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From an Innovation Village to a Science & Technology Park Experiences from the City of Windhoek, Namibia

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Abstract

Building Science & Technology Parks (STPs) and integrating them into a city not only requires comprehensive knowledge of general success factors but also consideration of the specific characteristics and framework conditions of the country. The Republic of Namibia developed its own successful model, the "NBII Innovation Village", which is expected to develop into a Science and Technology Park in the long run.

1. Introduction

Innovation, incubation and entrepreneurship are buzzwords that form an essential part of our modern work environment. Science and Technology Parks (STPs) are booming and growing all over the world, in large variety and different shades. Can the People's Republic of China with over 1,35 billion inhabitants and the Republic of Namibia with approximately 2,1 million inhabitants possibly have a similar approach to promote innovation and entrepreneurship? Or does each country need to develop its own concept to fit the unique circumstances and characteristics of its society instead?

The present paper outlines the framework conditions in Namibia and presents the concept of the "NBII Innovation Village" in Windhoek. It was specifically designed to meet the demands of the population, and embark together on the journey to build a Business Innovation Institute including a STP as well as a business incubator. The paper concludes with the lessons learned vis-á-vis the strategies employed during its implementation process as well as an outlook for its further development.

2. Framework Namibia

Located in Southern Africa, the Republic of Namibia is a young country that just celebrated 25 years of independence from South Africa as well as a peaceful and democratic change of power to its third president, Dr. Hage Geingob.

The country shares land borders with Zambia, Angola, Botswana and South Africa and while its territory is bigger than for example the territory of France, its population of 2,1 million[1] inhabitants and a GDP of US$ 13,11 billion[2] is very small. This implies a small market size.

Most products as well as technologies are imported, mainly from South Africa, which leads to an overall low

1. Namibia Statistics Agency (NSA) (2011). Namibia 2011 - Population & Housing Census Main report.
2. The World Bank (2013). Data by country: http://data.worldbank.org/country/namibia. [Accessed 7 May 2015]

to medium capacity for innovation (79/144)[3] . The open free market economy makes it difficult to protect the development of local products until they can compete internationally. However, recent developments emphasize the importance of building local value chains such as the launch of Namibia's Industrial Policy[4] and the "Growth at Home" strategy[5] . Additionally initiatives like the ones of Team Namibia[6], a member-based non-profit organisation that aims at mobilising Namibian consumers to buy local, as well as promoting local products and services can be highlighted.

Namibia's population is mainly centred in the capital, Windhoek, (326 thousand[7] inhabitants) and the northern part of the country. Many Namibians live in rural areas and depend on subsistence farming. Although the population density is very low (2,6 persons per sq.km[8]), Namibia has a large cultural variety with up to twelve ethnic groups[9] and eight recognised regional languages. The groups live peacefully together, however, cultural differences and language barriers make a common approach regarding activities such as educational campaigns difficult.

Unemployment is one of the biggest challenges Namibia is facing. According to the National Statistics Agency, unemployment reached 28,1%[10] in 2014. The countries high income disparity is furthermore witnessed by a Gini Index of 61.3[11] .

Furthermore, a low tertiary enrolment (117/144[12]) limits the number of university graduates who could be the main drivers in innovation and job creation.

While complaints about the lack of major government initiatives were voiced in the past[13] , recent developments have witnessed advanced progress in the area of innovation in the country. After enacting the Research, Science and Technology Act as far back as 2004, the National Commission on Research, Science and Technology (NCRST) was eventually created in 2013. Its mandate being

- "to ensure the co-ordination, monitoring and supervision of research, science and technology in Namibia;
- to promote and develop research, science and technology in Namibia;
- to promote common ground in research, scientific and technological thinking across all disciplines, including the physical, mathematical and life sciences, as well as human, social and economic sciences;
- to encourage and promote innovative and independent thinking and the optimum development of intellectual capacity of people in research, science and technology;
- to ensure dedicated, prioritised and systematic funding for research, science and technology application and development in Namibia;
- to promote linkages between Namibia and international institutions and bodies on the development of

