



Dr John Normanton

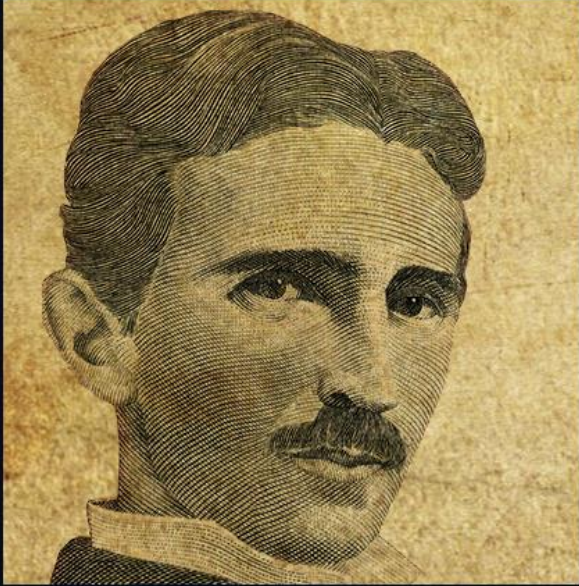

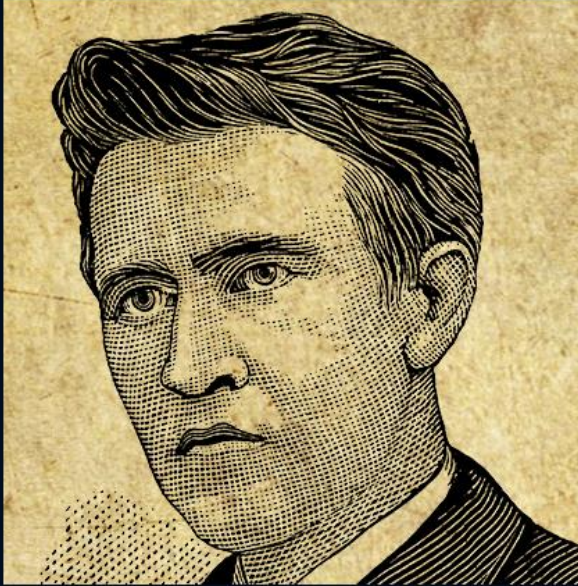


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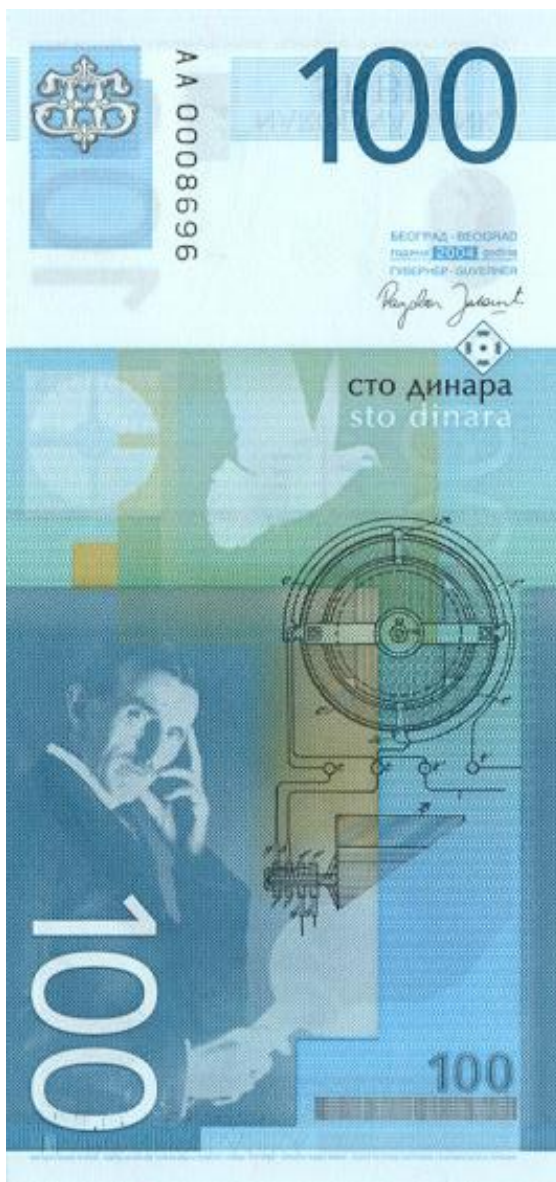
TRANSFERADE 2018
Belgrade, 1st November 2018

Tesla – one of the world's great inventors

Buzzle.com

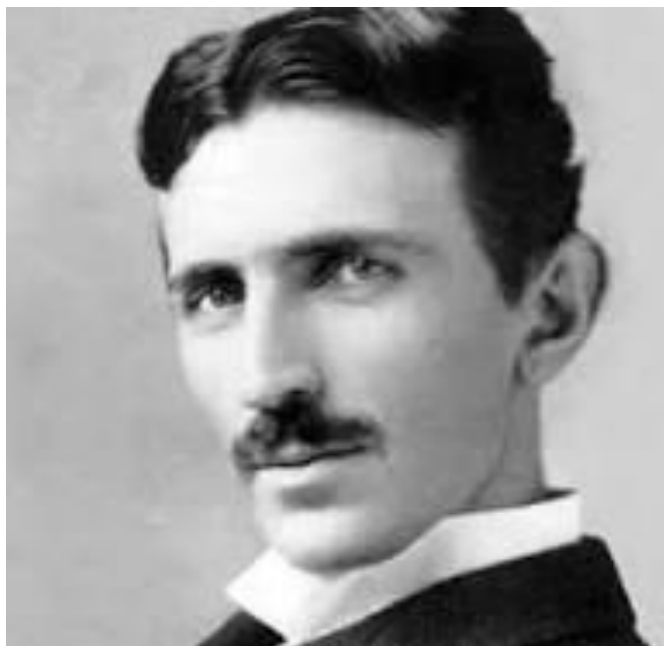
<h2>Nikola Tesla</h2> 		<h2>Thomas Edison</h2> 
<p>Scientist who modernized alternating current system.</p>		<p>Shrewd businessman who mass produced to maximize profits.</p>

Be prepared for the next big one !



- Born to Serbian parents
- ≈ 300 patents
- AC induction motor still increasing in use
- SI unit of magnetic flux density (Tesla)
- Even made it to your bank notes !!

How well would Serbia benefit if inventions happened today ?

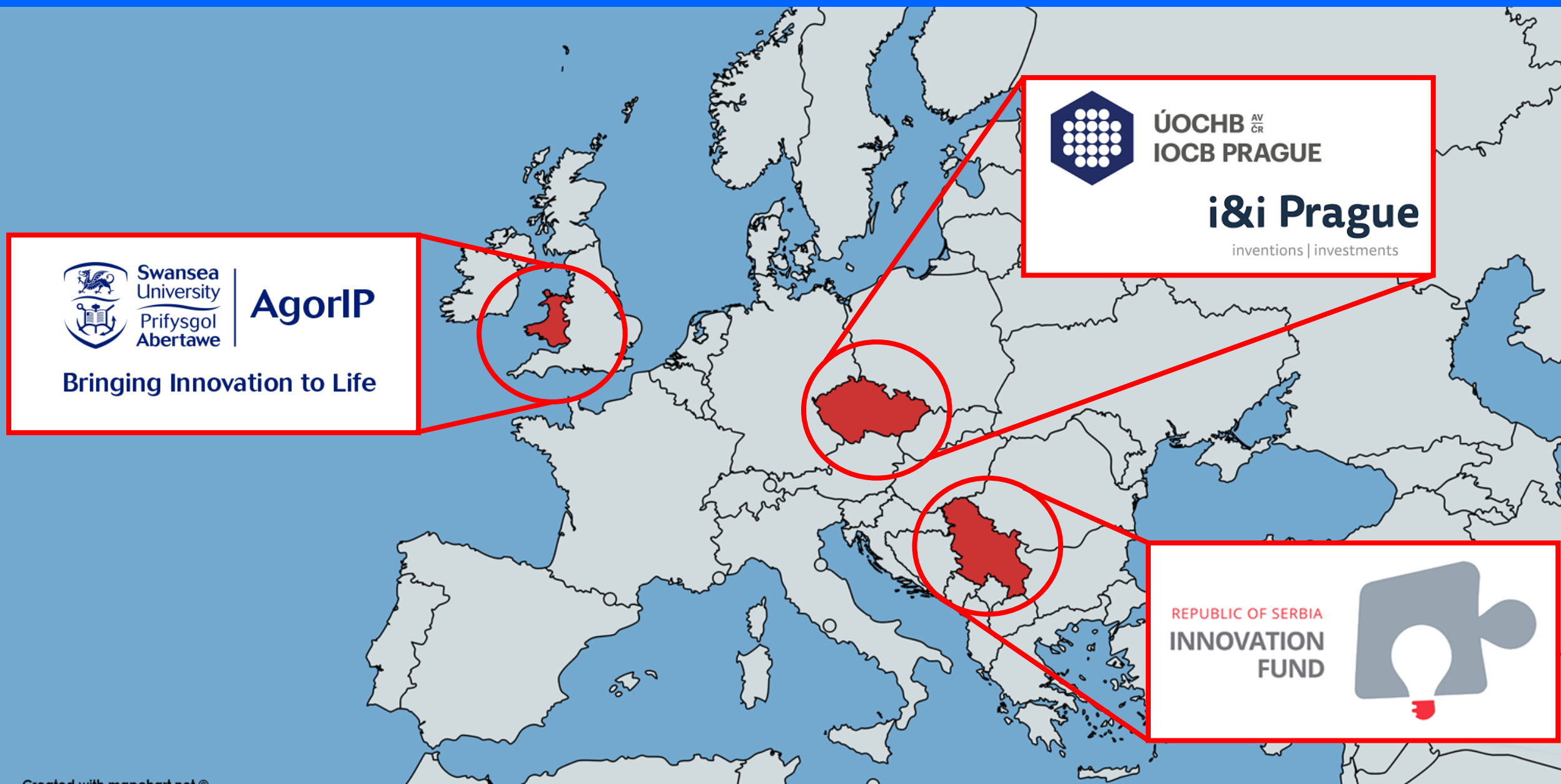


- Would it be recognised early enough ?
- Would its IP be protected ?
- Would it be supported and nurtured ?
- Would Serbia get proper commercial return ?

