Innovation
@ The Junction

Licensing

Dr Francesco M. Colacino
Warwick Innovations

Thursday 6 June 2024
We are the WI – not the WV

Subsidiary company of the University

Group within the Warwick Innovation Group
Warwick Innovations Team
Deliver impact through commercialisation
Manage university research intellectual property
Why we do it?

**WE HELP DEVELOP WORLD-LEADING IDEAS**
We provide expertise and resources to help Warwick academics to develop skills and world-leading disruptive ideas.

**WE HELP TRANSLATE RESEARCH**
We help Warwick academics to translate their ideas, protecting IP & making research commercially viable.

**WE HELP CONNECT IDEAS TO THE WORLD**
We identify end users for innovations and deliver real world impact through commercialisation.

**WARWICK ACADEMICS & RESEARCHERS**
Explore how we can support Warwick academics and researchers to achieve commercial success.

**PARTNER OPPORTUNITIES**
Make connections and discover a range of exciting and beneficial opportunities to work with us.

Because it benefits the public (taxpayers) who funded our research in the first place
Where Does IP Come From?

Research grants
Contract research
Studentships / student projects
Teaching material
Consultancy
Experience
“In the bath”
IP includes...

- Inventions/patents
- Know-how
- Trade secrets
- Data
- Databases
- Formulae
- Algorithms
- Software
- Drawings
- Specifications
- Biological materials
- New molecules
- Methods
- Teaching materials
- Etc.
The Plan

THE WHAT
What is Licensing?

THE WHY
What are the benefits for the Academics and the University... and society?

THE HOW
How does licensing happen?
The What
IPR commercialisation routes

- Licensing
- Assignment / sale
- Spinout
- Direct sale of products and services
- Research collaboration
Licensing at its core
...one of the exploitation routes

Granting rights to use Intellectual Property while retaining ownership.

**Licensor**
Granting licence

**Licensee**
Holding licence

**Licensing Deal:**
3rd party further develops, and uses or sells

**Licence vs. License**
Noun vs. verb (UK)
Licensing transactions

Licensing IPR is a transaction:

- It may involve monetary consideration – signing fees, milestone fees, royalty payments....
- It may involve “just” permission to use ... with conditions, e.g. recognising the source
- It may be time-bound or perpetual or task focused (e.g. evaluation licence)
- It may in a specific technical field and/or geography
- It may be exclusive or non-exclusive
- ....
Licensing is hard work...

Statistics reported (British Business Bank’s presentation at the University of Birmingham, 2018-ish)

- 88.9% of University Research does not have a place in the market...

- It does not mean that it is not relevant to society...

- It may mean that it is not immediately relevant... too ahead of the game?
  - Timing is of the essence!... Too late is also bad.

- It could be developed further or in another direction...

- Or, sometimes, it is not relevant to how Industry would make it happen to solve societal problems... and make profits
  - Their industrial plans are already committed to a technology roadmap
  - The new technology, even if superior, does not justify investments
  - The new technology does not pose a threat if adopted by competitors
## Licensing is hard work...

### Marketing Campaigns – 12 months (5 out of 43 active unencumbered cases)

<table>
<thead>
<tr>
<th>Department</th>
<th>Companies Contacted</th>
<th>Marketing Campaigns</th>
<th>Replied</th>
<th>Discussions</th>
<th>Status</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept. A</td>
<td>31</td>
<td></td>
<td>1</td>
<td>4</td>
<td>Ongoing</td>
<td>Sourced collaborator (UK); submitted commercialisation grant applications for TRL5+.</td>
</tr>
<tr>
<td>Dept. A</td>
<td>55</td>
<td></td>
<td>1</td>
<td>5</td>
<td>Abandoned</td>
<td>Abandoned - Poor feedback and little interest helped in decision to drop patent.</td>
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<tr>
<td>Dept. A</td>
<td>57</td>
<td></td>
<td>2</td>
<td>9</td>
<td>Ongoing</td>
<td>Discussion with DE/US company over a period of 6+ months, then not interested. Target sector adjusted based on feedback.</td>
</tr>
<tr>
<td>Dept. B</td>
<td>On Hold</td>
<td>On Hold</td>
<td>On Hold</td>
<td>1</td>
<td>Ongoing</td>
<td>Exploring a warm collaborator (UK) from the academic’s before moving to full-blown marketing stage.</td>
</tr>
<tr>
<td>Dept. C</td>
<td>32</td>
<td></td>
<td>2</td>
<td>8</td>
<td>In progress</td>
<td>Targeting a list of preselected companies at an industry event.</td>
</tr>
</tbody>
</table>
Feedback from 1 Potential Licensee

