efforts by groups like the Dutch organization Butterflyworks, which provides digital design training for underprivileged youth in Nairobi and the Rockefeller Foundation support of the E-Health Center of Excellence at KIST.

**Access to business skills**

Donor-sponsored initiatives have also been successful in helping trainees develop practical business skills. Nairobits and the Creative Enterprise Project are two noted examples. A focus area has been on enabling the broad set of SMEs (not necessarily technology focused SMEs). Examples include the IFC SME toolkit available online and the Enablis Entrepreneurial Network funded by CIDA with member entrepreneurs in Kenya, Tanzania and Rwanda.

**Access to business networks**

Donors have successfully sponsored business networking events and procured physical spaces that connect entrepreneurs and investors in local markets. Examples include iHub in Nairobi, supported by Omidyar Network and Hivos; nailab in Nairobi, supported by The 1% Club; and the Hive Colan in Kampala, supported by Appfrica. Donors are also supporting networking opportunities through events like Mobile Monday funded by InfoDev.
Donors have increased their efforts to enable SME access to markets by opening up access to procurement processes. Examples of such interventions include the recently announced Sub-Contracting and Partnership Center in Uganda (SPX) which is funded by the United Nations Industrial Development Organization (UNIDO). This effort seeks to provide SMEs with access to supply chains currently dominated by larger companies. The Bandwidth Capacity Support Project funded by the International Development Association (IDA) is designed to help BPO companies meet the cost of internet access. Finally, the Creative Enterprise Project, a partnership between the British Council and the Strathmore University Enterprise Development Center in Kenya, focuses on training and mentoring entrepreneurs in the creative arts.

However, many entrepreneurs bemoan the onerous tender requirements for government and donor-funded projects and lack of readily available information on how to compete successfully. Additionally, there is a perception among SMEs that the procurement process unfairly favors foreign firms.

Donor supported interventions: what is not working?

Access to finance

The most commonly cited gap is the limited access to finance at the seed stage (USD 25,000 to USD 100,000). Most donor-supported SME funding is either at the micro level or driven towards more established technology companies, for example, Craft Silicon, funded by Fanisi Capital. The most prominent funds with donor community involvement tend to invest in mature companies. Examples of these donor-related funds are Aureos Capital (initially funded by Norfund); East Africa Capital Partners (US OPIC); Fanisi Capital (Norfund, IFC, Finfund and others). The IFC’s Grassroots Business Fund is one of the few interventions that appear to target more early-level businesses, although with a minimum investment of USD 250,000, the target range is still north of the needs of many SMEs in East Africa. This funding gap for SMEs makes it difficult for them to grow into larger enterprises.

Furthermore, when suitable funds are available to SMEs, application numbers are frequently low. This is in part due to lack of information, but also because of onerous
application processes that are often too challenging for local companies. For example, some interviewees indicated that they had found The World Bank broadband subsidy application process time-consuming and overly intrusive, and had not applied as a result.

Coordination between local government and donors

A regular refrain from government and policy-makers is that donors’ plans are not coordinated closely enough with existing government plans, leading to disparate outcomes in spite of shared goals. While there are often justifiable reasons for this approach, such as slower and even corrupt bureaucratic processes, a smarter approach is required in order to coordinate efforts between donors and local governments, at the minimum to ensure the plans aren’t working against each other.

PRIVATE SECTOR DRIVEN INTERVENTIONS

Overview

Corporations such as Safaricom, IBM, Nokia and Google are regularly in the news supporting new initiatives aimed at SMEs. To date, these private sector interventions have been most successful in creating access to technical skills, access to business networks and access to finance. However, such interventions have been far less successful in building a sense of trust between established companies and SMEs.

Private sector interventions: what is working?

Access to technical skills

Private sector companies have successfully partnered with educational institutions to harness synergies and help students develop the technical skills required in order to be effective. This model is the direct analog of private company-university relationships that exists in developed world countries like the US. Examples of partnerships that have been geared towards educational institutions include: IBM’s partnership with the University of Dodoma in Tanzania to facilitate research projects on cloud computing and business analytics; Safaricom’s partnership with Strathmore University in Kenya to launch an Innovation Center; and Nokia’s partnership with the University of Nairobi to develop a research center. In addition to these specific partnerships, competitions have been used to showcase innovation and provide support for local entrepreneurial ventures. Examples of these types of competitions include the Nokia Growth Economy Global Challenge and the Google Code Challenge.

Access to business networks

A number of partnerships between private sector companies and ICT SMEs revolve around organised events. For example the regional Mobile Monday series is focused on engaging and connecting the local mobile applications community; the G-Africa series sponsored by Google raises awareness about Google products and opportunities for developers; and the IPO 48 start-

Table 2: Existing interventions – “private-sector”-sponsored

<table>
<thead>
<tr>
<th>Strong interventions</th>
<th>What is working?</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to technical skills</td>
<td>Private company-university relationships similar to model in U.S.</td>
<td>The best way to identify these technologies that impact the masses</td>
</tr>
<tr>
<td>Access to business networks</td>
<td>Networking opportunities provide opportunity to collaborate and share experiences</td>
<td>Partnering with a notable private company over the long term would enhance the network</td>
</tr>
<tr>
<td>Access to finance</td>
<td>“Private sector”-driven investment funds is key source of funding for technology SMEs</td>
<td>Create a “trusted” network with clear code of conduct and steering committee</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interventions requiring enhancement</th>
<th>What is not working?</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship between large companies and SMEs</td>
<td>Trust issues between established companies and their SME partners are mostly IP-related</td>
<td>IP protection and code of conduct still weak</td>
</tr>
</tbody>
</table>
up weekend in Kenya is driven by entrepreneurs from Estonia.

Another growing area of support is in the incubator and technology hub sector. The iHub in Nairobi is supported by companies like Wananchi/Zuku and Google; Silicon Valley-based I/O ventures is a potential supporter of the new incubator in Tanzania; and Hive Colab got its start via the privately funded App Africa Labs. Furthermore, Afrilabs is an effort being driven by Erik Hersman and the iHub team, along with other incubators throughout Africa, to build relationships and share knowledge amongst developers across the Continent.

However, in addition to events, entrepreneurs have expressed a desire for formalized sharing of ideas across companies. In particular, many entrepreneurs believe that developing case studies based on local success stories would be a great way to share ideas about what works and what does not work for different business models and to inspire the next generation of entrepreneurs.

Access to finance

Though it is still in a relatively nascent stage in the region, private-sector driven investment funding is proving to be a key source of funding for ICT SMEs. There are several investment funds purely funded by the private sector, for example E-Ventures Africa, founded by two Dutch entrepreneurs. Within its first year of its operation, E-Ventures Africa has already invested in three ICT SMEs, a relatively higher number compared with donor-supported funds. The Midnight Sun team have also proposed an iAccelator program that would finance 30 technology entrepreneurs focusing on Kenyan mass market consumers, with investments of USD 25-30,000 for 20% equity in 1-year partnerships.

This is important, as a high-level mapping of the financing marketplace with the more prominent names shows limited activity taking place in the critical financing range for these entrepreneurs. In addition, the key financing gap area of USD 25,000 to USD 100,000 is on the lower end of the scale that the funds focus on, which creates a disadvantage due to the private equity business model that encourages larger deals. Though funding from private sector partners is increasingly available, entrepreneurs consider most of the local funding to be either "predatory" or difficult to access. As one entrepreneur noted, "There is local money, but the networks are not transparent."

Private sector interventions: what is not working?

Trusting relationships between established companies and SMEs

Overall, the most significant shortcoming of private sector interventions have been trust issues between established companies and their SME partners. On the one hand, established companies are concerned about the protection of corporate intellectual property, while SMEs worry about the risk of larger partners stealing with their business plans.