An effective technology transfer infrastructure should be able to deliver these

BUT: Could Serbia get full benefit doing things on its own ??

Recap on the Day



Economic Comparators

	Serbia	Wales	Czech Republic	Germany	USA
Population	7.1M	3.1M	10.5M	80.6M	326.6M
GDP (purchasing power parity)					
total	\$ 106 B	\$ 67 B	\$ 376 B	\$ 4,171 B	\$ 19,400 B
per capita	\$ 15,000	\$ 22,000	\$ 35,500	\$ 50,400	\$ 59,500

Compete or Collaborate ?



Compete or Collaborate ?

Can significant inventions from small economies compete on the world stage and bring full financial benefit to the home country ?

- Easy to get some benefit
- Easy to out-license early to big country

**BUT: Critical global IP protection usually filed by licensee
Hard to take invention to a significant value inflexion point**

How could a carefully structured Collaboration Network help ?

Smaller countries generally do not each have the full range of expertise in the different disciplines needed

- **Collaborate to access synergistic skills**
- **Don't re-invent the wheel with lots of small national spinouts**
- **Try to find at least 1 BIG partner to collaborate with**
- **Generally, leverage other parties' capabilities/market presence, etc.**

AIM for: *"The whole is greater than the sum of its parts"*

Dr John Normanton – Background



UNIVERSITY OF LEEDS

*BSc Pharmacology
PhD Neuropharmacology*



Innovation for patient care

Director

*Commercial Project Planning
(small molecules)*



UNIVERSITY OF BIRMINGHAM

*Research Fellow
(neurophysiology)*



*Demonstrator, College Lecturer
& Junior Fellow
(neurophysiology)*



SANDOZ



NOVARTIS

*Clinical Research
(oncology)*



*Tech. Transfer &
Venture Capital
(bio- & agri-sciences)*



Co-founder

*Chief Operating Officer
(oncology, womens'
health & diabetes)*

**Imperial College
London**



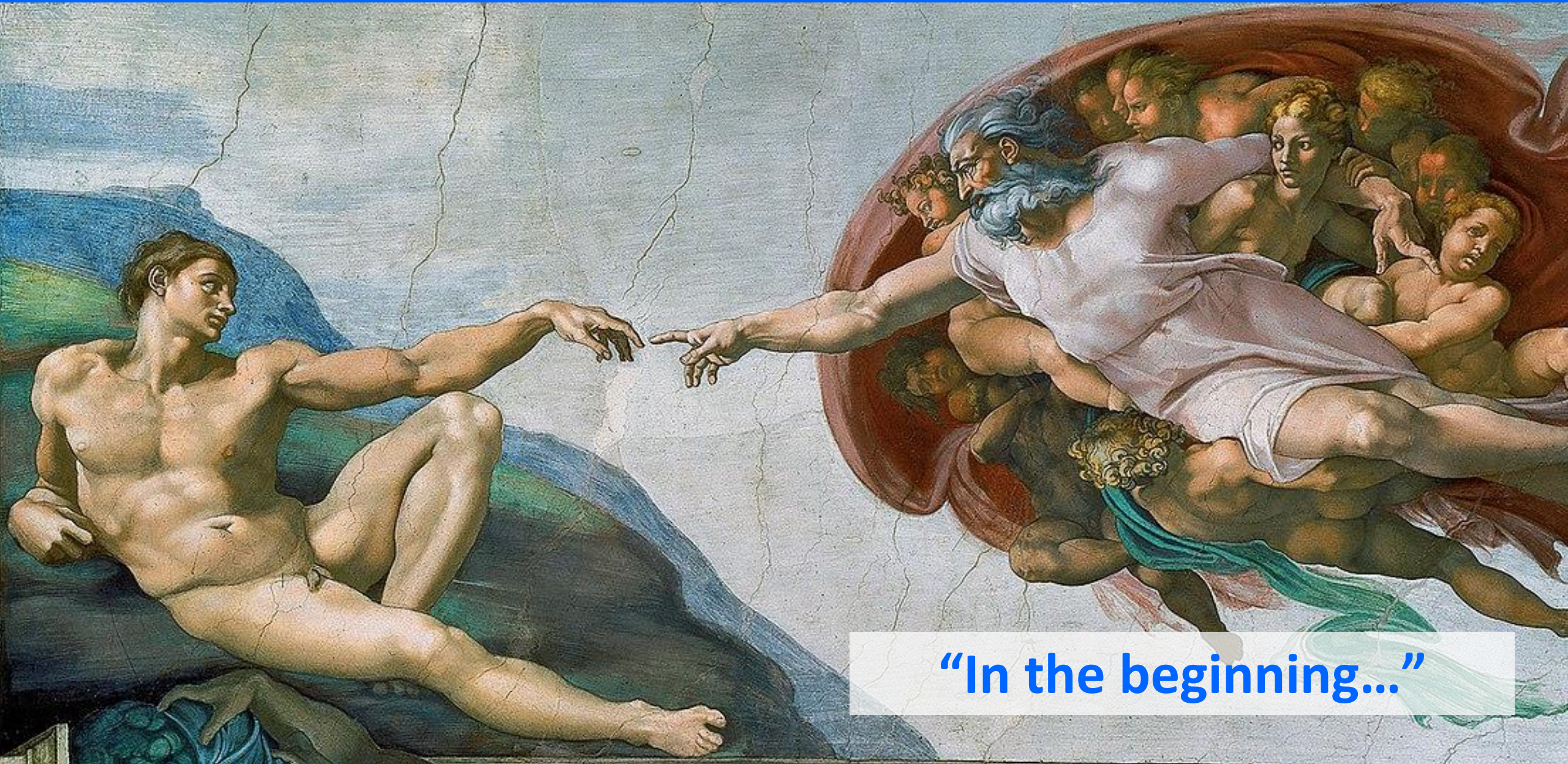
*Founding member
Tech. Transfer
(biosciences)*



ArgantriX

Managing Director

The invention process



“In the beginning...”

