IMPERIAL
ENTERPRISE LAB

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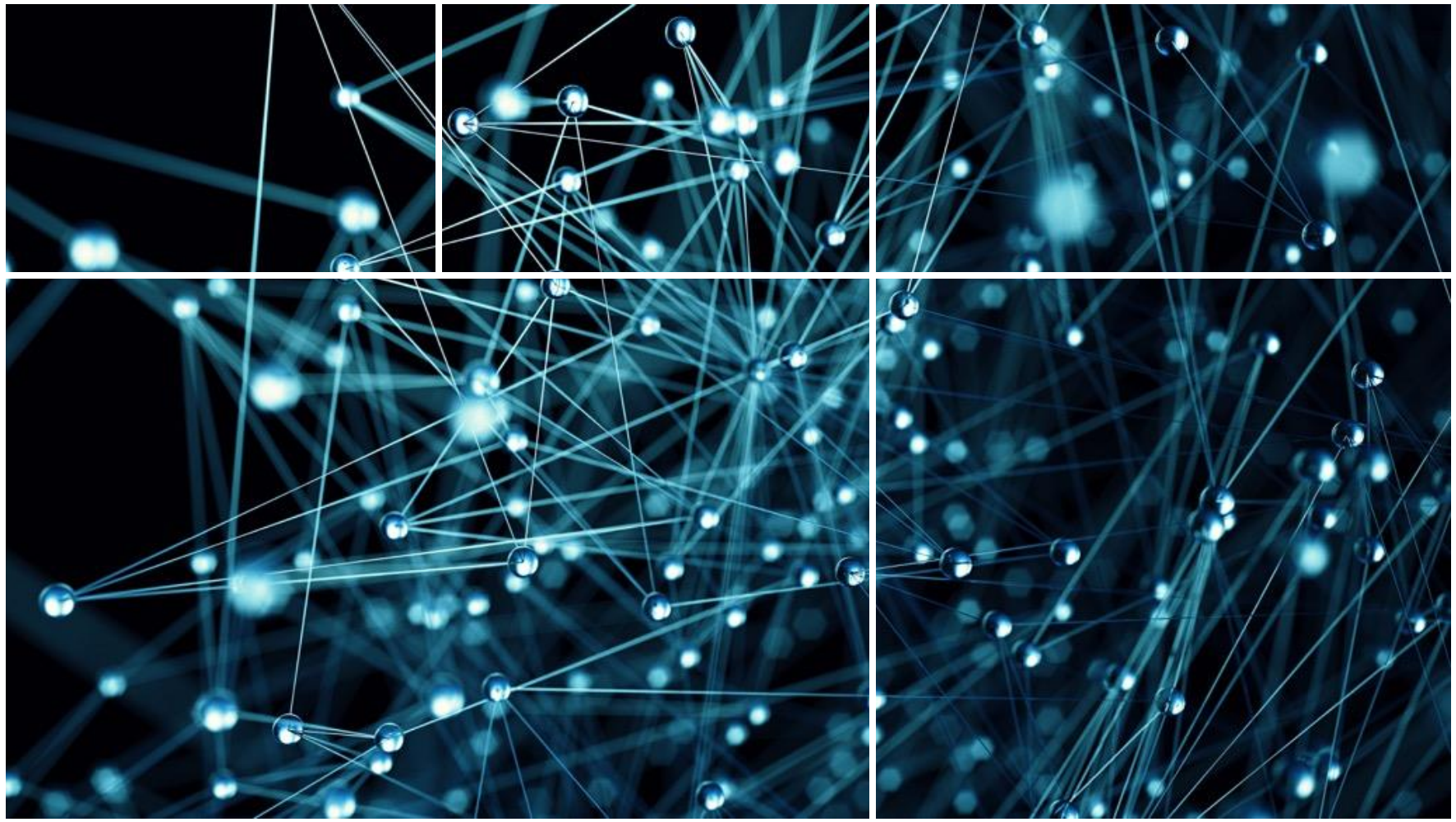

An Introduction to Intellectual Property

Georgia Mann
Josh Miller
Theo Worsley

(not legal advice!)

Objectives

- Who are we?
- What is Intellectual Property?
- What types of IP exist, and when should each be used?
- IP ownership and invention capture
- How can we effectively exploit our IP?

Who We Are

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What is Intellectual Property?

- A set of legal rights designed to protect intellectual creations.

- Balances state and individual interests by offering limited exclusivity in exchange for wider dissemination of innovation.

The Basics…

- Negative rights
  - To **STOP** others from using your creations for their own gain
- It is a piece of Property
  - It has value
  - So, it needs care
  - You can buy, sell or license it
  - You can use it for commercial gain
- BUT – only if you:
  - Identify it at the point of creation and take the right steps at the right time

Some Examples of IP Rights
(see the world through our eyes)

