



OXENTIA

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Innovation Consultancy

Introduction to Commercialisation

UKMMN Conference, Wednesday 14th June, Wotton House, Dorking

Bruno Reynolds PhD MBA

Introductions



Bruno Reynolds
Managing Consultant

- Leads Oxentia's Technology Commercialisation services
- Experience in early-stage innovation management
- Supporting entrepreneurs and SMEs with IP and route to market strategies
- BSc Biological Sciences; MSc Neuroscience; PhD and Postdoc in Developmental Biology; MBA



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History of Oxentia



Isis Innovation Ltd



International expansion to Asia, Europe and Latin America.



Rebrand and spinout

1988

2004

2009

2015

2017

2022

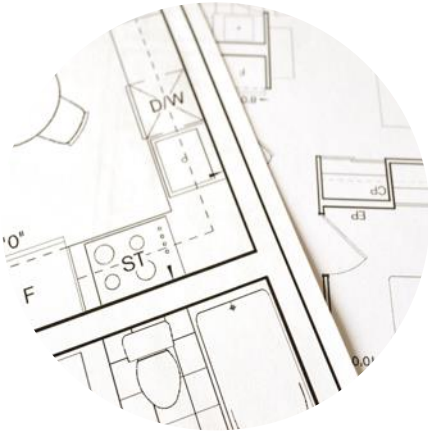


Queen's Award for Enterprise.



Oxentia Foundation created

What we do



Consulting

We offer **strategic support** for innovation strategy, IP licensing and sales, IP portfolio management, intrapreneurship, and relationships between universities and industry.



Training & Mentoring

Our training offering ranges from **accredited courses** for innovation professionals, to **masterclasses** for academics, entrepreneurs, and corporate teams. We offer standard as well as **bespoke training** programmes, in a variety of formats and languages.



Accelerators

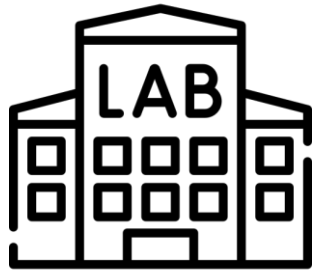
We help teams and individuals **accelerate innovation** through our proprietary accelerator programmes, designed to leverage the strengths and opportunities in **different ecosystems**.

Agenda



- Introductions
- Commercialisation fundamentals
 - The commercialisation pathway
 - Characteristics of a license vs spinout
- Intellectual Property
 - the patent process
 - IP due diligence
 - IP Landscaping
 - claims analysis
- Licensing
 - Technology out-licensing process
 - Market research
- Spinouts
 - Equity distribution
 - Funding sources
- Ecosystems
 - location
- Summary
 - top 10 tips on how to commercialise your research outputs
- References, support and further reading

