

RESEARCH TO COMMERCIALISATION EXPERIENCES IN UGANDA & MALAWI

UC 2023, Kampala, UG

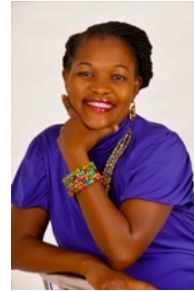
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Panel Outline



Effective Knowledge Transfer – Dr. Julianne Sansa-Otim



Postman case study in Uganda – Dr. Grace Kamulegeya



COVID-19 PPE & Hygiene Tools case study in Malawi – Prof Nancy Chitera



IoT-ra lab AWS & Smart bee hive case studies in Uganda – Dr. Isaac Mugume



Universities safeguarding their Intellectual Property – Canon Goddy Muhanguzi Muhumuza




RENs' role in facilitating the transfer of academic knowledge to the industry – Prof. F. F. Tusu Tusubira






Effective Knowledge Transfer

- ❖ Addressing societal challenges is the main motivation for Research & innovations
 - ❖ Most innovations end at “PoC” stage and fail to penetrate the target market
 - ❖ Based on case studies, systems & structures that support the commercialisation process are discussed
 - ❖ Informal and formal modes of cooperation have been used in the observed knowledge transfer
 - ❖ Formal cooperation leads to deeper commitment / accountability hence superior solutions
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Bridging the gap between research and practice

- ❖ Innovations must be demand-driven i.e. with real clients
 - ❖ Industry must be engaged to standardise the process of technology scaleup
 - ❖ After PoC, stakeholder mapping and validation is critical to confirm business case
 - ❖ Business collaboration expose innovators to valuable commercialisations experiences but NDAs are vital for IP protection
 - Incubators: validate product, roll out MVP, define business model, marketing plan
 - Accelerators: identify investors, prep for seed funding, support in pitching
 - i-hubs & coworking spaces for affordable facilities and services (legal, accounting, consultancy)
 - ❖ Funding support is critical for scaling up, otherwise good ideas are shelved
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CASE STUDY 1





Innovation Commercialisation

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Outline



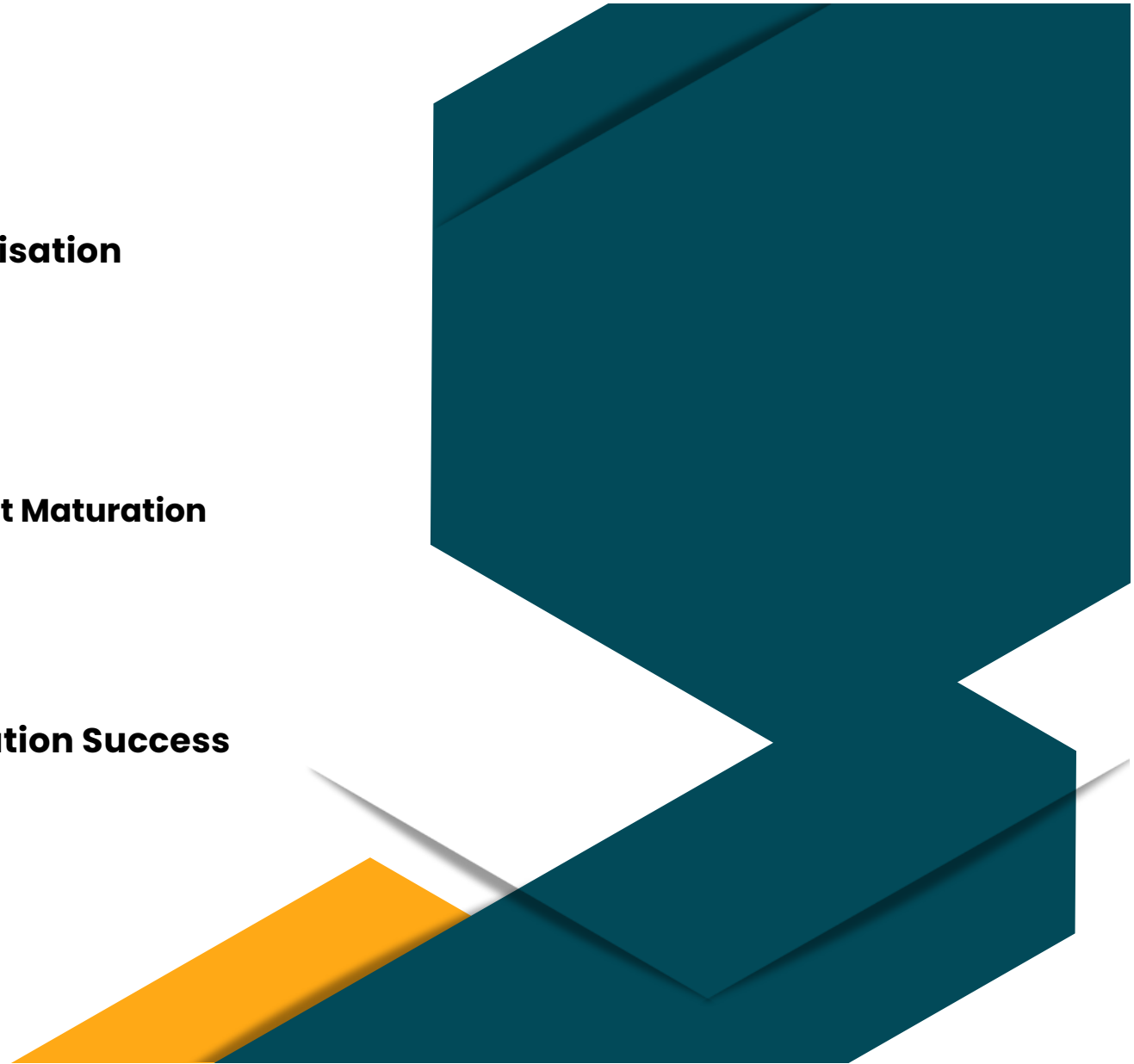
The innovation-commercialisation pipeline