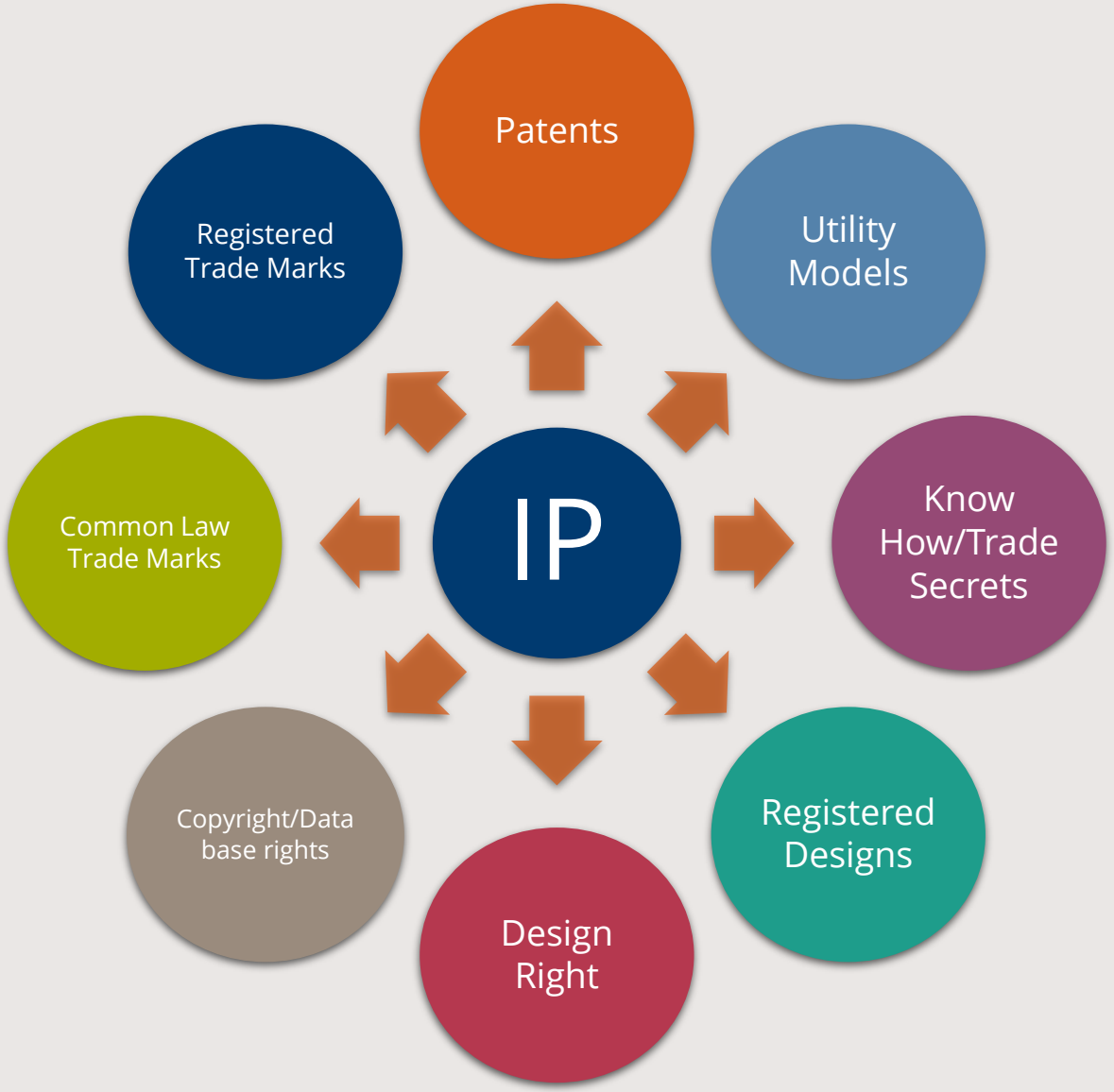
```
using System;

namespace Hello_World
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Hello World!");
        }
    }
}
```

The Importance of IP in Business Strategy

"A business strategy without an IP strategy is no strategy."