GOVERNMENT INTERVENTIONS

Overview

Governments in all four countries have committed to investing in ICT as an important part of their national growth plans. However, there is some variation in government involvement within each country and a need for an integrated policy framework by the East African Community Secretariat.

To date, government initiatives have been most successful in creating access to business skills, providing content to spur application development and demonstrating a high level of visibility and participation, particularly the governments of Kenya and Rwanda. However, these interventions have been far less successful in improving access to markets, providing an overall supportive regulatory environment and fostering strong relationships between SMEs and governments.

Government interventions: what is working?

Access to business skills

Governments have championed ICT through skill incubation efforts and networking events, for example, the Tandaa workshops in Nairobi supported by the Kenya ICT Board. This high level of government visibility has enhanced their credibility in the eyes of entrepreneurs.

Providing content to spur application development

There has been a strong effort on the part of governments to make available previously offline local content available online. Kenya’s push for e-government is a noted example. The availability of data will serve to encourage application development across the region.

Active government participation in Kenya and Rwanda

The governments of Kenya and Rwanda have spearheaded efforts to boost ICT investment to infrastructure as well as BPO and contact centers. The Kenyan government, for example, provided large subsidies for the building of
underwater telecoms cables in East Africa. They have also provided grants to BPO organizations. The Kenya ICT Board has also championed local content creation and application development with initiatives such as the Tandaa Digital Content Grants Program.

Government interventions: what is not working?

Access to customers and markets

One area of concern with regard to government support of technology SMEs has been government procurement processes, which SMEs find challenging. The challenges take many forms, including onerous application processes and experience requirements for government vendor selection. Some governments, such as that in Rwanda, have successfully addressed this concern with SME-focused tenders and initiatives.

Supportive regulatory environment

The business environment in East Africa presents difficulties for SMEs, including challenging and restrictive registration, licensing, and taxation processes. Feedback from interviewees suggested that the licensing processes in Kenya, Uganda and Tanzania raise the barrier for creating a new company too high. Rwanda is a clear exception in this regard.

Relationships between government and SMEs

Another frequently noted problem area is the perceived weakness of the relationship between formal government entities and the SME community. Entrepreneurs interviewed said that while larger businesses have access to lobbyists and lawyers, little is done to advocate for the needs of small businesses. More importantly, entrepreneurs believe that current legal intellectual property protection provisions are inadequate both as they exist on the books and in terms of enforcement.

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**Exhibit 6: Financing gap in East Africa**

<table>
<thead>
<tr>
<th>Funds (not exhaustive)</th>
<th>Typical financing range USD, thousands</th>
<th>Typical structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa Media Venture Fund</td>
<td>20 - 140</td>
<td>Equity, board seat</td>
</tr>
<tr>
<td>Business Partners</td>
<td>50-500</td>
<td>Quasi-equity ¹</td>
</tr>
<tr>
<td>eVentures Africa Fund</td>
<td>25-250</td>
<td>N/A</td>
</tr>
<tr>
<td>Fanisi</td>
<td>500-3M</td>
<td>Equity</td>
</tr>
<tr>
<td>Fusion Capital</td>
<td>100 - 500</td>
<td>Equity</td>
</tr>
<tr>
<td>Grofin</td>
<td>50-1,000</td>
<td>Equity</td>
</tr>
<tr>
<td>Open Capital Fund</td>
<td>500-2M</td>
<td>Equity, quasi-equity ¹, and debt</td>
</tr>
<tr>
<td>Actis</td>
<td>&gt;10M</td>
<td>Equity</td>
</tr>
</tbody>
</table>

¹Could include revenue participation
Note: Logarithmic scale
# Table 3: Existing interventions – government-sponsored

<table>
<thead>
<tr>
<th>Strong interventions</th>
<th>What is working?</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to business skills</td>
<td>Local governments good at supporting incubation efforts and attending networking events</td>
<td>Do more: any additional support and expertise from other geographies/regions/countries to execute on the goals of transparency and openness should be available</td>
</tr>
<tr>
<td>Providing content to spur application development</td>
<td>Posting a lot of previously offline local content online (push for e-government)</td>
<td></td>
</tr>
<tr>
<td>Active government participation in Kenya and Rwanda</td>
<td>Spearheading efforts to boost the technology space from investment to infrastructure</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interventions requiring enhancement</th>
<th>What is not working?</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to customers/markets</td>
<td>Local market procurement processes appear to be biased against start-ups</td>
<td>Initial “kick-start” effort can be centered around set-asides and procurement training</td>
</tr>
<tr>
<td>Supportive regulatory environment</td>
<td>Regulatory environment is not supportive of start-ups</td>
<td>Export the Rwanda setup model</td>
</tr>
<tr>
<td>Relationship between government and SMEs</td>
<td>Perceived weakness of the relationship between formal government entities and the SMEs.</td>
<td>Direct lobbying or building SME networks to critical mass to advocate for themselves</td>
</tr>
</tbody>
</table>
OVERVIEW

The East Africa ICT Business Engine for SMEs is a concept that comprises a critical mass of skilled entrepreneurs connected by a strong network where innovation can thrive and drive job creation. Enabling it is a regulatory and business environment that simplifies the process for entrepreneurs to do business within the region and globally. We identified five components needed to develop the ICT SME Business Engine. These components address specific challenges facing East African ICT entrepreneurs, and can realize the vision of a robust and dynamic ICT sector that creates innovation, jobs, and global companies to the benefit of all East Africa.

1. Develop a Fully Connected Network:

Create a networked community of trust that enables both collaboration and competition where appropriate. The network should also provide advice, mentoring, financing, skill-building, and community representation.

2. Launch Skills 2.0:

Cooperate with academic and training institutions to ensure that young East Africans have the full range of business and technical skills they need.

3. Support Innovators:

Support the start-up and growth of companies that create innovative solutions for business and development challenges in the region and beyond.

4. Enable Job Creators:

Support the development of stable service companies that generate employment opportunities for knowledge workers.

5. Upgrade the Business Environment:

Improve business conditions to simplify the process to establish companies and conduct business.

These interventions would be components of a unified program. The components are of course interdependent, and success of the program requires the full implementation of all of them together. The program also requires the coordinated efforts of the public and private sectors, academic institutions, NGOs, and international organizations. Specific interventions and program partners would vary depending on the specific East African country.

PROGRAM CONCEPT

The program has two components that provide direct support to a targeted nucleus of promising entrepreneurs to be identified in each country. Support for Innovators (Component Three) is designed to help innovative entrepreneurs get their businesses off the ground; Enable Job Creators (Component Four) targets companies in the BPO, contact center, and systems integration segments where there is existing business and high potential to generate immediate employment opportunities. The other components are designed to
address systemic and environmental challenges. Develop a Fully Connected Network (Component One) aims to strengthen business networks so that they are more supportive of entrepreneurs and more conducive to innovation. Launch Skills 2.0 (Component Two) is designed to improve quality of and access to technical and business training. Upgrade the Business Environment (Component Five) consists of activities to create a more business-friendly environment with a special focus on policies and practices to eradicate the challenges faced by ICT SMEs. This combined approach of direct intervention to build local institutional capacity is designed to drive immediate impact that can be sustained over the long term.

Program Component 1: Develop a Fully Connected Network

“These networking opportunities are great…and we can share solutions for the problems we all face.”

“I need to talk to someone that has done this before.”

The desired outcome of this program component is a networked community of trust that collaborates, competes, and provides its members advice, mentoring, financing, skills, and representation.

This effort seeks to embed the right cultural norms and governance for shared knowledge and collaboration within the local community of entrepreneurs. In many cases it requires strengthening the already existing business networks.

This component would be comprised of helping these groups increase their SME membership and their value proposition to entrepreneurs. It includes program development and support for events and spaces that bring members together in the physical world to strengthen working relationships developed online.

