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Towards the Development of the Entrepreneurial Capacity of the Education System in South Africa

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Abstract

The entrepreneurial capacity of the education system in South Africa needs development in three main areas. The first area is in the volume and process used to educate entrepreneurs, the second area is in the commercialisation of existing research and the third is in the entrepreneurial approach of the university system itself. The article explores these aspects

Keywords: *South Africa, Education System, Entrepreneurship, Technology Commercialisation, University revenues.*

Introduction

The socio-economic reality of South Africa, much like many other developing countries in the world, highlight the dire need for job creation.

It is widely acknowledged that entrepreneurs create jobs, but it was only relatively recently found that there is a causal link between entrepreneurship and job creation. Kane (Kane, 2010) showed that 40 million jobs were created in the US over a 30-year period by 6 million businesses. What was however startling about this report is that only new firms created jobs and this underscores the need to use job creation to transform economies. This statistic by its nature implies as well that the average (surviving) business would create 6.6 jobs over time.

There are many studies that explore the links between entrepreneurial intent and university students (Li & Liu, 2011; Malebana, 2014; Mwiya, 2014; Pruett, Shinnar, Toney, Llopis, & Fox, 2009; Rideout & Gray, 2013; Sánchez, 2011; Turker & Sonmez Selcuk, 2009). A key question is what the role is of Universities in educating entrepreneurs we first have to ask, do they have a role? The answer is a resounding yes.

To evaluate this is simple – the role of universities in the Asian tiger transformation (Boyle, 2006; Davis & Gonzalez, 2003), the Silicon valley and Taipei technical communities(Saxenian, 1991; Saxenian & Hsu, 2001), the Startup Nation (Senor & Singer, 2009) and we will soon observe that technical communities, fuelled through military innovation and universities served as the primary catalysts for the transformation.

If we look at unemployment statistics for the major economies we know that 71% of low income countries are unemployed (World Bank (last), 2017). We know we need about 300 million jobs in India, 600 million in Africa, 300 million in South America, 100 million in China and 100 million in the Russian and former soviet republics. This is 1,4 billion jobs that can be used today. We know that a new small business creates 4.5 jobs which means that we need to create 300 million new companies is BRICS to satisfy the needs of customers. We can build bigger industries and move these employment figures higher and create larger sectors of the economy. This may bring the requirement down to 80 million businesses. The alarming fact is that these jobs need to be created quickly, efficiently and with maximum impact to ensure that domestic employment rates are sustained for new emerging participants in the global economy. The net economic contribution of the workers in these countries need to be realized towards sustainable economic growth else we will face a growth in global poverty.

Is it unrealistic to say that we can create 60,000 businesses in South Africa with a minimum annual turnover of R 2 million per annum? If we could this would form a total of R 120 billion annual turn-over, and create a minimum of 270,000 direct jobs. The estimated multiplier effect is expected to be a factor of 10 times on the base figures over time. If such a programme could be sustained for 10 years in a row with minimum criteria met, this would create an economy that would rival the US.

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Methods

The main review of this article aimed at investigating 4 main questions

- Proven strategies for creating businesses
- What types of businesses need to be created?
- What is the role of universities in creating entrepreneurial capacity?
- How do universities create this capacity?

This was done through desktop research and a pilot study.

The pilot study recruited 861 people with entrepreneurial intent and identified what their main challenges in starting up a business was. These were addressed through a structured training process. 220 of these participants converted their intent to a start-up with the relevant support.

Results

The pilot study showed that

1. Given a group of people that go through a structured entrepreneurial process, there is a 25% conversion ratio from intent to start-up given a correct support structure.
2. Businesses can be supported to build economically viable units that can employ up to 4.5 people and achieve a first-year turnover of R 2 million.
3. There are significantly different challenges facing various types of entrepreneurs.

The main challenges that entrepreneurs face when starting up is to not have a clear roadmap to guide them on the process to start-up their business. Subsequently they do not focus on balancing marketing and production and achieving financial sustainability. Through a relevant curriculum these challenges can be overcome.

Discussion

The discussion is based on the 4 main questions outlined initially.

Proven strategies for creating businesses

There are proven models for creating businesses.

Four models stand out:

Massachusetts Institute of Technology (MIT) saw the creation of 5600 businesses between 2000 and 2006 who's combined turnover today would be $ 2,3 trillion USD. If this was a country, it would be the 11th largest country in the world.

The Y Combinator uses a venture acceleration approach that saw the funding of 1,000 startups and the creation of $ 65 Billion USD in valuation since 2005. The fascinating part of the model is that ventures are funded to the value of $ 120,000 USD initially and only 100 businesses are admitted every 6 months.

Israel created the Startup Nation which focuses on supporting Israeli startups. They have created an estimated $ 40 Billion USD in valuation over the last 5 years. Interesting a recently report shows that investors got exits to equity markets through IPOs and listings of $ 1,5 USD for every $ 1 USD invested.

