



Understanding knowledge systems for innovation: A Case of Business Ideas emanating from Innovation centers in Tanzania

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Introduction

- Knowledge systems are regarded as a network of linked actors or organizations that execute a number of knowledge-related functions (Mihram & Arthur Mihram, 2007).
- Such functions are training, research, knowledge development, technology transfer to users
- They are supposed to have a formal strategies of linking knowledge generated and know-how with action.

- **Problem statement**

- In Tanzania, knowledge systems for generating and developing knowledge have been in existence for quite a number of years now.
- But most of these traditional KS (universities and R&D organizations) to a large extent have failed to take the knowledge generated into use (Diyamett & Thomas, 2017), signifying that there is a problem with their knowledge system.
- On the other hand, however, the KS especially from the innovation centers e.g. incubators have been able to put generated knowledge into use.
- Indicating that the structure of KS in these organizations is different from those of the traditional R&D organization.
- This work is an attempt to study KS in innovation centers for the purpose of reinvigorating the traditional knowledge systems.

- **Specific objectives are;**

- I. To understand strategies that guide knowledge generation and use in innovation centers.
- II. To identify type of available resources and services for supporting the business ideas.
- III. To identify and characterize the business ideas incubated in this innovation centers.

Conceptual framework

The study used the concept of the systems of innovation (SI), especially focusing at the ten functions of SI as advanced by Edquist (1997) to assess KS in innovation centers.

1. Provision of R&D and creating new knowledge	6. Networking through markets and other mechanisms, including interactive learning between different organizations.
2. Competence building (provision of education and training, creation of human capital, production and reproduction of skills, individual learning) in the labor force to be used in innovation and R&D activities (firms skills).	7. Provision of institutions, e.g. IPR laws, tax laws, environment and safety regulations, R&D investment routines, etc. that influence innovating organizations and innovation process by providing incentives or removing obstacles to innovation
3. Formation of new product markets (markets)	8. Incubating activities, e.g. providing access to facilities, administrative support, etc. for new innovating efforts.
4. Articulation of quality requirements emanating from the demand side with regard to new products (buyers)	9. Financing of innovation process and other activities that can facilitate commercialization of knowledge and its adoption.
5. Creating and changing organizations needed for the development of new fields of innovation	10. Provision of consultancy services of relevance for innovation process, e.g. technology transfer, commercial information and legal advice.

Methodology

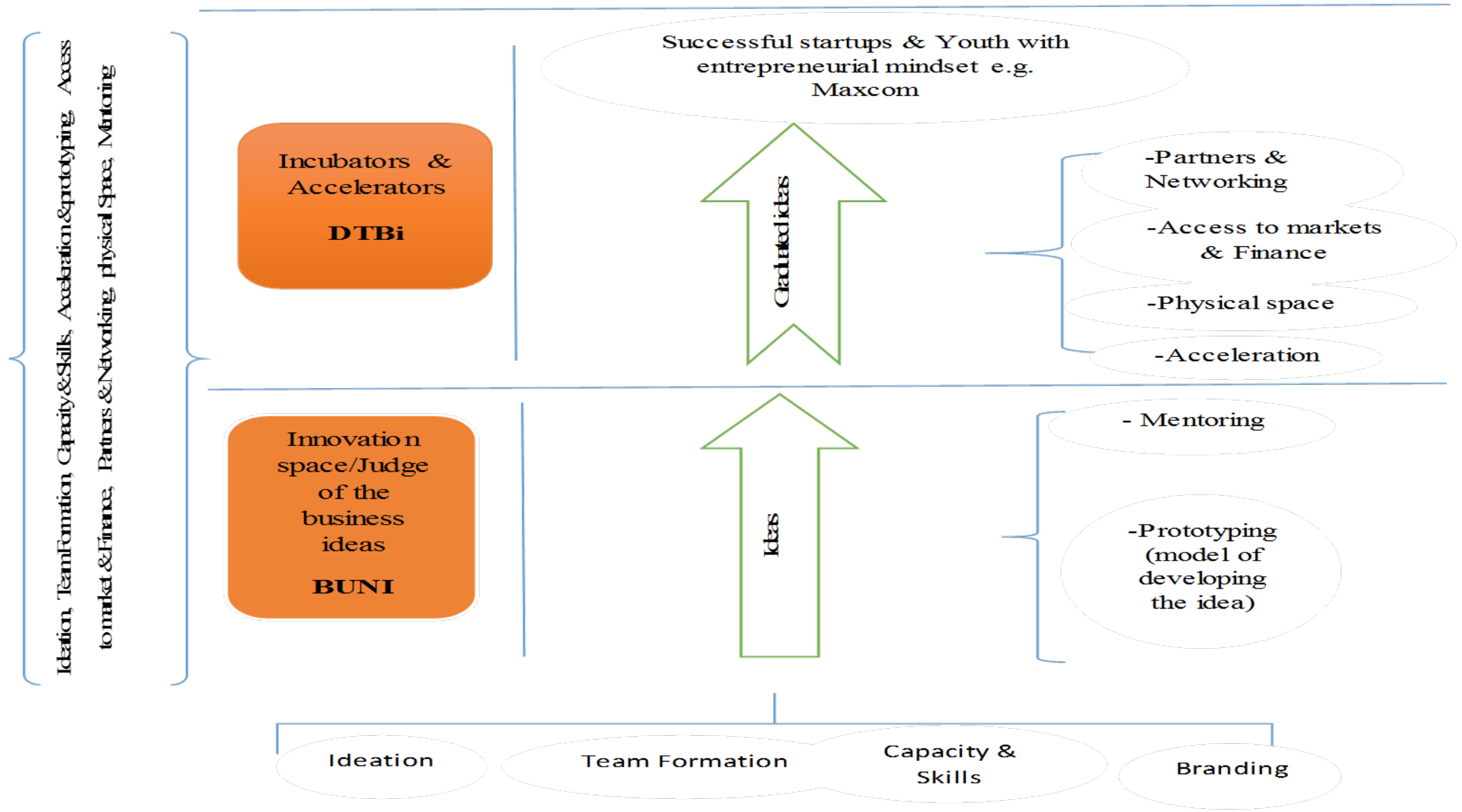
- The research used case study design
- Case studies are; DTBi, KAKUTE and TWENDE innovation centers
- The technique used was in-depth interview