Objectives
- Foster a business culture that breeds innovation and collaboration
- Create a shared knowledge base
- Continue to grow and broaden a sustainable network

Activities
- Support the establishment and strengthening of ICT business associations, networks, and clubs
- Support the establishment of spaces that encourage convening and collaboration
- Develop and disseminate case studies and how-to guides

Issues addressed
Access to markets, access to business skills, access to technical skills.

Partners
Existing ICT business associations and networks, individual entrepreneurs and companies, universities, international organizations, specifically:
- Kenya: iHub is already recognized as a critical node of activity, events, and networking by nearly all parts of the ICT ecosystem (entrepreneurs, private firms, donor community, government, academics) in East Africa.
- iHub is currently developing programming to leverage its naturally forming network, as well as extend its impact within the region by connecting with other networks and technology spaces through the Afrinet initiative; both initiatives are worth supporting and extending. Additional entrepreneur networks that could be integrated include Strathmore University’s entrepreneur community and the entrepreneurs taking part in the Tandaa programming. Extending the iHub launch and development model to other locations in East Africa would deliver the benefits as discussed in the iHub case study example.
- However, to deliver the next level of the fully networked environment, entrepreneurs and experts have identified a set of programming and capabilities for iHub and other locations/networks to deliver. These capabilities are listed in the following exhibit.
Exhibit 7: What might iHub version 2.0 look like?

Programs

Mentorship program
- On-going, structured program with assigned mentors and mentees at manageable ratios (e.g., 1:5)
- Clear responsibilities and time commitments for both groups
- Defined business roadmap to drive progress and milestone achievement

Active feedback from the community
- Periodic surveys and focus groups to all stakeholder categories to ensure events, programming and skills development meets expectations

Creative collaborator matching
- Links to other professional and academic networks to provide a full compliment of business and technical skills (e.g., accountants, lawyers, marketing professionals)
- Also links to potential collaborators outside of specific geography (e.g., Afrilabs as a connector)

Knowledge warehouse
- Key data sources required to every early tech enterprise
  - Business start-up guide, tailored at the country or locality level
  - Access to basic data sources to complete business plans (e.g., census)

Strong community norms and mechanisms
- Clear and communicated code of conduct
- Mechanisms to resolve disputes within the community

Rwanda: While there are no dominant physical spaces or ICT/developer networks within Rwanda, the Kigali Institute of Science and Technology has business incubation space. A clear challenge will be forming the initial network of entrepreneurs and developers. Fortunately the government, through the Rwandan Development Board, is supportive of the development of the physical space and the network, and would prefer to see the process led and driven by the entrepreneurs themselves.

Tanzania: The Tanzanian Commission on Science and Technology (Costech) is in the process of developing an incubator space for entrepreneurs. However there was some concern on the direction of the space with government guidance. A few structured networks exist, led by respected mid-tenure entrepreneurs that could form the hub of the network.

Uganda: Hive Colab, near Makerere University Business School in Kampala, has the core physical presence and has started to host some programming. Improvements could include connecting this space with additional marketing and development resources, and entrepreneurs associated with other Ugandan academic institutions.

Timeline

- Phase 1: refine initiative fact base and consolidate support
  - iHub 1.0
    - Develop partners among potential physical space providers (i.e., academic institutions or donor community) and existing network partners – Month 1
    - Assign roles among partnership team, including key chairperson’s roles – Month 2
    - Agree on guiding principles for the space and network (potentially using iHub as an example) – Month 2
  - iHub 2.0 (Kenya): Understand current capabilities and resourcing across five program modules (e.g., mentorship program) – Month 3

- Phase 2: develop specific action plans
  - iHub 1.0
    - Develop business plan for network space – revenue/operating fund model, marketing plan, operations plan – Month 3
Develop site location, build out, and IT support plan for space – Month 3

Consolidate potential stakeholder database (e.g., entrepreneurs, local ICT firms, multinational ICT firms, donors, government, academia) at the institution, firm, and individual levels – Month 3

iHub 2.0

Develop specific workplans and timing for implementation of 5 module areas. Leverage existing plans for Afrilabs – Month 3

Secure initial financing for build out and first 12 months operations – Month 3

Phase 3: execute implementation plan

iHub 1.0

Build out physical space – Month 4-5

Develop events plan for next 6-12 months – Month 4-5

Design networking and mentorship programming – Month 5

Soft launch, begin to shift existing programming to the physical space – Month 5

Full launch with stakeholders and dignitaries – Month 6

Begin networking modules (once stakeholders are acclimated to the space) – Month 7

iHub 2.0

Identify network participants, mentors and non-tech collaborators – Month 4-5

Design feedback collection mechanisms (potentially in conjunction with the overall Business Engine Coordination Office) – Month 4-5

Design networking and mentorship programming – Month 5

Design conflict resolution mechanisms and communications strategy – Month 5-6

Phase 4: monitor and track progress (on-going)

Resource requirements: Year 1 requirements of ~USD 300,000 - 500,000; Year 2 of USD 200,000 - 400,000

Initial ramp-up requirements

- Time frame: Months 1 - 3
- People requirements - program manager (1 FTE); administrative resource (1 FTE) to coordinate the various stakeholders, travel/non-compensation expense budget

- Financial requirement: Total USD 300,000 (100,000 per country, ex-Kenya)
- Physical space build out, USD 50,000, based on iHub experience
- General and administrative (including staff) of USD 50,000

On-going requirements

- Time frame: Annual basis

- People requirements - program manager (1 FTE) to drive events, programming and network development; administrative resource (1 FTE) to coordinate the various stakeholders, travel/non-compensation expense budget (include support for expanded iHub 2.0 capabilities in Kenya)

- Financial requirements: USD 200,000 per annum, based on ramped up iHub experience (to be confirmed)

- Time to self-sustainability/partial-sustainability: 12-24 months, through a combination of sponsored programs, membership fees, and grants

Metrics

- Monitoring and evaluation

  - Input metrics and leading indicators
    - Number of active entrepreneurs in network database
    - Amount of sponsorship at the network level (vs. event level)
    - Number of events held

  - Output and result metrics
    - Number of collaborative projects started (case studies will be required)
    - Growth of active membership over time
    - Growth of mentors over time
    - Growth of existing and new companies established by members
    - Participant satisfaction ratings
    - Evaluation of skills by entrepreneurs at start and end of program, and 6 months after completion
      - Self-evaluation
      - Mentor evaluation
Percentage of businesses operated by program graduates that survive for 1, 2, 3 years after program completion (versus baseline rates)

Risks and mitigation tactics

- **Key risks**
  - Inability to drive meaningful traffic to the location upon launch
  - Inability to sustain traffic over time
  - Inability to recruit and retain mentors

- **Mitigation tactics**
  - Identify “network nodes” in each community to ensure initial traffic – academic institutions, key “big brother” entrepreneurs
  - Provide a mix of immediate incentives (e.g., iHub, very fast Internet available for techies), and longer acting incentives (e.g., quality programming); actively poll and survey participants to ensure satisfaction
  - Design and communicate value proposition for mentors (e.g., access to talent, access to technology); buttress with community norms and transparency to build confidence that ideas will be protected

Program Component 2: Launch Skills 2.0

“We’re geeks. We need people who can market and communicate.”

“At university we learned how to code, but our professors don’t know other things we need in the real world.”

The availability of highly skilled knowledge workers will be critical to the success of the East African ICT sector. Companies of all sizes need access to world-class developers, programmers, network engineers, and other technical specialists in order to compete globally. Entrepreneurs and their employees will also need sound business and project management skills in order to start and run their businesses successfully. Upgrading the skills and educational resources available will ensure a ready supply of well-trained IT professionals earning the confidence of local employers, international clients, and investors.

