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Session

(Academic) Innovation for a Changing World

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CO-CREATING A RESILIENT FUTURE



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BUILDING A RESILIENT TECHNOLOGY TRANSFER OFFICE

From a IP-and-licensing office to a strategic capability for university resilience

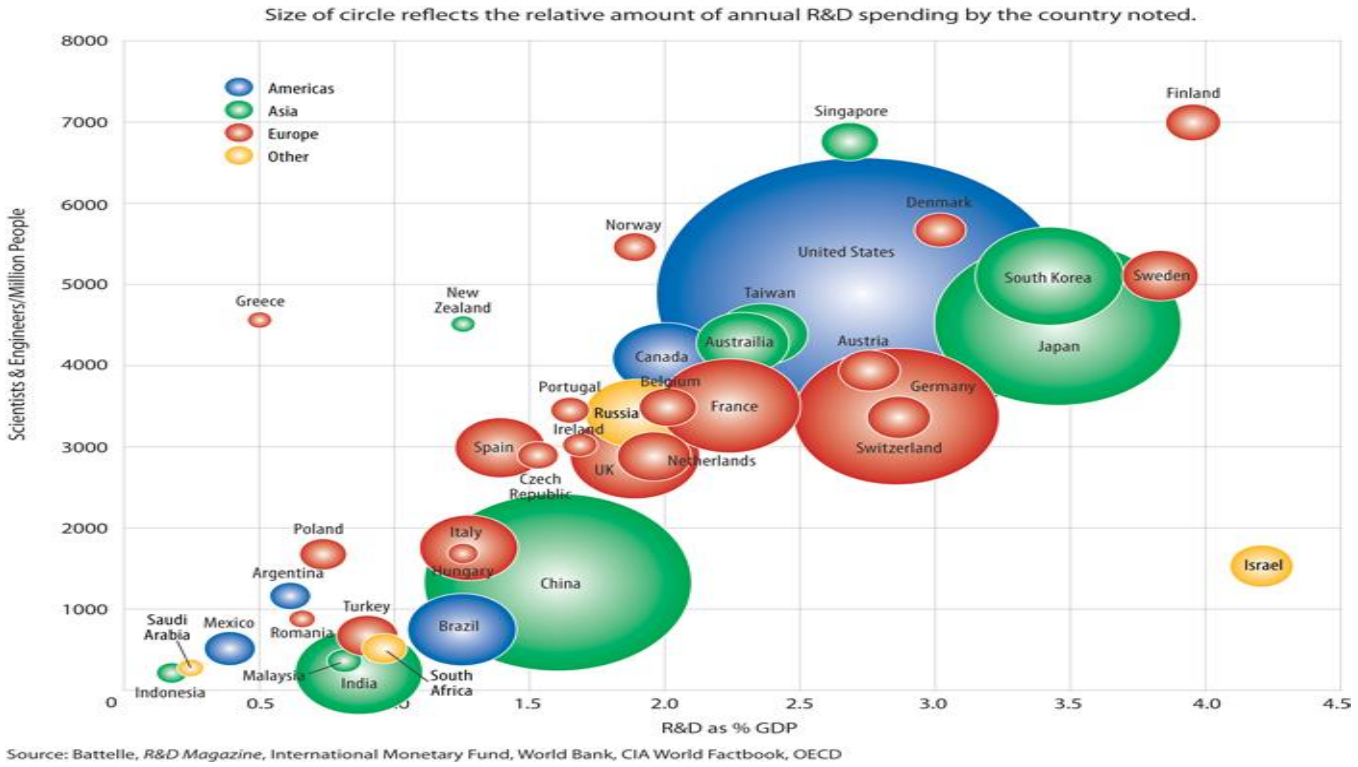
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Introduction

R&D – not primary source of innovation in Africa



Source: Battelle, *R&D Magazine*, International Monetary Fund, World Bank, CIA World Factbook, OECD

Highlighting the need for an ecosystem to drive innovation as well as de-risking opportunities to build a resilient TTO

Build a resilient TTO model

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Five interconnected functions

1	**Research**	Identify university research with potential economic or societal impact.
2	**Protect**	Manage intellectual property (IP), patents, copyrights, know-how and data.
3	**Commercialise**	License technologies, create spin-offs and support startups.
4	**Partner**	Build long-term relationships with industry, government, investors and communities.
5	**Reinvest**	Use commercialisation income and partnerships to strengthen future research and innovation.