In this study, we rolled out a program to 861 start-ups of which 220 ended up creating bankable business plans. Initially only 13% of respondents had plans that had the minimum qualities for success (a product, a strategy for delivering it), while eventually 75% of respondents had a comprehensive business model and business case. This is after 4 days of class-room training.

What types of businesses need to be created?

Not all start-ups are equal. There is substantive research that shows that the businesses that succeed to grow are innovation driven and not just there to fulfil a job creation role (K. Adams, 2005; M. Adams, Makramalla, & Miron, 2014; Baker, Grinstein, & Harmancioglu, 2016; Bjorklund, Bhatli, & Laakso, 2013; Bock, Opsahl, George, & Gann, 2012; Byers, 2010; Carleton, Cockayne, & Tahvanainen, 2013; Černe, 2013; Clapp & Swenson, 2015; Darnihamedani & Hessels, 2016; Engle, Mah, & Sadri, 1997; Schneider & Spieth, 2013). To characterise this, an economy is better off for a person to enter

employment if their business cannot reach a minimum threshold of employment and remuneration for the entrepreneur is below the entry level wage for a graduate.

The implication of this is that businesses need to be able to be demand driven, achieve minimum turnover levels and sustain market growth.

This scenario seems idealistic for African businesses – we have everything that we need and we can quite simply buy our products from the rest of the world. This approach has created a scenario where we are trading gold and mineral resources for computers and consumer electronic from more advanced nations. To turn the tide, we have to invest in making innovation driven businesses that will deliver on transformative capacities that stimulate local production.

What is the role of universities in creating entrepreneurship?

The following is extracted from discussions around this topic with key roleplayers in the university ecosystem throughout this year.

Understanding markets

One of the key roles of universities is to open up an understanding of markets through providing information services that

- Cover and anticipate demand
- Identifies opportunities for commercialisation of research

South African product demand and supply modelling is not adequate and subsequently many entrepreneurial researchers describe a key challenge in South Africa as access to markets. Our markets are unclear and unfocused but currently serviced by massive import oriented companies.

Enabling effective entrepreneurship methodologies

Very few entrepreneurship methodologies have been created that have proven results. The pilot study of this program is one of the few systemic initiatives that have a relatively predictable result and that has been based on research. Many interventions in South Africa have limited proof of success.

- The creation and support of viable entrepreneurial methodologies that accelerate the development of entrepreneurship in sector specific focus areas

Creating support for commercialising key technologies

Every country has comparative advantages. A methodology here would focus on seeding these technologies into universities through co-locating researchers, supporting research programmes and supporting the commercialisation of these technologies through co-operation between university and private sectors. These types of collaborations and focus have been very successful in many parts of the world.

Providing, testing and promoting the dissemination of designs, prototypes and models for achieving access

We will not be able to build an airplane in Africa tomorrow – but if we start looking at the growth paths for building airplanes the we are able to design individual airplane parts, inspire people to produce them, design the factories that will produce them, and work out the markets for which they would be relevant. If we initiate this approach on several end states in specific industries, then we will be able to have stimulated an aircraft building industry. This type of technology pathing was used effectively by MITI in Japan to transform the Japanese wartime economy to a post-industrial trading economy that today controls major industries in the Asian basin.

Promoting scholarship around economically viable areas

Innovation and entrepreneurship depends on opening up new markets. Research shows that the stimulation of ideas through introduction of new approaches, and support of these new approaches lead to different entrepreneurs taking opportunities.

A university system blueprint

Every university needs a minimum viable entrepreneurship eco-system that includes

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- Capacity to research entrepreneurship
- A research agenda related to entrepreneurship
- Capacity to commercialise ideas
- A venture capital type infrastructure
- A commercialisation process based on a sound and localised methodology
- Integration of entrepreneurship in the curriculum of each student, based on a sound localised methodology
- An entrepreneurship network that involves local business and other entrepreneurship eco-system stakeholders
- An entrepreneurship alumni network to draw on and to support new entrepreneurs

Effective industrial partnerships

Entrepreneurship on a macro scale depends on industry partnerships with industries such as the medical, engineering, transport etc., industries. A client management interface with these types of industries is very critical.

Tracking and monitoring of entrepreneurial growth, challenges and issues

To enable effective research requires good data. There is a dearth of tracking the development and challenges

Entrepreneurship networks

Universities serve implicitly as entrepreneurship networks, and universities that have fostered these actively have created massive communities that form structural parts of the economy.

Support systems

Universities provide access both from a technological but also social perspective through access to business support centres and validation and support of ideation. It is quite common for people to seek the advice of an academic in supporting the growth of an idea or to seek advice on how to proceed with a particularly tough problem in technical, business or other aspect of a new technology, venture or particular phenomenon in business.

How do we create this capacity?

To look at the capacity that needs to be created it is important to understand that this is at two levels – the individual university, and then the country as a whole.