- “It is too early for us as we consider it to be at TRL2”… We thought it was TRL4!
- “We can think of developing it further when we plan for the next R&D projects, talk to us in August 2025…”

Positive comments from the Academic on how to start again...

- “We did get some useful information from them in terms of ranges etc.”
- “I've built a new prototype that will do higher speeds and have another in development to get to even higher speeds still by using some new electronics - I did this following the steer we had on the desired speed range”
- “We'll have a bunch of data to go with any pitch next time from the tests we are running - so we did get some useful input from them”.
- “If we take this any further up the TRL ourselves, then we might like to consider setting up a spin-out.”
- “As long as after each of these we take a step forward, then we are not wasting our time.”
The Why
So, what’s in it for me?
There is a lot to be gained...

**PROMOTION**
Appraisals are being amended to recognise innovation & impact activities

**NEW FUNDING STREAMS**
Translational & collaborative funding calls with industry

**SKILLS, KNOWLEDGE & NETWORKS**
Opportunities to explore research in action

**FINANCIAL REWARDS**
Consulting fees, licensing income, share value in spin-outs

There is a lot to be gained…
Financial Rewards – Licensing income

• Relevant when IP is licensed by the university where you are a named inventor (Creator) on the Division of Proceeds form.

• Licensing income is distributed back to inventors in the following proportions:
  • 50% to Creators
  • 25% to Department
  • 25% to Warwick Innovations

• Payments are made once external IP and associated legal costs have been covered.

• Payments are normally made annually following the end of the academic FY.
Financial Rewards - Consulting

CONSULTING FEES

- FP10 describes the procedure to enable academic staff to engage in permitted external activities for up to two days per month.

- Academics are responsible for all their own tax and legal liabilities. Day rates vary and must be negotiated.

- Consulting work can lead to wider, longer term research collaborations.
Benefits to the University

- Reputation with Industry, Gov, UKRI, other Universities, etc.
- More industrial partnerships
- Research contracts from industry partners
- Edge when it comes to submit research proposals
- REF returns and IMPACT cases
- Possibility to involve industrial partners in teaching and students’ placement
- Possibility to be involved in Policy making
- ...
Licensing to exploiters... not for shelving!
Licensing implies development plans and go-to market

Remembering different reasons for licensing – blocking, really want something else
The ‘value’ of university research

If we are using the People’s money, we best make sure they get something back for it!

That’s why we innovate & commercialise research.
Licensing vs Assigning IPR

Assigning is...

Granting rights to **use** the Intellectual Property while **retaining** relinquishing ownership.

Give up all rights to the IP, usually for a fee or for shares/equity

- Problem:
  - No control over what happens to the IP in the future
  - May lose your use of the IP for further development
  - May not require real involvement by inventors

- Not generally used by public research institutions

**WHY?**
Why do companies may want to license IP from Universities?

- Quicker to market
- Reduce costs (e.g. internal R&D)
- Share the market
- Enhances products & portfolios
- Acquire know-how and market knowledge along with the IP
The How
Bridging the gap

“Valley of Death”

Research Funds

Sales

TRL 1
Basic research

TRL 3
Lab Demo

TRL 7
Proven prototype

TRL 9
Final Product

Proof of Concept
Type of support

Mentorship  IP Protection  Translational Funding  Business Planning  Industry Insight  Team Construction
Two-sided approach – Internal & External
Our key process steps - Internal

1. Engage with the research community
2. Capture disclosures (ROIs)
3. Convert to a resourced project (COAP)
4. Develop & Transact the IP
5. Post-deal management

