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Knowledge Exchange:  
Connecting research into practice & policy.

What does success look like and  
how to get there.

Dr Ewan Chirnside  
Director, KT Centre



# Today's conversation

- St Andrews – University & TLO
- Why can't we be like MIT, Stanford, \_\_\_\_\_ or Cambridge?
- TLO trends
- Define what your success would look like
  - Start with the end in mind – and get there.





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# ST ANDREWS





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# St Andrews – Internationally Scottish



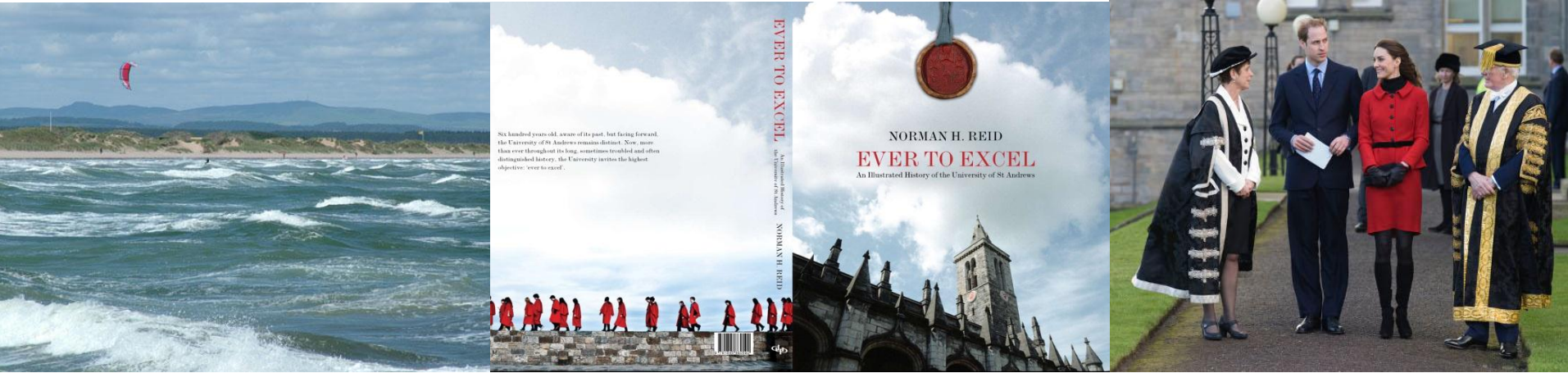
- “Ancient”, established 1413
  - 1<sup>st</sup> in Scotland, 3<sup>rd</sup> in English speaking world
- Small, research intensive university
- Flexible, with strong interdisciplinary links (18 Schools)
- 80 Fellows of the Royal Society of Edinburgh
- Research - 2008 RAE – 14<sup>th</sup> in UK & 2<sup>nd</sup> in Scotland





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# St Andrews – Internationally Scottish



- £150m turnover; £300m GVA; supports 9,000 Scottish jobs
- Teaching - 2012 National Student Survey : top 5 in UK
- Overall - consistently rated in UK's top 10 universities
- A world top 100 university
  - QS ranking 83 (Charles University 233)
- Very strong in attracting staff & students from abroad



# St Andrews TLO

1980's activity started – no single unit

1995 Research & Enterprise Services (RES)

2002 RES v2 - expansion based on growing research success

2008 KTC focus on broad range of KE activities; all research support moved into Finance

201x ???????

## TT - 1995-2013

291	Invention disclosures
169	UK patent applications
92	licence deals
39	companies formed
£4.4m	licence income

## 2013

>500 patent applications under management  
>40% in active use





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**“WE NEED TO BE MIT,  
STANFORD OR CAMBRIDGE.”**



# What are Universities for?

- **Create knowledge**
- **Codify, analyse & translate knowledge**
- **Disseminate knowledge**
  1. Teaching to students
  2. Publication to peers
  3. Knowledge transfer - to users = industry/society/economy

...Knowledge transfer is the 3<sup>rd</sup> dissemination channel







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# University Mission statements

“.....promote, transfer, move research results/technology for society’s use & benefit.....”