The Technology Transfer process

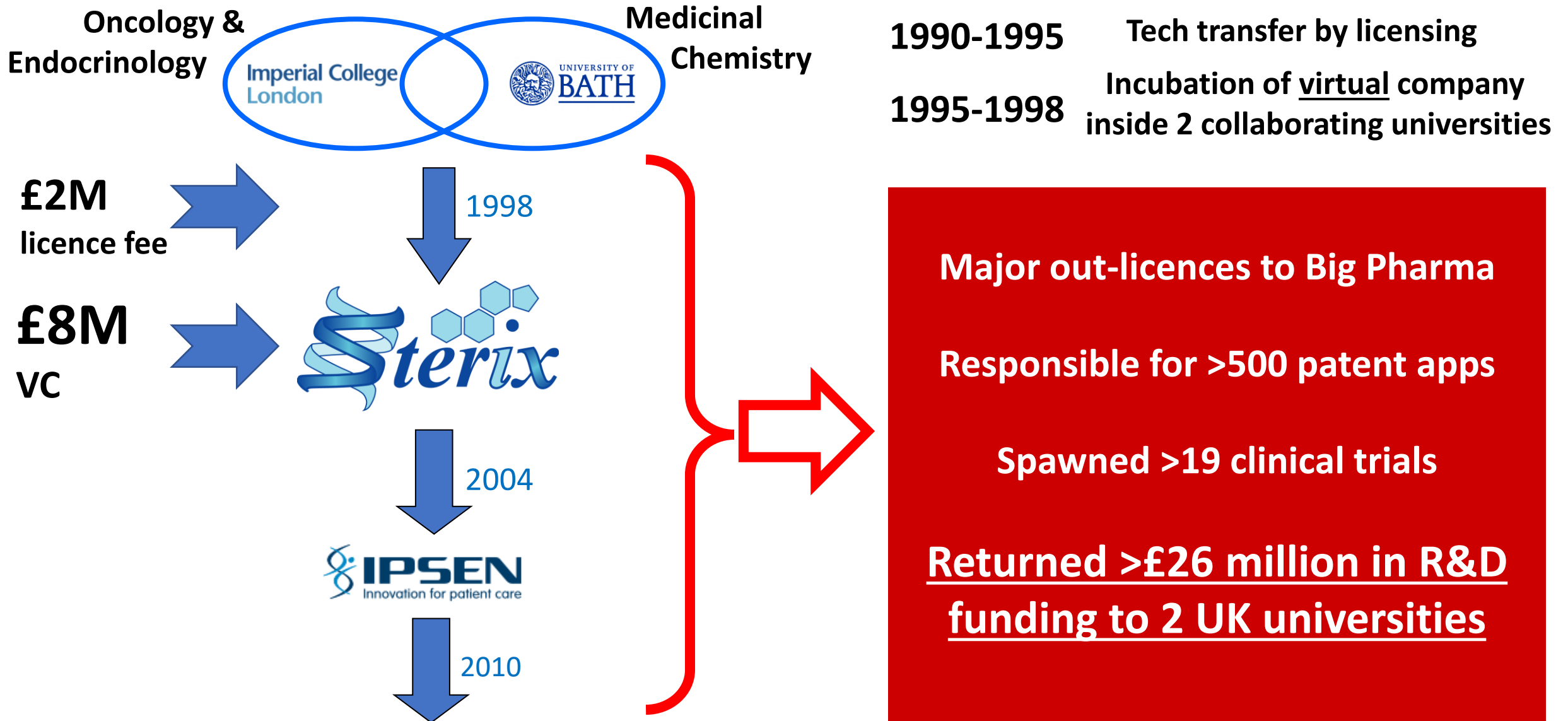


RETAIN SOME DIRECT COLLABORATIVE INVOLVEMENT

Licensing vs. spinout



First JRN Spin-out

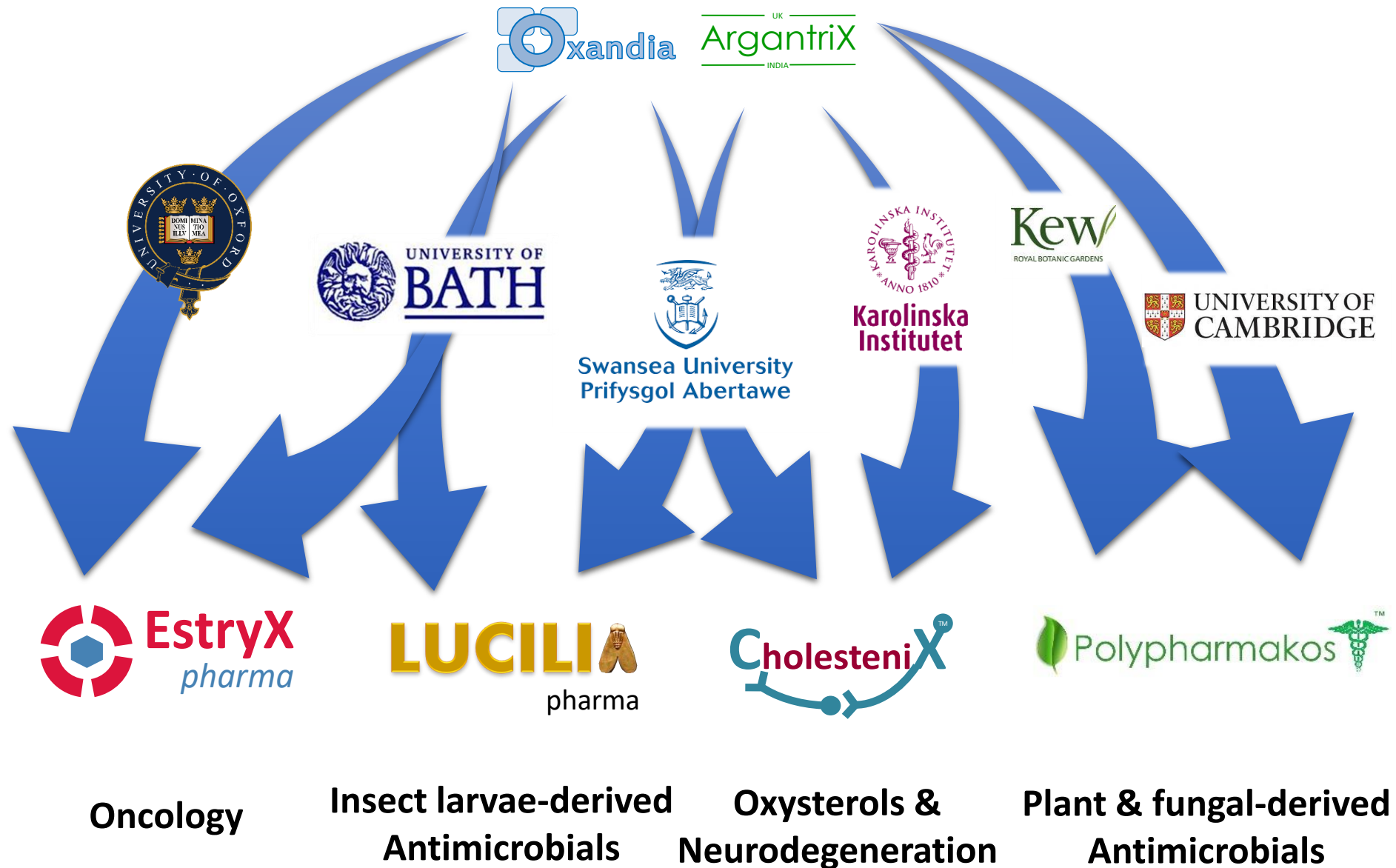


Sterix Team



Many now in senior positions in pharma/biotech/services/etc.

Some current activities in Collaborative Spinouts

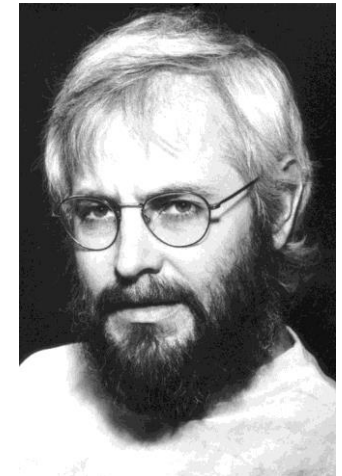
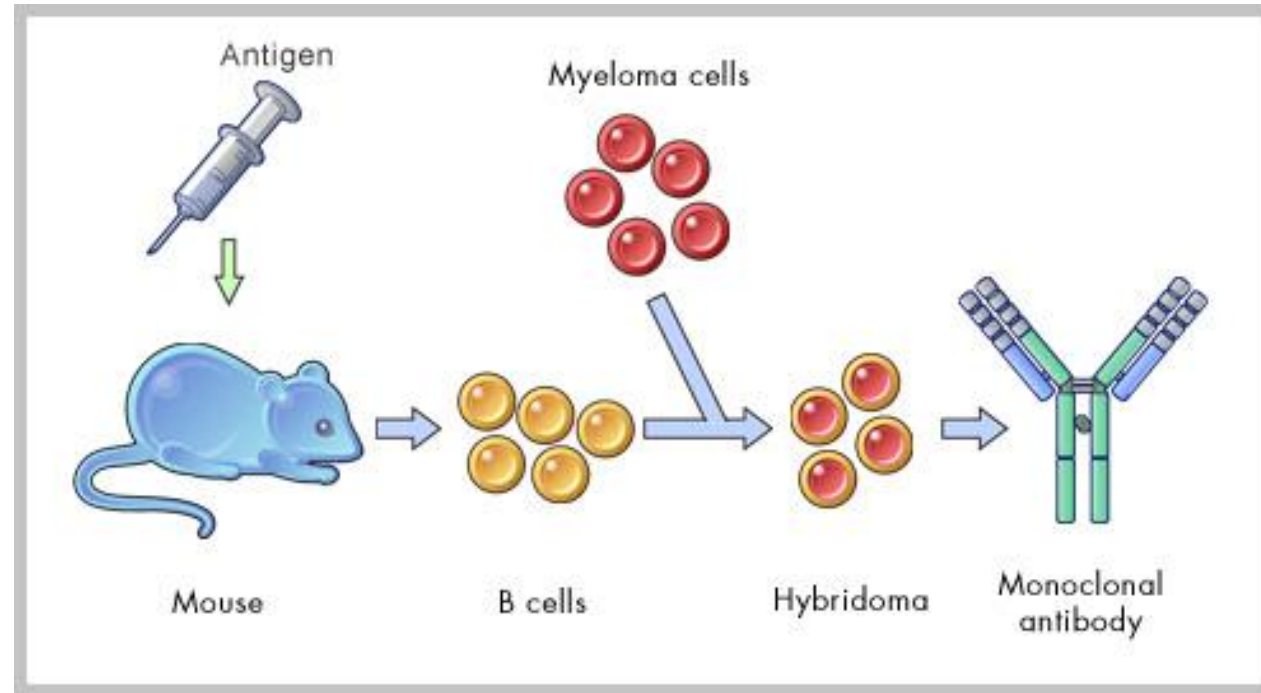


How the UK got it badly wrong !



“Washing our dirty laundry in public”

Example of the big one that got away !



Invention by César Milstein & Georges Köhler working in Cambridge

Example of the big one that got away !

- ‘Curiosity-driven’ pure research
- July 1975 – internal MRC meeting (mention imminent Nature paper)
- Audience member struck by commercial possibilities
- Alerted MRC TTO to need for “swift patenting action”

MRC TTO took several months before responding

- Too late to patent because of publication
- MRC TTO as ‘unable to identify any immediate applications’
- Major ‘use’ & ‘selection’ patents filed by US scientists

Example of the big one that got away !



Köhler & Milstein (& Niels Jerne) awarded Nobel Prize in 1984 for invention

BUT: Much of the commercial return ultimately went to US

Example of the big one that got away !

Commercialisation Lessons Learnt ?

