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## RESEARCH ARTICLE

# TECHNOLOGY & BUSINESS INCUBATION: CREATING OPPORTUNITIES FOR INNOVATION AND ENTREPRENEURSHIP FOR THE YOUTH

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### ABSTRACT

In this age of exponential technology development and relentless globalization, innovation and entrepreneurship have become the prime drivers of economic growth. Thus the role of Technology Business Incubators (TBIs) as part of the system of innovation has become all the more important for the transformation of technological ideas into commercial benefits. More advanced countries have already taken a lead in this direction, developing nations have yet to fully exploit this system particularly to invigorate SMEs which are a crucial part of their economy in terms of employment as well as growth. The research focused on ICT incubation in Kenya targeting start ups and innovators. The key role of the research was to nurture nascent ventures by providing focused guidance and facilitation services together with networking, mentorship and shared facilities. The research incorporated a total of 19 incubatees split into two groups. The research leveraged Strathmore University resources to facilitate the business training and technological support of the participants. The program progressed from pre-incubation, business planning, financing, networking and finally mentorship. The program objectives were fostering innovation and entrepreneurship in Kenya, promotion of job creation, commercialization of technology, and creation of new or better products and services. The outcomes of the program have been two top 100 entrants for the chase business plan competition; Xrystalgenius and HDS logic, winners of the Mobo base pyramid challenge in Finland, Sukuma Africa award and the Kenya ICT board local content development for the private sector.

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## INTRODUCTION

The new development blueprint for Kenya dubbed *Vision 2030* aims at converting the nation into a "newly industrializing, middle income country providing high quality of life for all its citizens by the year 2030."<sup>1</sup> To realize this objective the vision envisages an economic transformation program aimed at achieving an average growth rate of 10% per annum in the next 25 years. This is a critical goal considering that about 50% of the populations presently live below the poverty line and a majority of Kenyans are either unemployed or underemployed, and a large number of the country's workers are employed in the informal economy. Nevertheless, this goal is not unrealistic and is achievable if existing constraints to future growth are removed. Some of these constraints include poor infrastructure, high energy costs, inefficient judiciary and a generally unfriendly business environment.

The removal of these limitations will create an enabling environment for the private sector in particular to play its rightful role in the economic growth of the country. One area that will be critical for this process is the conception and evolution of new businesses. Small and Medium Enterprises (SME) are widely recognized as an engine for economic development and have been mentioned in the vision document. The other part of the development continuum that is critical and also needs to be addressed is the initiation and growth of new businesses. Indeed, the conception and evolution of new businesses is the basis for dynamic economies built around a robust SME sector. But institutional structures and maturity of the institutions in a country shape the environment for starting and growing of new businesses. In the United States for example, new business creation is facilitated by the presence of well-established institutions of capitalism, such as an independent and solvent banking system, a deep stock market, clear property rights, a legal system to guarantee such rights, and a host of government supported initiatives. These institutions create opportunities for funding of businesses and serve to reduce conflict by lowering transaction costs of doing business. Weak institutional structures on the other hand lead to market failures or gaps in the system that hinder new

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<sup>1</sup> Government of the Republic of Kenya, *Vision 2030*, Nairobi, 2007

business creation. To address these instances of market failure and provide an enabling environment for starting and growing new businesses, incubation programs are perfect tools for this development process. In China, for example, business incubation programs are a policy tool and instrument of choice for government-mandated, high tech-driven economic development. Similarly, in Brazil incubation programs have been promoted to overcome the obstacles to business creation and growth which include capital scarcity, bureaucratic interference in the form of heavy taxes and regulatory burdens and an educational system that does not foster an entrepreneurial spirit. In Kenya, the process of developing or strengthening institutions that provide the framework for a market economy is yet to begin in earnest, especially with the promulgation of the new constitution. Furthermore, there are many other business impediments such as corruption, high business cost, lack of clear policies on industrialization, and so on. More importantly and like in Brazil, the current education system in Kenya does not foster an entrepreneurial spirit among the youth. Indeed a recent study to determine the relevance of the Strathmore degrees to the market needs shows a very low number of graduates who have undertaken entrepreneurial activities.<sup>2</sup> The market failure and lack of entrepreneurial culture make the need for business incubation an imperative requirement for Kenya.

### Emergence of Incubation Programs

Business incubation emerged as an economic development tool in the early and mid 1980s, initially in the USA and Europe, subsequently spreading around the world. Presently, it is estimated that there are about 5,000 business incubators in the world, with 1,400 in North America, 900 in Europe, 1,000 in Asia and 400 in Latin America. It is widely recognized that business incubation is a key element in both economic and social development. Indeed, the ex-President of China, Jiang Zemin, has acclaimed business incubation as: "The most important creation of sci-tech industrialization in the 20th century." In 2005 alone, North American incubation programs assisted more than 27,000 companies that provided employment for more than 100,000 workers and generated annual revenues of \$17 billion. While incubation activity has not been limited to developed countries, only a few developing countries, such as China and Brazil have been proactive in creating business incubation environments. In China, there are about 500 business incubation programs providing over 600,000 jobs. In Kenya and Africa in general, business incubation activities are rare or non-existent and yet their potential impact on socio-economic development is widely accepted.