MIT, Stanford & Cambridge...



# MIT, Stanford & Cambridge



- Research spend last year
  - Stanford: \$1.2B
  - MIT: \$681M
  - Cambridge: \$426M
- Independent & Integrated into local economy
- Nobel laureates >120
- >1500 inventions disclosed per year

St Andrews R&D spend \$58m





# MIT, Stanford & Cambridge

So how does your institution compare with these research metrics?

Are they really comparators against which your KT/TT institutional performance should be judged?

All their TLOs run tours, visits and provide information, so easy to access.

BUT

Are these examples you should or could follow?



# Important differences

## University

- R&D quality & volume
- Students
  - “type” of students
  - Balance of under/postgraduates
- Ownership IPR
- Flexibility
  - Handling of business ideas
  - Support of enterprise
  - External involvement

## Environment

- Society:
  - Entrepreneurial
  - Acceptance of “high risk for high rewards”
  - Failure “OK”
- Geography
  - Metropolitan
  - “Investor accessible”
- Business
  - high-tech clusters





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# TLO TRENDS





# US and EU TLO comparison

## North America

- Longer history
- Arose through alumni
- Expanded with gov't action
- 1<sup>st</sup> license/ 2<sup>nd</sup> spinout
- Fewer FTEs
- 50% lose money
- 45% profitable (5 very)
- Best = 1-2% of uni TO

## UK/Europe/Australia

- Shorter history
- Little alumni involvement
- Gov't driven initiative
- 1<sup>st</sup> spinout/ 2<sup>nd</sup> license
- Economic development
- 95% lose money
- 5% profitable (none a lot)
- Best = 1-2% of uni TO



# Its not about the money

- Concentrate on promoting research excellence and getting opportunities out of the lab and into the hands of partners
- TT has broad economic impact
  - Transfer (licensed or free) & collaboration supports company output, jobs & profitability
  - New companies (spinouts/startups) provide new products & services
- By comparison TLO income to university will be very small



# Change is the (new) normal

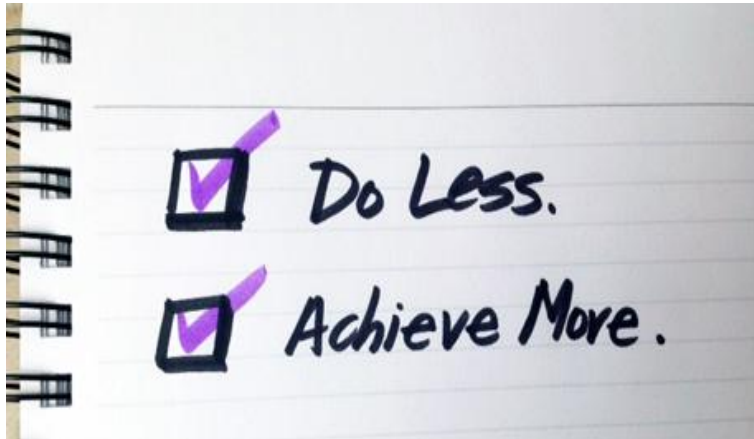
- Governments have become very active (regional, national & EU)
  - R&D mission creep
  - TLO office mission creep
  - Views on IPR are changing
- Competing & opposing factors





# Do more, not less

Counter intuitive (expect opposite)