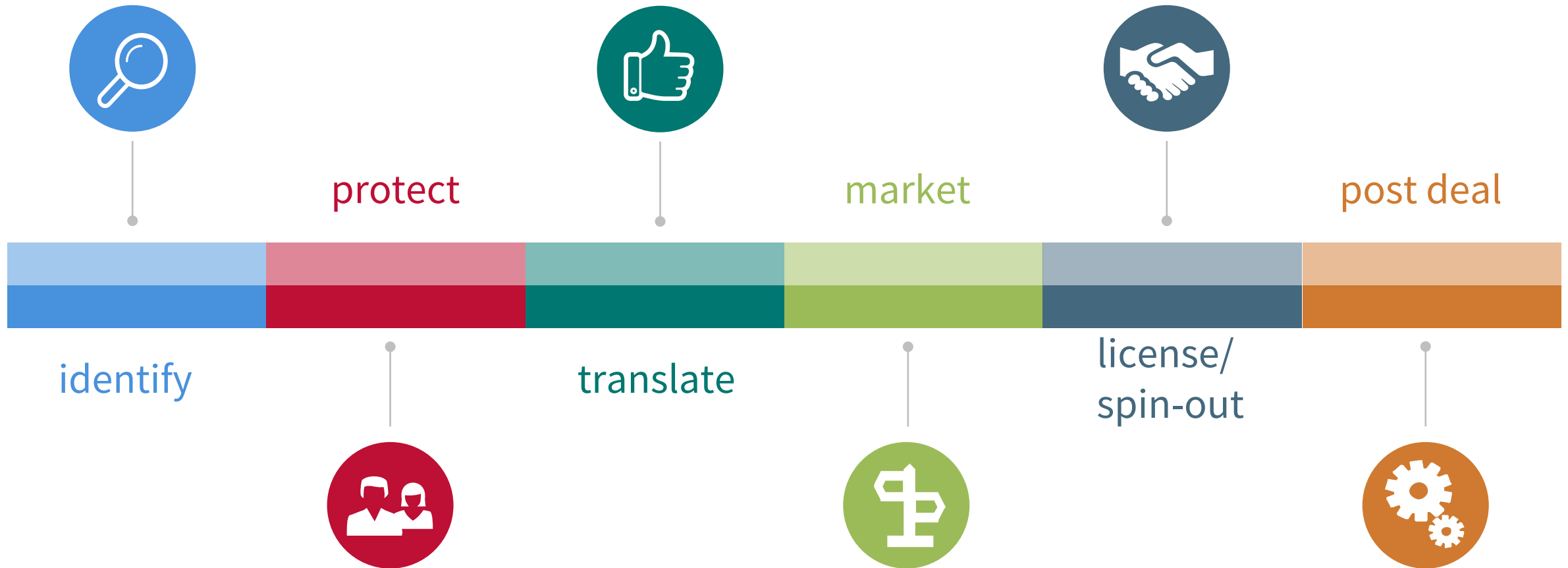
Introduction to Commercialisation



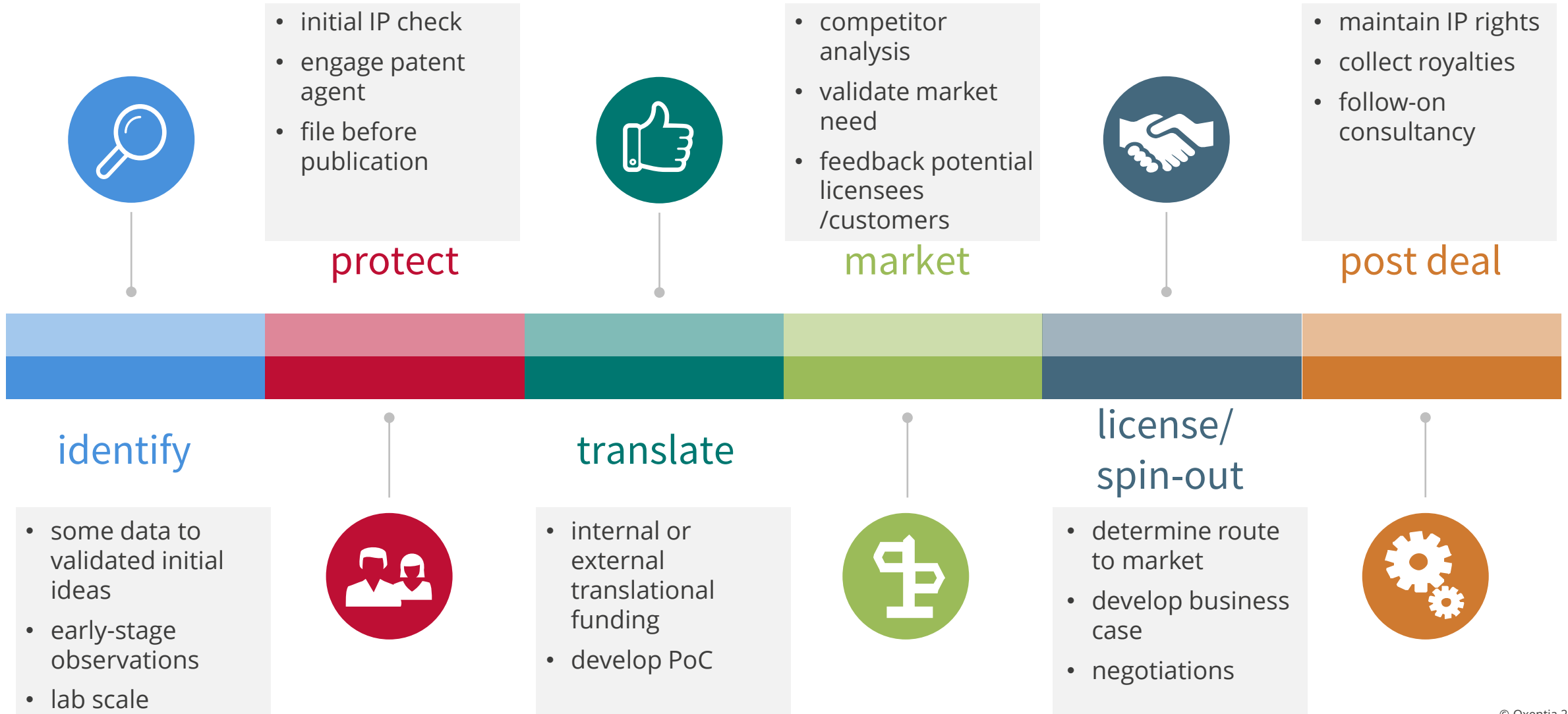
Market

- Commercialisation is a very involved process, an activity you have to prioritize and work with several partners
- What it isn't....
 - file a patent and handover to the KEC / RIO / TTO (commercialisation team)

Key stages in the commercialisation pathway



Key stages in the commercialisation pathway



License versus Spinout - considerations

Licence

- Single application for the technology, e.g., drug for Parkinson's Disease
- Established market and players
- Incremental improvement or enhancement
- Research institution has access to proof of concept funds
- Interested Licensee

Spin-out

- Multiple applications for the technology – “platform technology”, e.g., delivery system for drugs to the central nervous system
- Nascent market with high growth potential
- Disruptive technology
- Research institution has access to investment funding
- Interested Investor



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Intellectual Property

the patent process
performing IP due diligence
claims analysis

The patent process

Priority Application

12 months

- Initial filing provides your priority date – start of 20 years
- Can add developments within 1st year
- can request an early (6 month) search and examination report

PCT filing

18 months

- PCT stage facilitates multiple simultaneous national filings
- International Search Report published 18 months from the priority date
- the 30 month – entry into national stage – is a key go/no/go decision point

National Examination

2 – 5 years

- National Examinations
- Separate applications made in chosen countries
- ISR used as basis for national search
- translations may be required
- potentially a lengthy and expensive process