Frans Van Houten, CEO, Philips, 2014

IP Wheel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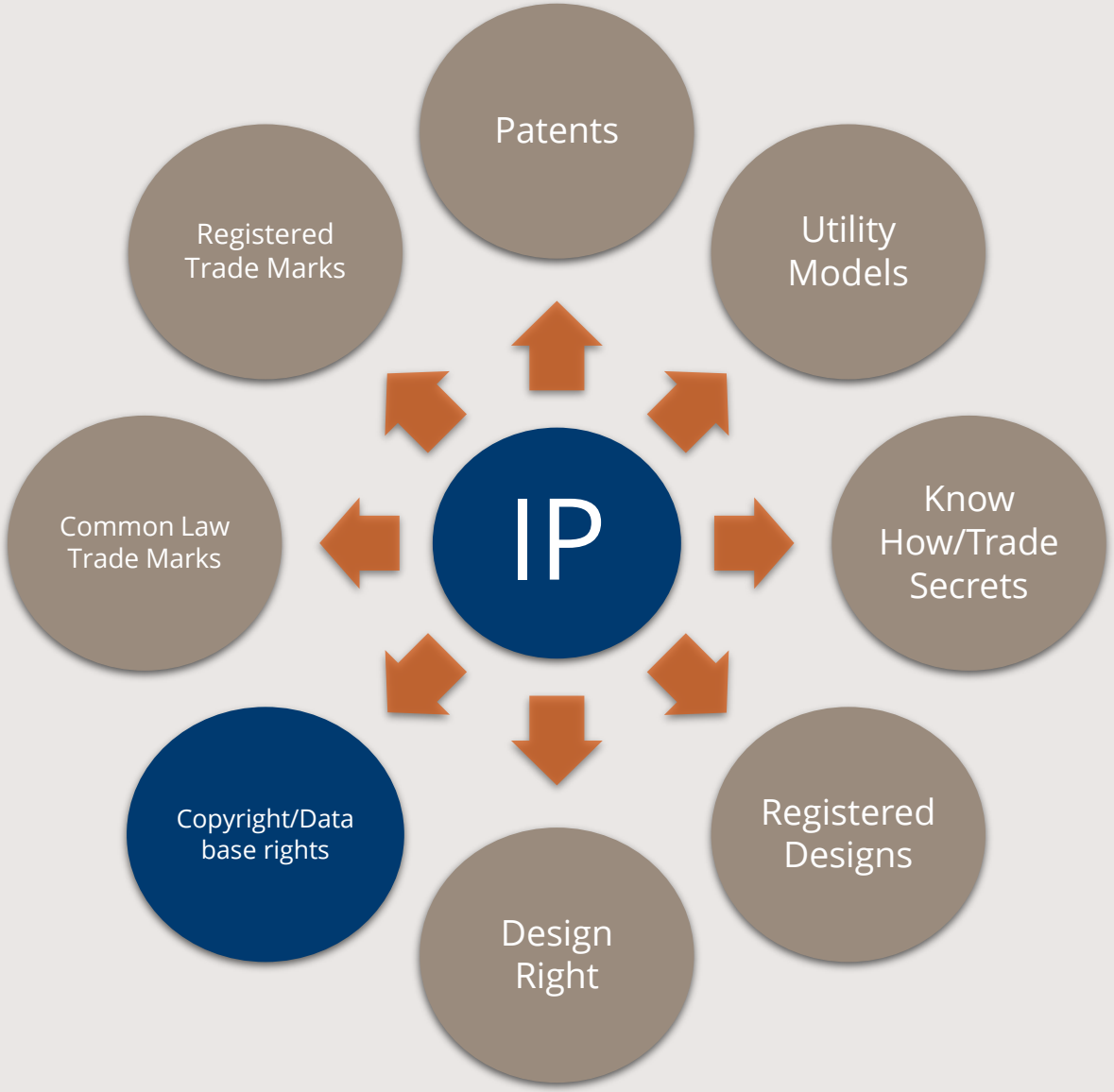
Utility Models
Know How/Trade Secrets
Registered Designs
Design Right
Copyright/Data base rights
Common Law Trade Marks
Registered Trade Marks
IP

IP Wheel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Copyright

Expressing Ideas in Original Ways

Copyright

Protects the *expression* of an idea

You get copyright protection automatically – no application or fee.

You automatically get copyright protection when you create:

- **original** literary, dramatic, musical and artistic work, including illustration and photography
- original non-literary written work, such as **software**, web content and databases
- sound and music recordings
- film and television recordings
- broadcasts
- the layout of published editions of written, dramatic and musical works

You can mark your work with the copyright symbol (©), your name and the year of creation.

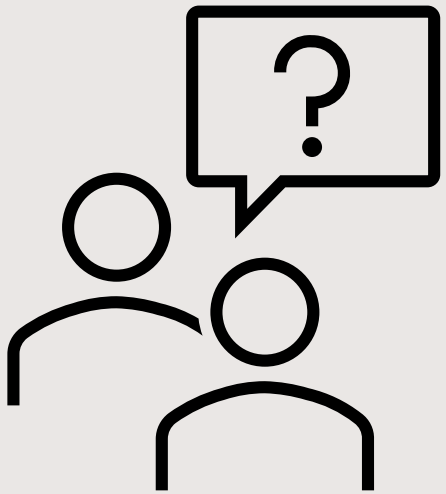
Copyright covers the **smallest** recognisable part of a work

Database Rights

Protects substantial investment (financial, human or technical resource) in obtaining, verifying or presenting data.

