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Developing a Business Incubator Model for an Entrepreneurial University: The Case of Bindura University of Science Education

Florence Barugahara¹, Blessing Maumbe² & Robert Nzaro³

Abstract

This paper provides an overview of the development of a Business Incubator Model at Bindura University of Science Education (BUSE) and its role and effectiveness in supporting the development of new enterprises with high growth potential. Successful development of the BUSE Business Incubation Unit involves; development of entrepreneurship programmes and courses, having enterprise development in place of student industrial attachment, offering business and financial advisory services, mentorship programmes, entrepreneurial research output and networking with funding organisations. The prospective benefits for the development of the Business Incubation Unit are; transformation of BUSE from a “traditional university” into an “entrepreneurial university” thus achieving the BUSE 2014-2018 strategic plan objective of developing a fully-fledged entrepreneurship department. In addition, BUSE Business Incubation Unit will generate third stream revenue for the university, assist in the eradication of unemployment and poverty through the creation of successful and sustainable enterprises, increase government tax revenue, and thus promote the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim-ASSET) objectives.

Keywords: Bindura University of Science Education (BUSE), Business Incubation, Commercialization, Entrepreneurship

1 Introduction

Zimbabwe is facing a challenge of high unemployment rate and thus poverty. According to Zimbabwe National Statistics(2016)the unemployment rate in Zimbabwe increased to 11.3% in 2016 from 10.7% in 2011. Additionally, in 2011, 21.4 % of Zimbabwean population was living on less than US\$1.9 a day (Work Bank, 2016). This is a higher rate compared to the world's average of 13.5% in the same year. Furthermore, universities in Zimbabwe continue to churn out graduates every year who cannot get employment due to limited jobs opportunities and lack of entrepreneurial skills to engage in self-employment. The percentage of unemployed graduates of Bindura University of Science Education stands at 32% (BUSE Alumni, 2017). Moreover, there is lack of skills by entrepreneurs to utilize the potential available resources, underutilization of available resources, under performance of enterprises especially small-scale agriculture and high rate of business failure in Zimbabwe. The inadequacy of Zimbabwe's education system in addressing the unemployment challenge stimulates the need to change to advanced educational systems which can offer practical solutions. BUSE wants to be part of the solutions (i.e., employment creation and poverty eradication) but not part of the problem (i.e., churning out graduates every year who cannot get employment). In an attempt to offer permanent solutions, BUSE is developing a Business Incubator Model for an entrepreneurial university. The major drivers of the programme are; transformation of BUSE from a “traditional university” into an “entrepreneurial university”, thus achieving BUSE 2014-2018 strategic plan set objective of developing a fully-fledged entrepreneurship department. Other drivers include; generation of third stream revenue for the University, development of financially viable and self-sustainable enterprises, job creation, addressing the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim-ASSET) objectives and ensuring societal

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development as a result of the existence of BUSE rather than just becoming an ivory tower. According to the National Business Incubation Association (NBIA), “Business incubation catalyzes the process of starting and growing companies, providing entrepreneurs with the expertise, networks and tools they need to make their ventures successful (Harrington, 2016).

The main goals of Business Incubation Centres (BICs) are; to establish successful start-up companies that will leave the incubators financially viable and self-sustainable, in addition to job creation, commercialization of new technologies and wealth creation for economies (Harrington, 2016). It is widely known that business incubation is a tool for economic development. In support of this view, the Zimbabwe - FinScope MSME survey by World Bank (2012) acknowledged the crucial role played by Small to Medium Enterprises (SMEs) in the economy and the need to harness and optimise their potential. Hence, strategies should be put in place to mobilise and enable growth and development of SMEs. Similarly, the International Finance Corporation (IFC), (2010) states that SMEs play a major role in most economies, particularly in developing countries. Formal SMEs contribute up to 45% of total employment and up to 33% of Gross Domestic Product (GDP) in emerging economies. These numbers are significantly higher when informal SMEs are included. Small and Medium Enterprises in Zimbabwe continue to play a key role in the economy, employing about 60% of the country’s workforce and contributing about 50% of the country’s Gross Domestic Product (The Zimbabwe National Budget Statement, 2016). It is therefore believed that setting up and running a Business Incubation Unit is one of the many strategies that can ensure entrepreneurs reach their full potential resulting in a ripple effect on the economy.

Business incubation process involves providing common facilities such as physical space, business advisory services, financial services and “people connectivity” to facilitate the operations of selected entrepreneurs and assist them until graduation when they have capability on their own. Business advisory services are aimed at assisting the entrepreneur with management issues such business planning, financial management, marketing and regulatory compliance. Financial services range from seed loans or taking equity into the business whereas “people connectivity” includes mentorship by experienced business professionals, knowledge sharing with like-minded entrepreneurs and links to business relationship and opportunities. Identically, Wang et al. (2013) stated that incubators in Taiwan offer services such as: low-cost office space, business support services, networking opportunities and tax incentives. In addition, business incubators in Taiwan are financially supported via the government-established Small and Medium Enterprise Credit Guarantee Fund (SMEG).