Study findings

- **Case 1: DTBi Innovation center**

- Was established on 2011
- COSTECH is a main shareholder
- It's a non-for profit company with a purpose of promoting growth of ICT technology-base emerging startups
- Successful business ideas e.g. DayOne Softcom Technologies, Digital Brain, Maxcom Africa Ltd, Smartcodes Ltd and Wilson Raphael

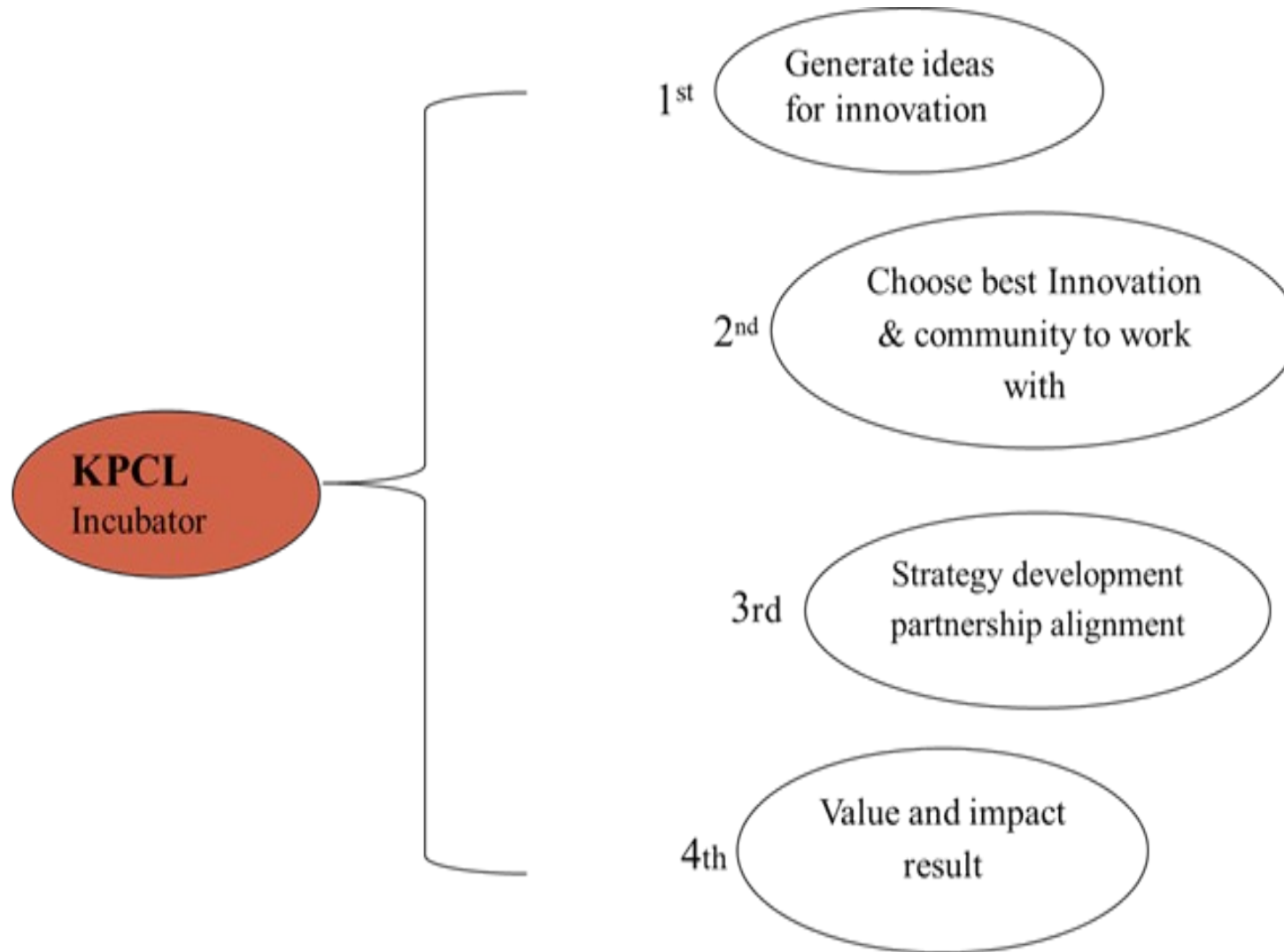
Figure 1: Innovation Ecosystem of DTBi



- **Case 2: KAKUTE Innovation center**

- Was established in 1995 but in 2008 changed to social enterprise limited by guarantee without a profit.
- Its main purpose is to facilitate innovation, transfer of knowledge as well as to nurture talents to accelerate technological innovations.
- Successful business ideas e.g. Mobisol Tanzania and The money maker pump in Tanzania.