E.g. Training data sets for AI models

Questions



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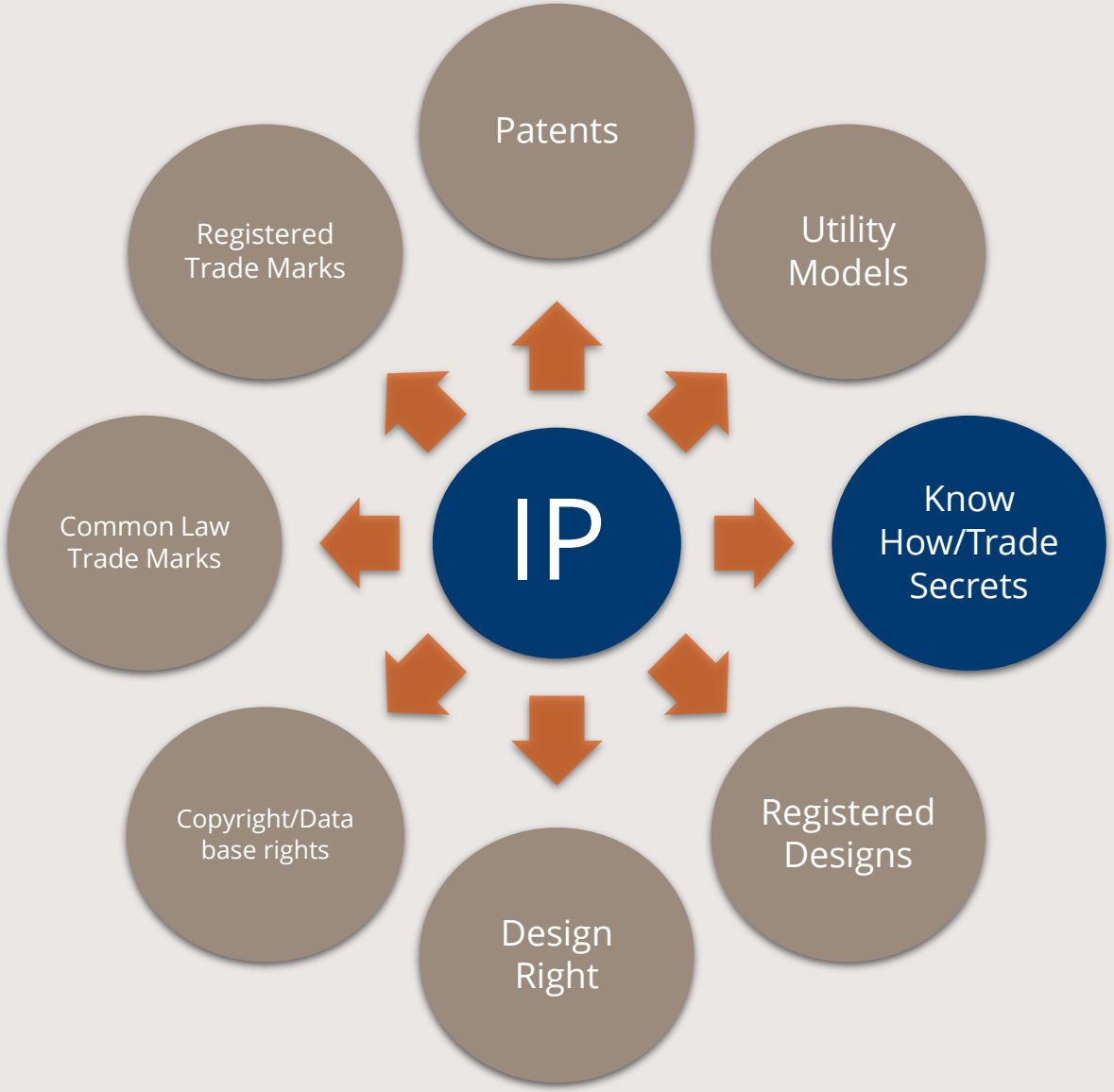
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Trade Secrets

Protection of confidential information

What is a trade secret?

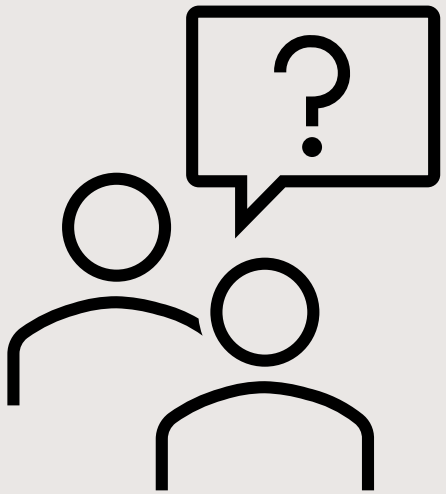
Well-known examples of trade secrets

Google

Remember…

- Trade secret:
  - No registration, but 3 requirements for legal protection
  - **Secret – commercially valuable – steps taken to keep the secret**
- No need for absolute secrecy, but ‘reasonable measures’
- Trade secret:
  - Only legal protection against dishonest acquisition/disclosure/use
- Developing and maintaining TS program
  - good business practice to prevent loss
  - legal requirement to enforce TS protection