### Role of Incubation Programs

Business incubation programs are dynamic tools for promoting job creation and economic development by linking talent, technology, capital, and know-how in an effective framework to foster the growth of new businesses. Indeed, business incubators have shown themselves to be effective instruments for assisting entrepreneurs in starting new businesses, nurturing young enterprises, and helping them to survive during the start-up period when they are most vulnerable.

The National Business Incubation Association of the United States defines business incubator as:

*an economic development tool designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding<sup>3</sup>*

The European Union Commission defines business incubator as:

*"a business incubator is a place where newly created firms are concentrated in a limited space. Its aim is to improve the chance of growth and rate of survival of these firms by providing them with a modular building with common facilities (telefax, computing facilities, etc.) as well as with managerial support and back-up services. The main emphasis is on local development and job creation<sup>4</sup>*

Therefore business incubation is critical in fostering young firms through their most vulnerable phases when early demise is most likely to occur due to various obstacles including weak management, poor governance, lack of funding, etc. It has been established that business incubation programs increase the likelihood of start-up companies staying in business for the long term. Research shows that over 80% of companies that graduate from incubation programs stay in business and grow. Typically, an incubator provides a safe haven for a firm in its early stages of growth through a mix of tangible and intangible services. Tangible services may include subsidized rental space and office infrastructure. Intangible services may include consulting and access to a network of organizations specializing in marketing, business planning, legal, accounting, and other services. Also incubation programs provide financial services which may include introductions or connections to sources of risk capital for the new ventures and direct investment in some cases by the incubator in the more promising firms.

### Models of Incubation Programs

#### Models of Incubation Programs

There are several models of incubation programs but a vast majority fall into two general categories: those focusing on commercialization of new technology and technology transfer; and those with mixed portfolio of businesses servicing a wide range of clients. In the USA and Australia for example, mixed portfolio types make the largest proportion.<sup>5</sup> Specialization in particular industries for each of these categories is possible but only in big economies. In large economies there are many variants of incubation programs, but in smaller countries it may be hard to achieve critical mass even for very general incubation level, let alone for a more specialized type. Indeed, rather than specialization, aggregation and convergence of different types of incubation may be more applicable in developing environments. Hence, adapting incubation to

<sup>3</sup> *Principles and Practices of Successful Business Incubator*, National Business Incubation Association, 1999

<sup>4</sup> *Best Practices in Incubator Infrastructure and Innovation Support*, Seminar Final Report, Ministry of Trade and Industry, November 19-20, 1998, Espoo, Finland

<sup>5</sup> *National Review of Small Business Incubators*, 1999, Department of Employment Workplace Relations and Small Business

<sup>2</sup> Mwiti, F., Muchira, C., Gachenga, E., *Final report on the study to determine the relevance of Strathmore degrees to the market needs in Kenya*, Strathmore University, September, 2009

different environments has resulted in the evolution of various models and concepts geared towards making incubation relevant to particular local circumstances. Hybrid models, combining resident, “outreach,” or “virtual” and providing broader services for both new and existing businesses have emerged in many developing countries, particularly those with smaller economies, limited generic business support services, weak cultures of entrepreneurship, difficult business environments and limited resources to support innovation. Often, a critical mass of demand for intensive narrow and deep incubation does not exist and broader, less intensive and more diverse services are needed to extend impact and to develop entrepreneurial and innovative cultures and business environments. In large growing economies like China, incubation has converged with technology parks, cluster development and investment incentives, resulting in new hybrid models suited to the Chinese environment. Even though smaller countries can never have the scale of China the resulting models show the potential of hybrids compared to traditional incubation on its own. More flexible and adaptive business models suited to local environments, and often combining outreach or virtual and resident clients can be created. The key message here is that what fits one location may not suit another and that incubation programs need to be developed to suit their particular environments and challenges. The incubator types in Table 1 have been taken from representative incubator typology that were used for the monitoring evaluation and impact assessment of the Info Dev Incubator Initiative in 2007.<sup>6</sup> The three types of incubators were considered relevant for the planned incubator at Strathmore and served as suitable models. However the Strathmore program was a business incubation with university affiliation that provided resident and *outreach* or *virtual* services to reach a wider scope.

The nature of these services and the way in which they are delivered will usually have an important influence on the success of client companies and hence on the successful performance of the program. A well-run incubation program will have an operating framework setting out guidelines for its management that include a clear definition of its target market, admission and exit rules, quality standards for client care and other aspects of the program’s operations, and performance indicators against which the activities of the program can be measured. The nature and range of support services provided by an incubation program will vary depending on the model and the objectives of the program. However, incubation generally seeks to provide clients with a comprehensive range of facilities and services which may be grouped into six main categories: provision of incubation space, pre-incubation services, business planning, and assistance with raising finance, networking and mentorship.