3. World Economic Forum (2014). Global Competitiveness Report 2014-2015: http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf [Accessed 7 May 2015].
4. Republic of Namibia (2014). Namibia's Industrial Policy.
5. http://www.mti.gov.na/downloads/Growth%20at%20Home%20ML_Pamphlet.pdf
6. Team Namibia (2015): http://www.teamnamibia.com/index.php [Accessed 7 May 2015].
7. NSA (2011). Namibia 2011 - Population & Housing Census Main report.
8. Government of Namibia (2011). Population: http://www.gov.na/population [Accessed 7 May 2015]
9. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (2015). Namibia: http://liportal.giz.de/namibia/gesellschaft/ [Accessed 7 May 2015].
10. NSA (2014). The Namibia Labour Force Survey 2014 Report.
11. The World Bank (2009). Gini Index: http://data.worldbank.org/indicator/SI.POV.GINI?page=1 [Accessed 7 May 2015].
12. World Economic Forum (2014). Global Competitiveness Report 2014-2015: http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf [Accessed 7 May 2015].
13. Toelg & Honsbein (2011). Building the Critical Mass for STPs in Small Countries – The Namibian Experience. Paper fort he XXVIII IASP World Conference on Science and Technology Parks, p.5.

research, science and technology“ [14]

The new Government under President Dr. Hage Geingob furthermore created a new Ministry of Higher Education, Training and Innovation and thus emphasizes the relevance of innovation for the country.

3. The Namibia Business Innovation Institute

In this environment, the Namibia Business Innovation Institute (NBII)[15] was created as a result of an initiative by the Polytechnic of Namibia in 2009 as Namibia Business Innovation Centre (NBIC). NBII's vision is to be recognised globally as a leading centre of excellence, transforming innovative ideas into sustainable businesses and social solutions. On its mission, NBII engages in three topical areas: First, the Innovation Marketplace (I'M), featuring mostly public events to spur idea creation and an entrepreneurial mind-set; Second, Entrepreneurship & Incubation (E&I), supporting young entrepreneurs with innovative ideas to kick-start their business via training and mentoring; Third, Research & Development (R&D), advancing product and process innovation as well as social media development. The long-term goals of NBII are very similar to the objectives of most incubation centres or STPs, but its approach, concept and programmes differ significantly in order to fit the unique circumstances of the Namibian environment.

3.1 Approach

Bottom-up. Due to a lack of government initiative, the NBII was established by the Polytechnic of Namibia in order to be close to the newest research and developments. At present, Namibia has a limited number of established companies that would fit within an STP. Reasons such as the low population and consequential market density, weak education system thus a lack of capacity, lack of support to develop good ideas further and a lack of R&D facilities can be mentioned. Therefore, the NBII focuses on “creating a critical mass”[16] of companies that can at some stage move into a STP.

Target Group. In order to counteract the division of Namibia's society as well as taking into account the small population in general, the NBII does not cater for the university students only. It is a national centre that is open to all quadruple helix partners, namely general public, academia, industry, government. The NBII furthermore facilitates partnerships and projects with all Namibian higher education institutions as well as international partners to advance research and development.

3.2 Village Concept

The NBII developed its characteristic village concept in order to be successful and to fulfil its mandate in this given environment, as well as to attract and make people feel comfortable and familiar. This is especially valid for those who have a lack of education and/or skills, who come from rural environments or grew up in a poor and very simple (non-technological) environment.

Residential houses and growth. The NBII is growing in a mixture between a residential and business area as part of the city campus of the Polytechnic of Namibia. The main offices and the current incubation and co-working spaces are set in old residential houses that were renovated and turned into office buildings. Buildings that fit the existing environment were added to host a training room and a Mobile Lab. Instead of modern, big structures that might be intimidating for many, this set-up creates a warm, welcoming and dynamic atmosphere and it grows with the interested start-up companies like a village or city grows with its

14. National Commission on Science, Research and Technology (2015). http://www.ncrst.na/ [Accessed 7 May 2015].
15. The NBII was formerly known as NBIC, the Namibia Business Innovation Centre. With the current transformation of the Polytechnic of Namibia into the University of Science and Technology, the centre was transformed into an institute.
16. Toelg & Honsbein (2011). Building the Critical Mass for STPs in Small Countries – The Namibian Experience. Paper submitted to the XXVIII IASP World Conference on Science and Technology Parks.

population.

Innovation Café. An outside recreational area was turned into an open Innovation Café with two main purposes. On the one hand, it serves as incubation centre for a restaurant start-up: While the café equipment and furniture belong to the NBII, the incubatee rents out the space and has the liberty to design and shape the café and its menu according to his/her business concept. On the other hand, the café serves as the "central marketplace" of the village. It provides space for the entrepreneurs and partners and to sit together and further develop their ideas, to network or to just be inspired by the atmosphere and many different people. The café provides Wifi access for the entire village.

Partners. In order to facilitate a fast and constant exchange with partners, the Southern African Innovation Support (SAIS) Programme, RLabs Namibia, FABlab Namibia and the Namibian-German Centre for Logistics (NGCL) have their offices in the village.