Launching “Skills 2.0” will require co-operation with academic and training institutions to ensure that young East Africans have the full range of business and technical skills that they need. Entrepreneurs and their employees should understand basic business principles, project management, and the fundamentals of core disciplines including marketing, operations, and financial planning. The sector would also benefit greatly from a large number of ‘techies’ with recognized certifications such as those offered by Microsoft (e.g. MCM, MCITP), Oracle (e.g. ODCA), Cisco (e.g. CCIE and CCDE). Standardization would provide employers and potential customers greater confidence in the skills of the local workforce. Such certifications could help advance the ICT sector much as proliferation of CPAs and CAs advanced the accounting and finance professions and businesses that depend on these skills. In addition, there should be support for developing a ‘continuous education’ culture in which ‘techies’ are supported in finding resources for online self-education to keep their skills and knowledge sharp and up to date (e.g., the ‘top ten new open-source tools for developers’).

Objectives

- Produce university computer science graduates with upgraded skills - both technical and practical, problem solving skills – to create business savvy technologists
- Fast-track industry standard certifications and post-certification continuous learning opportunities

Activities

- Support upgrading university computer science curricula: incorporate hands-on experiential learning; include exposure to business concepts; teach project management skills
- Provide broad access to industry standard training and certification programs
- Provide business skills training and business plan development support

Issues addressed:

Access to technical skills, access to business skills, and access to markets

Partners:

Universities (in the region and internationally recognized leaders), governments, private sector companies, international organizations, specifically

- **Kenya:** Strathmore University in particular has a strong SME training program that focuses on business skills – as discussed in the following exhibit. The program is largely underwritten by the British Council and has trained 100 entrepreneurs in the creative industry in Kenya over the past 12 months. The Dean of the Institute of Continuing Education indicated that the core set of trainings could be extended to ICT and tailored with input from the industry within a 3-month timeframe.
Exhibit 8: Strathmore Enterprise Development Center

**Brief overview**
- Located in Nairobi, Kenya
- Offers practice based learning to managers of SMEs in the creative industries (e.g., drama, theatre, writing)

**Why model worked?**
- Demonstrates successful business practices through case studies
- Specific focus on challenges within the local/Kenyan business environment
- Provides hands-on experience that participants can leverage in their own businesses
- Provides ongoing mentorship through peer networks of trainees, alumni and educators
- Impact: 100 entrepreneurs trained in 3 cohorts over course of the year; 7 trainers involved

**Potential improvements**
- Need to expand coursework to topics specific to ICT including developer content
- Develop leverage model to impact students in EAC outside of Kenya (e.g., training at local universities in EAC ex-Kenya) Bolster research activity and create a center of knowledge relevant to ICT SMEs
- Design mentorship program
- Provide dedicated access to finance

iHub currently hosts several events centered on the latest trends in technology through its Mobile Monday program. This could be a platform to develop a structured set of courses around discrete, commercially valuable topics.

- **Rwanda:** The RDB has been actively engaged in setting standard for training and has a budget for training exercises that has been under-used by the private sector. In addition, both local academic institutions are engaged in business incubator and technical training (for example, the Kigali Institute of Science and Technology, KIST) as well as international institutions (e.g., Carnegie Mellon through the ICT Center of Excellence under development in Kigali).

- **Tanzania:** There are myriad institutions offering business skills development in both university and non-university settings, including the British Council, the University of Dar es Salaam Entrepreneurship Center, and the Tanzania Entrepreneurship Forum. The challenge will be coordinating among these organizations to ensure coverage across all key business and technology issues.

- **Uganda:** Makerere University’s Business School provides business skills training and access to internships. In addition, the Hive Colab is starting a Mobile Mondays program in Kampala as well, to improve technical capabilities in the developer community.

**Timeline (based on experience at potential partnering academic organizations)**

**Phase 1: identify potential university partners**
- Map out criteria for potential university partners e.g. curricula, ICT focus, entrepreneurship experience – Month 1
- Identify potential university partners that fit criteria across the region, develop hypothesis on which programs are pilotable in the near term, and sequence potential rollouts by country – Month 1
- Meet with potential university partners to discuss opportunity for partnerships, sign Memoranda of Understanding – Month 2

**Phase 2: develop specific action plans**
- Secure funding for partnership initiatives – Month 1-3
- Develop plan for partnerships – revenue share, IP ownership, training etc. – Month 3
- Map out technology curricula of potential partners
and suggest improvements – Month 3-5

- Develop pilot for small group of ICT entrepreneurs in most developed program: customize programming for ICT, identify SME and ICT trainers, identify mentors – Month 2-4

- In other geographies:
  - Assess existing capabilities in other partner organizations and work with them to develop programming – Month 4-6
  - In other geographies: customize programming for ICT, identify SME and ICT trainers, identify mentors – Month 4-6

- Phase 3: execute implementation plan
  - Sign partnership agreements with universities – Month 3-4
  - Launch pilot in one country, collect and continuously disseminate learnings – Month 5-7
  - Evaluate program and fine-tune operations and programming – Month 8
  - Begin roll-out in other geographies – Month 7-9

- Phase 4: monitor and track progress (on-going)

Resource requirements: Year 1 requirements of ~USD 60,000 - 90,000 per country to train 100 entrepreneurs; Year 2 of USD 100,000-USD 150,000 per country: across 4 countries, single site per country, 100 entrepreneurs trained, Year 1 at USD 250,000 – USD 400,000; Year 2 at USD 400,000 – USD 600,000

- Initial ramp-up requirements
  - Time frame: 6 months
  - People requirements: Curriculum coordinator at East Africa level, 1 FTE; travel and marketing budget
  - Financial requirement: USD 50,000 at the regional level

- On-going requirements
  - Time frame: Annual
  - People requirements: Curriculum coordinator at East Africa level, 1 FTE; travel and marketing budget; contracted programming to Universities (at a rate of USD 50,000 to USD 100,000 per 100 entrepreneurs trained)
  - Financial requirements: USD 100,000-USD 150,000 per country

- Sustainability plan: Shift from a dominant donor subsidy (as in the case of Strathmore University and the British Council) to a mix of donor subsidy, business sponsorship support and entrepreneur enrollment fees as the program develops a reputation as strong talent developer: 12-24 months

Metrics

- Monitoring and evaluation
  - Input metrics and leading indicators
    - Number of universities qualifying as potential partners
    - Number of university partnerships agreements signed
    - Number of entrepreneurs that apply but do not enroll from lack of funds
    - Number of mentors/ trainers involved
  - Output and result metrics
    - Number of training courses held at local universities
    - Number on non-university students served through the programming
    - Number of start-ups launched from university-private partnerships
    - Evaluation of skills by entrepreneurs at start and end of program, and 6 months after completion
      - Self-evaluation
      - Mentor evaluation
    - Percentage of businesses operated by program graduates that survive for 1, 2, 3 years after program completion (versus baseline rates)

Risks and mitigation tactics

- Key risks
  - University setting and trainers viewed as too academic/ not relevant for cutting edge ICT sector
  - Economics will always depend on sponsors, donors or corporates, as the lean resourcing of ICT entrepreneurs doesn't allow for a considerable training budget
  - Relevance of training is not truly known until the entrepreneurs reach/fail to reach the next milestone

- Mitigation tactics
  - Develop mix of academic and entrepreneur (ICT
preferred, but not necessary) trainers

- Creative funding on the part of entrepreneurs – equity stake, or percentage of profits after the organization has hit certain development milestones, similar to the InfoDev incubator in Tanzania
- Monitoring of impact of training through surveys, interviews, and mentor feedback to rapid program refinement

“[Potential investors] don’t understand ICT at all…we need to educate the bankers and investors.”

“[T]here is money for the local restaurant and for the

This component is designed to support the start-up and growth of companies that create innovative solutions to business and development challenges in the region and beyond. Successful innovation will improve the way people in the region live and work. The next generation of business and consumer services will drive economic activity; ICT for development (ICT4D) innovations can help solve some of the most daunting problems in healthcare, education, and income generation faced by low-income communities. Successful local innovation also provides a ‘halo effect’ increasing the credibility of the region as a serious player on the ICT world stage.