- **Incubation space:** Office space is normally an expensive item for start-up companies and can be provided for free or subsidized rates. In addition, space may be provided for pre-incubation clients in form of workstations which may be shared by several start-ups when required. Furthermore, space may be provided for boardrooms, a common mail and print room and a common reception area that will be used by all clients including *outreach* or *virtual* companies.
- **Pre-incubation:** The pre-incubation support services are given to would-be entrepreneurs before they launch their businesses. These services may include proactive identification of innovations or technologies and would-be entrepreneurs, helping them to develop a business plan, training and advice on forming a company and further development of the innovation or technologies

Table 1. Business Incubator Typology

Type	Context & Features	Strengths	Challenges
Mixed Portfolio Business Incubation	1) Targets high-growth firms in a range of sectors 2) May select sectors that align with the overall regional or national competitiveness strategy 3) May exist in environments where there is little entrepreneurial activity	1) Can align with regional and national strategies, germinate new areas of competitive capacity and provide a locus for innovation in this regard 2) In environments where there is little entrepreneurial activity, may include extensive “pre-incubation” and education activities in order to source entrepreneurs and businesses	1) Where new competitive sectors are under development, time to achieve impact and scale may be long 2) Where there is little entrepreneurship, attracting clients with high growth potential can be a challenge and may not be possible to operate at the scale necessary to support the incubator’s business model
Technology Business Incubation	1) Targets high-growth technology firms 2) Require foundation of strong technology and human capital infrastructure 3) Where this infrastructure and human capital are weak, may require extensive pre-incubation activities	1) Can be an economic resource by attracting and developing research, skills and businesses 2) Can develop technology as a new source of competitive capacity	1) May be challenged to scale businesses beyond seed stage because of lack of financing and difficulties entering international markets
Business Incubation with University Affiliation	1) Frequently the university or academic institution has a role as founder and is a source of resources such as research, expertise, space and/or funds 2) Typically targets technology firm, but may work with other sectors	1) Opportunity to bridge the gap between research and commercialization or technology transfer 2) Access to intellectual property and the potential to develop competitive businesses from it 3) Often provides financial stability for incubators	1) Can create ‘cultural’ tensions if academics seen as good researchers but poor managers or if the university is seen as too bureaucratic or risk-averse

**Functions of Incubation Programs**

Business incubation programs seek to add value by offering candidate companies a combination of services that cannot be so easily obtained or are too expensive to obtain from other

where necessary. In addition the would-be entrepreneurs may be given access to the use of workstations and boardrooms if available and whenever they need them.

- **Business planning:** Business planning services provided by the incubation process helps to bridge the market failure in the provision of business support services to the small businesses. The services may

<sup>6</sup> *Types of Business Incubators*, Accessed March, 2011 at InfoDev website: <http://www.idisc.net/en/Article.38689.html>

include help with setting business goals, developing or revamping the business plan, identifying the markets, segmenting the markets, developing a sales and marketing plan, creating a financial plan, developing a bookkeeping and accounting system, etc.

- **Financing start-ups:** Incubation programs have an important role in bridging the financing gap between the company start-up and the financial community. Banks and venture capitalists have historically tended to shy away from early-stage companies. Incubation programs play a positive role in addressing this market failure in financing start-up companies. The programs can demonstrate that through managed approach to enterprise creation, risks can be minimized and returns maximized, thereby helping to change attitudes amongst early stage investors. Some incubation programs have set up small-scale seed capital funds for first round financing of start-up companies with viable business concepts. This provides financing to get the start-up company off the ground and typically covers the first six to twelve months of operations. For second round of financing, incubation programs typically build up a network of contacts and partners in the financial sector who are willing to invest in early stage ventures and provide the companies with advice on how to prepare their business plans prior to seeking additional angel or venture capital financing to fund expansion.
- **Networking:** Incubation programs encourage networking among start-up companies through various activities. This helps business relationships to develop and also leads to informal cross-fertilization of ideas and advice among these companies. Apart from business relationships, networking also helps entrepreneurs to overcome the sense of isolation that is often associated with their activities and can help them lobby for changes in government policies and regulation for better business environment.
- **Mentorship:** This service can be organized as *pro bono* consulting service that blends together the experience of successful entrepreneurs, experts in specific technologies and businesses, retired technology and business executives and professors in specific technology and business areas. The benefits of such a service to companies would include: a) access to first-class business expertise; b) business consulting services available when needed for specific problems; c) professional mentoring to help a company identify its problems and develop solutions; d) improvements of a company's business plan; and e) coaching on business presentations to potential customers, angel investors, financiers and venture capital firms.

### Strathmore innovation and technology transfer (SITT)

The Strathmore Innovation & Technology Transfer (SITT) program was a technology and business incubator within the Faculty of Information Technology at Strathmore University established with the help of the National Council for Science and Technology (NCST). The program has been running for over a year and had a long-term objective of being a self-sustaining technology and business incubator in Strathmore University. The SITT program focused on Information and Communication Technology (ICT) to take advantage of teaching, learning and research outputs from the Faculty of Information Technology at Strathmore University and other

ICT based programs within institutions of higher learning and research in Kenya. This program morphed to a virtual incubator providing various support services to start-up businesses in the ICT sector. Some of these services include: pre-incubation such as technology identification and development; business planning, assistance with raising finance, networking and mentorship. The SITT activities

### SITT Objectives & Expected Outcomes

The main objective of the SITT program was to accelerate the successful development of innovations and commercialization of technology from the Faculty of Information Technology at Strathmore University and other ICT based programs within institutions of higher learning and research in Kenya. The specific objectives for the project were the following:

- Identification of technologies and young businesses for incubation
- Identification of resource and service needs for the young businesses
- Sourcing and providing the resource and service needs for the young businesses
- Monitoring the progress of the technologies and businesses accepted into the program
- Providing marketing and financing opportunities for the technologies and businesses through exhibits, networking events, etc.
- Providing opportunities for interaction with mentors and experienced professionals

The achievement of these objectives was expected to lead to fostering of entrepreneurship and enhancement of economic development in Kenya. Specifically the expected main output from the SITT program was the promotion of job creation and socioeconomic development of Kenya. Other benefits expected from the program included financial returns for the entrepreneur, more and better products and services for consumers, and the promotion of commercialization of innovations from institutions of higher education and research.