- Engage with the research community
- Capture disclosures (ROIs)
- Convert to a resourced project (COAP)
- Develop & Transact the IP
- Post-deal management
Translational Funding
Increase the TRL level of your technology

>£1.15M till 2026
(≈50% spent)

Proof-of-Concept
WI EPSRC IAA
MRC IAA

Business and Commercialisation

Proof-of-Concept
15%

WI EPSRC IAA
30%

MRC IAA
44%

TRL 1
TRL 2
TRL 3
TRL 4
TRL 5
TRL 6
TRL 7
TRL 8
TRL 9
Value inflection
How to make best use of translational funding

A value inflection point in technology transfer is a **pivotal experiment** that helps determine if an invention is worth pursuing or if it has commercial appeal.

- Is your technology development on the same development curve of your potential licensee/target market?
- Is your experiment going to be pivotal for that technology development?
- Can you reach the “wanted” breakthrough?

Research Commercialisation & Training Programmes

Upcoming Cohorts

- **BBSRC ICURE Engage**
  - April 2024
  - Applications Open: 04/03/2024
  - Start Date: 22/04/2024
  - Delivery Partner: The Helix Way

- **ICURE Discover**
  - April 2024
  - Applications Open: 12/02/2024
  - Start Date: 15/04/2024
  - Delivery Partner: NxNW Partnership & The Helix Way

- **ICURE Explore**
  - April 2024
  - Applications Open: 07/02/2024
  - Start Date: 29/04/2024
  - Delivery Partner: Midlands Innovation

- **ICURE Engage**
  - May 2024
  - Applications Open: 07/02/2024
  - Start Date: 29/04/2024
  - Delivery Partner: Midlands Innovation

- **BBSRC ICURE Engage**
  - September 2024

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Transferable Skills for Science, Engineering and Medicine

**CH957 - Business, Innovation and Commercialisation for Researchers**

**Module summary**

Module Leaders: Dr Shum Prakash and Dr Tim Francis (Warwick Innovations)

In a world with constant change, often dynamic, with far reaching global impact - economically, socially, and environmentally - there are many opportunities to develop solutions to meet the challenges ahead.
Two-sided approach – Internal & External
Our key process steps - External

- Preparation
  - Identify Prospects
  - Research Prospects
- Contact prospects
- Prospect Likes?
- Prospect Wants?
- Negotiate

Key Steps:
- Marketing Materials
- Term Sheet
- Information Resources
- CDA
- Licence Agreement
Case Study – negotiation timeline

15 months in total!
At times it lost momentum
Where could it have been made faster?
Why may it take so long?

- Technology transfer is not like building a block-brick wall

Each technology has its own features that uniquely shape the licensing deal.
## Overview of the licence and spin-out process

<table>
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<th>Stage</th>
<th>Year</th>
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</table>
Patent prosecution process and time to license

30-months window of opportunity

**STAGE 1**

*Priority (£5k-6k)*
- A national filing in one country

**STAGE 2**

*Patent Co-operation Treaty (PCT) Filing (£5k-6k)*
- Reservation right for most countries of the world

**STAGE 3**

*National Phase (£5k-£6k per territory)*
- A national filing in one territory

*Examination (£10k-£15k per territory)*
- Occurs independently in each territory filed

*Grant*
- The application becomes a granted patent in a specific territory

**Publication**

Dependant on Country filed in

Day 0 Priority Date

1 year

12 months

18 months

30 months

30-months window of opportunity
Technology valuation

• Valuation is very difficult 😊

• There is no single correct methodology or answer.

• There are a number of different methodologies, each of which is sensible in its own way.

• There are many courses, titled ‘valuing technology’, no-one ever leaves satisfied because everyone wants the single answer and there isn’t one.

• In technology transfer we have a set approach to liabilities, indemnities, warranties, publication rights, improvements, etc. This fundamentally affect perceived value

“Price is what you pay, value is what you get.”