Questions



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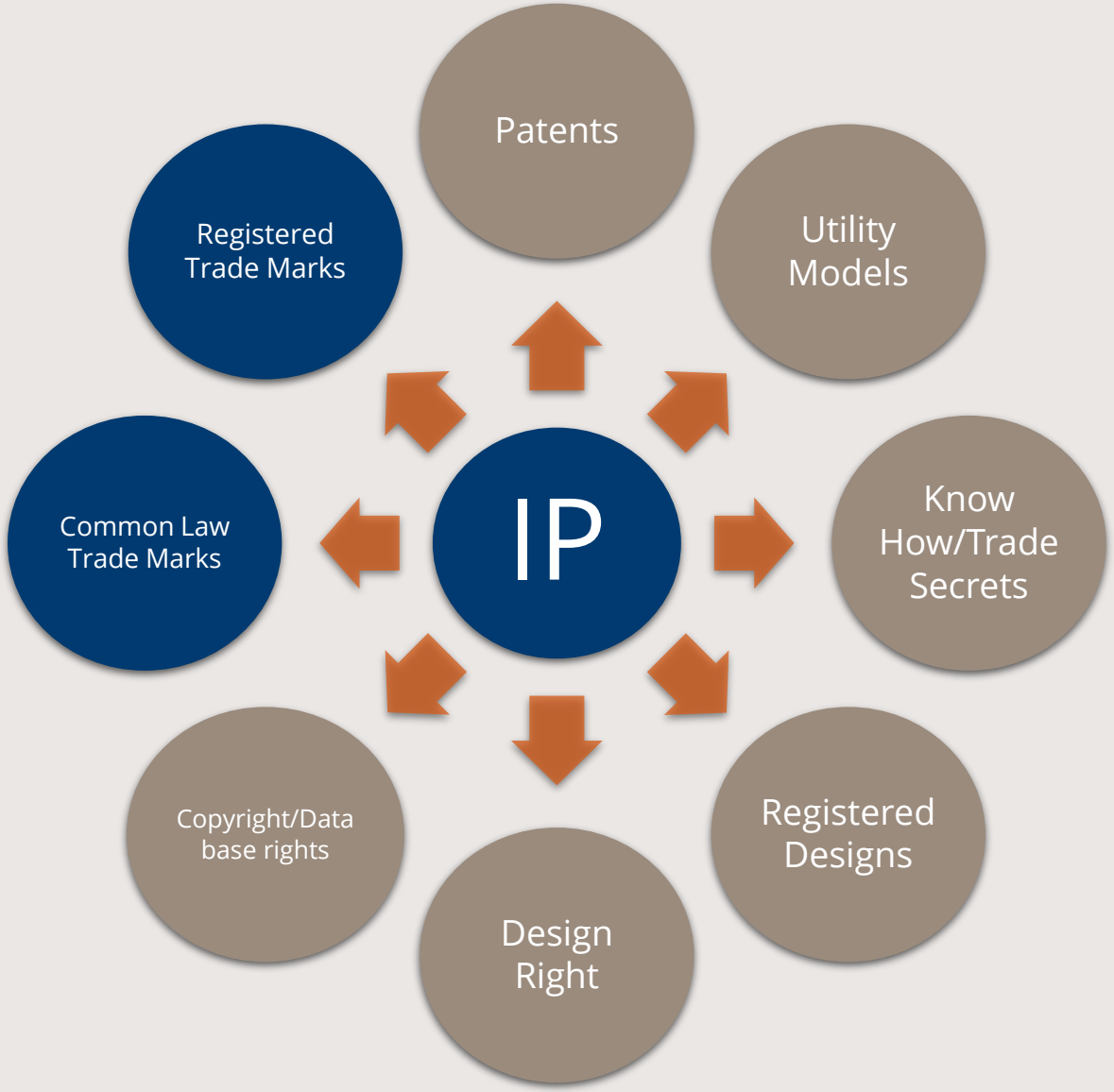
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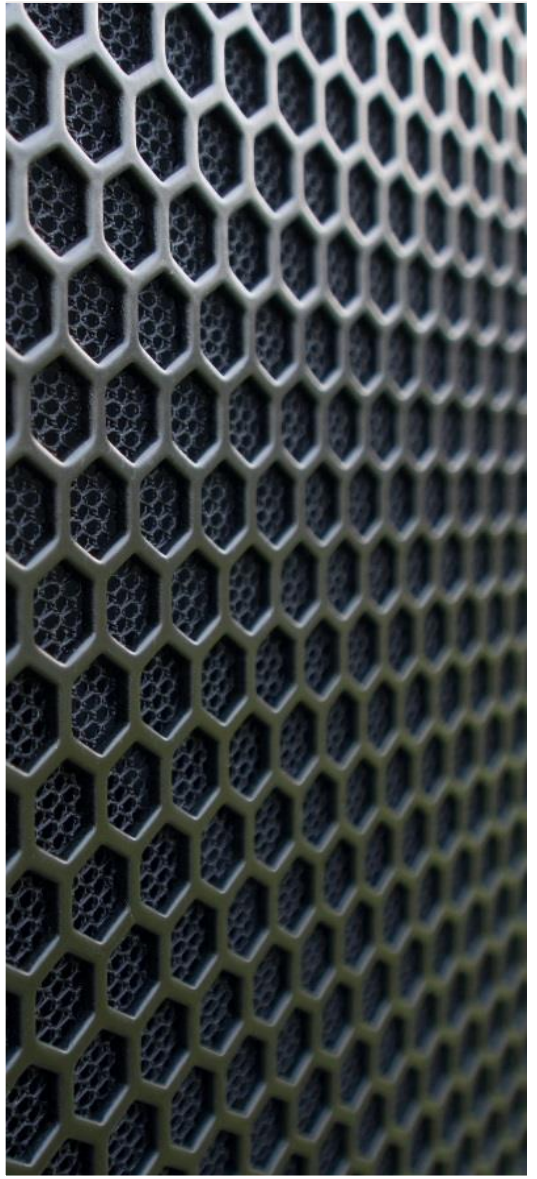
Trade Marks

How do you protect your brand?

What is a Trade Mark?

- Indication of origin
- Guarantee of quality
- Means of differentiating your product/service
- Advertising tool



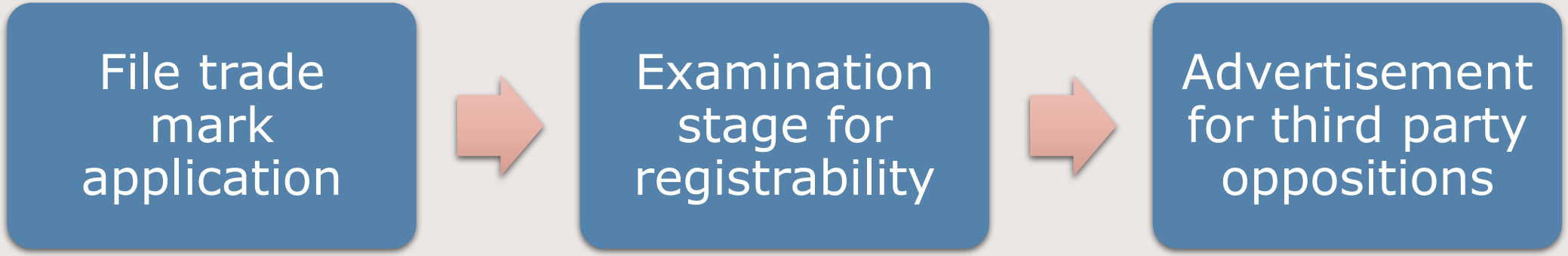
What can be Registered as a Trade Mark?