### SITT Implementation Methodology

During implementation, the project focused on the five areas previously mentioned: pre-incubation, business planning, support for raising seed funding, networking and mentorship. In each of these areas, various activities described below were undertaken and outcomes monitored and evaluated. The process started at pre-incubation stage where start-up companies were identified and selected for admission into the program. After admission into the program each of the companies was assessed to determine the services and resources it may need to make progress and grow. Then the program embarked on finding and providing these services and resources to the companies in the program.

### Identification and selection of start-up companies

The process for the companies to be admitted into the SITT program started with a call for entrepreneurs with technology start-ups to submit applications for consideration. Various dissemination methods were used to get the word out about this opportunity for young entrepreneurs. In particular, social networking methods, such as blogs, email lists and bulletin boards were used to reach the widest possible audience of

potential technology start-up companies in the ICT sector. For example, the program engaged online groups focusing on technology, such as Skunkworks<sup>7</sup> and Kictanet<sup>8</sup> to reach innovators in the ICT sector. In the invitation to apply the potential candidates were required to provide detailed company information, including the nature of business. In addition, the applicants were required to provide an executive summary of the business or a business plan if they had any. The applications were submitted through email or snail mail. Once the applications were received, they were reviewed and evaluated on the basis of two criteria: a) whether the business was ICT based; and b) whether the company was a start-up or early stage based on number of employees and revenues if any. The selected companies were then invited for a pitch session at Strathmore University. A panel of technology and business experts was constituted for the purpose of evaluating the entrepreneurs during the pitch session. The basis for the evaluation was on whether the entrepreneur understands the problem he/she is trying to solve, the product or service being proposed to solve the problem, the technology and its maturity that will be used to provide the product or service, the market to be targeted, the competition landscape for the product or service, the projected costs and revenues if any for the start-up, and management team of the entity. Based on the panel's recommendations after the pitch session, the successful companies were then formally admitted into the SITT program.

In the first announcement inviting applications, the program received 46 submissions from potential entrepreneurs. After evaluation of the submissions, 27 (i.e. about 59%) entrepreneurs were shortlisted and invited for the first pitch session that was held on 20<sup>th</sup> December 2009. From this pitch session, the evaluation panel recommended only 8 (i.e. about 17% of applicants) for selection into the SITT program. The panel also favorably viewed 12 entrepreneurs as having significant potential but felt that their innovations were not ready for commercialization. It was recommended that the program maintained contact to assist with technology development and then consider them at a later stage. The remaining 7 applicants were rejected outright for various reasons outlined above. In the second invitation for applications, the program received 35 submissions from potential candidates. On evaluation of the entries, 24 (i.e. about 69%) entrepreneurs were shortlisted and invited for the second pitch session that was held on 16<sup>th</sup> July 2010. From this pitch session, the evaluation panel recommended 11 (i.e. about 31% of applicants) entrepreneurs for selection into the SITT program and rejected the remaining 13 that were shortlisted.

#### Determination of resource and service needs

The companies that were admitted into the SITT program were assessed to determine which resources and services they may need to be assisted with by the program. The assessment took the form of surveys and individual interviews that were conducted weekly in the early period of the program. In particular, the companies were assessed to determine which of the following support services they needed as well as which were of the highest priority for them that the program could provide.

- Preparation of business plan services
- Forming and registering a company

- Training to develop business skills
- Accounting and other related services
- Legal and other related services
- Market research, sales and marketing
- Help with import/export and/or partner search abroad
- Help with e-business and other aspects of ICT
- Advice on development of new products and services
- Help with raising bank finance, grants, venture capital
- Advice on recruitment of staff and personnel management
- Networking, e.g. with other entrepreneurs, customers
- Mentors, board members and other senior advisers

From the results of the two cohorts of entrepreneurs, it was established that most participants as shown in appendices Fig 1 ranked raising finance as their highest priority. But it is important to note that even as they ranked finance at the top of their priorities, most 72% of these entrepreneurs did not have a business plan with which they could approach potential financiers. Nevertheless, preparation of a business plan was ranked as top priority by the second largest group of entrepreneurs. The rest of the other services ranked highly by entrepreneurs included marketing, mentoring and legal services in that order. In addition, all entrepreneurs indicated that they will require most of the listed services as shown in appendices Fig 1