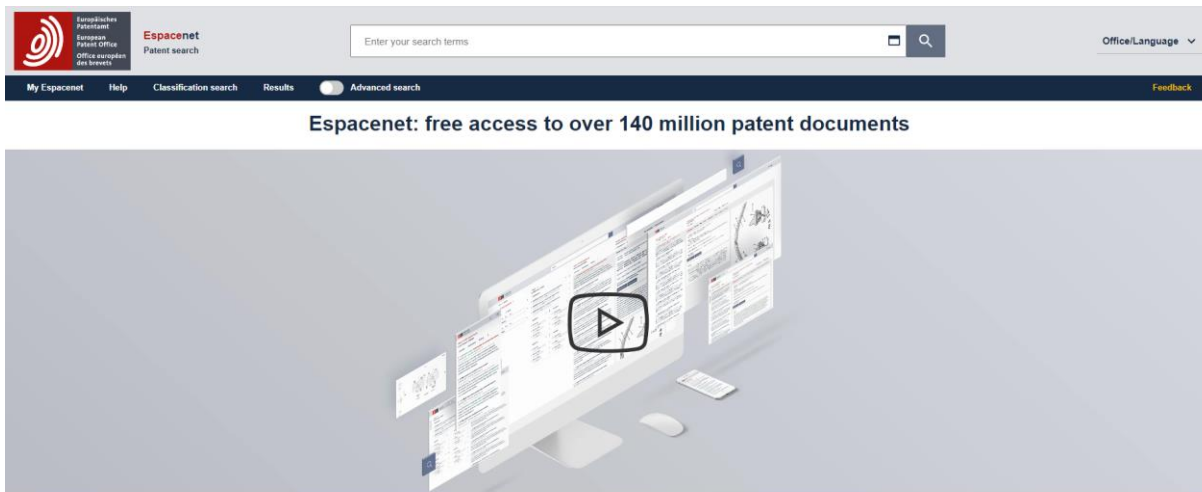
Granted Patent

up to 20 years

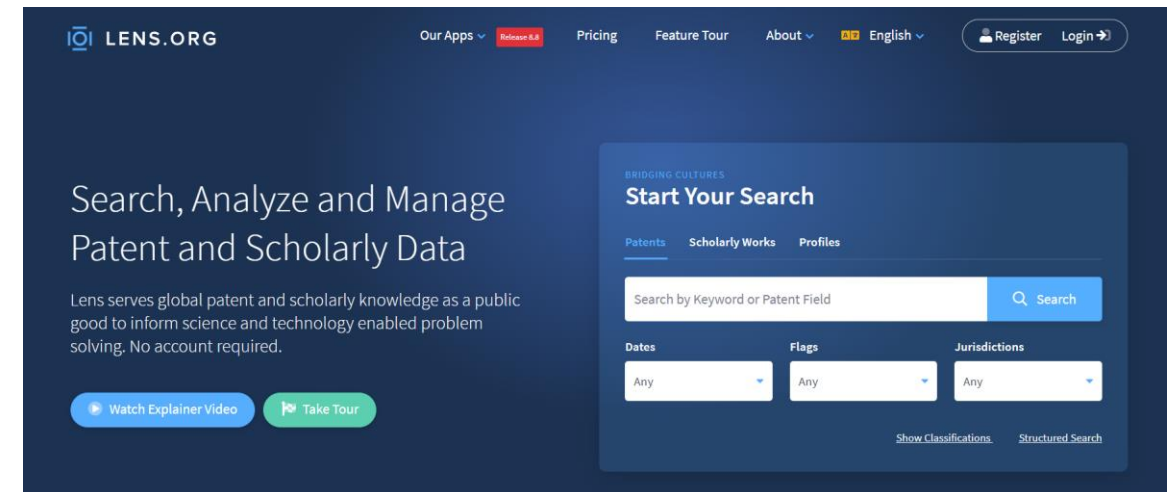
- Granted patent
- Enforceable rights – can be retroactively enforced
- Typical lifetime patent costs vary significantly – indicative costs:
 - US/EU £60,000
 - Japan £70,000

IP due diligence

- You can do this yourself, or your Research and Innovation office (TTO) may do this for you
 - patentability searches – *is my invention novel? can I patent?*
 - Freedom to Operate – *are there any clear barriers to commercialisation?*
 - Competitor analysis – *what does the competitor landscape look like?*
 - Commercial strategy – *who might want to license or co-develop my invention?*



<https://worldwide.espacenet.com/>



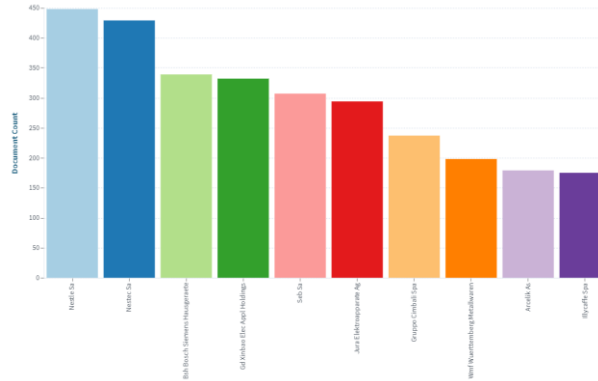
<https://www.lens.org/>

Industry trends

Number of patent documents filed/year



Patents filed by applicant



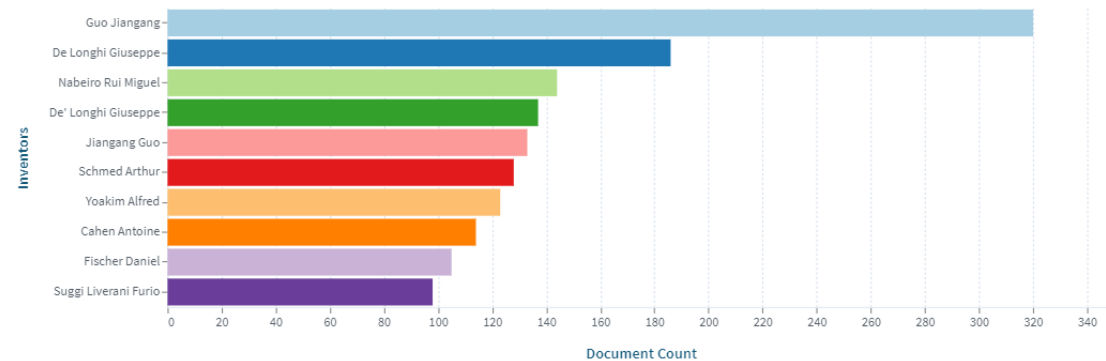
Patents filed by jurisdiction



Patents filed by CPC classification

223 A47J31/0663	207 A47J31/0668	197 A47J31/3609	413 A47J31/3614	283 A47J31/3619
301 A47J31/3633	160 A47J31/3638	163 A47J31/407	329 A47J31/42	219 A47J31/44
330 A47J31/4403	169 A47J31/4467	387 A47J31/4485	244 A47J31/4489	259 A47J31/542
164 A47J31/545	255 A47J31/56	233 A47J31/60	378 B65D85/8043	160 G07F13/065