- Number (e.g. 3 mobile)
- Shape (e.g. Toblerone)
- Packaging
- Slogan (e.g. "*Just do it*")
- Smell
- Sound
- Colour
- Moving Images

What cannot be Registered as a Trade Mark?

- Descriptive words or elements: e.g. global strategies (for investments services), the supermarket (for supermarkets)
- Generic product names: e.g. escalator, aspirin
- Immoral marks (explicit content/wording)
- Protected marks (Olympic rings, Royal coat of arms)
- If the trade mark is not distinctive at the outset it may acquire distinctiveness through use

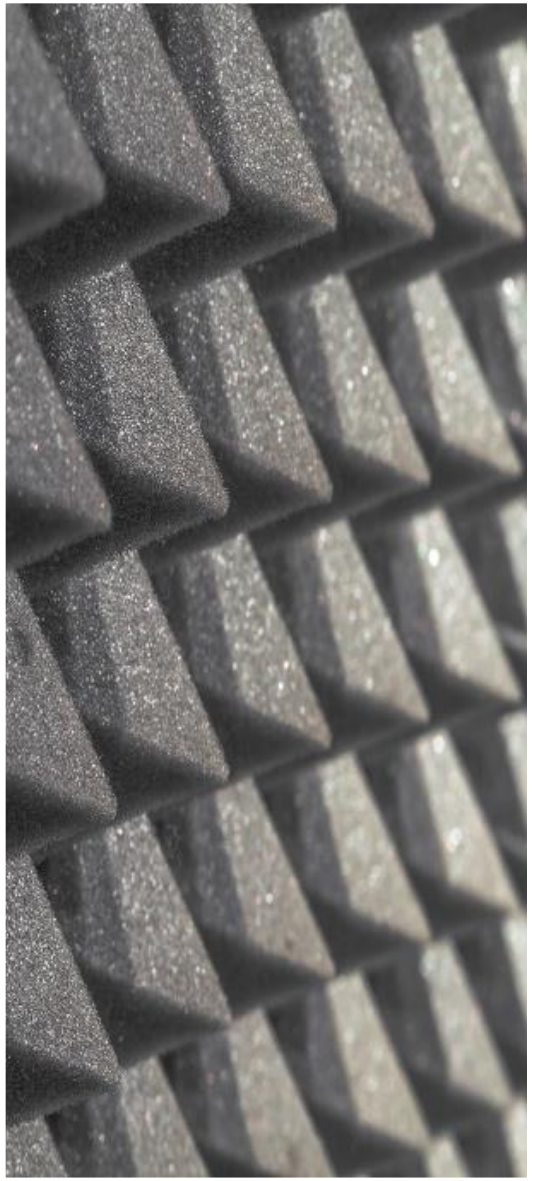
How do we get trade marks?



- Timescale to registration: 4 to 5 months

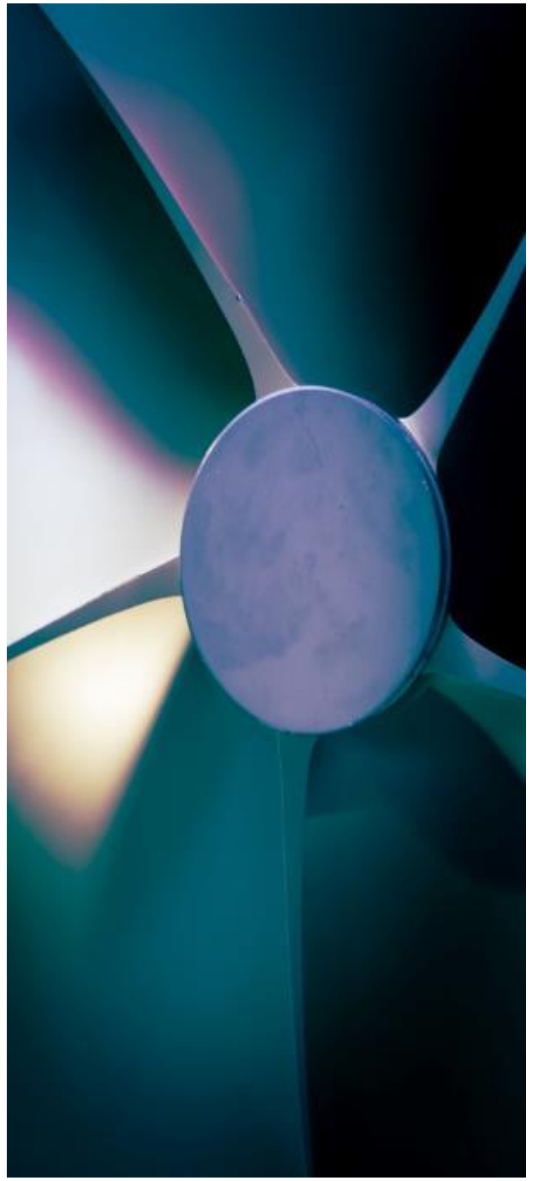
Why Register your Trade Mark?