Activities under this component would provide direct support to promising innovative entrepreneurs, replicating some of the qualities found in successful and sustained investment development environments such as Silicon Valley. Depending on the needs of the individual entrepreneur, support might include funding, introductions to investors, business plan review, training, mentoring, capacity support for critical business functions, introduction to potential partners and clients, and public relations. As regards to funding, options should be tailored to meet the needs of individual entrepreneurs, and could include fellowships to support ‘boot-strappers’ for a 3-6 month sabbatical to focus on their businesses; small amounts of seed capital; financing for capital investments; and venture funds.

Objectives

- Increase the number of successful start-ups
- Increase the number of successful firms driving innovation in East Africa

Activities

- Provide business plan development assistance
- Provide capacity building support and training targeted to meet the needs of the business
- Provide leadership mentoring and introductions to support top management
- Develop a menu of financial offerings for start-up companies
- Create and support venture funds for startups and other companies requiring less than USD 50,000

Issues addressed

Access to business skills, access to finance, access to markets, and access to technical skills

Partners

International organizations, local training organizations, angel investors, governments

For example, The Institute for Electrical and Electronics Engineers (IEEE) has been a very active organization in Kenya. Among its activities is an annual Engineering Exhibition which targets young technology innovators across East Africa. Every year IEEE carefully selects 200 engineering students with innovative ideas to take part in competitions and an exhibition, resulting in a commercialization rate of more than 80% for exhibited software ideas. A partnership with IEEE would be very useful in identifying entrepreneurs with promise, and could benefit IEEE by extending its reach within the region. Right now, participants from Kenya's University of Nairobi and Uganda's Makerere University dominate.

- Kenya (and Pan-EAC): private equity firms, including firms that have participated in the Tandaa workshops and Midnight Sun, TBL Mirror, find
- Rwanda: the Rwandan Development Board

Mentoring interventions

In combination with the first intervention, we see the mentorship activities taking part in combination within the broad network development; the programming can be launched with the location/network partners once they have a critical mass of attendance and events. It is worth noting that InfoDev is also developing incubators in both Tanzania and Kenya, both slated to open in 2011. Mentoring along with business skills were highlighted as critical areas for development from our conversations in the investment community.

Financing

Given the scale of the challenge at the regional level, we propose piloting a private-donor community partnership to successfully identify, fund, mentor, and transition entrepreneurial ventures to the next funding and development stage. On the private sector side, an
investment committee will need to be recruited from a combination of successful East African entrepreneurs, expatriates, and private equity professionals. This could be done in conjunction with Component 1: Developing the Fully Connected Network, providing the core of mentors to sit on the board. The donor community, in combination with multi-national private organization and foundations, can provide operational financing as well as co-invested funds, as well as potentially subsidizing the operating costs of the private investment committee participants (e.g., smart, cost effective due diligence vs. hiring investment consultants). Some organizations that may be willing to take part in this program include:

Timeline

- **Phase 1: criteria and funding**
  - Develop criteria for assessing business plans of start-ups – Month 1
  - Develop and distribute marketing program to attract eligible companies – Month 1-2
  - Obtain potential source of funding to support program and funding approach (e.g., co-investment, subsidized / preferential returns)– Month 2-3
  - Develop network of potential experts to assist companies – Month 3-5

- **Phase 2: develop specific action plans**
  - Detail ways in which entrepreneurs will receive assistance from program (e.g. training, funding, workshops) – Month 2-4
  - Determine specific funding milestones; set up specific milestones for achievement – Month 2-4
  - Determine mentorship and skills programming to support the entrepreneurs; determine roles and responsibilities for investment committee – Month 3-4
  - Establish partnerships with donors or private enterprises to fund the program – Month 3-6

- **Phase 3: execute implementation plan**
  - Enroll companies in program – Month 5-9
  - Conduct workshops for newly enrolled companies – Month 6-10

- **Phase 4: monitor and track progress (on-going)**

Resource requirements: Year 1 requirements of ~USD 225,000; Year 2 of USD 250,000 (not including capital budget)

- Initial ramp-up requirements

- **Time frame: 9 months**
- **People requirements: Investment manager, that reports to the investment committee (seconded from Private Equity company), travel and marketing budget**
- **Financial requirement: USD 100,000**

- **On-going requirements**
- **Time frame: Annual**
- **People requirements: Investment manager, that reports to the investment committee (potentially seconded from Private Equity company), travel and marketing budget; due diligence budget**
- **Financial requirements: USD 250,000**
- **Capital requirements: Initial pilot fund of USD 1,000,000 to finance 20-40 businesses**
- **Time to self-sustainability/partial-sustainability: permanent donor participation on the fund side**

Metrics

- **Monitoring and evaluation**
  - Input metrics and leading indicators
    - Number of companies enrolled in program; number of impacted employees and clients
    - Funding amounts
    - Estimated improvement in valuation and economics upon financing
  - Output and result metrics
    - Operational metrics of companies – revenues, profits, EBITDA; improvement over time
    - Number of firms that raise a successful next round of funding
    - Percentage of businesses operated by program participant rates that survive for 1, 2, 3 years after program completion (versus baseline rates)

Risks and mitigation tactics

- **Key risks**
  - Intervention expenditures on this topic may have a better return in training versus direct funds
  - Considerable investment return risk on the funds
  - Inability to source quality investment committee members

- **Mitigation tactics**
Conduct a small pilot to test the concept – the number of companies with a financing gap is so considerable that innovative approaches are likely worth testing.

Diversify the risk by partnering with several organizations or adjusting return expectations.

Look beyond ICT industry for entrepreneurial expertise; any services entrepreneur will have faced similar issues such as the lack of tangible assets, IP concerns and importance of product and service design.

Enabling job creators requires support for the development of stable companies that generate employment opportunities for knowledge workers. These companies focus on capturing parts of existing markets. They will serve as channel partners for large multinationals (e.g., Oracle, Cisco, Microsoft, Nokia, Apple and Google); support government and regional IT initiatives (digitalization of records, e-government, and shared services); and provide outsourced services to domestic and international companies.

Success in this market requires business savvy, operational excellence and organization; companies that serve these markets are generally labor intensive and create large number of well-paying and well regarded jobs. These companies create jobs and wealth, and can change perceptions about the skills and capacities of developing countries, which can help drive economic integration and growth.

This program component can help provide improved access to markets, skills and finance. Market access can be facilitated by working with governments and large companies to explain and showcase local companies; helping local companies better understand tender processes and requirements; and supporting development of pro-SME contracting practices. Capacity support could include targeted training programs, management secondments, and advisory support. Finally, access to finance could be improved by developing invoice financing to support companies with a strong pipeline of business and daunting working capital requirements; financing of capital expenditure for companies that need to invest in equipment to related to contract execution.

Objectives
- Increase the number of local companies that serve as channel partners for major IT multinationals
- Increase the number of local companies that implement government IT initiatives
- Increase the number of local BPO, contact centers and system implementation companies that serve the domestic private sector
- Become an off-shoring destination of choice

Activities
- Provide capacity building support and training targeted to meet the needs of government clients (digitalization, e-government, shared services)
- Provide capacity building support and training targeted to meet the needs of the domestic private sector
- Provide business development support (e.g., consultants to support tender process; create forum for presentations to buyers)
- Create a fund to support companies pursuing existing markets
- Support the BPO and contact center segment in pursuing international clients

The activities under this program component should be sequential. The experience of the Kenya ICT Board in promoting the BPO and contact center segment is instructive. First, companies should attract government and local clients. These contracts provide much needed experience and credibility. In courting international clients, potential targets can be wary of companies lacking public or private sector clients in their home markets. Therefore, if a government entity is to support promotion of a sector, it is important they demonstrate their confidence in that sector by using its services. At the same time, the sector should pursue local clients and demonstrate their ability to deliver high quality services. Only then, will they have the track records international companies are often looking for.