There has been significant increase in the number of business incubators throughout the USA, Europe and Asia (Tsaplin & Pozdeeva, 2017). However, in most African countries and in particular Zimbabwe, the idea of business incubation is still at its infancy stage. In Zimbabwe through the Ministry of Higher and Tertiary Education, Science and Technology Development, the government announced its commitment towards adoption and implementation of business incubation as an economic development strategy. Besides that, BUSE is continually facing a challenge of insufficient funds due to reduction of government grants to state universities. Government contribution to BUSE budget was 77% in 2012 and reduced to 65% in 2016, thus the need to generate third stream revenue. Additionally, so far no university in Zimbabwe has conceptualized the idea of business incubation hub. Therefore, the research question of this paper is what business incubation model can be developed for an entrepreneurial university so as to significantly contribute to the development of new enterprises with high growth potential and what strategies should be adopted to ensure incubation effectiveness. Thus, the objective of this paper is to provide an overview of the development of a Business Incubation Model for an Entrepreneurial University (The Case of Bindura University of Science Education) and its role and effectiveness in supporting the development of new enterprises with high growth potential. The paper is structured as follows: Section 2 provides a review of the literature on the Business Incubations, Section 3 provides the sources of differentiation of BUSE Business Incubation Unit, Section 4 describes the objectives of the development of BUSE Business Incubator Unit, Section 5 shows the methodology for achieving the BUSE Business Incubation objectives, Section 6 explains the existing enterprises at BUSE, Section 7 illustrates the BUSE Business Incubation Model and Section 8 provides the conclusion.

2 Literature Review

2.1 Definition of Incubation Centre

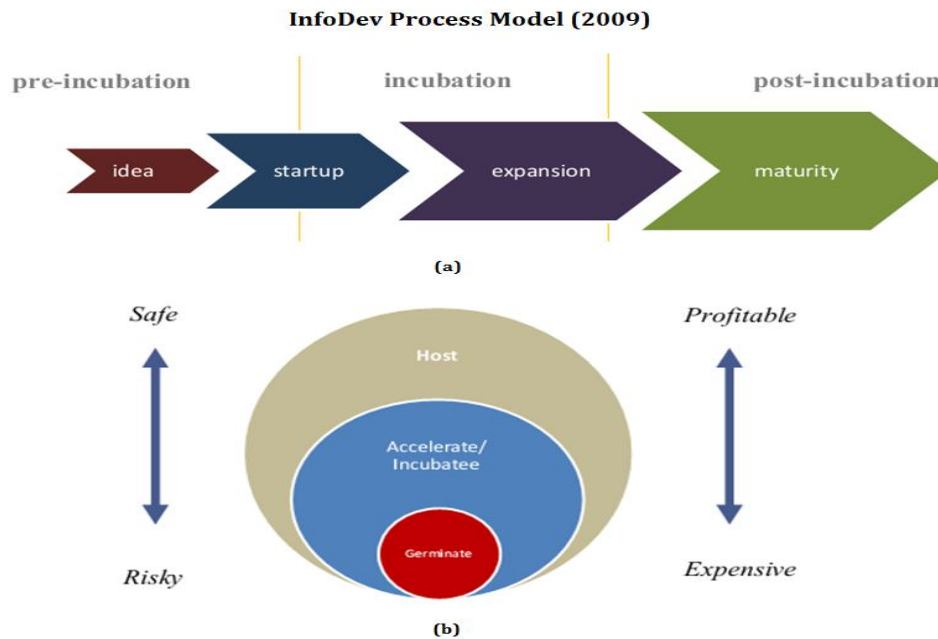
According to Obaji et al. (2015) an incubator is a mechanism in which babies who are born prematurely are kept warm and safe under controlled environment. In the same vein business incubation is a programme targeted at keeping young entrepreneurial firms warm and safe through an array of support services, until they are strong and sufficiently mature to move out of the incubator and flourish on their own.

The key driver for a business incubation programme is to encourage entrepreneurship (Rice & Matthews, 1995). Incubation is a support process that nurtures the development of beginning and emerging companies through a range of resources and services. The primary goal of a business incubator is to produce organizations that will leave the incubation program as a self-supporting organization compared to during the start-up period when they are most vulnerable (Barrow, 2001). The primary reason for beginning and emerging organizations to join an incubator is to build successful enterprises and to connect and network within their community (Totterman & Sten, 2005).

Business incubation first started in the United States in 1959 in Batavia, New York and now it's widely being used as an instrument for encouraging entrepreneurs and helping start-ups (Hacket, S.M., Dilts, 2004; Lewis, 2001). Graduates of a business incubator potentially create jobs, revitalize neighbourhoods, commercialize new technologies, and strengthen the local economy. Business incubators reduce the risk of small business failures and assist in the development and growth of existing companies (Allen & Rahman, 1985). Policymakers in developed countries usually facilitate knowledge-sharing across sectors by creating stronger incentives for commercialization and Research and Development (R&D). Furthermore, Jamil et al. (2015) argue that universities would enhance their participation through an effective and well-integrated incubation system for the development of a sustainable entrepreneurial society. It is in this same vein that Zimbabwe using BUSE can utilize the know how to establish its own unique Business Incubation Unit.