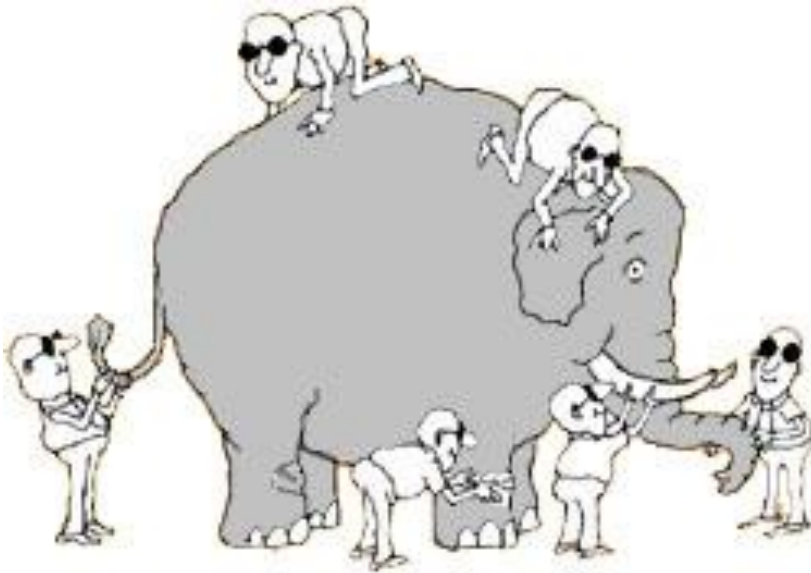


- Commercialisation comes in many forms:
  - Protecting & licensing research discoveries
  - Promoting collaborative research with companies
  - International collaborative research with companies
  - Hosting a translational research centre
  - Entrepreneurship education & support
  - Start-up incubation & acceleration





# So many stakeholders



- Governments have ever expanding expectations of universities:
  - economic development & “resurrection”
  - Investment not grant.
- Everyone wants to manage universities;
- TLOs funded to “do” so must deliver to sponsors, university etc. to continue;
- Business & technology investors willing to take less risk, so need to further develop opportunity in institute.





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# Act local



**ACT LOCAL  
THINK GLOBAL**

- Successful tech clusters are regional, formed around an “anchor” institute;
- Depend on a range of concerted actions, & strong leadership;
- First to see/hear are always “home-based” companies & enterprises;
- Multinationals and global players arrive later.





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**DEFINE WHAT SUCCESS WILL  
LOOK LIKE  
(FOR YOURSELF)**





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# (your) Vision



## NOT

- MIT, Stanford or Cambridge
- About income, licensing or new companies
- Based on IPR
- Acting alone
- Global
- What everyone else does

## Aspirations

- Strengthen research portfolio
- Solid transfer to users by researchers (TLO facilitates)
- Build business networks & contacts in region (and expand)
- Work with partners (they might do some of your work for you)
- Differentiate ourselves from neighbours
  - Local businesses “frogs & princes”
  - Enterprise - “flies & flypaper”



# Bridge the divide



Knowledge mobilisation  
Knowledge integration



Knowledge exchange



Technology transfer



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# St Andrews

- Best / easy place to do business
  - Reduce administration & legal elements
    - » User-friendly contracts & agreements;
    - » Complete agreements, don't protract negotiations; 80:20 rule.
  - Remove focus on IPR
    - » You cannot patent or work on every invention;
    - » Easy-access IPR portal;
    - » Straightforward license & start-up terms.
  - Culture, attitude – accept some risk
    - » Staff have authority to make decisions; “Yes”;
    - » Recognise & reward success
    - » Don't dwell too long on any mistakes. Keep moving;



# St Andrews KTC

*What do  
you get in  
Return?*

- Return on activity to INSTITUTE
  - Money – further R&D work at fEC
  - Increase in collaborative projects with business and others
  - Reputation with business (great R&D & easy to work with)
  - Awareness of institutes contribution to region growing
  - University is a major international “business” in the region so regional bodies seeking our assistance.

Direct return to KTC = £0; indirect returns most valuable. **KTC SUPPORTS**





# A N Other University



- QS rankings leader:
  - in Czech Republic  
Charles University 233
  - so highest quality  
research in region
- Local & regional  
outreach & links
- International partners
- (Cz) government expectations?
- Senior management views?
- Entrepreneurial environment?
- Motivation / reward for academy  
to work outside academy, with  
business?
- Who owns, and has access to  
research outputs - individuals,  
University or sponsor?
- What is the operational attitude  
of research support and TLO?
- Do people want to do business  
with you and is it easy for them?



# A N Other University

Someone will want your TLO to be modelled on and aspire to be Stanford, MIT or Cambridge (....in the Czech Republic).

- 1st response - **Say No!**
- 2<sup>nd</sup> Response – have an appropriate plan.

Thank You.