Partners:
- International organizations, the EAC, governments, private sector companies
- Government procurement arms such as the Public Procurement Oversight Authority in Kenya, Rwanda Public Procurement Authority, Public Procurement Regulatory Authority in Tanzania, and Public Procurement and Disposal of Public Assets Authority in Uganda.

Timeline
- **Phase 1**: setup and design of program
  - Identify and hire the program manager; work with partner companies; conduct surveys of locally
outsourced business to understand market size – Month 1-3

- Identify potential partner companies for secondments – Month 1-3

- Structure partnership with local governments – Month 3-5

Phase 2: develop specific action plans

- Develop training program for participating companies (e.g. how to secure BPO work with international clients)– Month 4-6

- Develop plans for working with government to showcase local successful companies, e.g., government procurement conference and training, sponsored by central government procurement arms) – Month 4-6

Phase 3: execute implementation plan

- Enroll companies in program – Month 3-6

- Work with government and large corporates to develop programming and lead the sessions (i.e., get trained by the potential client)

- Conduct training programs – Month 5-7

Phase 4: monitor and track progress (on-going)

Resource requirements: Year 1 requirements of USD 100,000; Year 2 of USD 50,000

- Initial ramp-up requirements

  - Time frame: 6 Months

  - People requirements: Program manager (1 FTE)

  - Financial requirement: USD 50,000 for staff and marketing/ travel budget

- On-going requirements

  - Time frame: Annual

  - People requirements: Administrative manager to track results (1 FTE)

  - Financial requirements: USD 50,000 for 1 FTE and marketing and travel budget

Metrics

- Monitoring and evaluation

  - Input metrics and leading indicators

    - Number of companies participating in program

    - Comparison of participants product offering versus the government / large corporates spend mix

  - Output and result metrics

    - Number of people employed by partner companies

    - Government spend allocated to SMEs through the program

- Satisfaction survey focused on improved competitiveness for SMEs

Risks and mitigation tactics

- Key risks

  - Governments and private organizations may push back on SME set asides

  - Plan assumes government and corporates will participate for free; resources required increase if trainers are hired

- Mitigation tactics

  - Donors can collaborate with EAC and national ICT ministries to gain buy-in with various public and private stakeholders, for both procurement and skills development

Program Component 5: Upgrade the Business Environment

“Getting an SMS short code [from the telecoms authority] is very hard for a small business and it takes very long. It creates a major delay to test and launch a product.”

Improve business conditions in tangible ways that enable citizens and international investors to build strong ICT businesses in the region. A challenging business environment is a drag on the entire economy. Large companies may have the resources to work around major obstacles, though often at significant cost. Smaller companies may be prevented from ever truly taking off. Business environment challenges may be created by government policies, regulations, and processes, business culture, or poor infrastructure. While some changes require long term investment, there are a few interventions, such as those listed below, which can be implemented in the short-to medium term. The impact would be to significantly improve the business environment and chances of success for ICT SMEs.

Rwanda’s business establishment process has been heralded as a regional and continental champion on the ease of setting up a business.

Objectives

- Make starting and registering a business simple and speedy

- Enhance industry credibility and transparency
Exhibit 9: Rwanda’s One Stop Center for Business Investment

• Established in 2004
• Mission is to simplify the process of investing in Rwanda
• Comprises delegated officers from different government authorities including customs, immigration, work permits and company registrar

Why model worked?
• Reduced red tape and simplification of process of starting a business
  – 3 days to start a business or register a property; fastest in Africa and 11th in the world
  – Rwanda the world’s top business reformer according to the World Bank’s 2010 Doing Business Report
• Attractive incentives and simple taxation process enabling small and medium size enterprises to thrive
• Creation of an industrial park, a technology park and free trade zone acting as incubators and network environments for businesses

Potential improvements
• Export best-in-class processes to other EAC countries


Activities
• Support business startups
• Continue subsidy activities such as infrastructure subsidies, ICT tariff reductions
• Streamline business registration and make the process available online
• Support improvement of policies and processes that relate to ICT, e.g., SMS short-code allocation, domain name squatting and bandwidth licensing
• Develop national and regional standards, codes of practice, and regulations
• Support tax holidays for new businesses
• Design a clear intellectual property protection framework and support speedy and transparent resolution of infringement claims
• Create a government sponsored small business administrative function to support specific needs of SMEs

Issues addressed:
Regulatory environment, access to markets, and access to finance.

Partners:
Governments, industry associations, regional and international organizations. In addition, the East Africa Community may be able to serve as a coordinating entity here.

From an advocacy standpoint, a mix of government and private organizations were mentioned as potential focal points for feedback:
• Kenya: Kenya ICT Board
• Rwanda: Rwanda Development Board
• Tanzania: National Business Council, Costech, Tanzania Private Business Council, Tanzania Chamber of Commerce, and Tanzania Investment Authority
• Uganda: Ministry of ICT

Timeline
• Phase 1: setup and design of program
  □ Identify key officials in local governments that can assist with implementing program – Month 1-2
  □ Work with local government to make online registration for businesses possible – Month 1-3
  □ Develop local and regional standards for business operations – Month 2-5
• Phase 2: develop specific action plans
Create action plan for government sponsored small business administrative – Month 3-7
Evaluate opportunity to offer specific subsidies for SMEs in certain sectors (e.g. ICT) – Month 4-6

Phase 3: execute implementation plan
Roll our national and regional plans for SME registration and applications – Month 6-9

Phase 4: monitor and track progress (on-going)

Resource requirements: Not incremental to administrative and program resources as part of the network

Metrics
Monitoring and evaluation
Input metrics and leading indicators
Satisfaction of entrepreneurs with business registration process
Output and result metrics
Time taken to register a new business
Number of cross-border businesses and amount of cross-border business
Percentage of businesses operated by program graduates that survive for 1, 2, 3 years after program completion (versus baseline rates)
Satisfaction surveys across addressed topics (e.g. short code registry)

Risks and mitigation tactics
Key risks
Scope of issues that affect SMEs are broad and sometimes at conflict with other business interests
Conflict generated on these areas might impact other interventions and other donor efforts

Mitigation tactics
Advocacy might take place for SMEs across all industries; seek strong existing non-ICT or general SME advocates to partner with to advance ICT SME agenda
Develop an ICT government advisory board to keep lines of communication open and to jointly problem solve

Business Engine Coordinating Office

As noted above, the five interventions described herein are part of a unified program to drive the growth and development of ICT SMEs. While each component could be run fairly independently on a day-to-day basis, optimal performance of the program as a whole will require coordination and cooperation across the five components (as well as across the four countries). The Business Engine Coordinating Office will manage alignment and communication across the program components and geographies. The Coordinating Office will provide overall strategic leadership; finalize program and component architecture; support the launch of new initiatives; design and track impact metrics; liaise with the East African Community; oversee an annual Regional ICT SME Census; and lead external communications. Objectives, policies, and performance targets will be set at Business Engine Semi-Annual Meetings to be attended by donor representatives, representatives of implementing agencies and partners; government stakeholders; and external advisors.

The importance of the Coordinating Office should not be under-estimated: data collection and analysis, knowledge management and sharing, communication, and coordination are critical to the success of this program. In addition, the Business Engine Coordinating Office serves in part to mitigate the Program-level risks inherent in such an ambitious, multi-party, cross-national initiative.

Overall Group-level Risks and Mitigation Steps

At the Business Engine Group level, there a set of overall risks that should be managed. All of these risks highlight the collective complexity of managing the 5 initiatives and the shared coordination, knowledge collection and marketing that will also be required.