The SAIS Programme[17] is a four-year pilot project funded by the Finish Ministry of Foreign Affairs. It seeks to guide innovation in Southern Africa and currently supports programmes in Botswana, Mozambique, Namibia and Zambia. The NBII is SAIS's partner organisation in Namibia.

RLabs Namibia[18] is a concept that originated in South Africa and provides capacity development for unemployed youth. Ultimately, the youth shall be empowered to participate in the job market or to create their own businesses.

FABlab Namibia[19] is Namibia's first advanced manufacturing, prototyping and design lab. While FABlab originated as part of the NBII, it has developed into a fully functional semi-independent centre under the Polytechnic of Namibia and offers entrepreneurs an opportunity to develop prototypes for their business ideas.

The Namibian-German Centre for Logistics (NGCL)[20] aims at supporting the local transportation and logistics industry. As with NBII, NGCL is part of the Polytechnic of Namibia.

3.3 Programmes

The NBII is currently operating through three programmes and while these programmes were part of the original business plan, the NBII adapts their contents constantly according to the specific needs of the target group.

Innovation Marketplace (I'M). The I'M promotes innovation and creative, out-of-the box thinking in the country through public talks, innovation challenges, idea creation and assessment workshops as well as an annual business idea competition and an annual Innovation Festival. Target group of I'M is the general public as well as aspiring entrepreneurs who want to develop or improve their business concepts on the idea level.
Entrepreneurship and Incubation (E&I). Once the aspiring entrepreneurs have a defined business idea, E&I helps them to kick-start their business via its business incubation programme; providing training and mentoring. Twice a year, the most promising entrepreneurs partake in a "boot camp"; an intense training

17. Southern African Innovation Support (SAIS) Programme (2015). http://www.saisprogramme.com/about-sais/ [Accessed 7 May 2015].
18. RLabs – A social revolution (2015). http://www.rlabs.org/ [Accessed 7 May 2015].
19. FABlab Namibia (2015). (http://www.fablabnamibia.org/about-fablab/what-is-fablab-namibia) [Accessed 7 May 2015].
20. NGCL (2015). http://www.polytechnic.edu.na/?q=centres/namibian-german-centre-logistics-ngcl [Accessed 7 May 2015].

that guides them to turn the business ideas into bankable business plans as well as engage with financial institutions. Entrepreneurs with a strong business concept can then join IncuLab, NBII's own business incubation programme.

Research and Development (R&D). The third programme comprises the Mobile Lab as well as the Technology Transfer Office (TTO). The Mobile Lab offers space and services for entrepreneurs to either develop their own mobile applications or to get support from one of NBII's developers. The TTO is currently in development and provides the link between university and market by supporting the commercialization of research products.

Outreach. NBII's mandate is to support aspiring entrepreneurs all over the country and not only in the capital. Therefore NBII has started with an Outreach programme in 2012. The workshops and trainings offered in Windhoek were modified so that they meet the demands of the entrepreneurs in the different regions with regards to e.g. language and education level.

4. Lessons Learned vis-á-vis Strategies Employed

The NBII Innovation Village is fast growing and constantly adapting to a changing environment. A number of lessons learned build a strong foundation to integrate any new development.

4.1 Approach

Close links to students. The close proximity to the Polytechnic of Namibia leads to mutual enrichment. The students participate in the NBII programmes, and NBII staff and lecturers are in constant exchange to work on joint projects.

Focus on innovation rather than sector. Due to the small population, a focus on specific sectors that are promoted by the NBII is not feasible. The NBII therefore sets the criteria of innovativeness as entry criteria to the Village.

4.2 Village Concept

Feels like home. The village concept with its transformed residential houses and the café in the centre proves to be the right environment for the NBII at this point in time. The entrepreneurs appreciate the positive and vivid atmosphere and the open doors of NBII staff. They rent out laptops to work on their business ideas and network with partners or clients in the café.

Integration. The café fulfils its purpose as central marketplace. Entrepreneurs, staff and partners use the space to mingle and network. Furthermore it contributes to integrating the Innovation Village into the city as it also attracts the residents from the elderly home in the neighbourhood as well as students and lecturers from the Polytechnic of Namibia. The café is also used for special events such as award ceremonies, art exhibitions or even workshops as the outdoor space stimulates creative thinking.

Safety first. However, a comprehensive security system including cameras is needed for the village as access to the village and café is not restricted and the open space attracts thieves.