According to InfoDev. (2009) Business Incubation Programs are aimed at promoting economic development by supporting start-up companies and their development. These programs offer services to support the establishment and development of small and medium companies. The services offered are divided into four categories such as; 1) start-up consulting and business planning; 2) consulting in all areas important for business development and growth; 3) consulting for and/or access to financing; and training and 4) networking. Likewise, Patton and Marlow (2011) state that to support new technology venturing, university business incubators offer their tenants professional support and advise plus exposure to entrepreneurial networks with the objective of assisting them to address the associated liabilities of newness.

2.2 Processes involved in Business Incubation



Business Incubation Blog, <http://worldbusinessincubation.wordpress.com/>, Ryzhonkov Vasily

Fig.1: Processes Involved in Business Incubation

Illustration:

“Germinate” is the earliest stage where your entrepreneurial ideas come. This is also the riskiest part of the venture because high uncertainty exists due to lack of knowledge and capabilities. Entrepreneurs and business incubators should invest time and effort mostly. The second stage is “pre-incubation” where the main goal is to help an individual with an idea. This is the riskiest and expensive stage of the process. Very few incubators can afford this kind of activity where they can access public support or private risk capital. This is often required in high-tech innovation industries and with incubators closely attached to universities. The third stage of the process is “incubation”. This is where an idea has graduated to a plan, with a team, and operations have begun. Consequently start-ups started scaling and expansion. Risks are still high, investments here are expensive and still don’t bring any profit. Incubators help in a search of business model, provide business assistance, build the team, provide resources, access to networks, and capital sources. The last stage is the Post-incubation where a profitable company merely seeks a particular type of facility. There is basically no need for intervention by an incubator, but experience shows that incubators still help companies. For instance, many companies continue to rent spaces in an incubator.

As authors accentuate for some incubators “this relationship with mature companies can be a crucial strategy to assist with and subsidize their other programs.” Companies are mature, and safe.

2.3 Impact of Business Incubation

As stated by Wanklin (2002), UK Business Incubation in 2001 measured the impact of incubators on the local economy and work force in the United Kingdom. The survey revealed that an incubator's client businesses provided an average of 167 jobs per incubator and were home to an average of 30 client businesses. Most (60%) incubators also operated outreach services, helping and advising companies located outside the walls of the incubator. Incubators operating outreach activities supported an average of 106 additional businesses. Across the sample, an average of 75% of client companies turned over up to £500,000, but only 1.5% had a turnover of more than £5 million. More importantly, companies housed within UK incubators had an average success rate of >80% compared with the national average of <50% of all small- and medium-sized companies registered and trading in that year (Wanklin, 2002).

Additionally, Al-mubarak and Busler (2013) reviewed the literature on business incubation in China, Bahrain, Jordan, Morocco and Syrian Arabic Republic focusing on the identification of the incubators as tool for economic development. The authors found that 1) business incubators provide support for start-up companies, 2) graduated companies tend to have a greater probability of success and 3) graduated companies have a significant positive impact on economic development. Similarly, Ayetseet al.(2017) find that firm’s performance is greatly enhanced when a firm avails itself to an incubation program. According to these authors, firm’s survival, revenue growth, job creation, venture funding, networking and alliance building are the most impacted by business incubation process. In contrast to the above finding, Mas-Verdú et al. (2015) found that incubators alone cannot affect firms’ survival. A combination between incubators and other factors such as sector, technology and business size is necessary. Moreover, findings by Meru and Struwig (2015) in their cross-sectional study of business incubation process and business development in Kenya surprisingly show that incubatees receive fewer services from business incubation than anticipated. Using an application of qualitative comparative analysis (QCA) on a sample of 54 incubators in Valencia in Spain, Albort-morant and Oghazi (2016) found that incubator tenants who find the services of the incubators most useful are the young, have good studies, professional experience and have family experience. Furthermore, Weeleet al. (2017) find that low use of incubator’s resources was due to the inability to use incubator’s resources to develop missing intangible resources, entrepreneurs not aware of the resource gaps and being primarily short-term oriented. Also the Small Business Administration of the U.S. Department of Commerce reported that only 20% of new businesses are still in operation after the first five years due to undercapitalization and lack of proper management skills. In contrast, a series of landmark evaluations of Economic Development Administration (EDA) funded programs revealed that 87% of all incubator graduate firms remain in business, indicating that business incubation can be a highly effective economic development tool to create wealth and improve community and national competitiveness. A 1997 study funded by the EDA concluded that business incubation programs help to build healthy, lasting firms and they do it for a low cost. In general, the mission of any business incubator is to increase the successful development of emerging businesses in sectors that are supported by a nation’s unique areas of opportunity. Ideally, businesses that graduate from an incubator move out into the community and contribute to the overall vitality, diversity, and growth of the economy. Incubators provide environments that allow a nation to take an active role in growing their own businesses that will lead to job creation.

These new businesses and the new jobs they produce create wealth through multiplier effects and new tax generation that ultimately benefits the community beyond the individuals directly employed by incubator businesses and graduates.