- Why Register?
  - Provides a monopoly on the use of the mark for specified goods/services
  - Becomes part of the company’s assets
- When to Register?
  - Within 5 years of planning to use the mark
- What to Register?
  - All elements of the brand



Enforcing your trade marks

- Trade Mark Watching Services
  - Monitor for potential infringements
  - Alert you to similar marks
  - Help protect your brand's uniqueness
- Cease and Desist Letters
- Be seen to take action to prevent mark becoming generic
  - Porta-kabin
  - aspirin, cellophane
  - Velcro



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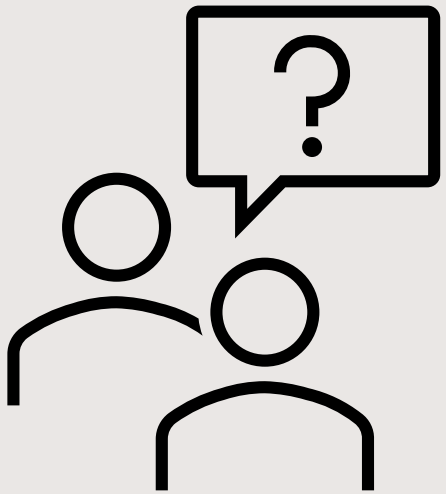

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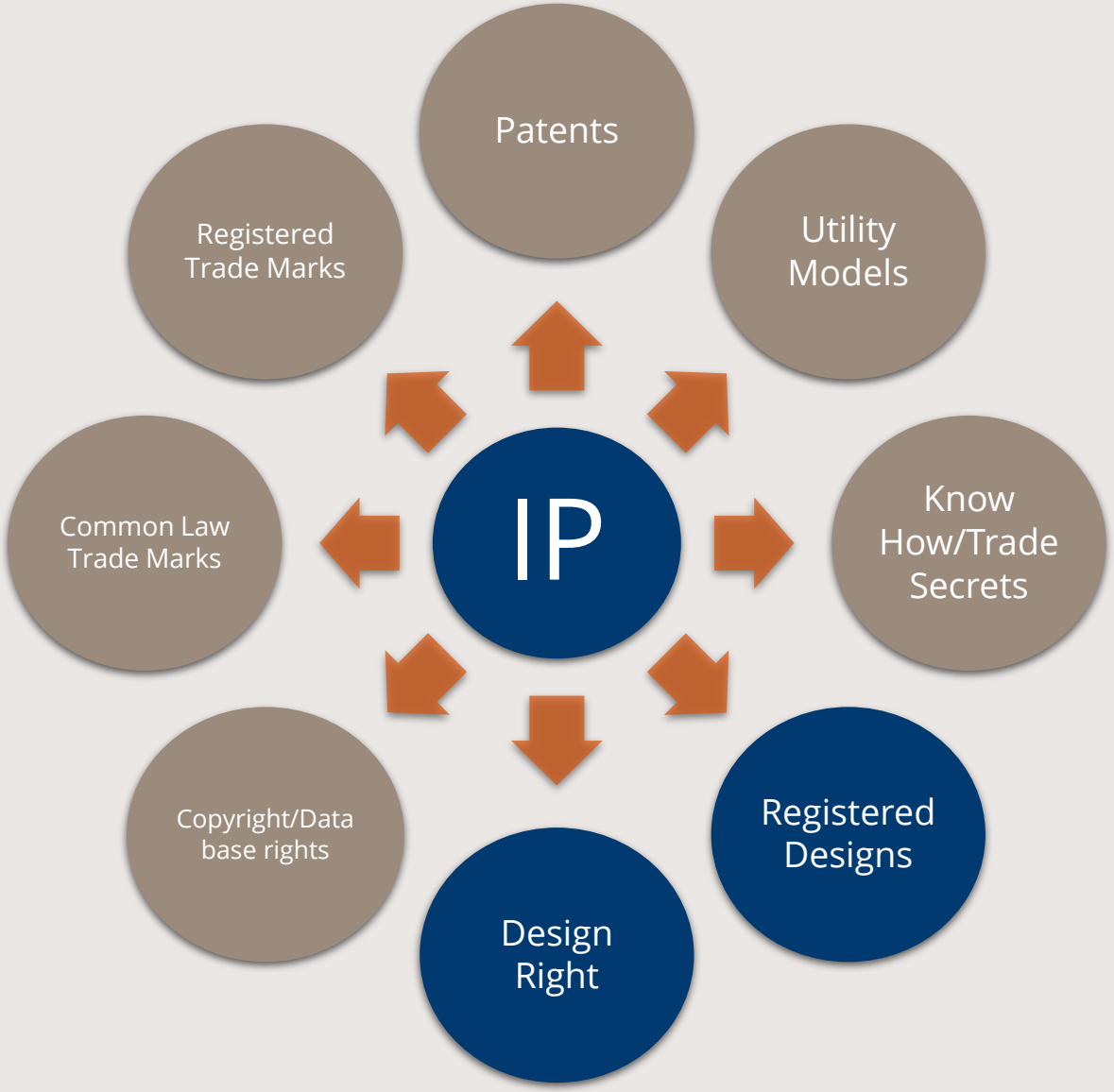
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Design Rights