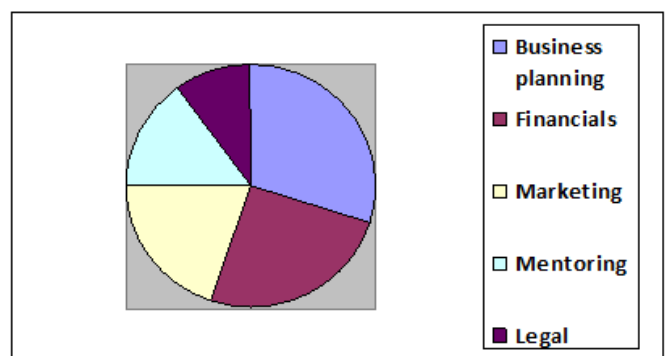


Fig 1. Graphical representation of service needs

#### Providing the services and resources

The program determined from the assessments that the services that were of highest priority for the admitted companies included: business plan preparation, seeking and finding finance for the businesses, preparation of marketing plans, and mentorship for the young entrepreneurs. Recognizing that most of these needs required a fully developed business plan, the program created a six month schedule for the two groups of entrepreneurs within which each company was to create a business plan. The program sought the services of business plan consultants as well as financial and marketing experts to facilitate this process. The program also organized seminars and presentation sessions purposefully to review the business plans of participants and to give feedback. Also, other follow-up reviews were done to ensure the business plans were realistic and made sense. The goal of the business plan development process was to ensure that the entrepreneurs understood the problems they were trying to solve and the product or service they were proposing to solve the problem. In addition the entrepreneurs were expected to clearly describe the technology that was to be used to provide the product or service. By the end of the process, the entrepreneurs were also

<sup>7</sup> <http://skunkworks-ke.blogspot.com/>

<sup>8</sup> <http://www.kictanet.or.ke/>

expected to be intimately conversant with the market they were targeting including the market segments and the layout of the competition. Finally, the entrepreneurs were required to project costs, revenues and staff needs over a three year period of the business. Once the business plans were ready, the entrepreneurs were then ready to step out to seek the other services like opportunities for marketing their products and services as well as seeking for finances to fund their businesses.

### **Providing marketing opportunities**

The provision of marketing opportunities is the hallmark of an incubation program. Marketing opportunities provide the entrepreneurs with forums to link with the market and potential clients. As soon as the business plans were ready, the program sought various avenues and mechanisms to provide these opportunities for entrepreneurs. The program identified ICT events, forums and networking activities both within and outside Strathmore University to provide marketing opportunities for participants. The program engaged organizations such as Kenya ICT Board, Ministry of Information and Communications, Ministry of Industrialization, Communications Commission of Kenya (CCK), AITEC (Africa ICT Conferences and Exhibitions), iHub, Kenya Incubators Association and Kenya Private Sector Alliance (KEPSA) to facilitate the process of marketing the innovations from the program participants.

### **Providing opportunities to find finance**

Providing opportunities for entrepreneurs to find money to finance their businesses is also a major function of an incubation program as previously outlined. The activities aimed for this objective may be combined with those of providing marketing opportunities and helps entrepreneurs to link with potential financiers and investors. Just as for marketing, as soon as the business plans were ready, the program sought various avenues and mechanisms to provide opportunities for entrepreneurs to connect with prospective financiers and investors. Some of these activities included; business idea pitch sessions to angel investors, competitions on technology innovations, and business plan competitions. Some of the organizations that were involved in these activities included banks, technology companies and government entities such as the Kenya ICT Board. In addition the program provided access to financial consulting services which is critical for initial phases of growth since young companies need all the guidance and support they can get in this area. The consulting focused on assessing the financial status of the entrepreneurs, reviewing their financial statements and providing advice on financial management. To augment efforts to find and access capital the consulting services also created awareness among the participants regarding avenues of possible capital. In addition participants were informed about various ways of access credit and finance from organizations that support SMEs such as K-Rep, Faulu Kenya and Equity Bank. Furthermore, participants were given information about venture capitalists in the region such as Fanisi and Groffin and how to approach them for support.

### **Networking for entrepreneurs**

The SITT program actively encouraged networking among the start-up companies that were admitted through various

activities. Also, other activities enabled the companies to network with other organizations including potential clients, possible investors, service providers, mentors and government entities. For networking among the entrepreneurs, regular meetings were organized by the program either at Strathmore University or outside of the university. Most these meetings were semi-formal and usually a consultant in some area such as taxation or a guest from industry, academia or government was invited to talk about a specific subject and interact with the entrepreneurs. During the business plan development phase of the program these meetings focused on the various aspects of the business plan such as defining the problem or reviewing the product or service. In later sessions, these meetings focused on specific areas like market research, creating financial statements or protection of innovations. During these sessions entrepreneurs were also given an opportunity to practice presenting their business plans and given feedback.

### **Mentoring of the entrepreneurs**

Mentorship entails liaising with experienced professionals or entrepreneurs to transfer practical knowledge to young and upcoming entrepreneurs. The SITT program considered mentorship critical in the Kenyan business environment for supporting new and upcoming entrepreneurs in the ICT sector. One of the outcomes expected from the networking activities was building relationships between the program entrepreneurs and other more experienced entrepreneurs and professionals who could eventually become mentors for the program participants. Thus several of these relationships were developed and it can be stated that a substantial number of the program entrepreneurs had mentors.

### **Program Results**

The results of the various activities undertaken during the implementation of this project were collected throughout the period of study. The results were also organized according to the five areas the project focused on: pre-incubation, business planning, support for raising seed funding, networking and mentorship.