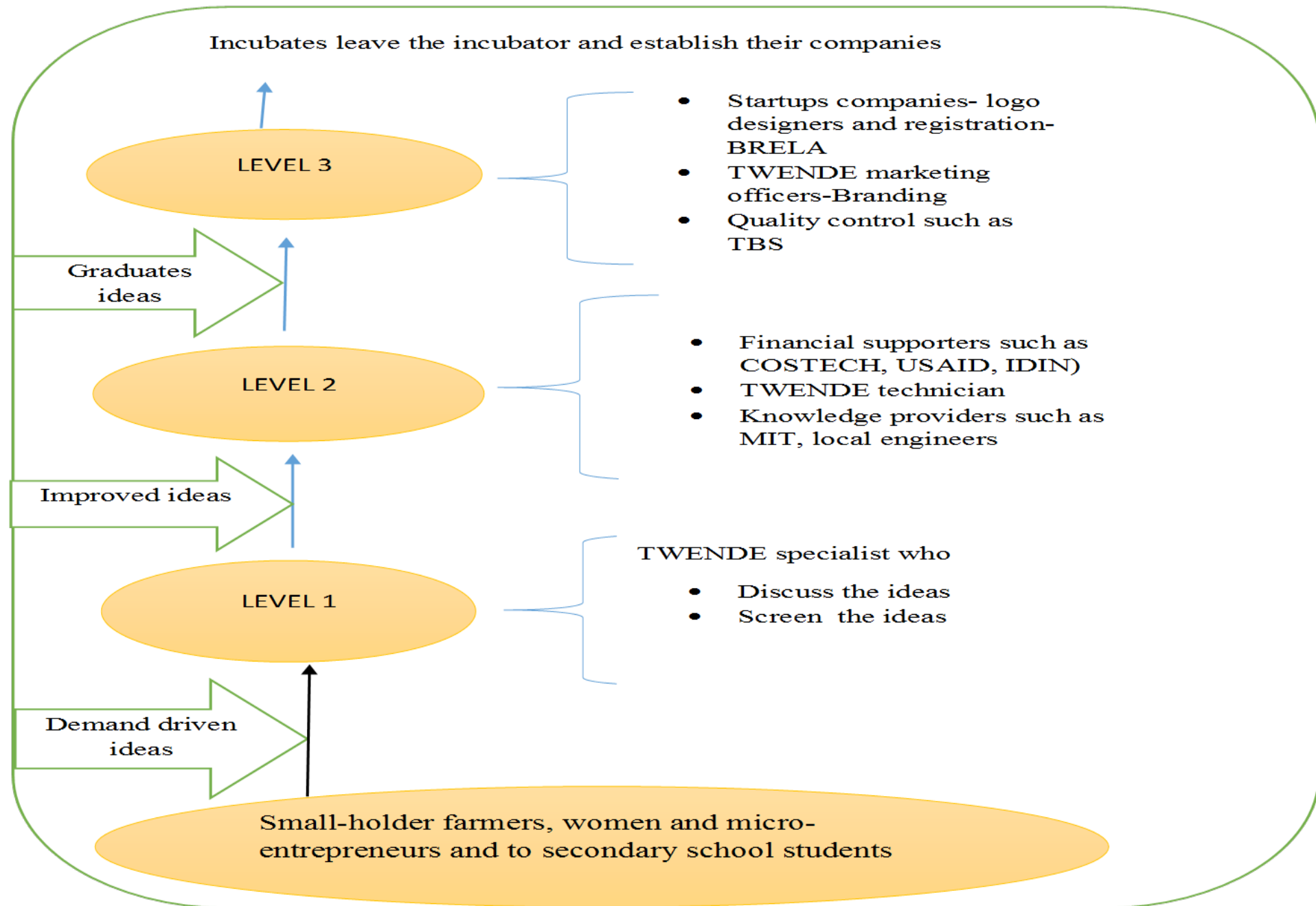
Innovation Ecosystem of KAKUTE



- Case 3: TWENDE Innovation center

- Was established in 2015
- Its main purpose is to provide space for community members to learn, develop and create local innovation
- Twende mostly supports technologies that address the real needs of local people using locally available materials.
- Successful business ideas/products e.g. Bicycle Powered-Maize Sheller, Drip Irrigation Kit, Manure Spreader, Multi-crop Thresher, Ripper and seed Planter as well as AVOMERU Group Ltd.

Figure: Innovation ecosystem of TWENDE Center



Types of resources and services offered by Innovation Centers

DTBi	KAKUTE	TWENDE
<ul style="list-style-type: none">• Access to shared resources• Networking opportunities to meet the right people• Marketing and sales strategies• Internet services• Financial and business management• Tax preparation and reporting services• Legal structures and services• Intellectual property• Feasibility study development• Business plan development• Strategic plan development and funding proposal development• Back office support services	<ul style="list-style-type: none">• Advocacy and lobbying• Market access• Input supply chain• Training and technical assistance• Technology and product development• Financing mechanisms• Networking	<ul style="list-style-type: none">• Free access of Twende workshop• Networking• Knowledge and skills• Internet access• Training and technical assistance

- **Characteristics of Business Ideas incubated**

- ✓ Most of successful Ideas originates from the challenge facing society.
- ✓ Ideas are Demand driven
- ✓ Market research
- ✓ Also systems that supports the idea
- ✓ Ambition of an owner's idea