2.4 Table1: Key Challenges Faced by Business Incubators

Challenges	Sources
Selecting and attracting adequately skilled professions	Lose and Tengeh (2015); Fukugawa, (2013)
Lack of entrepreneurial skills	Lose and Tengeh (2015)
Lack of growth and sustainability for businesses incubators	Scaramuzzi (2002); Lalkaka and Shaffer (1999); Lose and Tengeh (2015)
Lack of access to technology based facilities	Caleb et al. (2012); Lose and Tengeh (2015)
Lack of access to funding and sponsorship	Scaramuzzi (2002); Lose and Tengeh (2015)
Harsh economic condition such as inflation leading to difficulty in pricing, costly inputs and inability to restock	Primary data from BUSE Enterprises.
Little and wrong timing of funding. Funding from other sources such as banks is not possible as the University cannot be approved by the Ministry to get a loan due to a huge public debt.	Primary data from BUSE Enterprises.
Invading of farm land by miners these not only lead to land degradation but only use mining chemicals that are harmful to the animals.	Primary data from BUSE Enterprises.

2.5 Table2: Current State of Entrepreneurship within other Universities

Entrepreneurial Universities	Strategies
Massachusetts Institute of Technology (MIT)	Students from all faculties and disciplines with unique ideas apply to the Legatum Centre for Development and Entrepreneurship at MIT and they are interviewed. Successful applicants get fellowships and further training and coaching. Students graduate with two qualifications i.e Entrepreneurship qualification and the specialisation they enrolled for.
Babson College	Students are placed into teams based on different expertise, gender, religion, specialisation and interest. Each team is given \$3000 to start a project and they also get faculty support and coaching and during the gap year they work on the project. If students are successful at the end of the year they pay back the \$3000 and the rest goes to charity. Where the students make a loss the university writes off the debt.
Anglia Ruskin University	The University enrolls students for a Bachelor of Arts and Postgraduate Degree programmes in Entrepreneurship.
University of Plymouth	The university works with existing communities and small businesses to enhance their entrepreneurial capacities.
Stellenbosch University	The university introduced postgraduate degree by research in entrepreneurship and other programmes such as the Young Minds Entrepreneurship Programme.
Nelson Mandela University	The university introduced the New Venture Creation Programme which is designed to promote entrepreneurial behaviour and resourcefulness in any individual by conveying business, finance, marketing and costing skills to

	ensure sustainable SMME’s and wealth creation
Ibrahim Babangida University (Nigeria)	The University has developed an Enterprise Development Centre and students pass through the centre and are trained in Entrepreneurship and it is a compulsory programme.
Makerere University	The university introduced entrepreneurship programmes and has also established business incubators e.g. the The Food Technology and Business Incubation Centre (FTBIC) which aims at impacting entrepreneurial skills among the youth and the women for establishment of sustainable enterprises.
University of Coventry	The university set up the Enterprise Hub as a place to discuss new business ideas, provide mentoring and support for potential student entrepreneurs.
Tennessee State University	The university established the Tennessee State University Business Incubation centre whose goal is to build entrepreneurs through Start-ups and Small Business Development.

3 Sources of Differentiation of BUSE Business Incubation Unit

The first source of differentiation of BUSE Business Incubation Unit is that it will follow the university mandate of promoting science education. Therefore, enterprises which will be developed will be science based.

Additionally, the incubator will use technology extensively for example; adopting advanced technologies like the climate smart technology, green technology and industry technology. Furthermore, BUSE Business Incubator will benefit from regional comparative advantages. Since Bindura is a gold mining and arable area, enterprise development will be emphasised in commercial agriculture and gold mining. Moreover, the Business Incubator will have access to human capital expertise from different faculties of the University who will contribute to knowledge and running of the incubator. Lastly, the incubator will forge strategic partnerships with organisations such as the centres of excellence and funding agencies which can contribute to knowledge and efficient running of the unit.