Diversify university revenue

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Avoid depending excessively on tuition fees or government funding

Technology licensing	University spin-off companies
Industry-sponsored research	Contract research
Consulting and professional services	Research partnerships
Joint ventures	Continuing education linked to expertise
Commercialising university technologies	Innovation, Incubation and entrepreneurship programmes

The objective is not simply to “make money from patents – patents to payroll.”

It is a sustainable innovation ecosystem in which research generates economic, social and institutional value.

Embed the pipeline in strategy

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An innovation pipeline that is part of the university strategy, not an isolated unit

Create an innovation pipeline

The TTO supports researchers at every stage

From research idea to scale-up

01 Research idea	02 Disclosure
03 Evaluation	04 IP protection
05 Proof of concept	06 Prototype
07 Market validation	08 Industry partner / investor
09 Commercialisation	10 Scale-up

Each stage needs support: IP assessment, funding, prototyping, market research, regulatory guidance and investor introductions.

Make it part of the university strategy

Not an isolated administrative unit

The TTO should be connected to

University research strategy	Faculties and departments
Graduate education	Entrepreneurship programmes
Innovation hubs	Industry engagement
Procurement	Investment / funding offices
Alumni networks	Government economic-development programmes

A strong model: make knowledge exchange and innovation an institutional performance objective, alongside teaching and research.

Develop people and partnerships

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Resilient researchers and long-term strategic partners carry research to impact

Resilient researchers and entrepreneurs

Protection → Publication → Commercialisation → Impact

Training the university can introduce

IP and patents	Entrepreneurship
Business-model development	Industry engagement
Research commercialisation	Grant writing
Regulatory requirements	Market assessment
Leadership	Negotiation

This does not compromise academic freedom or fundamental research; it adds pathways for research to reach society.

Strategic industry partnerships

University + Industry + Government + Civil Society (Investor + Community)

Major challenges the "quadruple helix" can address

Energy security	Food security
Water	Health
Digital transformation	Climate change
Manufacturing	Artificial intelligence
Infrastructure	

The university becomes a problem-solving institution, rather than simply a producer of academic knowledge.

Establish an innovation fund

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A staged fund to cross the “valley of death” between lab and market

Stage	Funding purpose
Discovery	Identify promising research
Proof of concept	Demonstrate technical feasibility
Prototype	Develop a usable product
Validation	Test with users / industry
Commercialisation	Prepare for market
Scale-up	Attract external capital

The TTO can manage the process and use milestones to determine which technologies receive additional investment.

Measure resilience with KPIs

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A TTO should not be judged only by the number of patents filed

Research

Research projects with commercial potential

Industry-funded research

Research partnerships

Innovation

Invention disclosures

Patents

Prototypes

Proof-of-concept projects

Commercialisation

Licences

Spin-offs

Startups

Licensing revenue

External investment attracted

Impact

Jobs created

Products/services reaching society

Social impact

Industry problems solved

Technologies adopted

Institutional resilience

Diversity of funding sources

Long-term industry partnerships

Reinvestment into research and innovation

A 5-year roadmap, in practice

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From foundation to institutionalisation, and what it delivers for one researcher

YEAR 1
Build the foundation
- Establish TTO governance
- Develop IP policies
- Recruit skilled staff
- Map university research capabilities
- Create industry database

YEAR 2
Build the pipeline
- Launch invention-disclosure system
- Introduce proof-of-concept grants
- Train researchers
- Establish industry engagement programmes

YEAR 3
Commercialise
- Increase licensing
- Establish spin-offs
- Build investor networks
- Create university innovation fund

YEAR 4
Scale
- Develop international partnerships
- Attract venture capital
- Establish strategic corporate partnerships
- Scale successful technologies

YEAR 5
Institutionalise
- Reinvest commercialisation returns
- Evaluate economic and social impact
- Integrate innovation into university strategy
- Develop the TTO into a broader knowledge and innovation enterprise

WATER-TREATMENT EXAMPLE
One researcher receives
- IP assessment and patent advice
- Proof-of-concept funding
- Prototype development support
- Market research, industry links
- Regulatory guidance
- Investor introductions
- Licensing or spin-off support

In Summary

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How the TTO produces resilience

Resilient University

Technology Transfer Office

1. Knowledge creation
2. IP protection
3. Innovation
4. Commercialisation
5. Industry partnerships
6. Societal impact

Outcomes

- **Diversified revenue**
- **Enterpreneurship**
- **Innovation capacity**
- **Social resilience**

The key idea

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From a transactional “IP (patent) and licensing office” to a strategic institutional capability for resilience

The TTO helps the university convert knowledge into economic and societal value while creating new partnerships, revenue streams and capabilities.