Patents filed by Inventor



Closest prior art – claims analysis

- Search for the closest prior art by using combinations of keywords (and CPC codes) that describe the key inventive step
- Analyze the claims section of the closest prior art – for similarities and differences with your technology
- Do this when:
 - thinking about filling a patent – patentability check
 - before entering PCT stage – regional FTO check
 - annually thereafter – competitor activity /reaction

(57) I claim:

1. A pair of grinding burrs for use in a coffee grinder, comprising a stationary disk and a rotary disk, each of said disks having a multiplicity of teeth arranged in stages about the center of said disk, one of said disks having its multiplicity of teeth adapted to nest among the multiplicity of teeth of said other disk, each of said disks having

a first stage of teeth comprising at least four teeth aligned in a circular row about said center and spaced apart a distance at greater than the average diameter of coffee beans to be ground;

a second stage of teeth aligned in at least one circular row about said center and spaced outwardly from said first stage;

a third stage of teeth aligned in at least one circular row about said center and spaced outwardly from said second stage, each of said teeth having a triangularly shaped leading surface forming a first apex, a triangularly shaped trailing surface forming a second apex, and a pair of lateral surfaces converging to form a line of intersection between said apices, said leading surface being at a slope angle of between about 15° and 30° to the vertical of said disk and said trailing surface being at a slope angle of between about 40° to 60° to the vertical of said disk;

the leading face of a tooth in one row forming a line of intersection with the surface of its associated grinding burr that is coextensive with a line of intersection formed by the leading face of a tooth in the next outer row, said lines of intersection forming a continuous straight line from the innermost row to the outermost row located adjacent the perimeter of said disk, said outer stage of teeth forming V-shaped radial valleys defined by said leading surfaces and trailing surfaces with said continuous straight line extending along the bottom of said radial valleys;

said teeth in said adjacent rows forming tangential valleys therebetween; and

said radial valleys between teeth in a row located near the periphery of said disk being at least as deep as the tangential valley formed by said peripheral row with the next inner adjacent row.

2. The grinding burrs of claim 1 in which the sum of the skew angles of both disks is between about 95° to 100°.

3. The grinding burrs of claim 2 in which the sum of the skew angles is about 98°.

4. The grinding burrs of claim 1 in which all of said teeth have a trailing slope angle of about 45°.

5. The grinding burrs of claim 1 in which the width of the gaps between each tooth measured from each lateral surface thereof to the lateral face of associated nested teeth become progressively and constantly smaller from the inner most row of teeth to the outer most row in said third stage.

6. A pair of grinding burrs for use in a coffee grinder comprising a stationary disk and a rotary disk, each of said disks having a multiplicity of teeth arranged in stages about the center of said disk, one of said disks having its multiplicity of teeth adapted to nest among the multiplicity of teeth of said other disk, each of said disks having

a first stage of said teeth comprising at least four teeth aligned in a circular row about said center and spaced