#### **Pre-incubation**

At this stage of the program, technologies and businesses suitable for commercialization were proactively identified. To reach prospective candidates for the program, announcements calling for applications were sent out and then pitch sessions held for shortlisted entrepreneurs. Two recruitments drives were held from which 8 and 11 start-up companies were recruited into the program representing an acceptance rate about 17% and 31% respectively of applicants. After admission into the program these companies were assessed to determine which support services were needed and which were of the highest priority for them that the program could provide.

The results showed that the following services were needed by all the companies:

- Preparation of business plan services
- Forming and registering a company
- Training to develop business skills
- Accounting and other related services
- Legal and other related services

- Market research, sales and marketing
- Help with raising bank finance, grants, venture capital
- Advice on recruitment of staff and personnel management
- Networking, e.g. with other entrepreneurs, customers
- Mentors, board members and other senior advisers

From the results of the two cohorts of entrepreneurs, it was established that most participants as shown in Fig 1 ranked raising finance as their highest priority. But it is important to note that even as they ranked finance at the top of their priorities, most 72% of these entrepreneurs did not have a business plan with which they could approach potential financiers. Nevertheless, preparation of a business plan was ranked as top priority by the second largest group of entrepreneurs. The rest of the other services ranked highly by entrepreneurs included marketing, mentoring and legal services in that order. In addition, all entrepreneurs indicated that they would require most of the listed services as shown in Fig. 1.

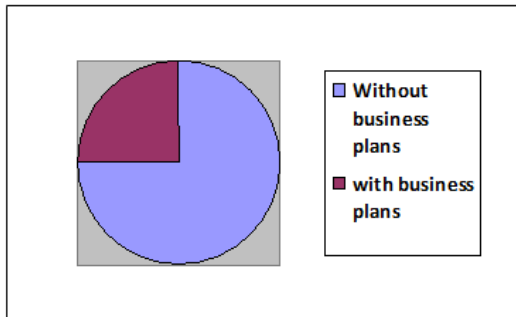


Fig. 2. Business plan status of group prior to research

**Business planning**

Business planning is a key step for any business and as it provides a guide on how the business will be conducted. This process involves formulating of a viable business plan which is an essential document for the entrepreneur and potential investors. To effect this crucial phase the program assisted participants develop their business plans for purposes of realizing a viable document. The program leveraged Strathmore Business School and Consultants within Strathmore University to guide participants develop business plans.

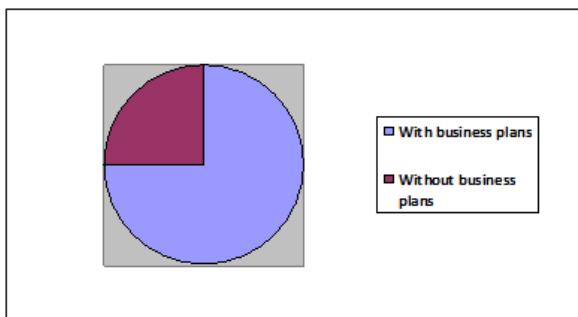


Fig. 3. Business plan status after research

From the first group of eight (8) participants, six (6) were able to develop their business plans from scratch through consultation and seminars organized by the SITT program. From the second group of eleven (11) entrepreneurs, eight (8) of them have been able to develop their business plans through


the assistance of the program. Besides development of these business plans, they are also reviewed by more than one consultant. Through the review process the entrepreneurs are given feedback for purposes improving the plans. In addition, the entrepreneurs are encouraged to practice making presentations about their businesses using these plans. They were also given feedback from these presentations which went to strengthen the business plans and improve confidence of the entrepreneurs.

**Finding start-up finance**

The opportunities the program provided for the entrepreneurs to find money for their businesses resulted in some successful outcomes. A program participant who entered the Kenya ICT Board grant competition was among the winners of the private sector category for 2010. The award of US\$50,000 grant is to be disbursed quarterly to the participant based on achievement of specific milestones. See case box 1. The two entrants who entered the MIT/AIT business plan competition, two of them took first and second place winning US\$ 3,000 and US\$ 1,000 respectively. One of the program participants that entered the Sukuma Afrika Young Entrepreneurs competition won the award for 2010 and was invited to receive his award in New York, USA.

**Box 1: SITT participants win ICT Board grant (Private sector participants)**  
*(ICT Board Online News, Monday, October 4, 2010)*

Among the winners were Jumuika Media Solutions Ltd an incubatee at the Strathmore innovation technology transfer program. Jumuika received the grant of US\$ 50,000 (Kshs 4 million) on their project titled *Jumuika Mobile Advertising and Marketing-* subscription and permission based mobile application. Jumuika will offer Kenyan brands a unique opportunity to run targeted digital campaigns. Subscribers to jumuika will accumulate points as they interact with the application and receive targeted promotions. The 'jumuika' points can then be redeemed for gadgets and goods in stores across Kenya. The demographic and psychographic data Jumuika collects will allow brand managers to better understand the Kenyan market and develop products that are relevant and meet market demands. In June 2010 the Kenya ICT board announced the launch of a Ksh 300 Million grant to promote the development of local digital content and software applications. The call for proposals for the Digital Content and Software Application Grant closed on July 19.