The University Software Product Maturation Cycle



Postman as a Commercialisation Success story



Technology Commercialisation

Technology commercialization involves transforming innovative ideas or technologies from research settings into marketable products or services for profit generation. In software innovation, this involves converting ideas into commercially viable products or services that can be sold to clients or customers.



The innovation-commercialisation pipeline



Idea Generation: Unleashing Creativity

Brainstorming
and
conceptualizing
innovative
software ideas



Feasibility Study: Evaluating Viability

Evaluate the
technical,
financial, and
market feasibility
of the software
concept.



Prototype Development: Bringing Ideas to Life

Develop a functional
prototype or proof-
of-concept to
showcase the key
features and
capabilities of the
software.



Intellectual Property Protection: Safeguarding Innovation

To protect software
innovation, use
patents, copyrights, or
trademarks to prevent
competitors from
unauthorized use and
replication.



Funding and Investment: Fueling Growth

Secure funding to
develop, market,
and scale the
software product.

The innovation-commercialisation pipeline (Cont'd)



Product Development: Crafting Market-Ready Solutions

Develop the software into a complete, market-ready product



Market Testing and Validation: Refining for Perfection

Validate the product-market fit and identify potential issues by introducing the software to a small audience and gathering feedback



Launch and Marketing: Making Waves in the Market

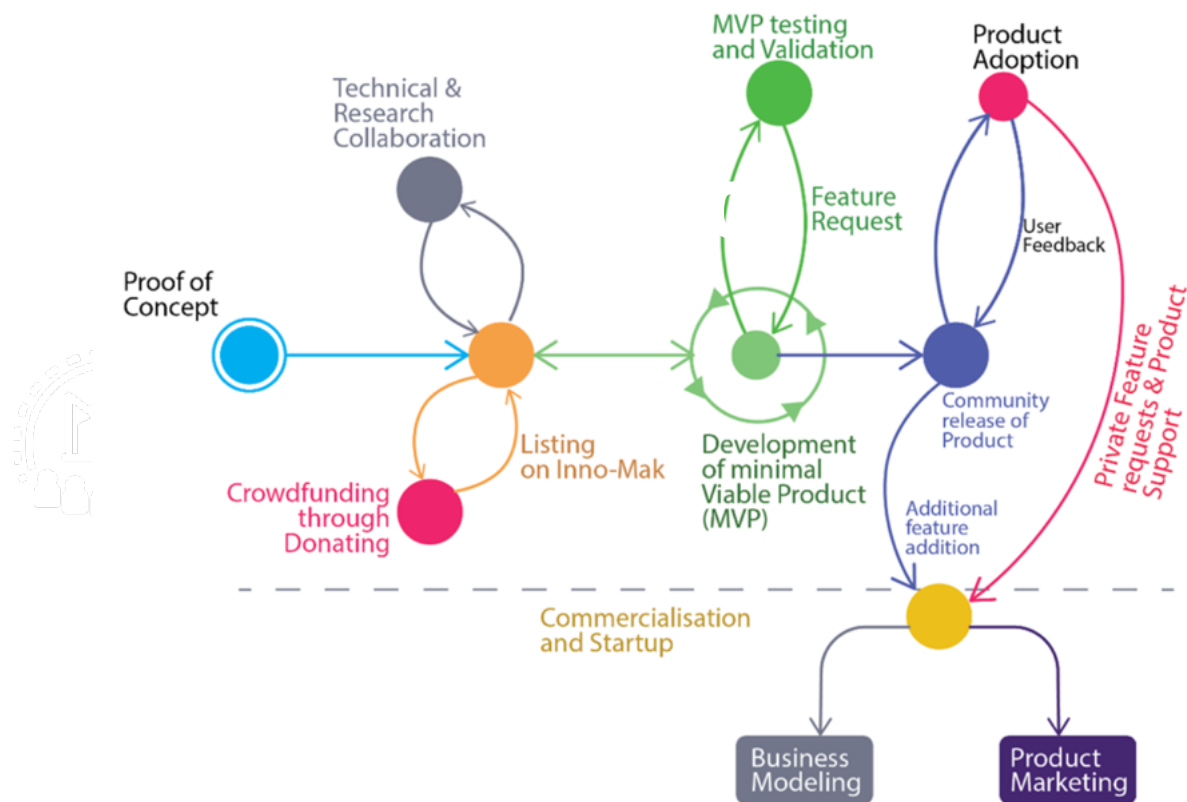
Develop marketing strategies to successfully launch the software in the market, create awareness, attract users, and drive sales.



Post-launch Support and Updates: Enhancing User Experience

To improve the software's functionality, security, and user experience, provide continuous customer support and release frequent updates and patches.

The University Software Product Maturation Cycle



Postman in a nutshell