Selecting the right incubatee. As the café plays a crucial role in the village, it is furthermore necessary to undergo a strict selection process for the incubatee who is running the café. Prior experience in the sector

should be a prerequisite as well as the openness and willingness to adapt to the suggestions of clients and mentors.

4.3 Programmes

Early stage programmes. The entrepreneurship programmes need to start at the idea level in order to groom enough entrepreneurs who can be incubated in the long run. On the one hand, this is because many young people and students do not consider entrepreneurship as an alternative career way due to a lack of information. On the other hand, many aspiring entrepreneurs tend to write the business plan before thoroughly thinking through the idea, its innovative component and competitive advantage. The I'M therefore developed three different training modules:

1) Create your Business Idea – targeted at everyone who wants to start a business but does not have a concrete idea in mind. The focus is on identifying opportunities and presenting entrepreneurship as an alternative career path.

2) Innovate your Business Idea – targeted at entrepreneurs with rather traditional business ideas to work out the innovative elements;

3) Business Idea Assessment - intense workshop where the entrepreneurs assess their own ideas based on the Business Model Canvas and get feedback from the other participants.

Tangible results. In order to stimulate creative thinking and produce tangible results, the I'M introduced the concept of Open Innovation Challenges. Private companies and public organisations that are facing unsolved issues approach the NBII to source for a solution. The I'M then formulates an Innovation Challenge and poses it either to the general public all over the country or to a specific group of students who will work on the challenge in the course of their studies.

Nothing for free. Although the NBII wants to reach as many aspiring entrepreneurs as possible and thus tries to offer its services at a very affordable price, experience teaches that the participants have to pay for any training in order to consider it valuable. Early attempts to offer some training for free failed because the participants were not committed and didn't see the value in it.

Money matters. Providing comprehensive business training and mentorship does not necessarily lead to the successful establishment of businesses. Given the economic situation of many aspiring entrepreneurs in Namibia, seed money is a prerequisite to be able to start a business. This seed money should furthermore be purpose-bound (refund against invoices) as otherwise social pressure and daily needs might lead to spending it for other purposes. Strategic partnerships with the private sector have allowed for seed capital to be available for selected entrepreneurs. This has led to faster starting of the businesses then had been in the past.

Right timing. Considering that only very few aspiring entrepreneurs have enough financial resources to solely focus on the development of their business, it is necessary for NBII to be flexible and to offer training and mentoring at times that suit the working entrepreneurs (in the evenings, weekends).

Creating a spirit. Intense working sessions with entrepreneurs tend to create a team spirit and long-lasting motivation among the participants. This is especially true for Mobile Developers.

Face to face interaction. Outreach Programmes need to grow organically and feed the existing structures in the capital. Although technology makes it possible to overcome distance, not everybody in the rural areas has access to internet, a laptop or a smartphone. Furthermore, face to face interaction is still the preferred and most effective way of communication.

Right Communication. The NBII is marketing its events using radio, posters, bulk sms or newspaper ads.

Emails don't work; neither do online event platforms.

5. Outlook

The NBII has grown immensely in the past five years and future developments can already be foreseen.

Framework.
With the new Ministry of Higher Education, Training and Innovation, the Government set an important signal that Innovation is a priority area. Furthermore, the National Programme on Research, Science, Technology and Innovation[21] outlines the establishment of an Innovation Hub with comprehensive services such as technological support and R&D capabilities. In such a conducive environment is it to be expected that the NBII Innovation Village will further expand and form fruitful partnerships with the new Ministry and the NCRST.

Approach. The Polytechnic of Namibia is currently in the process of transforming into the University of Science and Technology. As a consequence thereof, the NBII will be strengthened in its role as institute and expand in particular its Technology Transfer Office, as it is the crucial link between the University and the market. Research projects will go through the TTO for commercialization.

Village Concept. The Innovation Village will receive its own Incubator building in the coming two years. The boundaries of the Village will furthermore be expanded so that other institutes of the University can join the Village.

Programmes. While the NBII is running three programmes at the moment, the original business plan foresees a fourth area, the Young Talents Programme, which is currently in the conceptualization phase. The programme aims at identifying exceptional young people and promoting their talents.

6. Conclusion

Innovation, incubation and entrepreneurship might be buzzwords in our modern working environment; however, the words become filled with life looking at the actual application of them in the different countries. The present paper outlined how the Namibia Business Innovation Institute developed its unique Innovation Village concept and tailor-made programmes to fit the unique circumstances of the country and its society.

21. NCRST (2014). The National Programme on Research, Science, Technology and Innovation – 2014/15 to 2016/17, p.49.