4 Objectives of the Development of BUSE Business Incubation Unit

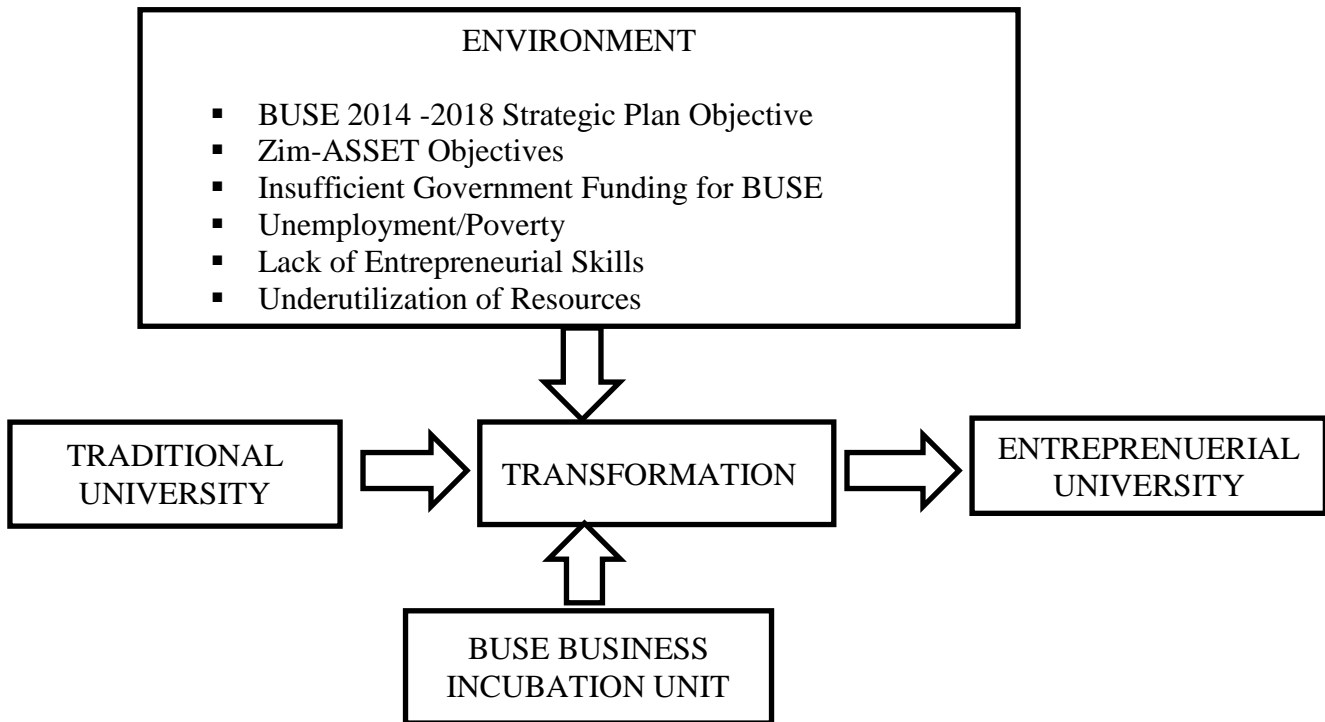


Fig2. Objectives of the Development of BUSE Business Incubation Unit

The objective of the development of BUSE Business Incubation Unit is driven by the environment both at University level and national level. From the university environment point of view, the development of the business incubator aims at transforming BUSE from a “traditional university” into an “entrepreneurial university”. An “entrepreneurial university” is defined as a university that has the ability to innovate, recognize and create opportunities, work in teams, take risks and respond to challenges (Kirby, 2000). BUSE Business Incubation Unit will be structured in such a way that it stimulates and supports the development of entrepreneurial mind-sets and skills among the students, staff and community and impact entrepreneurial skills willed to exploitation of the available resources. The development of the business incubator is also motivated by the achievement of the objective of the BUSE 2014 -2018 Strategic plan of a fully-fledged entrepreneurship department.

At national level, the development of the BUSE Business Incubator is aimed at addressing the (Zim-ASSET) objectives which are aimed at bringing recovery to the Zimbabwean economy. The business incubator will be a catalyst for economic activity locally, nationally and internationally through entrepreneurial skills development, enterprise development, promotion of technology transfer and innovation and job creation. This will help address the challenges of lack of entrepreneurial skills, underutilization of available resources, unemployment and poverty which are currently facing the nation. Additionally, the development of the Business Incubator is also aimed at generating third stream revenue for the University and increasing government revenue. Third stream activities are revenue-raising activities that academics undertake alongside their normal traditional work of teaching and research. This objective will be achieved through charging rental and consultancy fees to incubatees. Government revenue will be increased through development and formalization of small and medium enterprises.

5. Strategies of BUSE Business Incubation Units

5.1 Methodology for Achieving the BUSE Business Incubation Objective

In order to attain the above objectives, BUSE Business Incubation unit will offer the following programmes; a certificate in micro, small and medium enterprise management, a diploma in entrepreneurship, an undergraduate degree in entrepreneurial studies and a masters’ degree in entrepreneurship. In addition, the incubation unit will offer short courses and workshops on entrepreneurship to the community. The above are aimed at equipping students and community with entrepreneurial knowledge and skills. Furthermore, BUSE Business Incubator Unit will offer support and advice in enterprise start-ups and development. This will range from; 1) providing incubation facilities in the form of office space, use of equipment and machinery, 2) offering business advisory services which are aimed at assisting the entrepreneur with management issues such as business planning, financial management, marketing and regulatory compliance, 3) offering financial services ranging from seed loans or taking equity into the business and 4) providing networking which includes mentorship by experienced business professionals, knowledge sharing with like-minded entrepreneurs and links to business relationship and opportunities. Moreover the Business Incubator will make available an Incubator Manager and team whose role is to nurture the client businesses and helping them to build networks of support.

5.2 Effectiveness of BUSE Business Incubator / Quality Control

The success of business incubators depends on how the incubators are designed and managed (Adelowo et al., 2012). According to these authors, some of the ways for ensuring sustainability and effectiveness of business incubators include;

- Developing and strengthening public–private partnerships. Strengthening strategic partnerships and networking would enhance the capabilities of the incubator in rendering quality services to venture enterprises during and after incubation.
- Intensifying Research and Development (R&D) to innovate and produce new technology. The focus will be on production of technology value added products and services through R&D and technology commercialization.
- Sourcing funding for the business incubator and incubatees. The funds help in the operation, management and supervision of the incubator for effective service delivery. There is also need to provide financial support such as loans to incubatees for venture development and growth.
- Recruiting personnel equipped with management and entrepreneurial skills. These will ensure efficient management and operation of the business incubator.
- Clearly following the objectives and the mission of the business incubator will help to achieve the goal of effectiveness in a business incubator.

