Research Driven Innovation: A Collaborative Approach for Developing Countries’ Research Uptake.

A CASE OF UNIVERSITY OF DAR ES SALAAM ICT INCUBATOR (UDICTI)

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Introduction

Everyone uses data everyday!

- To make a decision
- Build up to a decision (Information)

- But, you need to have data first!

- And Add context; Establish facts; Arrive to conclusions! (RESEARCH)

- And apply what you GET (Development)

R&D
Introduction

- Innovation drives economic growth.
- But what fuels innovation?
- Research and Development (R&D) activities
  - Scientists and Researchers develop new knowledge, techniques, and technologies.
  - As technology changes, people can produce more with either the same amount or fewer resources, thereby increasing productivity.
  - As productivity grows, so does the economy.

- (Most of the) developed countries have attributed that to R&D
- Argued: Developing countries should follow suite
- There are initiatives in silos to achieve that
- Question: Are they making IMPACT? What is the way forward?
- This study assessed the Research application in the UDICTI process, and based on their experience draw the way forward
Methodology

- Bench work data review (UDICTI/Research papers)
  - Documents (which) reviewed (Motivational talk reports, Negawatt reports.
  - Papers and books on innovation, research, Open Access, Open Data, Countries performances, Research uptake

- Online survey to 50 UDICTI Incubatees
  #38 responses

- Interviews with UDICTI coaches
  # 4 coaches interviewed on the process, challenges and way forward
Results and Discussions

Incubatees and Coaches

Incubatees

<table>
<thead>
<tr>
<th>Year</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>5.56%</td>
<td></td>
<td>5.56%</td>
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<tr>
<td>2012</td>
<td>5.56%</td>
<td></td>
<td>5.56%</td>
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<tr>
<td>2014</td>
<td>11.11%</td>
<td></td>
<td>11.11%</td>
</tr>
<tr>
<td>2015</td>
<td>16.67%</td>
<td></td>
<td>16.67%</td>
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<tr>
<td>2016</td>
<td>47.37%</td>
<td></td>
<td>52.63%</td>
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</table>

Gender

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Coaches

- 4 coaches
- 38 Incubatees

Areas

- Pre-incubation
- Acceleration
- Challenges
- Success
- Research uptake
UDICTI was established NOT to commercialize research results BUT to commercialize students final year Projects.

Most of students solutions were not necessarily what was demanded by the market—rather showcasing their skills and knowledge (We will see more in students approach from study output later).
UDICTI BACKGROUND

- 2008 - Idea
- 2011 - Operationalization:

First coach training and first batch

- Staff given crash course on coaching
- Five students coached in parallel with coach training
- All students were final year CoICT students
- All students got employed
- One company in existence
UDICTI BACKGROUND

- 2012, 2013 - Second batch; very little output; a lot of learning

- Any UDSM student allowed to join
- Over 30 students joined
- Few students committed to the process
- Two companies in existence (ICTPack, iCollate)
2014, 2015 - Partner with ITIDO; two more batches; more coach training; a lot more learning

- 2 coaches attending first team coaching training in Tanzania, 5 coaches attended one-day mini-training
- 9 active coaches in total, all CoICT staff
- Shortened program length
- Recruited a batch of 11, and another of 6.
What does UDICTI do?

**Train**
- Collaborate with other institutions
- Government agencies (Legal and regulatory)

**Research**
- Through Business and projects

**Business**
- In the process to establish a startup

**Coach**
- 13 coaches

**Accelerate**
- Proven ideas accelerated to products/services

**Mentor**
- Innovation activities by students

**Network**
- Exhibitions
- Graduation

**Space**
- Exhibitions
- Graduation
The Pre-incubation Program

- The study focused on Pre-incubation and acceleration programme

**FOUR MONTHS PRE – INCUBATION TERM**

<table>
<thead>
<tr>
<th>LEVEL A: RECRUITMENT</th>
<th>LEVEL B: ORIENTATION CAMP</th>
<th>LEVEL C: 1st TEAM EVALUATION</th>
<th>LEVEL D: COACHING/MENTORING/EXPOSING</th>
<th>LEVEL E: 2nd TEAM EVALUATION</th>
<th>LEVEL F: IMPLEMENTING THE PERFORMANCE IMPROVEMENT PLAN (PIP)</th>
<th>LEVEL G: 3rd TEAM EVALUATION</th>
<th>LEVEL H: GRADUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivational Talk</td>
<td>Orientation on Innovation &amp; Entrepreneurship</td>
<td>Assessing Capacity Level of Innovation &amp; Entrepreneurship on Apprentices</td>
<td>One-on-One Sessions with Apprentices to implement Business Idea</td>
<td>Assessing Progress towards established Milestones</td>
<td>Apprentice implementing of PIP</td>
<td>Final Evaluation of the Business/Project of the Apprentice</td>
<td>Awarding Participation Certificate</td>
</tr>
<tr>
<td>Registration of Apprentices</td>
<td>Camping for Two-Weeks Full-Time Session</td>
<td>Establishing Milestones, Strategies and assigning a Coach to each Apprentice</td>
<td>Referring apprentice back to Level B or forward to Level D</td>
<td>Assign Performance Improvement Plan (PIP) to each Apprentice</td>
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<tr>
<td>Pitching Sessions</td>
<td>Signing of Commitment Forms</td>
<td>Referring apprentice back to Level B or forward to Level D</td>
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<tr>
<td>Assigning IDs</td>
<td>TWO WEEKS BEFORE NEW ACADEMIC SEMESTER</td>
<td>AT THE 2nd WEEK OF A NEW ACADEMIC SEMESTER</td>
<td>FROM 2nd WEEK TO 7th WEEK OF THE ACADEMIC SEMESTER</td>
<td>AT THE 8th WEEK OF THE ACADEMIC SEMESTER</td>
<td>FROM 8th WEEK TO 12th WEEK OF THE ACADEMIC SEMESTER</td>
<td>AT THE WEEK 13th OF THE ACADEMIC SEMESTER</td>
<td>AT THE WEEK 14th OF THE ACADEMIC SEMESTER</td>
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(Source, UDICTI)
Motivational Talk
Sat 18 Jan 2014