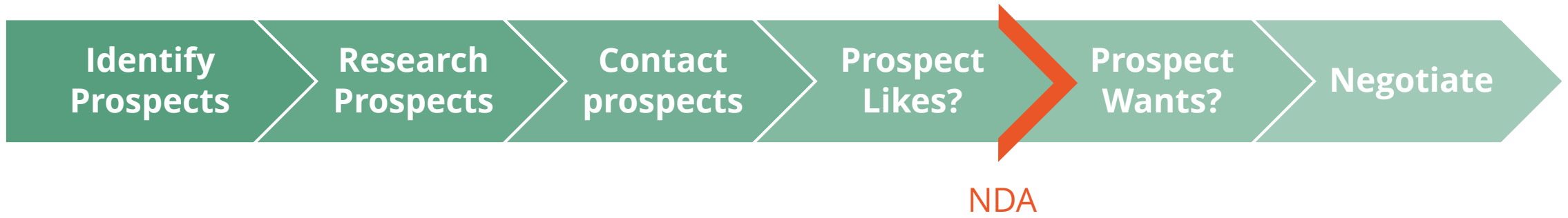
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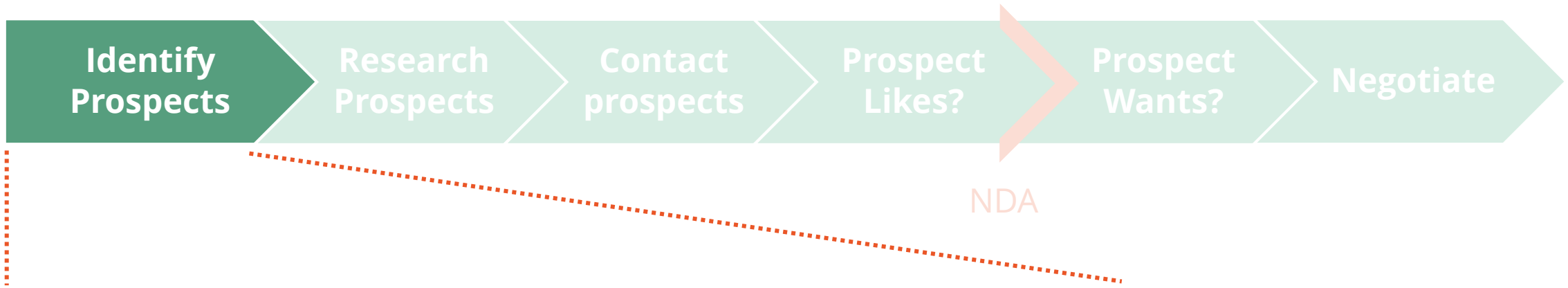
Licensing

the out-licensing process
identifying licensees

Technology out-licensing process



Market Research – identifying licensees



- Talk with:
 - colleagues
 - industry partners and contacts
 - patent attorney
 - KEC team
- Desk based searching:
 - Market Reports
 - Patent Search Engines
 - Search on the Internet





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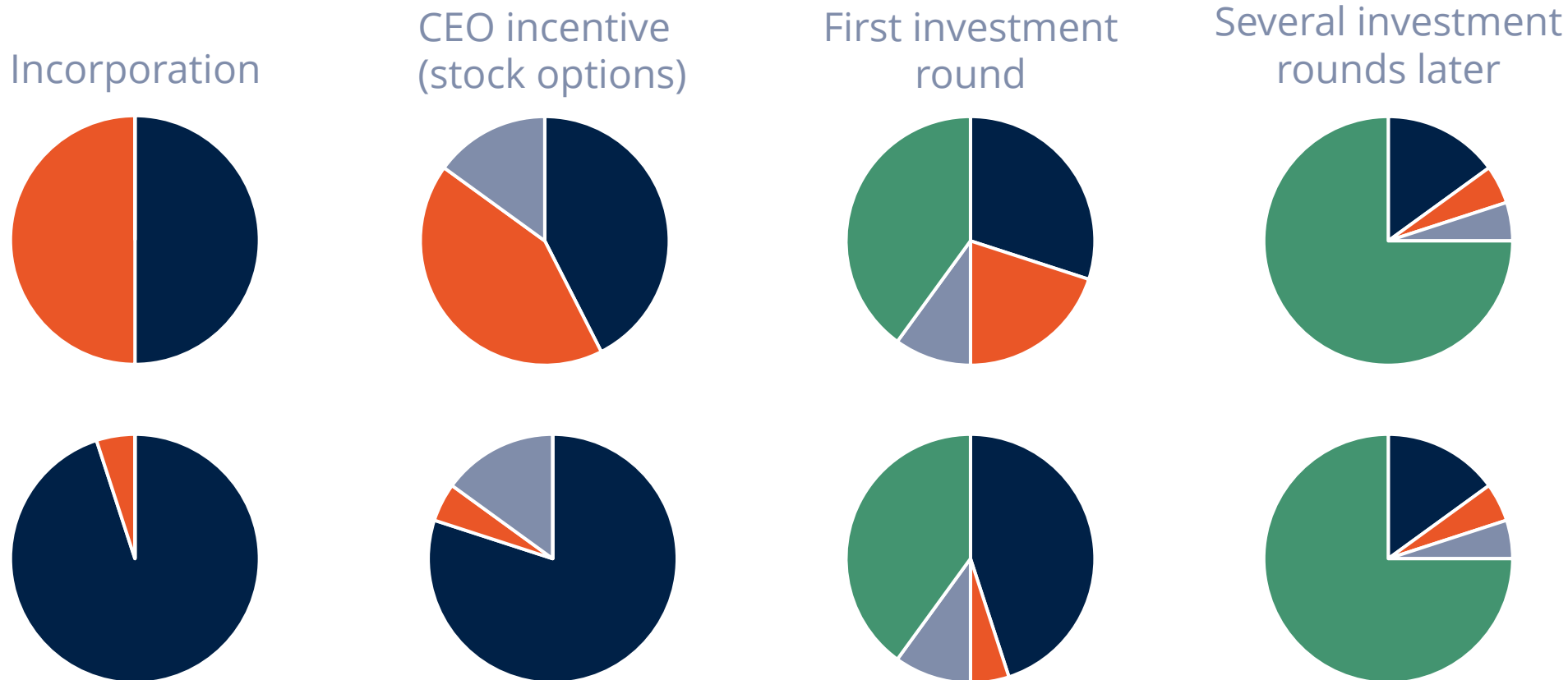
Spinouts