Postman App Limited, founded in 2018, is a free mobile application available on IOS and Google Play Stores that offers last-mile delivery services to the Ugandan public. Its primary features include generating National Postcodes and Address Codes, which can be used to dispatch and receive goods from anywhere in Uganda. The codes are provided to players in the courier/logistics ecosystem as a Software as a Service (SaaS). POSTMAN maintains a national-scale digital infrastructure that supports the needs of both the public and private sectors and has received accreditation, funding, and grant support from various sources.



Postman- Commercialisation Timeline

2017

Company Formation

2020

Signing of a Government 5-year Concession

2020

Signing of a grant agreement

2022

Completion of the Minimal Viable Product

2023

Full commercialisation with an Venture capitalist

Postman Ug: Our Commercialisation Journey



Inventor or team with a dream

An idea was translated into a business venture by formulating and analyzing basic ideas on paper for a business opportunity.



Evidence of Business Opportunity through Experiments

Postman conducted active research and development to assess the market potential, competition, and technology.



Ability to work on focused programs with project teams.

The technological and business components were tested to ensure compatibility, and an initial business plan was created.



Ability to support project engineering development and design, with no product or revenues.

The integration of basic technology and business components was supported reasonably.

Postman Ug: Our Commercialisation Journey



Ability to support market-driven product development and design, even without revenues.

A prototype was tested in a relevant environment, but the venture was not yet ready for commercialization due to an incomplete business team. However, a comprehensive business plan covering market, operational, technological, and financial aspects was available.



Capable of supporting limited production with a full business team in place, including product and limited revenues.

The business to operate on a small scale was developed as the complete team was already in place.