- Networking with stakeholders and international agencies would provide support such as entrepreneur training, business advice, financial support and technology support.
- Having in place a clear admission and exit criteria will ensure a high turnover of the tenant company. Provision of support services such as counselling, loans and monitoring and evaluation of performance of graduated firms would promote the effectiveness of a business incubator.

Accordingly, the findings of Redondo and Camarero (2017) indicate that the greater the managers' experience in the business and entrepreneurial world, the greater the fostering of personal and business assistance and networking activities in the incubator. Managers lacking an entrepreneurial profile weaken incubatee access to other business networks and prove less efficient in business training. The appropriate indicators for measuring the effectiveness of BUSE Business Incubation Unit as a tool for stimulating the creation and growth of innovation enterprises will be; number of innovative enterprises created, viability of the enterprises, revenue size for the enterprises, growth rate of the enterprises, investment size attracted (as a proxy for the perceived market value of the enterprises) and performance comparison between innovative enterprises created and other businesses in the same sector. According to Wann et al.(2014) the key performance indicators of Taiwanese university-based incubators include; an average number of incubatees of 22, length of tenancy of 4 years, a ratio of UBI managers to incubatees of 1:11, a growth rate of incubatee turnover of around 15% and job creation per university-based business incubator of 38 jobs annually. In additional, Özdemira and Şehitoğlub, (2013) in their study on the performance of business incubators as an SME support tool and their relevance in Turkey consider factors such as job creation, graduation rate, import substitution effect of incubators in high-tech products and services and their contribution to entrepreneurial and technical education as important factors in measuring business incubator performance.

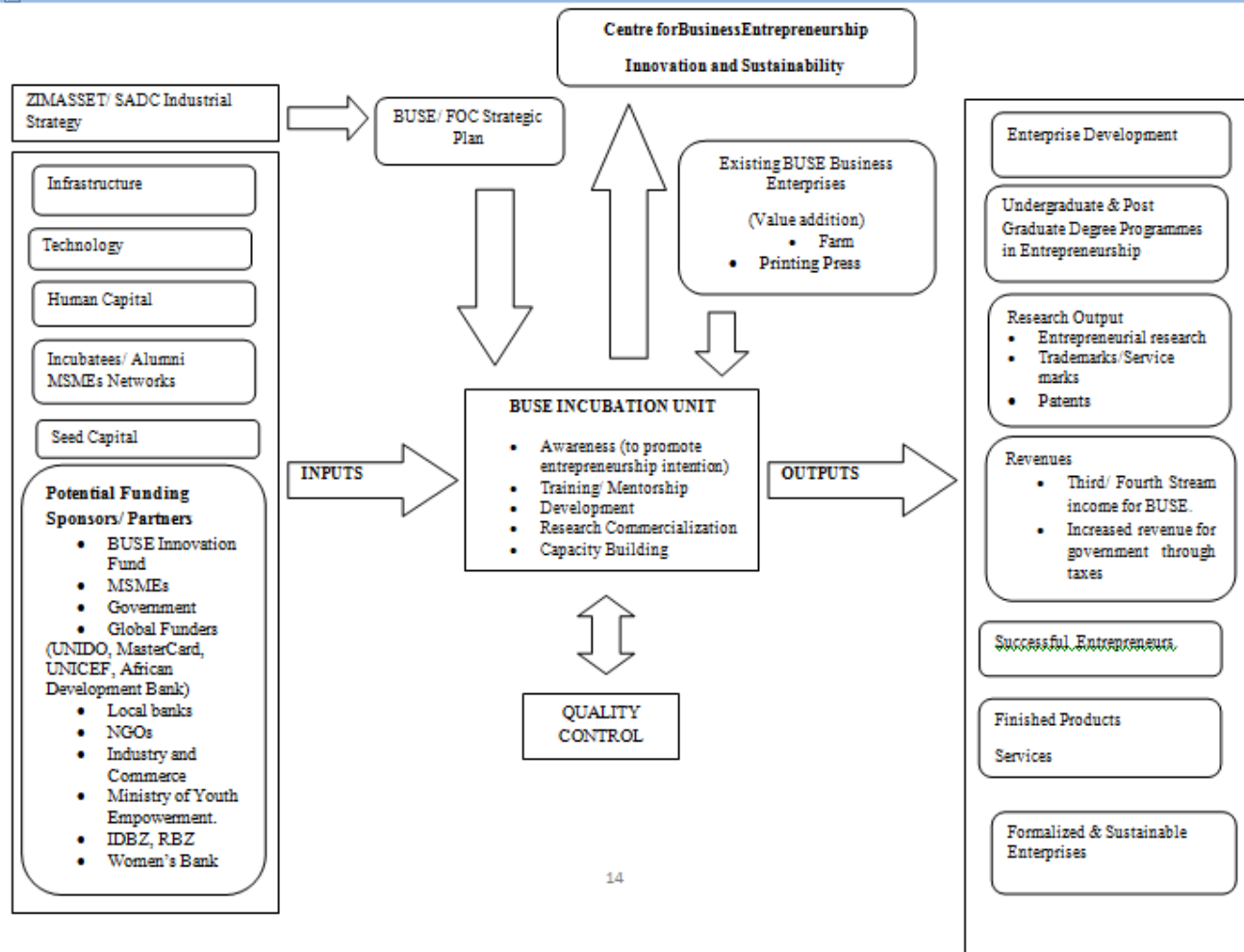
6 Table 3: Bindura University Business Enterprises