*Jumuika media solutions company logo*

**Networking for entrepreneurs**

Networking among the start-up companies and also with other organizations was facilitated through various activities in the program. Regular meetings totaling 24 were held by the program at Strathmore University and in other venues outside the university. During these meetings a consultant in some area of interest or a guest from industry, academia or government was invited to talk about a specific subject and interact with the entrepreneurs. The following areas of interest for the entrepreneurs were covered during these sessions: taxation, patent law, market research, creating financial statements, ICT trends, ICT innovation, financing ventures, Technologies/Resources, Challenges in the local ICT environment, Business plan development, Strategy, Taxation, Marketing and Programming methodologies. These sessions also provided entrepreneurs with opportunities to present their business plans and be given feedback. A total of 5 such opportunities were provided for the entrepreneurs.

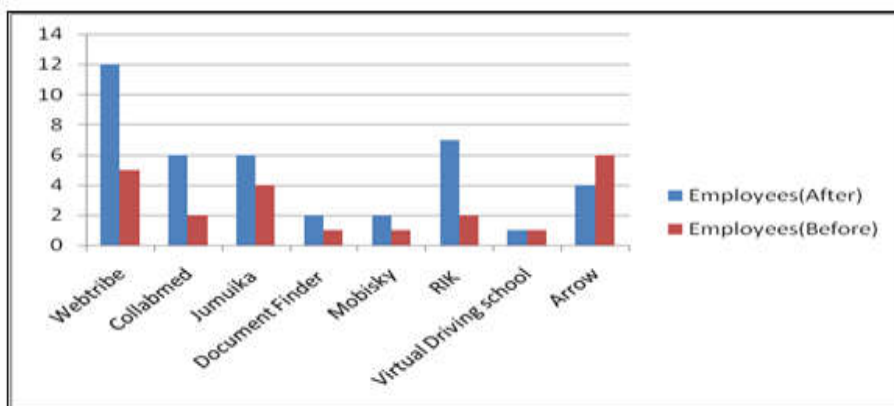
The SITT program facilitated initiatives geared towards encouraging mentoring of the young entrepreneurs. Specifically, the networking activities were organized in such away as to help with building relationships between the program entrepreneurs and other more experienced entrepreneurs and professionals who can eventually become mentors for the program participants.

**Box 2: SITT Incubate wins in Global mobile communications awards**  
*(Daily Monitor, Uganda, September 29, 2010)*

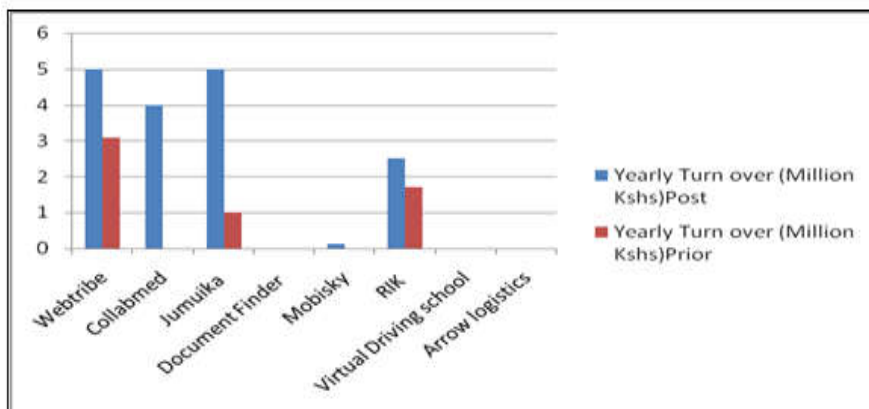
The event dubbed Mobile Monday (MoMo) Peer Awards took place in Helsinki, Finland, on Monday 26th September. The event had two categories, Base of the Pyramid and Future Potential. Mr.Nyika pitched the idea on iCheki under the Bottom of the Pyramid category and won, beating renown United States-based Super Technologies. The award recognizes young and outstanding mobile companies that are making a difference in mobile health, education, payments, employment trade and entertainment. Software developers from 37 countries across the world participated in the awards. MobileMonday (MoMo) is an open community platform of mobile industry visionaries, developers and influential individuals based in Helsinki Finland with an aim to foster brand neutral cooperation and cross-border P2P business opportunities through live networking events to demo products, share ideas and discuss trends from both local and global markets. It has as one of its objectives to Foster an open and independent innovation platform within the mobile sector. Xrystalgenius is a Nairobi-based mobile start-up and a Strathmore innovation technology transfer (SITT) incubate. The company was started during the AITI - MIT 2010 program which is usually a 5 week program whereby participants are taught on mobile and entrepreneurship skills and encouraged to become successful business people. The company also consists of Dominic Mativo, Joseph Kivuva and Kelvin Yonga all who are all Diploma of business information technology graduates. Mr AlexNyika, a Ugandan software developer based in Kenya, on Monday, 26th September scooped the top prize at one of Europe’s most prestigious mobile communication innovation awards. Mr Nyika won the Base of the Pyramid award at the 2010 Mobile Monday Peer Awards that took place in Helsinki, Finland. Five finalists including United States-based Super Technologies, which emerged runner up in the category competed for the award.



*Alex at the Conference*



**Fig. 4. Comparison of staff levels at SITT entry and at conclusion**



**Fig. 5. Comparison of revenue generation at SITT entry and presently**



These mentors have helped the companies reach clients. Through various networking events the following sufficed: SITT participants managed to work with the following companies I and M bank, Kenya Data Networks, Galitos, NGOs for research, Colleges, Equity bank, Man soft Ltd, Maple tech, Vortex Solutions, VIPP systems, iJelo, internet society, Adobe youth voices, Sparc, Nailab, Frontline SMS and UNDP and Kenya Medical Association. For more on collabmed.