Ability to Scale Production and Distribution (Product and Revenue)

The technology and venture structure were proven effective in supporting growing market shares.



A successful business necessitates proper infrastructure, staffing, increasing market share, and revenue growth.

The business successfully integrates new technology and gains market share through operational usage.

Postman in the field

**Business
postcodes**



Residential postcode





Guild of Professional
Software Engineers
and IT Practitioners

Thank You

For Your Attention



CASE STUDY 2





Malawi Case Study: COVID-19 PPE & Hygiene Tools

Prof. Nancy Chitera

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Outline

- Background
- Description of the problem
- Our Solutions
- Technology Features
- Production Methods
- Impact and Benefits
- Challenges



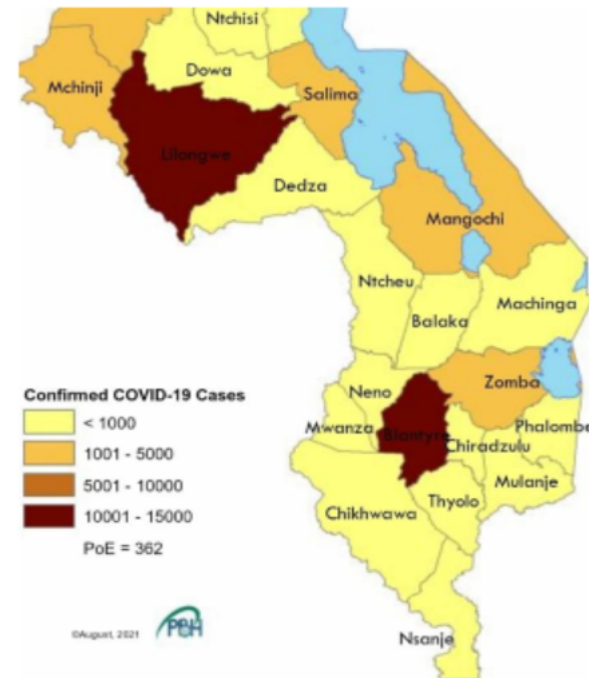
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Background

- COVID-19 in Malawi
 - In 2020, COVID-19 swept across Malawi, straining its healthcare system and resources.
 - Especially Lilongwe & Blantyre
 - Hospitals and health workers faced overwhelming pressure, and the need for protective equipment was critical.
- PPE and Hygiene Shortages
 - Shortages of face shields and handwashing units were particularly severe.
 - Malawian healthcare workers and communities needed affordable and accessible solutions.



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Description of the problem

- The Lack of Affordable PPE and Hygiene Solutions
 - Malawi faced a dire shortage of affordable personal protective equipment.
 - The cost of PPE was a significant barrier to healthcare access.
 - Most international borders closed- importing was a challenge
- Significance of PPE and Hygiene in Pandemic Control
 - Effective PPE and hygiene are essential in controlling virus transmission and saving lives.
 - Addressing this challenge was vital in mitigating the spread of COVID-19.