Enterprise	Products and Services	Employees	Annual Revenues	Constraints	Market Opportunities
Printing Press	Printing examination booklets Certificates, cards, receipt books and stationary printing Banners and venial printing Dissertation printing Photocopying examination question papers.	4 permanent employees 3 contract employees but can vary depending on the work load ranging from 5 – 10 employees.	(2018) \$313,834 (2017) \$246,885	Lack of spare parts to refurbish the equipment due to shortage of foreign currency High cost of refurbishing the equipment and out sourcing from other companies High operating costs High competition from other printing presses. Shrinking market due to government constant tuition policy. Increase of bad debts. Inability to retain skilled manpower due to the contractual form of employment	BUSE has a lot of printing work which can be done by the printing press
Farm	Livestock Chicken (2000 – 3000 birds) Pigs (10 sow units) Beef (45 heads of cattle) Crops (2 cropping seasons) Summer cropping	Permanent workers 15 employees (1 farm manager, 1 book keeper, 1 crop technician, 1 livestock technician and 11 farm	(2018) \$275,735 (2017) \$246,885	Lack of equipment hence depending entirely on hiring which is very costly and unreliable resulting in low yields. Erratic power supply hindering irrigation Failure to plant at the right time due to lack of equipment and limited land which would be	Government supporting partnership financing for farmers may be a breakthrough for the finance challenge Faculty of Agriculture fees

	<p>- Maize 25 Hectares - Soya 25 Hectares Winter cropping -wheat 25 hectares</p>	<p>workers) 30 contract employees during harvest and 3 contract employees during off peak season.</p>		<p>occupied by the winter crop. Lack of working capital due to lack of capacity for the university to fund the enterprise. Challenge of partnership financing since partners require unfavourably long tenure. Bureaucracy in decision making hence making operating procedures difficult. Poor location of the farm and lack of infrastructure such as telephone, internet etc. Lack of finance personnel hence need of intensive structural reforms. Lack of cash customers. The large customer is BUSE which is a credit customer. They take long to pay and by the time the money is received, it has lost value due to inflation. High competition from other farmers. Heavy debt due to lack of finance to clear employee law suits Land disputes with the original land owners.</p>	<p>for Teaching and Learning charged to the Agriculture students may be channelled to operate the farm hence reducing costs Tapping on farm research projects from the Faculty of Agriculture to enhance farm productivity Readily available market for the farm produce Planning to venture in horticulture due to readily available university market</p>
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Primary data from BUSE Enterprises and Financial Audited Statements

7 Framework for Implementation of BUSE Business Incubation Centre



6.1 Operationalization of BUSE Business Incubation Model

The BUSE Business Incubation Unit will be housed in the Centre for Business Entrepreneurship Innovation and Sustainability. The key elements for the operationalizing the BUSE Business Incubation Model are as follows; Technology is the application of scientific knowledge for practical purposes, especially in industry. Technology will be extensively used in the BUSE Incubation Unit as new business ideas are developed and nurtured. This will involve advanced technologies such as smart agriculture technologies (mechanisation and irrigation development), green technology (use of renewable energy like solar, planting drought tolerant crops e.g. genetically modified resilient seeds) among others. Funding is defined as money provided, especially by an organization or government, for a particular purpose. The model will source funding from all willing partners as depicted in the diagram. Sponsors/ Partners are Individuals or entities who organize and are committed to the development of a product, program, or project.

The incubation centre will collaborate with development partners and sponsors to ensure availability of funding for the centre projects as depicted in the diagram. Human Capital refers to the collective skills, knowledge, or other intangible assets of individuals that can be used to create economic value for the individuals, their employers, or their community: Education is an investment in human capital that pays off in terms of higher productivity. The Business Incubation Unit will have access to human capital expertise from different faculties of the University who will contribute knowledge to run the incubator. These teams are better qualified and can therefore make better strategic decisions necessary for enterprise development. Seed Capital is the funding required to get a new business started. This is initial funding, which usually comes from the business owner(s) and perhaps friends and family, supports preliminary activities such as market research, product research and development (R&D) and business plan development.