### Program Outcomes

The achievement of the program objectives was expected to lead to fostering of entrepreneurship and enhancement of economic development in Kenya. Specifically the expected main output from the SITT program was the promotion of job creation and socioeconomic development of Kenya. Other benefits expected from the program included financial returns for the entrepreneur, more and better products and services for consumers, and the promotion of commercialization of innovations from institutions of higher education and research. Focusing on job creation and revenue generation the next section reviews how specific entrepreneurs have performed since being admitted into the SITT program.

### Job creation

Table 2 shows staff levels for the various companies at the stage of entering the program and at conclusion. From the Table and the accompanying graphical comparison of the staff levels, it can be seen that five out of eight companies increased their staff levels by 100% or more. One increased by 50% and the remaining two either did not increase or decreased in staff levels.

**Table 2. Staff levels for SITT participants**

Company	Employees at entry	Employees at conclusion	Percentage change
Webtribe	5	12	140%
Collabmed	2	6	200%
Jumuika	4	6	50%
Document Finder	1	2	100%
Mobisky	1	2	100%
RIK	2	7	250%
Virtual Driving School	1	1	0%
Arrow Logistics	6	4	-33%

### Revenue generation

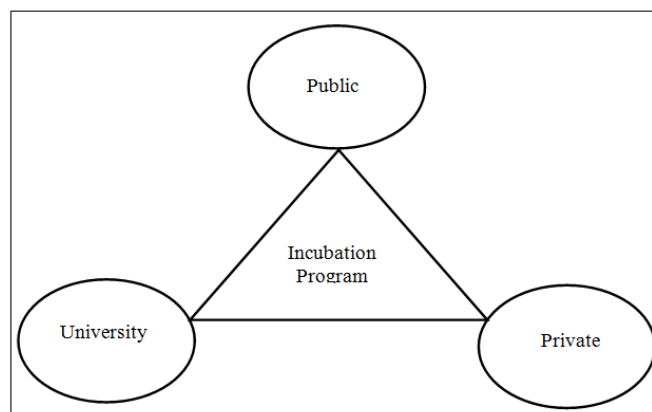
Table 3 shows revenue generation for the various companies at the stage of entering the program and at conclusion. From the Table and the accompanying graphical comparison of the revenue generation, it can be seen that five out of eight companies significantly increased their revenues over the study period. Indeed one company increased its revenues from zero to over a million Kenya shillings and another from zero to over one hundred thousand. Yet another notable company increased its revenues by about 400% over the period being considered.

### Implications of program outcomes

The outcomes from the SITT program clearly indicate that incubation programs can be used to promote job creation and spur socioeconomic development in Kenya. The implication of this finding is that there is need for a national government driven policy geared towards expansion of the incubation program.

**Table 3. Revenue generation for SITT participants**

Percentage change	Company	Revenue at entry (KShs)	Revenue at conclusion (KShs)
60%	Webtribe	3,100,000	5,000,000
Very high	Collabmed	0	4,000,000
400%	Jumuika	1,000,000	5,000,000
0%	Document Finder	0	0
Very high	Mobisky	0	120,000
48%	RIK	1,700,000	2,520,000
0%	Virtual Driving School	0	0
0%	Arrow Logistics	0	0



**Fig. 6. Model of public-private-university incubator**

Hence, for the development and deepening of business incubation in Kenya the government can play a key role in policy formulation and the creation and operation of incubators. The funding of the incubators can come from a range of sources including different levels of government and a mix of public-private support to avoid excessive dependence on any one source. In addition, the government would need to address market failure by stepping in with some form of support for early stage start-ups since risk capital for early stage firms is difficult to obtain. In Brazil for instance, the government stepped in to fill the gaps in the financing chain by setting up various lines of seed capital funds separately and in conjunction with business incubators. The proposed model for incubators in Kenya is one envisaged to be a partnership consisting of the public sector, private sector, and institutions of higher learning or research as depicted in Fig. 6.

### Conclusion

Business incubators have proven to be an effective way for fostering sustainable business growth and stimulating entrepreneurship. In this study case the business incubation process started with the identification and recruitment of young businesses in the ICT sector. From the responses to announcements for applicants it was clear that there is a significant need for support services for start-up businesses in technology. However, it was also clear from the low percentage of acceptance i.e. 17% and 30% respectively for the two cohorts, that despite the enthusiastic responses from entrepreneurs most of the ideas were ill defined. Business incubators add value to young companies by offering a combination of services that either cannot be so easily obtained or are too expensive to obtain from other sources. From the assessments of the admitted companies the services that were of the highest priority for the start-ups were assistance with

raising finance and preparation of business plans. The other services ranked highly by entrepreneurs included marketing, mentoring and legal services in that order. The SITT program facilitated various activities to help the participants to access these services. The results obtained indicated that the outcomes of the program were positive. It can be seen that several participants in the program have increased their revenues and staff levels due to the intervention of the program. The implication of these outcomes is that there is need for expansion of the incubation programs nationwide through the involvement of government. The organization and funding of such a program can be created as a public-private-university partnership.

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