At a university system level

- Develop a consistent model that serves as a minimum viable infrastructure for a university to effectively support invention, innovation, and early stage commercialisation.
- Ensure that such a minimum infrastructure is implemented per university.
- Provide practical processes that can be followed to do the same.
- Train a group of implementers per university to create a viable model and link these centres to each other to stimulate information transfer and joint learning.
- Leverage inter country relationships through BRICS to procure key skills wrt to manufacturing (China, Russian), commercialisation (India, Brazil), finance (China) to ensure that local developments are commercialised.
- Stimulate central information provision on elements of demand, supply and through the intergovernmental cooperation frameworks ensure that Small Business, Statistics, DTI, DST and parastatal organisations all contribute to and play a role in the mobilisation of capacity in the right directions.
- Enable critical centres of knowledge to gain fast track access to accreditation. E.g. Transnet needs to educate 50,000 people annually to enable the train development infrastructure of South Africa – but due to accreditation being a road-block the competency is being deferred to the Department of Higher Education and Training. Is this right? In a fast-moving economy, government would have established a School of Rail and moved to become a premier supplier of this in the African

regional economy. This is one case, but there are many in which such vocational specific academies can add tremendous value in a short space of time. A similar position is currently present in the maritime industry and there are many more specialists' industries in which capacity needs to be created fast and with results for the economy.

- Further the legal frameworks that would enable Universities to benefit from IP realisation and create access to grants that would enable such benefit realisation to be accelerated.
- Establishment of clearing houses for innovations, data on local demand and aggregation of these into national demand and supply statistics and research.

At an individual university

- An entrepreneurship faculty
  - Research entrepreneurship
  - Localise national research
- Create entrepreneurship clinics that support NEET and community entrepreneurship engagement through offering short courses and access to feasibility analysis of businesses.
- Entrepreneurial course
  - A course that is attended by every single student, over the course of their studies, to focus on entrepreneurship in context
  - Preferable initiated at an early stage to give student the skills to
    - Support their own education
    - Build skills towards potential initiatives, while at university
    - Creates a national entrepreneurship mindset
- Seed funding for ideation
- Seed funding and facilities for supporting entrepreneurs.
- Commercialisation centre
  - Provide an interface for small businesses
- Research programmes on demand in the local environment with research on how that demand should be realised as commercial ventures
- Submitting clear tracking data and research relevant to a national programme of entrepreneurship mobilisation

At an academic level

- Acknowledge that we do not know what the demand and supply situation in South Africa, and Africa more broadly is currently.
- Establish a research agenda that looks for opportunities for import substitution, local beneficiation and to develop work methods for satisfying demand using local sources. Publish these findings to local industries.
- Bring together the workers in entrepreneurial education and provide meaningful academic engagement to synchronise the efforts of these programmes.
- Push up to date and meaningful research on the state of the South African entrepreneur.
- Run an extensive training programme to enable every teacher at HET, GET and TVET level to be able to support an entrepreneur through a basic understanding of the principles of business and access to a toolkit that can enable support of business creation.

Macro level

- National Skills Fund to allocate a portion to venture capital funding of entrepreneurs, in a controlled fashion, with a portion of these businesses remaining party owned by Universities to contribute to the funding of those programmes and the institutions broadly. These venture portfolios can spin off or otherwise go into development.
- Stats SA to comment effectively on demand and supply opportunities
- Treasury to comment on areas where foreign suppliers create macro level opportunities for us to create new industries.

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- Through Nedlac, NBI and other fora creating an effective engagement with industry on how to stimulate economic development through university partnerships

On a start-up level

Through our experience in training entrepreneurs, they need of entrepreneurs are simple

- a step by step process that enables them to start that is not focused on business plan creation, but rather on practical actions that they need to take,
- knowledge of where to go and look for a market, and then
- a ton of support when they start going to market.

We have developed a step by step framework that takes a person from putting up their hand and saying that they want to be entrepreneurs, through to their first sale. This process creates viable ideas, viable products and connects them to the market. It is our belief that this type of process needs to be available to every South African to move away from the mindset that business is risky, to a mind-set that says that people have needs and commerce is there to satisfy these needs. Our framework is proven as we have taken individuals that were running survivalist businesses to creating viable and innovative businesses that make sense and that is creating employment and growth for the nation.

Conclusion

Unless the University system accelerates the implementation of entrepreneurship and growth capacity – we are likely to accelerate our dependency on foreign debt.

Transformation will not happen in South Africa, until we transform the economy from a foreign owned, debt ridden world to a locally relevant and vibrant commercial sector that serves the needs of people.

The need for entrepreneurial capacity is highly dependent on

- A macro model that supports entrepreneurial development
- Clear research information that shows local supply and demand
- Viable local curricula that grow economic participation
- Proven methods that work for supporting the challenges of emerging businesses
- Training of every teacher on entrepreneurship
- Training of every student on the opportunity to be an entrepreneur
- Support systems that grow ideas from concept to viable commercial entities

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