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Our Solutions

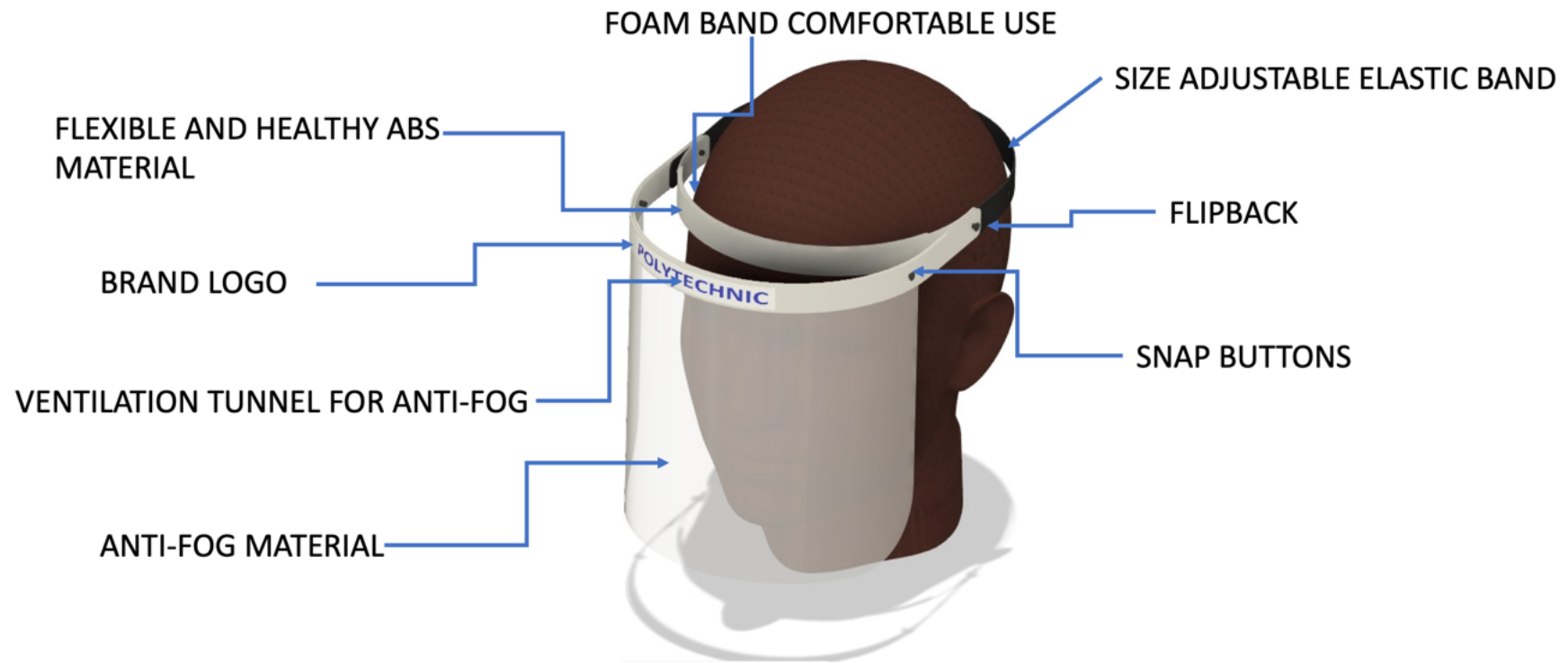


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Technology features- Faces shield



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Protective Face Shield

- Face shields are a type of personal protective equipment (PPE) that protects the wearer from direct splashes of potentially infectious droplets
- When worn it covers forehead, extend below chin and wrap around side of face
- Disposable face shields are only worn for a single use
- Reusable face shields are cleaned and disinfected after each use
- For maximum protection against corona virus face mask usually need to be worn under a face shield
- Additionally, face shields discourage individuals from touching their face, which can help maintain better hand hygiene.



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Production Methods

- **Automatic Design Cutting**

- Utilized CAD Designs and Laser Cutting Technology: Incorporated computer-aided design (CAD) to create precise designs and harnessed the efficiency of laser cutting machines for precision cutting.

- **Manual Design Cutting**

- **Masterpiece:** Developed a master component using laser cutter
- **Mass Production:** Utilized the master component as a template for mass production of face shields using knives & drilling machines.



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Packaging



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Hand Washing Units

- Hand hygiene is one of the most essential practices for preventing the spread of COVID-19.
- Hand washing units promote regular and effective hand hygiene.
- Designed to minimize contact with potentially contaminated surfaces, reducing the risk of infection.
- Their convenience and efficiency encouraged individuals to practice proper hand hygiene more frequently.



Impact & Benefits

- Positive Outcomes of Open Source Designs
 - Healthcare workers received the necessary PPE.
 - Communities had access to handwashing units, contributing to better hygiene and infection control.
- Statistics and Testimonials
 - Over 100,000 face shields and 150 hand washing units were distributed.
 - Testimonials from healthcare workers and community members reflected the positive impact on their safety and well-being.



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Walk Through Full-Body Decontamination Unit



- A walk-through free-standing cubicle that delivers fine mist to thoroughly dampen full-body clothing designed specifically for environments where there is a potential risk of contamination of protective clothing by infectious particles.
- The decontamination unit is designed to operate automatically by sensing presence of a person and deliver treated mist for a specified amount of time



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