Warren Buffett
Some methods for Technology Valuation

- No single method is sufficient
- Sometime not all methods are appropriate or possible

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Example</th>
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<tbody>
<tr>
<td>Cost</td>
<td>Total cost of goods sold</td>
<td></td>
</tr>
<tr>
<td>Market</td>
<td>Business value comparables</td>
<td></td>
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<tr>
<td>Buyer</td>
<td>Value of product to the buyer</td>
<td></td>
</tr>
<tr>
<td>Royalty Rate</td>
<td>Benchmark Industry Averages</td>
<td>25%</td>
</tr>
<tr>
<td>Rule of Thumb</td>
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</tbody>
</table>

A combination of assessment of the fundamental position of the invention coupled with good market research to benchmark with pricing of other inventions is important for obtaining the ‘big picture’.
Royalty Rates – Benchmark Industry Averages

Typical royalty rates by industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>Low %</th>
<th>Average %</th>
<th>High %</th>
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<tbody>
<tr>
<td>Medical Device</td>
<td>3.71</td>
<td>4.35</td>
<td>5</td>
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<tr>
<td>Pharmaceutical</td>
<td>4.75</td>
<td>5.66</td>
<td>6.57</td>
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<tr>
<td>Chemicals</td>
<td>2.82</td>
<td>3.7</td>
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<td>Electronics</td>
<td>0.5</td>
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<td>5</td>
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<tr>
<td>Machinery</td>
<td>0.33</td>
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<td>10</td>
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</tbody>
</table>

Pharma royalty rates at different stages

<table>
<thead>
<tr>
<th>Stage</th>
<th>Typical Royalty (%)</th>
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<tbody>
<tr>
<td>Pre-Clinical</td>
<td>0 – 5</td>
</tr>
<tr>
<td>Phase I</td>
<td>5 – 10</td>
</tr>
<tr>
<td>Phase II</td>
<td>8 – 15</td>
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<tr>
<td>Phase III</td>
<td>10 – 20</td>
</tr>
<tr>
<td>Approval</td>
<td>20% +</td>
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</table>

Role of an Academic

Yes, you have a fundamental role!

Key contributions of researchers

• Generate brilliant ideas which provide the basis for societal solutions.
• Disclose inventions with societal or commercial potential to the TTO.
• Assist the TTO in seeking protection (e.g., patent) before publishing the results of the research.
• Tap into their networks and help raise money, engage with potential licensees, investors, and other partners.
• Support further development of the inventions (e.g., as a consultant to a licensee or by engaging in translational funding).
• Support students that want to take technologies developed from their studies further.
• Ensure continued enthusiasm from the whole TT team.

What about when IPR is jointly owned?

Unless already determined in research collaboration agreements...

- Inter-Institutional agreement are put in place to nominate the **lead exploitation partner**
- The lead exploitation partner... leads on IP exploitation (doh!)
- Plans for exploitation may or may not be negotiated at the outset (depends on who the partner is!)
Licensing to spinouts

Advantages

Spin out will be dedicated to developing the invention as its first priority
Will work closely with one or more of the inventors
Research institution knows the people involved
Financial arrangements may include shares so upside even if technology doesn't work

Disadvantages

Substantial risk of conflict of interest
Concessions on future IP
Misuse of institutional resources or staff time
Must find management talent and raise investment money
Difficulty in marketing and developing distribution channels
What happens after a licence is granted?

- Scheduled (yearly or more frequent) monitoring of IP development & go-to market plans
- Monitoring of sales & share of proceeds (where applicable)
- Monitoring (via R&IS) of potential impact cases
- May involve some consultancy work for the academic team to support development by the industrial partner
- Sub-licensing may occur
  - To novate the same terms to a third party (basically acting as a substitute to the original licensee)
  - To expand the use of IPR in different markets/applications that may differ from the original intentions.
  - In each case, approval by the University usually required as to vetting the terms
- IP-related costs are borne by the licensee
Quiz time!
Question 1.

Does licensing payments harm the relationship?
Question 2.

Can you only license patents?
Question 3.

Can you license patents still under examination?
Question 4.

Is it better to license to big corporate or SMEs?
Innovation @
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NEXT SESSION:
The what, why and how of creating spin-outs

Thursday 27 June 1530 h
Dr Tim Francis