➤ Commercial assessment of research potential

ASSESS

➤ Protection of IP

PROTECT

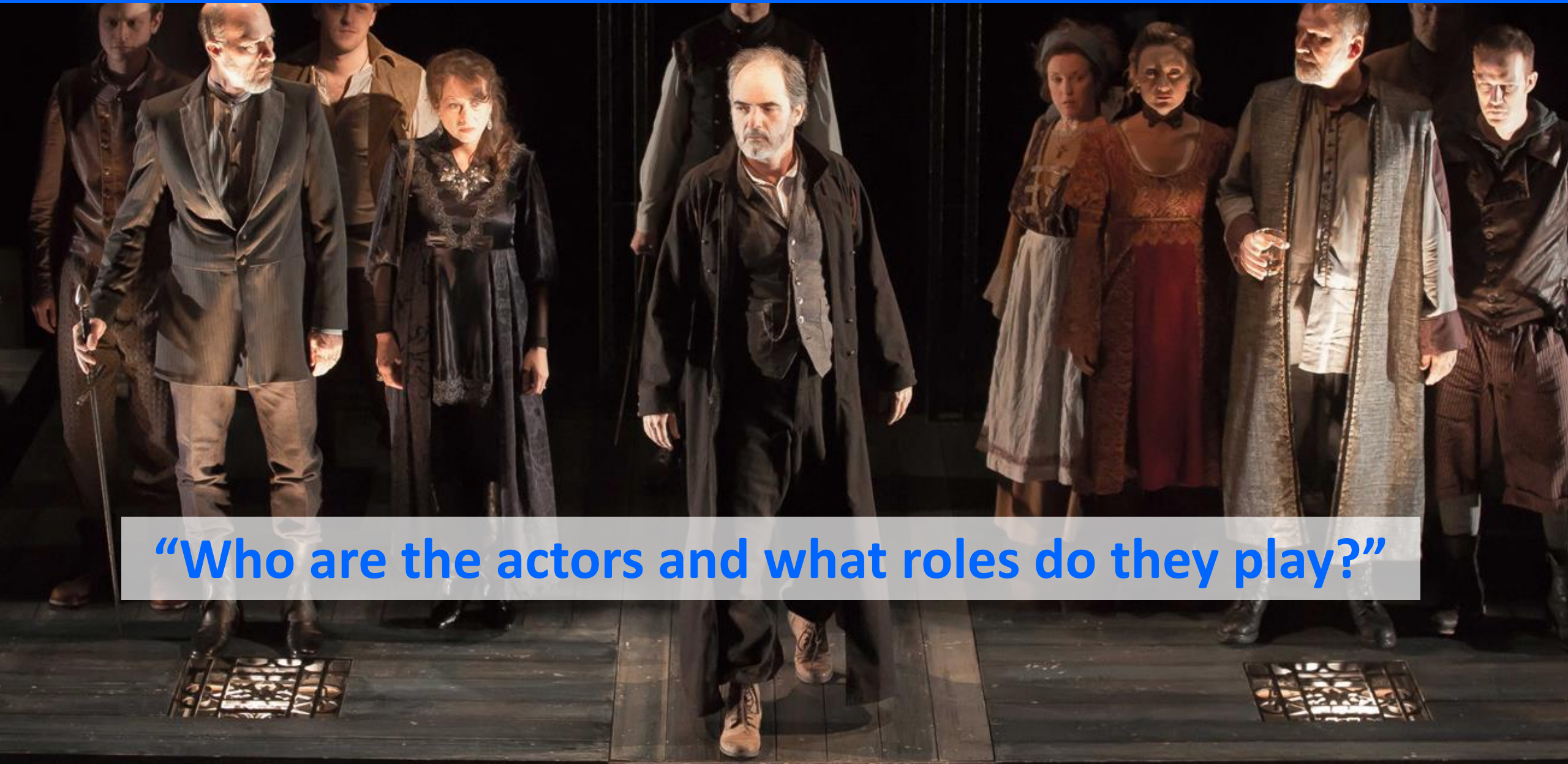
➤ TTO's to be able to interface with industry

EXPLOIT

➤ Spin outs technology if appropriate

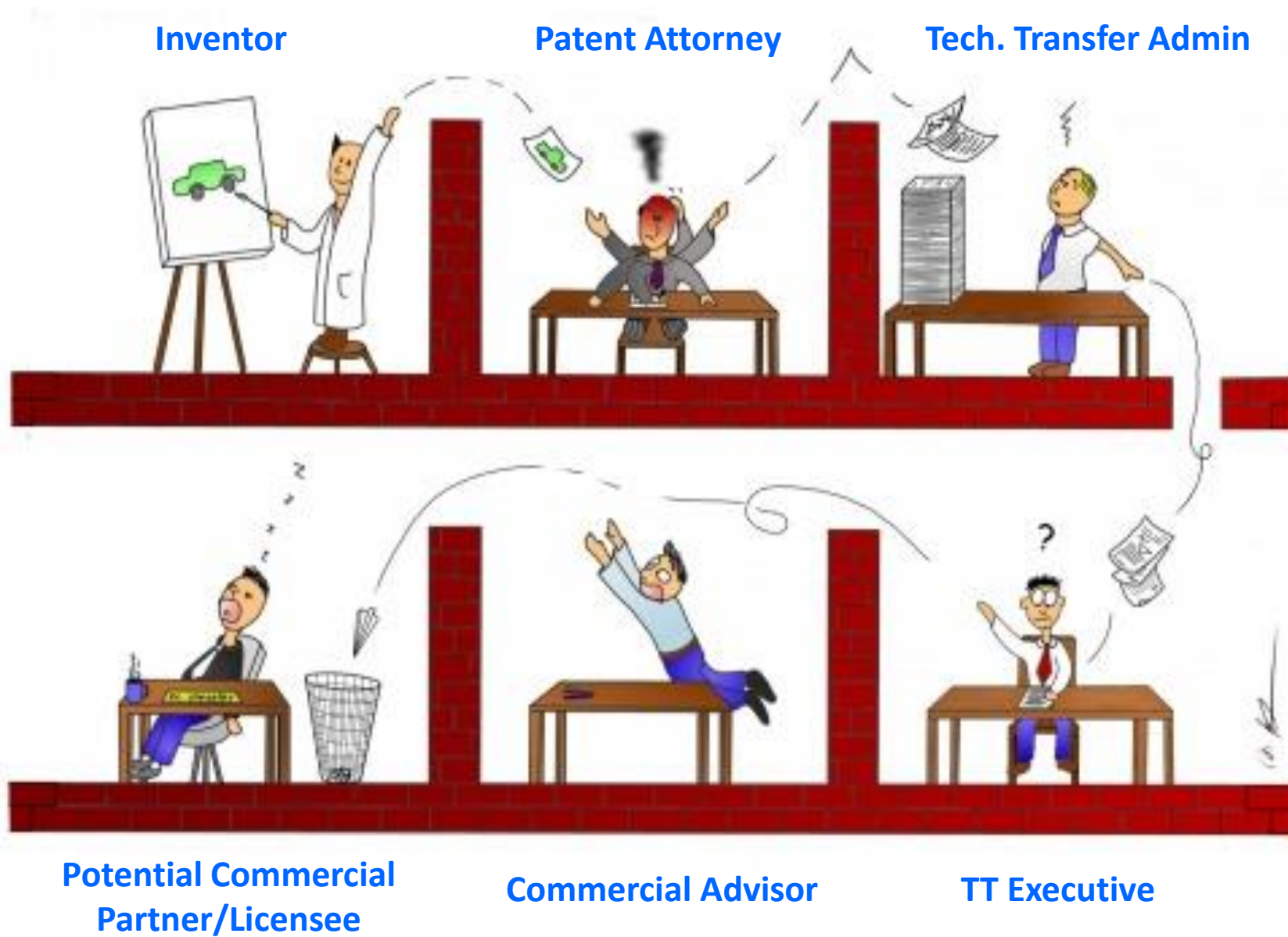
CREATE

The Modern Technology Transfer Era



“Who are the actors and what roles do they play?”

Initial 'Linear' model of Technology Transfer



Create career paths in technology transfer

Historically, Technology Transfer was a career for “failed academics”

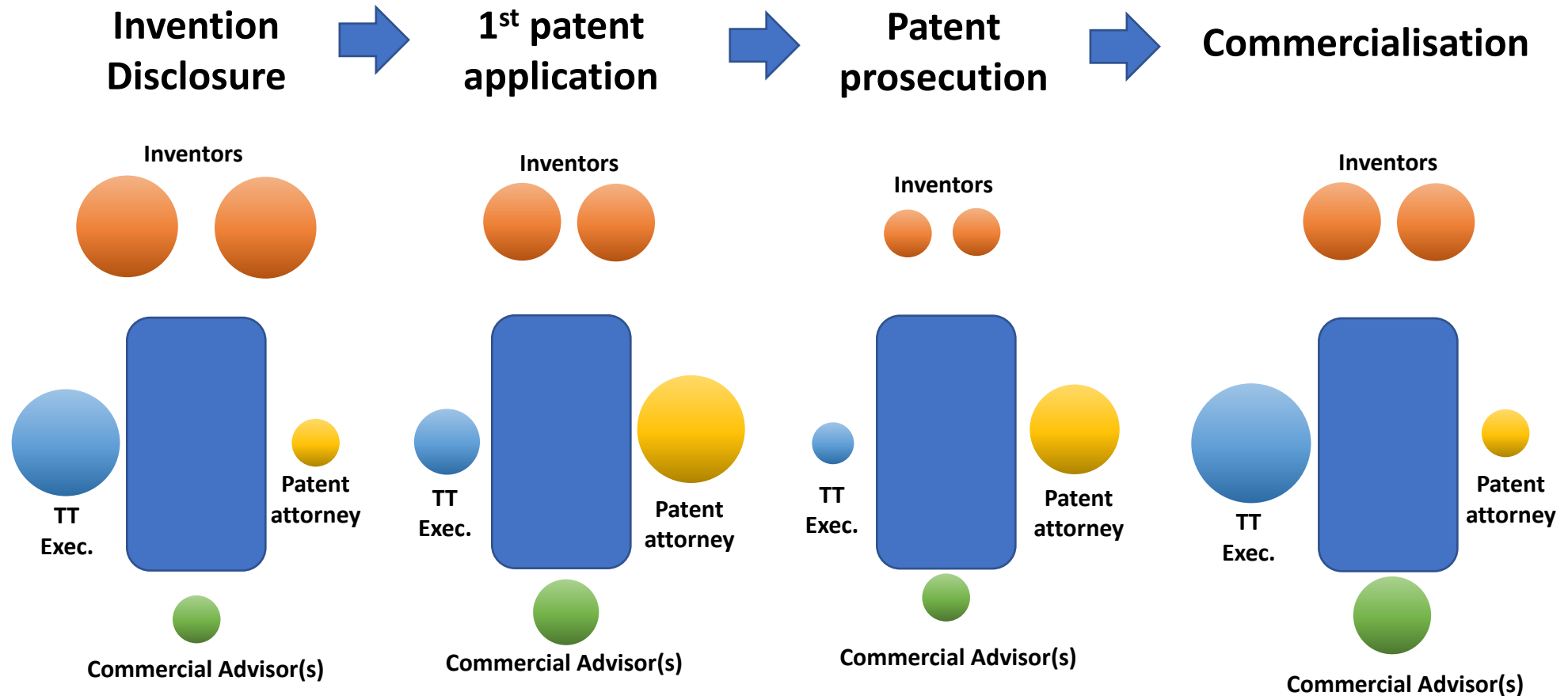
Now very much changed

- Highly competitive entry requirements
- Readily available high quality training
- Has become a profession