Risks
Donor participation could interfere with the momentum of existing projects: A key principle in our design approach was to build on existing efforts within each initiative area. Adding the agenda of the Business Engine may, in a lot of cases, extend the scope and shift the timeframes out to build a runway for greater impact. A conflict may arise between the Engine and the original program leadership as a result as they see some change in their milestone timing and resources.
Financial dependence on the donor community: Although mitigated already by leveraging existing efforts, there is still a risk that the underlying support model is designed for continuous donor involvement.
Lower likelihood of near-term success on some of the more complex areas: Some of the initiatives will take longer to implement or to realize impact. In particular, Components 3 and 5, which address the finance issues and initiative enhancing the regulatory envi-
environment, respectively.

- Greater challenge in stakeholder management and coordinated decision-making. Governments, private sector players, donors, academics and entrepreneurs will bring their own agendas to the table. This will require careful stakeholder management, communication and coordination. Gaining buy-in from each stakeholder group will greatly improve success of the overall program.

Mitigation

- Clear timelines, partner goals, and individual organization objectives set at the start. This will ensure alignment throughout the project and reduce conflict midstream.

- sunset date for donor financing: Initiative managers and partner organizations will need to consider sustainable business models from day 1, which will improve the success probability of the underlying initiative.

- Leveraging existing programs as part of the basic DNA of the East African ICT Business Engine. This allows the effort to skip the teething phases and leverage the existing capabilities and networks, which are always challenging to build.

- Build early wins under the banner of a Group Coordination Office: Consistent coordination and communications under one brand will build the positive momentum and buy good will for longer term investments that will have to be made.

It is worth mentioning the risks the sector will face if a Business Engine Coordination Office is not established. While many of the ideas will continue to develop organically, the single branded umbrella will allow for a greater coordinated spotlight on all important elements including the initiatives, stakeholders, and entrepreneurs. This will accelerate the timeframe for impact: The expectation is that networks should form faster, participation rates should increase, and the business community will know where to invest, recruit and develop talent.

<table>
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<tr>
<th>Exhibit 10 – Business Engine Coordinating Office</th>
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<tr>
<td><strong>Description</strong></td>
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<tr>
<td>• Donor representatives</td>
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<td>• Lead implementing organizations (component level)</td>
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<td>• Government stakeholders</td>
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<td>• 10-15 participants</td>
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<td>• Coordinating Office Director</td>
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<td>• Junior Management Analyst</td>
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The next wave of growth of the ICT sector in East Africa will depend in part on the establishment of a critical mass of small and medium enterprises with skilled workers connected by a strong network driving innovation and job creation. A supportive business environment, along with continued coordination among stakeholders, will be critical to the success of this effort. The East Africa ICT Business Engine provides a platform for donors and policy makers to implement recommendations arising from this report. In order for the Business Engine to be effective and sustainable, it would be necessary to mandate a centralized guidance and coordinating function - a Business Engine Coordination Office - to oversee need for overall program coordination, research, metric tracking, stakeholder management, communications and marketing. Such a function would likely be overseen by a board of 10-15 individuals representing the major stakeholders in the sector, and would have the ability to monitor, evaluate and influence long term change.

This report was based largely on interviews and workshops with innovative and ambitious entrepreneurs who are dedicated to continuing the strong growth in both the East African ICT sector, and also development of the region in general. Their efforts and commitment, coupled with appropriate policy changes and donor and private sector support can create a sustainable ICT sector that provides East Africa’s people with the future they so strongly deserve.
## Session feedback (1/2)

### Vision

- Overall agreement with vision
- Considerable opinion that benefits for ICT sector to impact East African broadly, not strictly individuals and organizations directly involved in industry

### Interventions

1. **Fully connected network**
   - Broad consensus across countries on importance of physical space and networks linked to that space
   - iHub was commonly cited example as best-in-region currently
   - Importance placed on independence of space and network from institutional agendas
   - Mentors will need training and clear responsibilities as well
   - Some existing networks are too broad for ICT SMEs (e.g., RICTA?)
   - "We have good networks, they just need support to reach more people and do more physical meetings. Everything cannot be done in a virtual network."
   - "Let's not duplicate our [existing] networks, but build capabilities within them"
   - "We are funding the meetings and talks out of our own pockets; knowing there was a solid source of funding would increase the perception of our networks."

2. **Skills 2.0**
   - Bias to partner with corporations for training and internships, with access to latest technologies; however more meaningful opportunities to learn must be developed
   - Create training opportunities in the rural areas as well
   - Push back in Rwanda and Tanzania on whether academic institutions are right institutions to lead "practical" trainings
   - "Universities need to focus on hands-on."
   - "Colleges are academic places and not the right places to learn the practical [side of development]."
   - "Internships are great, but give us the opportunity to practice on real problems; not made up items."
   - "Universities do not know the latest software, they are teaching ones that are very out of date."

### Feedback

- "Could we add something about ICT 4D?"
- "We need to do something in ICT for the villages."
- "This effort leads to benefit all of [East Africa] including the poor."
- "There is money for the local restaurant and for the established business, but not for mine"
- "The banks don’t understand ICT at all"
- "It took us 9 months to get our financing from the bank"
- "We need to educate the bankers and investors."
- "Chamas could be an answer, why don’t we look into that?"

### Quotes

- "We have good networks, they just need support to reach more people and do more physical meetings. Everything cannot be done in a virtual network."
- "Let's not duplicate our [existing] networks, but build capabilities within them"
- "We are funding the meetings and talks out of our own pockets; knowing there was a solid source of funding would increase the perception of our networks."
- "Universities need to focus on hands-on."
- "Colleges are academic places and not the right places to learn the practical [side of development]."
- "Internships are great, but give us the opportunity to practice on real problems; not made up items."
- "Universities do not know the latest software, they are teaching ones that are very out of date."

## Session feedback (2/2)

### Interventions

3. **Innovator support (Small enterprises)**
   - Positive response, if a bit out of scope for some session participants
   - Mentorship and mix of business network, business skill and financing was attractive to participants
   - Chamas (indigenous savings co-ops) mentioned as a potential indigenous solution; but similar risk and industry gaps may limit impact

4. **Job creator support (medium enterprises)**
   - Positive response, if a bit out of scope for some session participants
   - "We need the support to get to medium stage companies and also to be part of their supply chains"

5. **Business environment**
   - Positive, though acknowledgement that results will take time.
   - Address specific ICT issues including domain name squatting and short-code allocation
   - "Getting an SMS short code is very hard for a small business and it takes very long. It creates a major delay to test and launch a product."
### Attendees: Kenya and Uganda – 14 & 16 September

<table>
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<tr>
<th>Kenya</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Fabian Owuor</td>
<td>Maduka Online &amp; Alpha Trading</td>
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<tr>
<td>Micheal Pedersen</td>
<td>Plus People</td>
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<td>James Muendo</td>
<td>Timsoft Technologies</td>
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<td>Karuki Gathitu</td>
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<td>Juliana Rotch</td>
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<td>Joseph Kimani Ndung’u</td>
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<td>Ahmed Mawey</td>
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<td>James Munene</td>
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<td>Mendi Njonjo</td>
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### Attendees: Rwanda and Tanzania – 28 & 29/30 September

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<tr>
<th>Rwanda</th>
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<tbody>
<tr>
<td>Sabin Hitimana</td>
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<td>Alice Mukabalisa</td>
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<td>Ntare Dau</td>
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<td>Jean Claude Rugera</td>
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<td>Philetele Gahire</td>
<td>GITT/KIST</td>
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<td>J. Paul Kavuma</td>
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<tr>
<td>Nicolas Pottier</td>
<td>Nyaruka</td>
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<td>Robert Nsunga</td>
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<td>Abisham Rununzi</td>
<td>Rwanda Focus</td>
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<td>Abbas Njama</td>
<td>Tanzania Telcom Co (TTCL)</td>
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<td>Is-Haq Abdulkadir</td>
<td>Zantel</td>
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<td>Moshi Amran</td>
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<td>Idrisa Kinyaghu</td>
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<td>Bajuna Salehe</td>
<td>IFM</td>
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<td>Nadeem Juma</td>
<td>E-Fulusi</td>
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<td>Richard Mushiri</td>
<td>E-Fulusi</td>
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<td>Peter Bazive</td>
<td>My Data</td>
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<td>Terence Silonda</td>
<td>BDIC</td>
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<td>Suhail Sheriff</td>
<td>Simbanet</td>
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</tbody>
</table>
### Attendees: Rwanda and Tanzania – 28 & 29/30 September