Institutional settings between the traditional R&D organizations and innovation centers

Innovation centers	R&D Institutions
Problems/Ideas addressed are demand driven i.e. intend to solves problem in the society	Some of problems are not a response to effective demand and sometimes are guess work of researcher (Diyamett & Thomas, 2017)
Funding to support the idea from inception to the end.	Most of programs are initiated by funders (German & Stroud, 2007)
IPR i.e. the copyright is under the ownership of individual/company with business idea.	knowledge produced remained in an institutions (Zuniga, 2011)
Anyone with an idea can be recruited	Mostly they respond to call for proposals i.e. researcher from institution are eligible

Conclusion

- The studied innovation centers clearly shown that their knowledge system are in line with the suggested functions of Systems of Innovation as advanced by Edquist (1997) such as,
 - ✓ Incubating activities e.g. successful business idea
 - ✓ Financing of innovation process
 - ✓ Provision of consultancy services of relevance for innovation process,
 - ✓ Networking and other mechanisms through interactive learning between different organizations
 - ✓ Competence building by providing of education and training
 - ✓ Formation of new product in the markets

Policy Recommendation

- Innovation centers seen as potential channel for promoting inclusive growth in Tanzania in terms of technology transfer, increased productivity, and improved socio-economic status.
- Therefore it is interesting to see innovation centers KS are adopted by other KS such as Universities and R&D institutions



Thank
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