equity splits

funding sources

Incorporation and equity splits

Founders University Management Investors



Don't be too preoccupied with the initial equity position at incorporation

Funding sources



Type	Provider	How	Purpose /TRL
Grants	<ul style="list-style-type: none">• Government, Foundations, NGOs• Business Competitions	<ul style="list-style-type: none">• Competitive Application	<ul style="list-style-type: none">• Technology development• PoC• TRL 3 – 6
Seed funds	<ul style="list-style-type: none">• University• Business Angels• Corporate Venture Capital (CVC)	<ul style="list-style-type: none">• Business Plan• Strategic alignment	<ul style="list-style-type: none">• Incorporation• First 6 – 12 months business activities• TRL 5 – 8
Venture Capital	<ul style="list-style-type: none">• Industry specific VC firms• CVC• VC consortia	<ul style="list-style-type: none">• Business Plan• Strategic alignment• PoC• Revenue Plan	<ul style="list-style-type: none">• Technology development• Market entry• Rapid growth• TRL 7 - 9
Loans	<ul style="list-style-type: none">• Banks• VC loans	<ul style="list-style-type: none">• Business plan• Collateral• Guarantor• Repayment plan	<ul style="list-style-type: none">• Defined business investment• Growth strategy• TRL9



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Ecosystems

locations



Where to locate your spinout

- Most Spinouts chose to locate close to where they spinout – University incubator
 - preferential rates
 - close to research team
 - future recruitment
 - personal /family choice
- Many relocate when they have outgrown their original space
 - Access to investment
 - Access to Markets
 - Proximity to industry



Summary

top 10 tips on how to commercialise your research outputs

- 1. Attitude & Energy:** this must be something you want and something you prioritize
- 2. Support:** engage your Research and Innovation office (TTO) early, and keep them informed
- 3. Network:** build your network of industry contacts, go to conferences, understand industry needs and where your innovation fits, and find collaborators
- 4. Consulting:** seek out consulting opportunities, this helps with networking and understanding industry needs, and also builds your credibility as an (applied technology) expert
- 5. IP strategy:** understand the fundamentals of patents (process, timelines, and costs) and the importance of know-how
- 6. NDAs:** know when to use them and when not to (investors will rarely sign NDAs)
- 7. Industry led:** engage industry /collaborate early, so tech development is aligned with industry needs
- 8. Investors:** Pick your investors wisely, what track record do they have, what relevant industry experience do they have, and how can they support you beyond providing investment
- 9. Training:** attend entrepreneurial training sessions, information sessions, and bootcamps, find yourself a mentor and look for incubator with sector specific entrepreneurial support
- 10. Talk:** Don't hide in your department, don't think you can do all this alone – seek out and take as much help as you can

References, support and further reading

Open Source Patent analytic tools

- Espacenet: <https://worldwide.espacenet.com/>
- The Lens: <https://www.lens.org/>

Intellectual Property resources

- UK intellectual Property Office: <https://www.gov.uk/government/organisations/intellectual-property-office>
- World Intellectual Property Office: <https://www.wipo.int/portal/en/index.html>

Spinout resources

- Sifted: <https://sifted.eu/>
- Business incubators and accelerators: the national picture
<https://www.gov.uk/government/publications/business-incubators-and-accelerators-the-national-picture>

Commercialisation support services

- Oxentia: <https://www.oxentia.com/>

Thank you

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