#### Kenya
**Attendees:**
- Angela Crandall
- Kariuki Gathitu
- James Muendo
- Agatha Verdadaro
- Mark Misiko
- Fabian Owuor
- Charles Kithika
- S. Ingabo
- Dominic Mativo
- Tonee Ndungu
- Simon Ndunda
- Henry Kago
- Larry Carl Keya
- Daniel Oitieno Omondi
- Ahmed Maawy
- Marvin Oduor
- Evans Owiti
- Casira Carol

**Organization:**
- Infodev/iHub
- Zege Technologies
- Timsoft Technologies
- The Can do! Company
- Geona Enterprises
- Adelphi Trading
- Grendreams Ltd
- Mama-mikes
- Xystaegenius
- Nailab
- Equisoft Technologies
- Front Gate
- Dotto Computer Agencies
- Datadyne .org
- Transparency & Accountability Programme
- Construction & Admin

#### Tanzania
**Attendees:**
- Jonathan Kalan
- Irenmanuel Kanagisa
- Edwin Mwenda
- Idrisa Kinyagu
- Felix Maganja
- William Ndilla
- Richard Mushri
- Mbuzho Othwaye
- Peter Baziwe
- Terence Silonda
- Albert Francis

**Organization:**
- The (BOP) Project
- Perfect Approach
- BIDC
- Zantel
- Marketing Partner
- Quantum Computers
- E-Fulusi Africa
- Digital Brain Company Ltd
- My Data
- BIDC
- IT FARM

#### Rwanda
**Attendees:**
- Nicolas Pottier
- Alice Mukabalisa
- Robert Nsinga
- Mwizerwa Carlos
- Benjamin Muhoza
- Keli Mutiso
- Albert Rwego
- Richard Zulu
- John Kibuuka
- Solomon King
- Daniel Stern
- Kitaka Felix
- Majugo Gerald
- Barbara Birungi

**Organization:**
- Nyaruka
- Hobuka
- RwandaAir
- RDB - ICT
- Partners in Health
- Moneta Capital – I.T.
- Transparency – Rwanda
- CITT/KIST
- CITT/KIST
- KIST
- KIST

### POTENTIAL PARTNER LIST

#### Kenya

1. **Fully connected network**
   - iHub – already has physical space and critical mass of activity; structure required to formally build out the networks
   - Tandaa – as a network
   - Other organizations mentioned included USIU, Strathmore

2. **Skills 2.0**
   - Strathmore Enterprise Development Programme
   - University of Nairobi
   - Jomo Kenyatta University
   - Kenya ICT Board

3. **Innovator support (Small enterprises)**
   - Chama as a partner – though no specific Chama or Chama network was mentioned; Institute of Electrical and Electronics Engineers; KICTANet

4. **Job creator support (Medium enterprises)**
   - Government procurement managers
   - Large multinational IT firms

5. **Business environment**
   - Kenya ICT Board

#### Rwanda

- No dominant physical space or network although KIST was an opportunity
- Government/Rwanda Development Board supportive of private organization creating a space
- RDB engaged on in setting standards for training and providing funds for training (although current participation is low)
- Academic institutions, both internal (KIST), and external (e.g., Carnegie Mellon)
- Business plan competitions; RDB organizing business skills retreat
- Government – freedom of information efforts are early but expected to yield results in terms of content (e.g., GIS); donor/government assistance with procurement
- Rwanda Development Board – marketing on new efforts will be improving in the early 2011
Potential partners – by countries as suggested by workshop participants

<table>
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<tr>
<th>Interventions</th>
<th>Tanzania</th>
<th>Uganda</th>
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<tbody>
<tr>
<td>1 Fully connected network</td>
<td>• Business network – Enablis, eThinkTank (as organized by some session participants), British Council, Costech, Tanzania Marketing Association</td>
<td>• Physical space: Hive CoLab as a physical space, with additional resourcing to improve attendance</td>
</tr>
<tr>
<td></td>
<td>• Physical space: no clear dominant space; group sought independent leadership, e.g., not academic and government affiliated</td>
<td>• iNetwork</td>
</tr>
<tr>
<td></td>
<td>• Business network – Enablis, eThinkTank (as organized by some session participants), British Council, Costech, Tanzania Marketing Association</td>
<td>• Linux User Group – fairly active, if specific topic area</td>
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<tr>
<td>2 Skills 2.0</td>
<td>• University Computer Center – considered good at building hands on skills</td>
<td>• Makerere University; Kampala International University; Uganda Communications Commission Universal Service Fund</td>
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<tr>
<td></td>
<td>• Business skills – potential partners include British Council, University of Dar es Salaam Entrepreneurship Center, Tanzania Entrepreneur Forum</td>
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<tr>
<td>3 Innovator support</td>
<td>• infoDev incubator coming on-line in Q1 2011</td>
<td>• Hive Colab, Makerere University National Software Incubation Center</td>
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<td></td>
<td>• No clear financing partners – a lot of “vulture capital” currently</td>
<td></td>
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<tr>
<td>4 Job creator support</td>
<td>• Not discussed in detail in this session</td>
<td>• Government procurement managers; large multinational IT firms</td>
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<tr>
<td>5 Business environment</td>
<td>• Advocacy partners include National Business Council, Costech, Tanzania Private Business Council, Tanzania Chamber of Commerce, and Tanzania Investment Authority</td>
<td>• Not discussed in detail in this session</td>
</tr>
</tbody>
</table>

EXPERT INTERVIEW LIST

We wish to thank all of the ICT experts and stakeholders that took the time to share their perspectives with our team.

- Edith Adera, IDRC
- Andrea Bohnstadt, Radio Magazine
- Jessica Colaco, iHub
- Christopher Foster, University of Manchester
- Erik Hersman, iHub
- Benjamin Kanagwa, Makerere University
- Kelvin Kiplagat, IEEE
- Dr. Ruth Kiraka, Strathmore Enterprise Development Center
- Kaburo Kobia, Kenya ICT Board
- Dr. Vincent Kouwenhoven, eVentures Africa
- Paul Kukubo, Kenya ICT Board
- Apolo Kyeyune, Makerere University - Directorate for ICT Support
- Acha Leke, McKinsey and Company
- Ayisi Makatiani, Fanisi Capital
- Theophilus Mlaki, Tanzania Commission for Science and Technology (Former)
- Dr. Ham Mulira, ICT Advisor, President of Uganda
- Dr. Flora Musonda, East African Community, Director of Trade
- Patricia Mwangi, Financial Sector Deepening - Tanzania
- Dr. Bitange Ndemo, Permanent Secretary, Ministry of Information and Communications (Kenya)
- Mark Pickens, CGAP
- Rakesh Rajani, Twaweza
- Ian Robinson, Financial Sector Deepening – Tanzania
- Daniel Richard Stern, Hive CoLab
- Sandra Winters, Midnight Sun, iAccelerator
CITATIONS


3 - The World Bank, 2008; Excelsior Firm analysis

4 - The World Bank, 2008

5 - ITU, ICT Indicators 2009

6 - Kenya ICT Board, October 2010

7 - Sida, “The Innovative Use of Mobile Applications in East Africa”, 2010


9 - http://manypossibilities.net/african-undersea-cables/

10 - The World Bank, 2010