Entrepreneurship Programmes; academic and professional development programmes on entrepreneurship education and training will be running within the centre as follows; Certificate in Micro, Small and Medium enterprise management, Diploma in Entrepreneurship, B. Com Degree in Entrepreneurial studies; Elective entrepreneurship course for students across all disciplines. In addition, the incubation centre will offer short courses on entrepreneurship on and off site. Enterprise Development; the BUSE Entrepreneurship Program will provide a selected group of undergraduate students with an opportunity to run a business during their third year of study. The program will provide students with an opportunity to gain hands-on experience in an entrepreneurial environment through training in real-world business situations. Further this program will assist students shape their career path in entrepreneurship. BUSE Business Incubation Unit will spearhead research on entrepreneurship in order to address current issues affecting entrepreneurs. Also, there will be Research Commercialization which refers to the process of transferring research output between a researcher and a commercial partner, including industry, academia, and state and local governments. The research output transfer process typically involves: Identifying new technologies stemming from research activities.

A Mentor is defined as someone who guides another to greater success. The BUSE Business Incubation Unit will recruit a number of successful entrepreneurs, alumnus, and other experts who donate their time to help the incubatees in shaping their business ideas and establishing successful enterprises. An entrepreneurial ecosystem may be thought of as a system for providing fertile soil and climate in which to seed and nurture and grow new businesses. This process is depicted in the BUSE business incubator model. This will include but not limited to venture creators, mentors and advisors, university partnerships and programmes e.g. linkage with Venture Science Academy in South Africa, support organizations (funders, legal, technology, and accounting), connection to markets, networking and working with government. A comparison with University Business incubators namely: The Food Technology and Business Incubation Centre (FTBIC) at Makerere University and The Enterprise Hub at Coventry University has been done. FTBIC's aim is to nurture and sustain foods and allied businesses especially among women and young graduates by providing innovative research, practical solutions, linkages, enterprise development and outreach to enable wealth creation and nutrition enhancement. Their goal is to come up with new strategies that will have a bigger impact on the youth by providing leadership and guidance in the area of science, technology and innovation for job creation (<https://news.mak.ac.ug/>). The aim of The Enterprise Hub at Coventry University is to provide facilities and services to aid and support potential student entrepreneurs and small businesses to the next step to grow their businesses. They provide facilities and services such as space for hot desking to discuss new business ideas, expert mentoring and opportunities to connect and network with like-minded entrepreneurs (<https://www.coventry.ac.uk/cuse/the-entreprise-hub/>). The conclusion is that BUSE business incubator will be a specialized business incubator like The Food Technology and Business Incubation Centre (FTBIC) at Makerere University specializing in enterprises that are science based in line with the university mandate of promoting science education. It will be different from The Enterprise Hub at Coventry University which is a diversified enterprise hub. The BUSE Business Incubator will have similar goals to these two university business incubators such as equipping students and community with entrepreneur skills, developing sustainable enterprises and job creation. Activities to achieve these goals will be in many ways similar to the activities carried out by the above two university business incubators and these are; provision of facilities, enterprise development, mentoring, networking and providing innovative research and outreach through community engagement. These inputs are depicted in the BUSE business incubator model.

8 Conclusion

In this paper, we provide an overview of the development of a Business Incubator Model at Bindura University of Science Education and its role and effectiveness in supporting the development of new enterprises with high growth potential. The major drivers of the programme are; transformation of BUSE from a “traditional university” into an “entrepreneurial university”, achievement of BUSE 2014-2018 strategic plan set objective of development of a fully-fledged entrepreneurship department, addressing the unemployment and poverty issues, achieving the (Zim-ASSET) objectives and ensuring societal development. The operationalization of the BUSE business incubator and education process through the incubator will equip the students and the community at large with entrepreneurial skills enabling them to start up sustainable enterprises. This will contribute to the implementation and achievement of the sustainable development goals (SDG's) such as reduced poverty, zero hunger, quality education, decent work and economic growth as the people are able to earn high incomes from established sustainable enterprises.

The centre will run academic and professional development courses and facilitate needs driven research in the country by academics and students in the entrepreneurship programme. This will contribute to the development of policies favourable to entrepreneurship growth and development and offering informed research-based advice to Government. The Business Incubation Unit will create an enabling environment through the provision of infrastructure, access to finance and business networks and will facilitate start up support to students, staff and the community. The Incubation Business Unit will facilitate the formalization of the informal sector through development and growth of businesses and transformation from survivalist entrepreneurship to value addition as a way of breaking the poverty cycle. The centre will also disseminate best practices to entrepreneurs through outreach and extension services and also facilitate the marketing of entrepreneurs' products and services both locally and internationally. In summary, successful development and implementation of BUSE Businesses Incubation Unit is expected to have the following prospective benefits: transformation of BUSE into an entrepreneurial university, increase in third stream income, increased number of successful entrepreneurs, employment creation, increased number of formalised and sustainable enterprises, increased volume of new products/ services, increased GDP and national development, increased tax revenue and accelerated attainment of the Zim-ASSET objectives.

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Appendix

Definitions of Terms

Student Industrial Attachment – Is a “work-based experience programme” providing a real-life organizational context for students to develop specific or generic skills, valuable to their professional development.

Abbreviations

BUSE- Bindura University of Science Education

Zim-ASSET - Zimbabwe Agenda for Sustainable Socio-Economic Transformation

SMEs –Small and Medium Enterprises

RBZ – Reserve Bank of Zimbabwe

SADC - Southern African Development Community

UNICEF - United Nations International Children's Emergency Fund

UNIDO - United Nations Industrial Development Organization