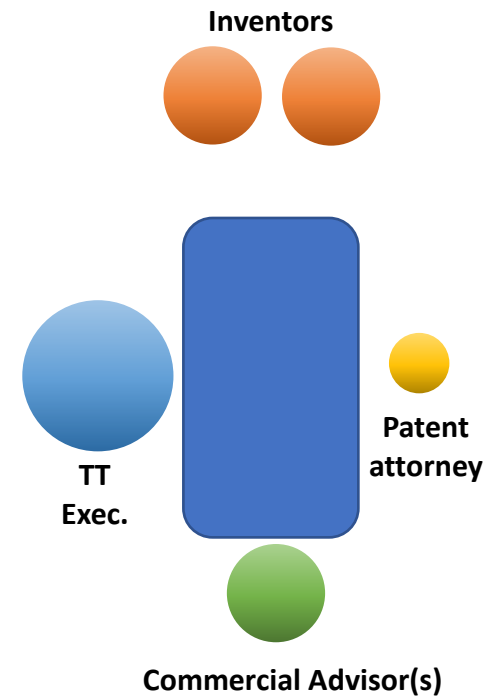
The TTO Executive should become a “Technology Champion”

Modern 'Dynamic Committee' Technology Transfer

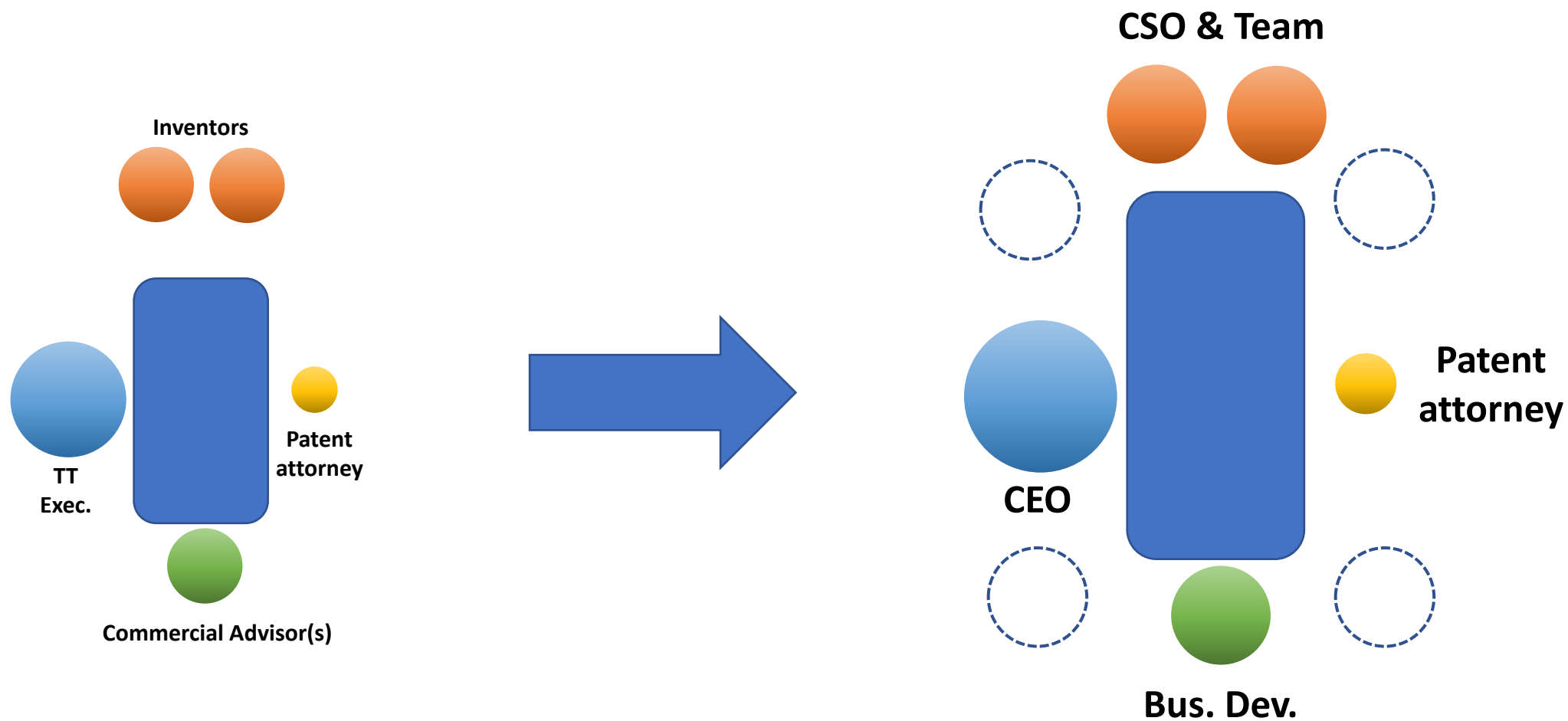


Members of academic team now heavily involved throughout process

Transition potential to Spinout mode



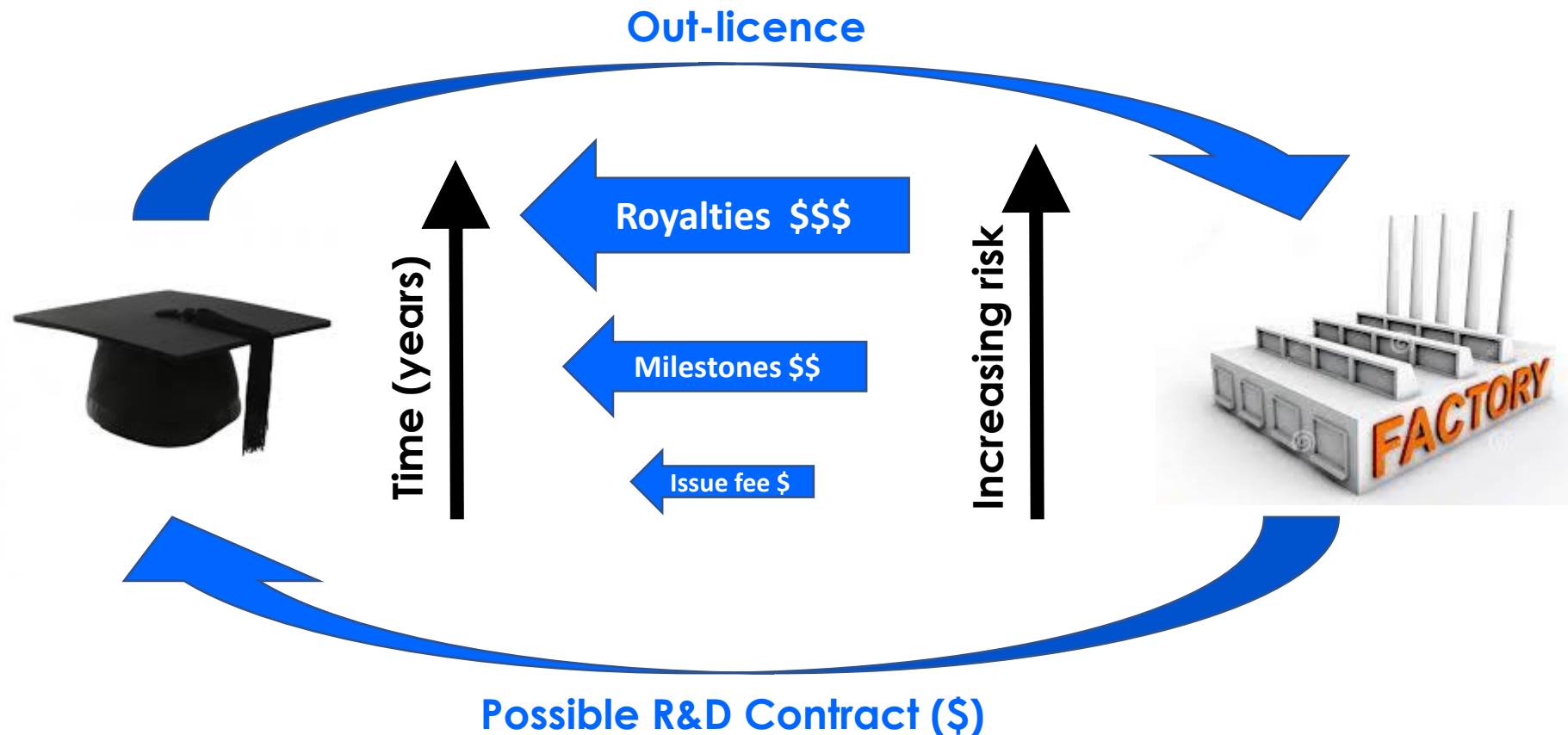