Why Should You Start Your Own Business?

Source, UDICTI repository
Motivation and Pitch Session
Thurs 01 May 2014

Motivation Session
Sat 06 Dec 2014

Source, UDICTI repository
Incubatee Training Sessions
Sept 2014
Incubatee Training and Coaching Sessions
02 – 06 March 2015
UDSM Research Exhibition Week – 28 March 2015
UDSM Research Exhibition Week – 1st April 2016
What are the success/Achievements

The study found that, UDICTI:-

- Reached over 1000 students between 2011-17 and created awareness on innovation and entrepreneurship
- Recruited over 200 students
- 4 ICT businesses developed (Ho-Tech Engineering Ltd, ICT Pack Solutions, Smart Exam Co. and iColate)
- Some products on the final stages (DiIO Smart Exam, VICOBA, BRT cards (to be tested in phase 3))
- Created relationships with Local Stakeholders in innovation (Governmental Units, Local Organisations, Local incubators and Innovation Hubs)
  -> DTBi, BUNI, BRELA, TRA, ITIDO
- Links with International institutions and organisations from Finland
  -> ProAcademy, TiimiAkatemia and Demola
- Accelerated a world winning team in the Negawatt challenge
RESEARCH?

Investigated how Research has been applied and how is that connected to success/Failures.
How far did incubatees go with the program?

- 28.9% Ended up in idea generation
- 21% In coaching and training stage

Managed to develop a product?

- 65% Developed no product/service
- 18.42% Not yet but on progress
- 15.79% Yes

Why?

- Did not have enough time to dedicate in the programme: 10.53%
- I gave up as it was not a feasible idea in the end: 50.00%
- Other: 2.63%
- Training and coaching were not enough: 34.21%
- (blank)
Problems/ Sources of ideas

Where do you think was the issue?

From the research data; I designed with the users of my solution; It was an industrial based idea; I randomly generated it expecting it to make a good product.

Where did the idea come from?

More than 50% of ideas not based on research/data failed!
And 100% of incubatees with no product success think wrong choice of the idea was the problem.
Research contribute to good choice of ideas?
Incubatees preferred ideas data source

- Incubatees think research is the Way, so are the studies elsewhere
Research data availability (and use) to/by Incubatees

- Research results are not made open to students, even in the academic institutions

Finding and Accessing Research Data

- Difficult: 68.42%
- Easy: 2.63%
- Neutral: 7.89%
- Very difficult: 21.05%
- Very Easy: 0.00%

Using Research Data

- Between 1 and 3: 26.32%
- Between 3 and 5: 7.89%
- More than 5: 5.26%
- Never used: 60.53%
- (blank): 0.00%
**Other Ideas (using research data)**

- 94% Are succeeding/ On the path to success!

**Embarked on another idea?**

- No, it didn’t: 2.63%
- Yes, the development is continuing: 47.37%
- No responses: 50.00%

**How did you shape the idea?**

- Through available research data: 5.26%
- Through self research: 13.16%
- Through self research; Through available research data: 15.79%
- Through self research; Through available research data; Through someone else’s support: 7.89%
- Through self research; Through someone else’s support: 7.89%
- Not responded: 50.00%
UDICTI Challenges

- Financial
- Incubatees’ Access to curated Research results for commercialisation (IPs/ Readiness to share (Open Data)
- Lack of a platform that brings the stakeholders together to foster innovation
- Students coping with University Timetable
- Contribution to students assessment to motivate them
Measures

- Introduction of UDICTI in UDSM timetable, 2015/16

- Introduction of HCD through UNICEF Innovation Hub and integrating it to FYP curriculum

- Creating a platform to leverage on Open Access initiative by the University

- Looking forward to get it contribute to CA starting this year
Ideas Bank Model

- Considering different sources of data for innovation (from literature and UDICTI experience); the platform focuses on:
  - Problems
  - Sources of such data
  - Platform to combine/Accessing data (More than a repository)
  - Data refinery for specific consumers
  - Linking to consumers
  - Measuring the outputs (Through research again!)

- Combining them into this........
Proposed IDEAs Bank model
Way forward

- Bringing the stakeholders together to agree on the framework
- May be we will have a platform then, for inputs.
CONCLUSION

- UDICTI model is one of the ways innovation can be brought to academia
- There is a need to make research output available and coordinated and curated for relevant consumers for uptake
- A proposed model will be one of the firsts (if not the very first) in the country
- Leverage on already OD initiative can bring quick success