Transition potential to Spinout mode



Licensing vs. spinout

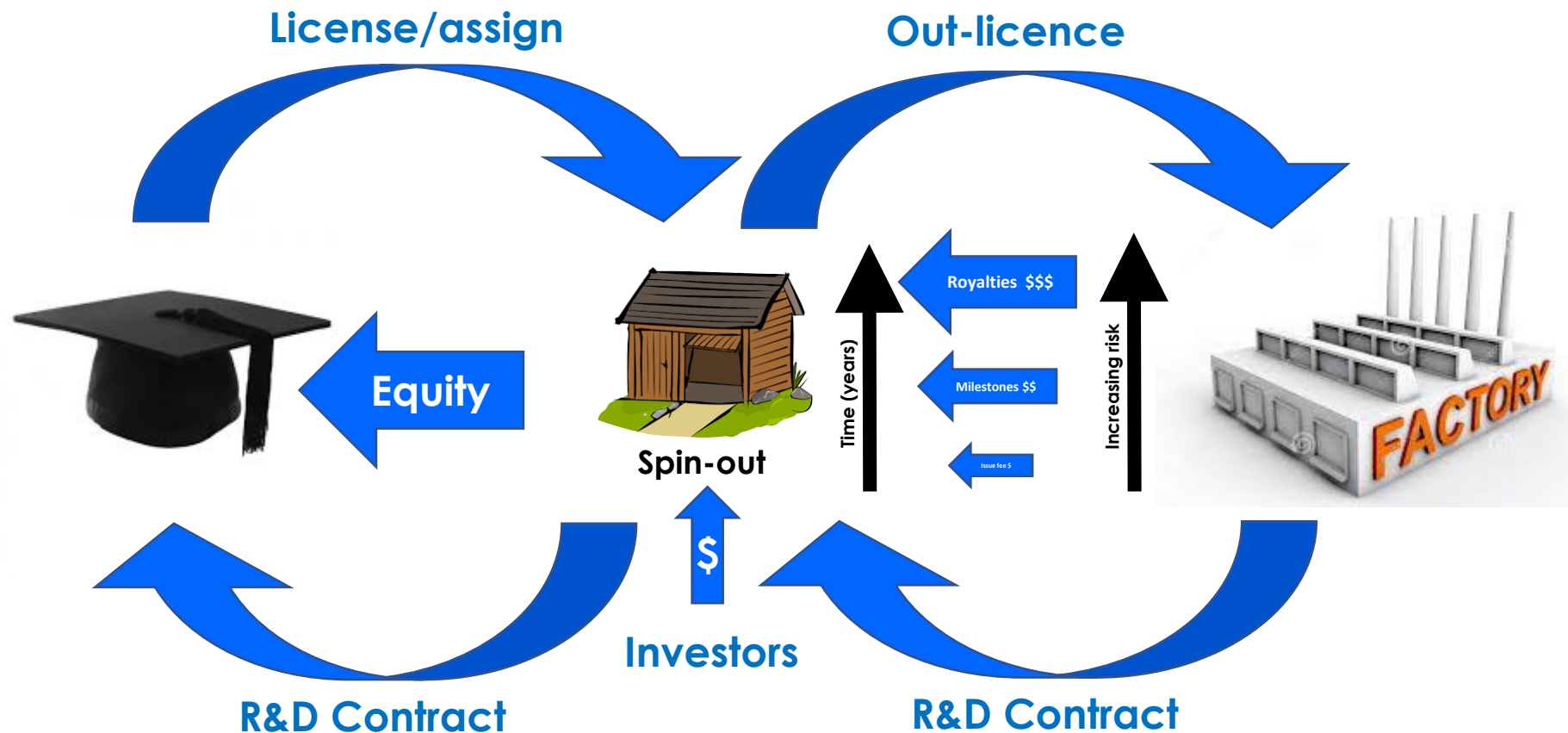


Metrics of Typical Licensing Deal



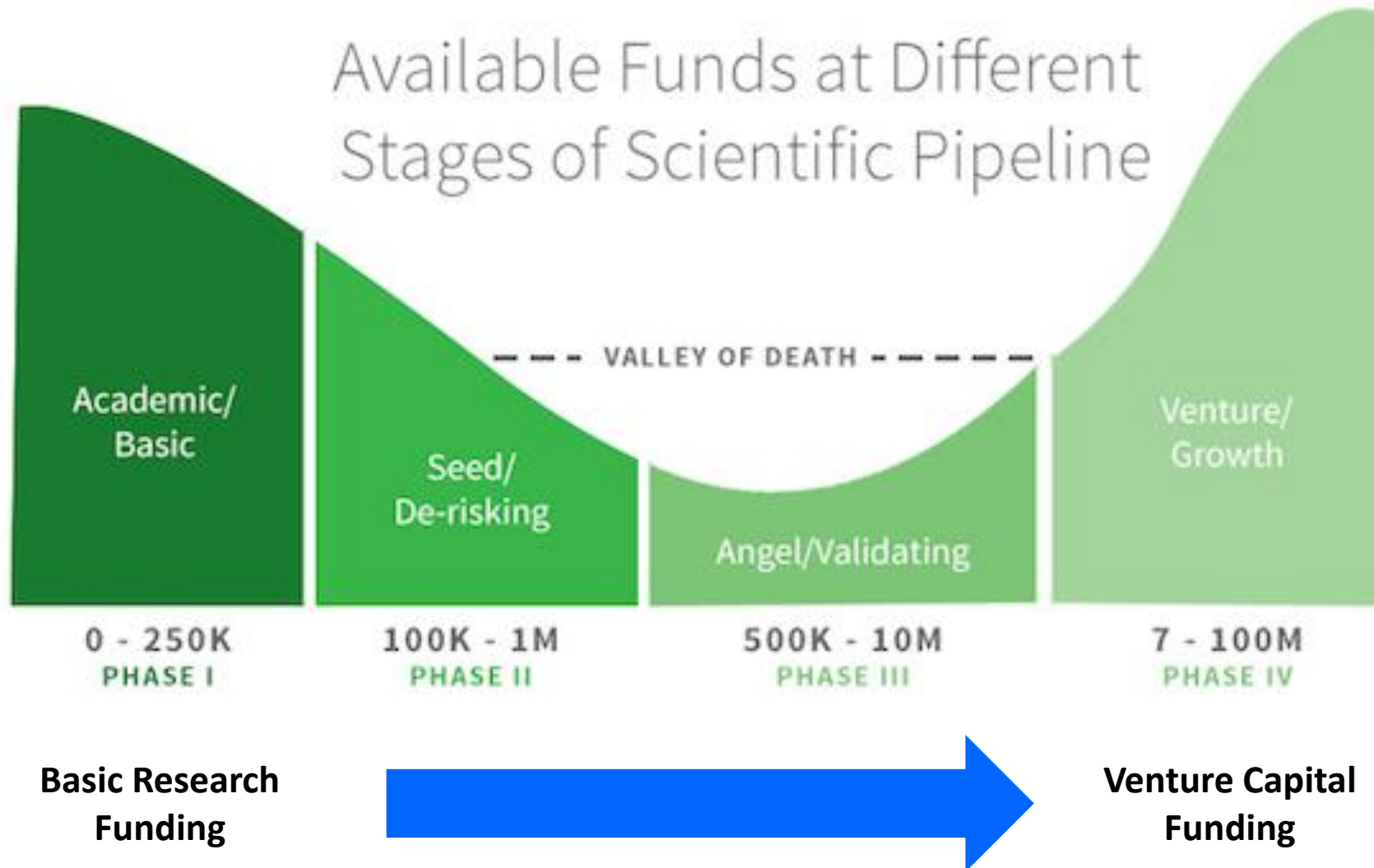
Deal typical struck at early stage – deal value usually reflects this
Deal value is back loaded and subject to high risk

Virtual Spin-out Arrangement

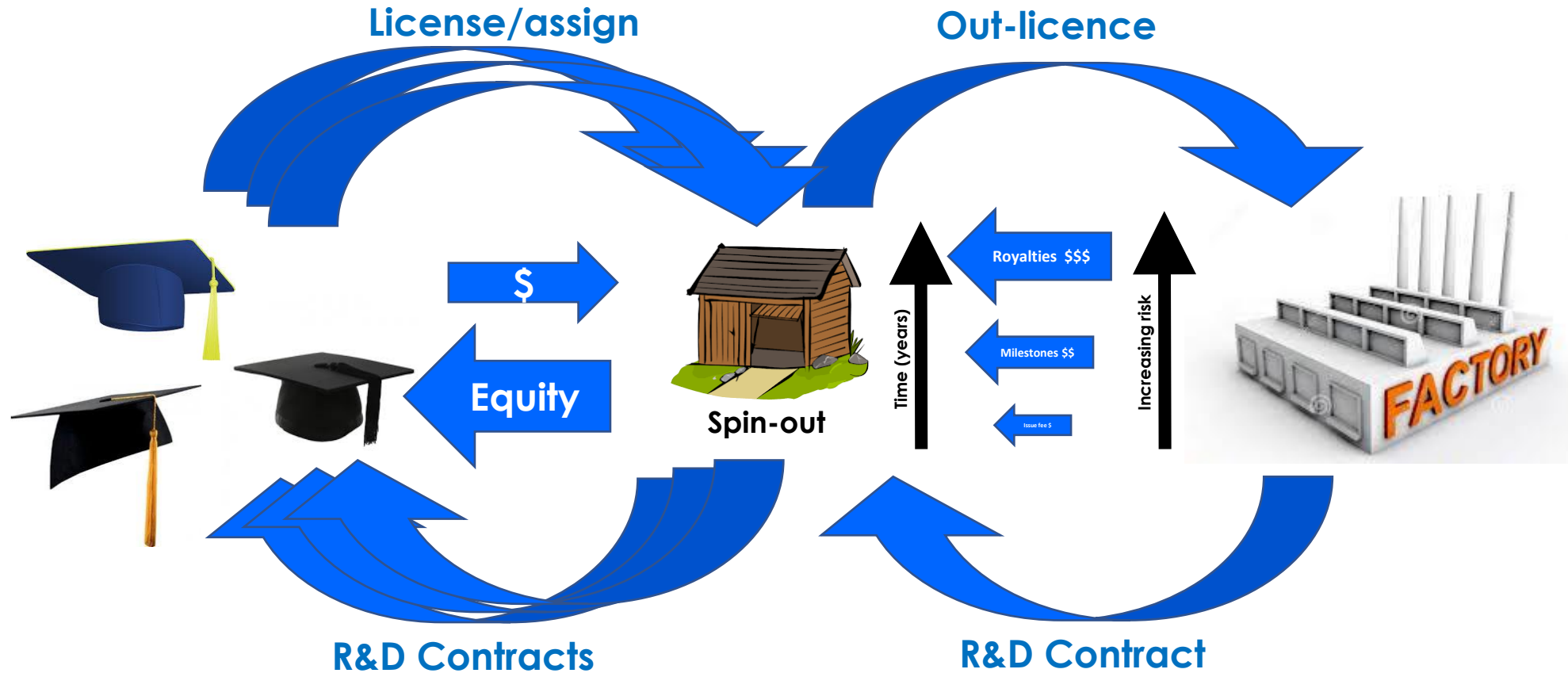


Investment can reach next value inflexion point before out-licensing

The Valley of Death



Collaborative Spin-out Arrangement

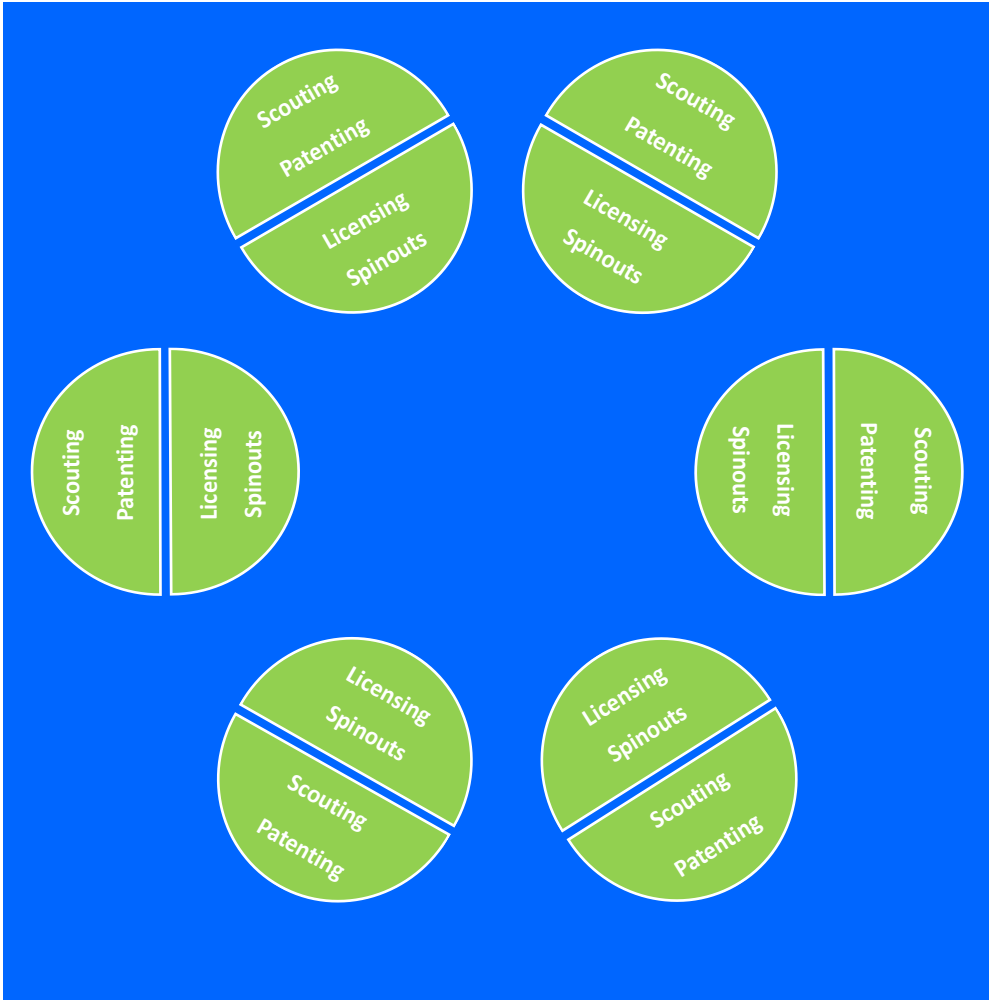


Requires carefully managed collaboration between universities

How could Serbian TT go further & faster ?



Multiple universities each with their own small TTO

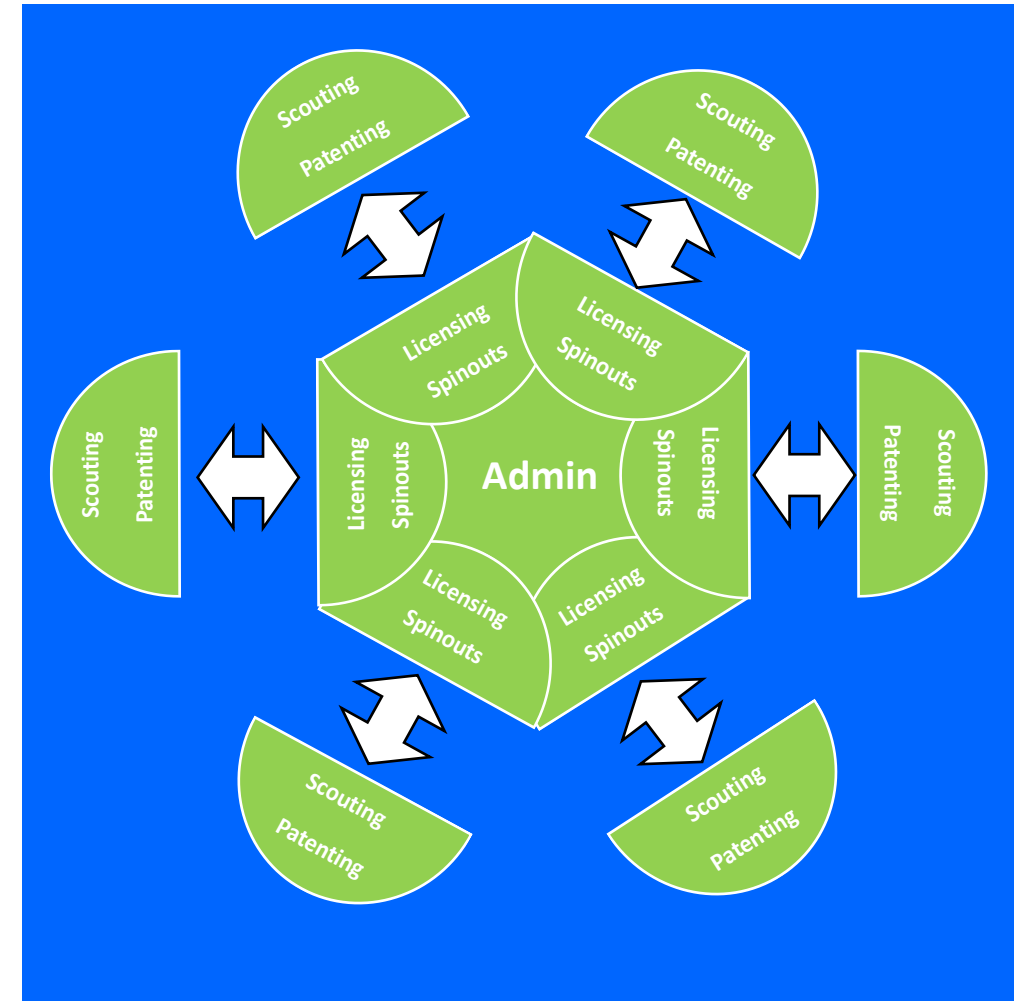
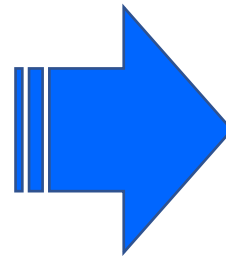
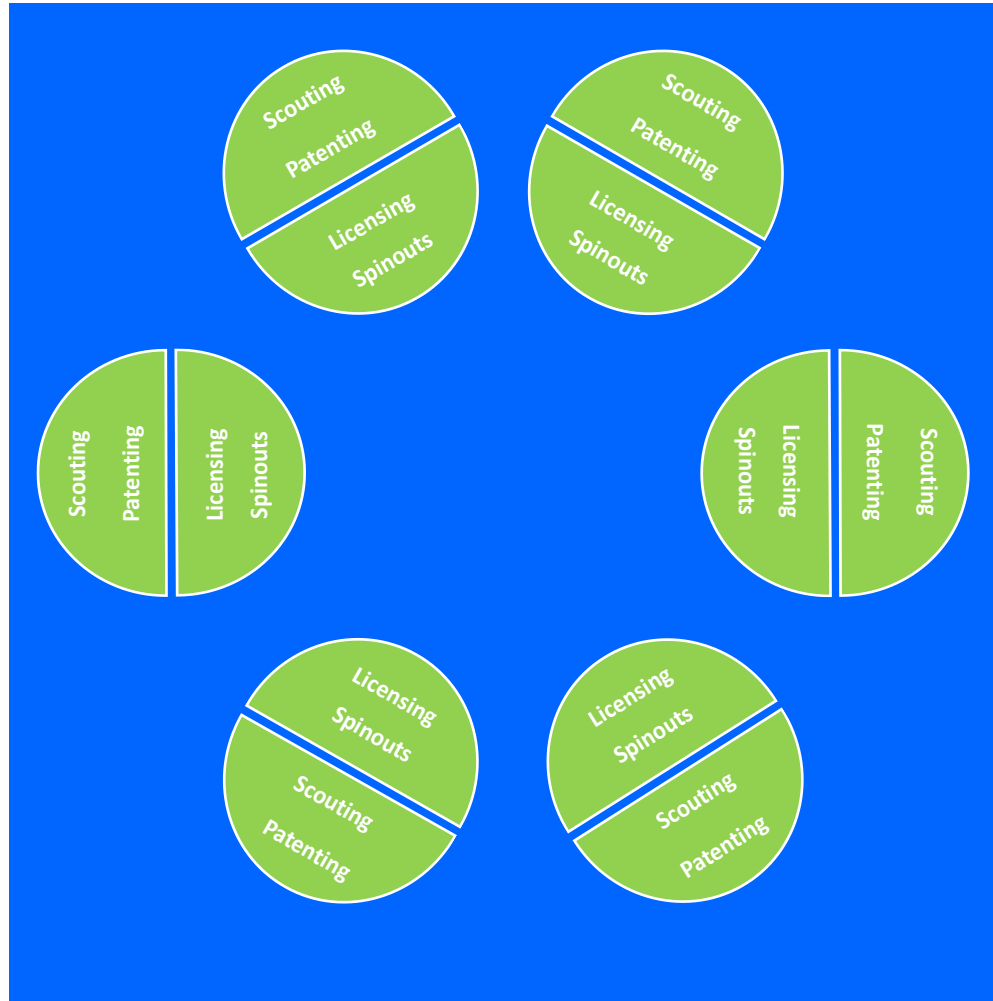


- Lack of breadth of skills needed
- Lower calibre staffing due to lack of career progression opportunities
- Cannot attract staff with international commercial experience
- Collaborative out-licensing or spin-outs almost never happen
- Limited financial 'power' to deal appropriately with important inventions

LACK OF CRITICAL MASS IN EACH TTO

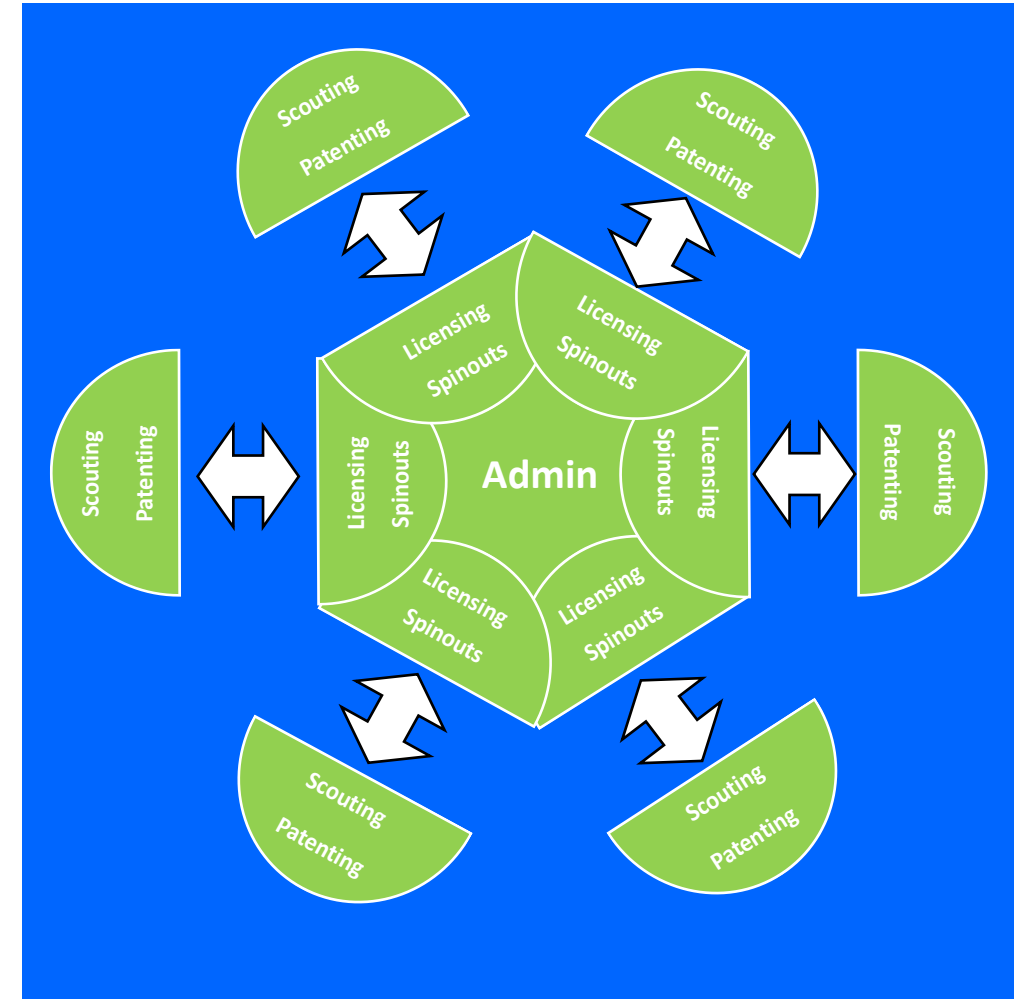
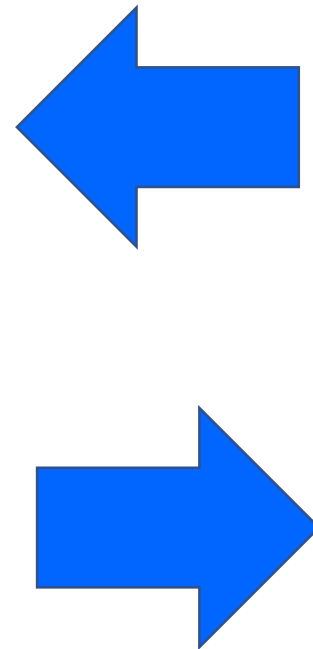
BUT experience teaches that fully centralised TT doesn't work either !

Partially Centralised TTO Model to achieve critical mass



Create collaborative 'hub and spoke' infrastructure

Partner with other (international) University organisations



Create inter-country collaborations & funding arrangements

Take Home Messages



“Collaborate, collaborate, collaborate”

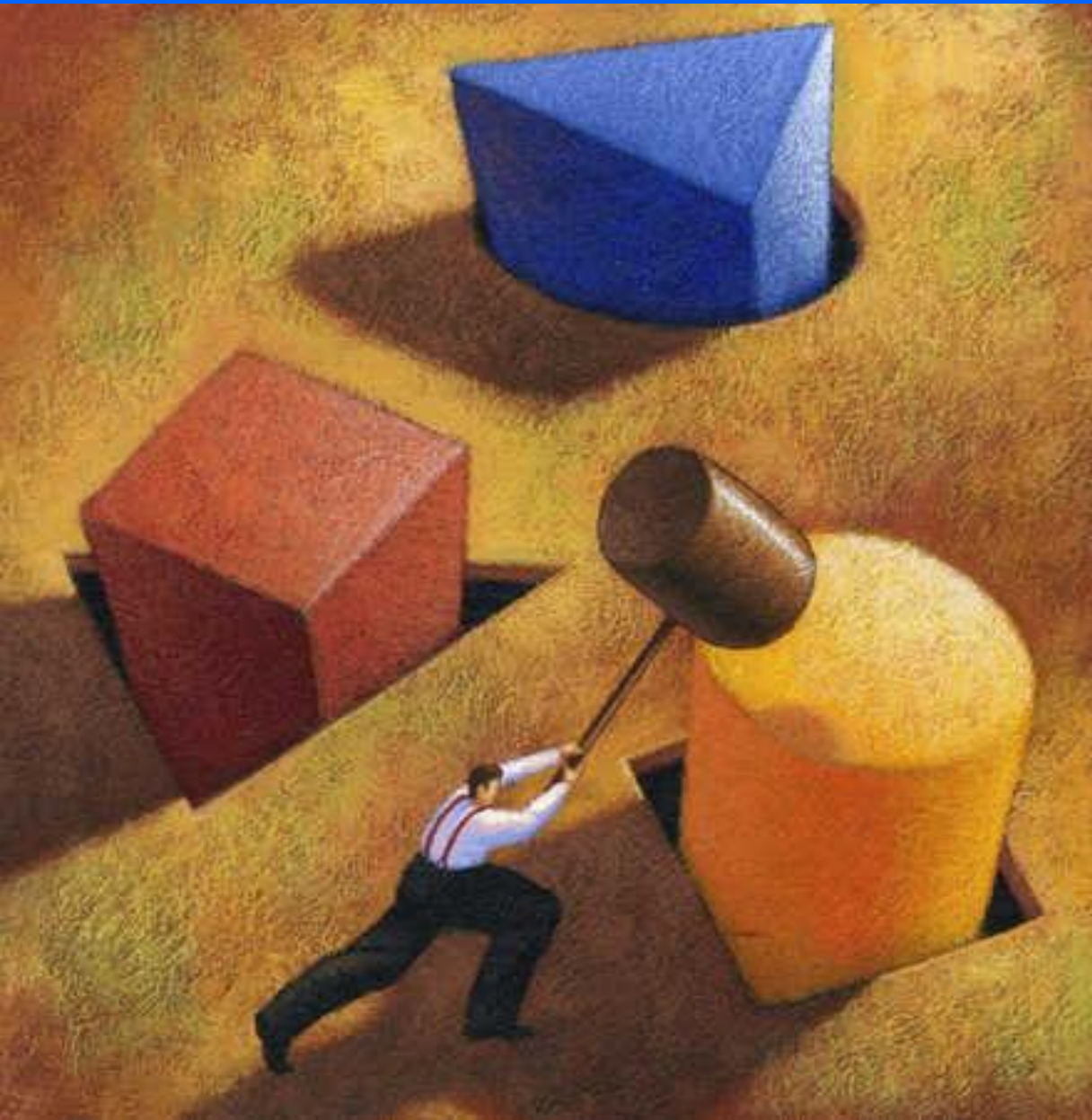


Follow the current trend in university R&D & ACHIEVE CRITICAL MASS IN TTO

- Intra-country university ↔ university
- Inter-country university ↔ university
- Don't fear working with big university partners
- Use translational funds to achieve licensing-ready and/or investor-ready technologies

A small share of success is better than
a big share of failure !

Encourage your entrepreneurs



Academic Entrepreneurs

Work with your TTO partners to achieve success

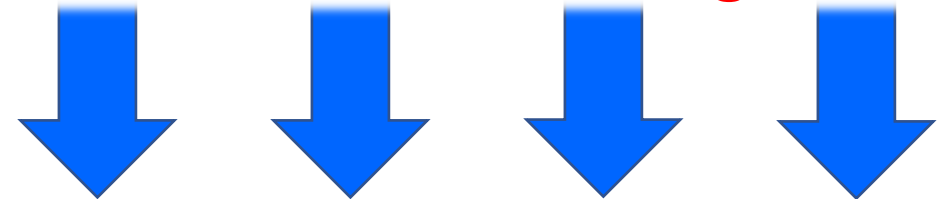
Research funding & Share of Revenue



TTO 'Facilitators'

Become the Product Champion for each technology

Promotion & Career Progression



Spinout Entrepreneurs

No matter what – JUST DO IT

Never, never, never stop (or sleep!)

Pain but \$\$\$

Always Balance Realism with Boundless Optimism



“This time next year, we’ll be millionaires ...”