How it looks is important

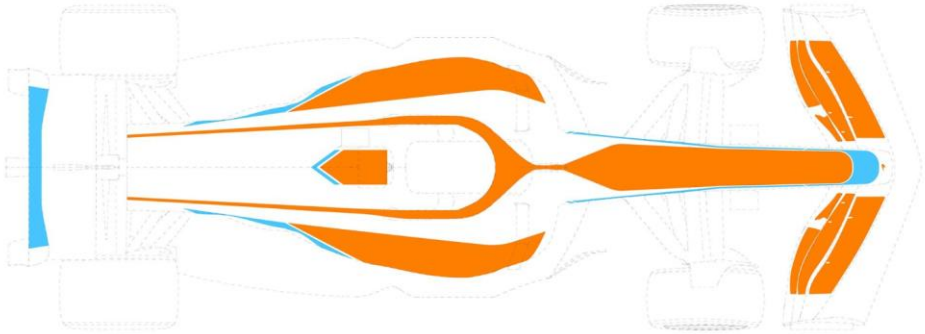
Registered Designs

- Monopoly right
- Territorial
  - UK/country only, or EU wide
- No examination as to design's validity by UK or EU design registry
- Registration is usually achieved within a matter of a few weeks or months
- Only enforceable once the design is registered
- Fees reduced for multiple designs

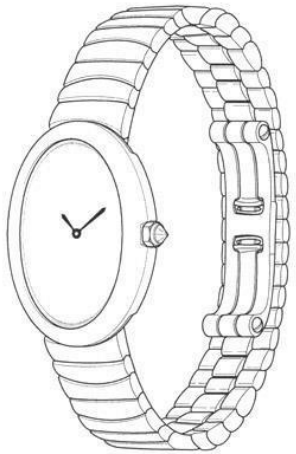
Designs (Registered and Unregistered)

- All can be used to protect aspects of appearance
- Designs intended for industrial articles, copyright for artistic works
- Unregistered design (UDR) free and automatic - must prove copying!
- UK unregistered design right - 10 year duration
- EU unregistered design right - 3 year duration
- Copyright – lasts for 70 years from death of author
- Registered design - 25 year duration – subject to renewal fees

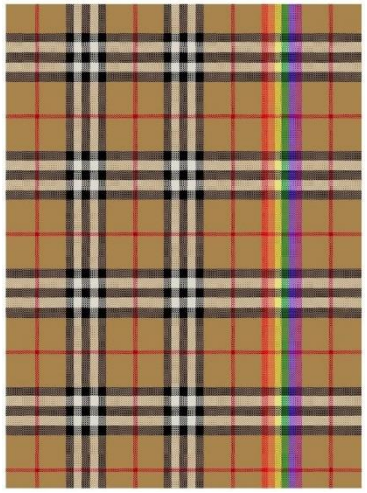
UK Registered Design Examples



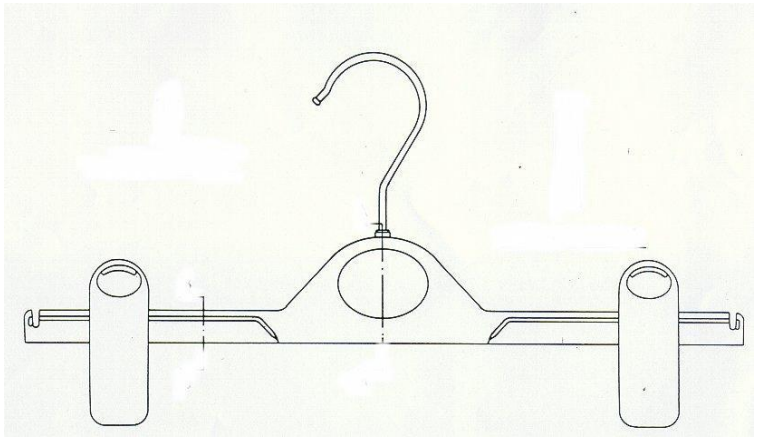
McLaren F1 Car



Cartier Wristwatch

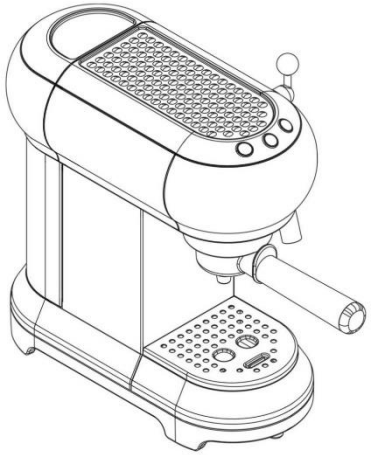


Burberry Fabric Pattern



Extendable Coat Hanger

Trunki Case



Coffee Machine

Scope of Registered Designs in Europe

Trunki suitcases

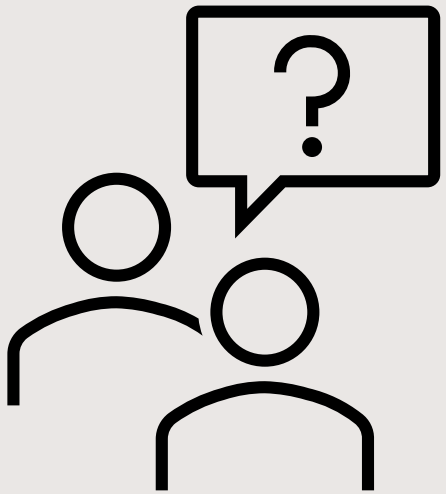
A now familiar site at airports around the world, the ‘Trunki’ from Magmatic has been a recent UK success story

Magmatic RCD

Kiddee Case

The Kiddee Case was launched by PMS International and “specifically designed to compete on price and quality against Trunki products.”

Questions



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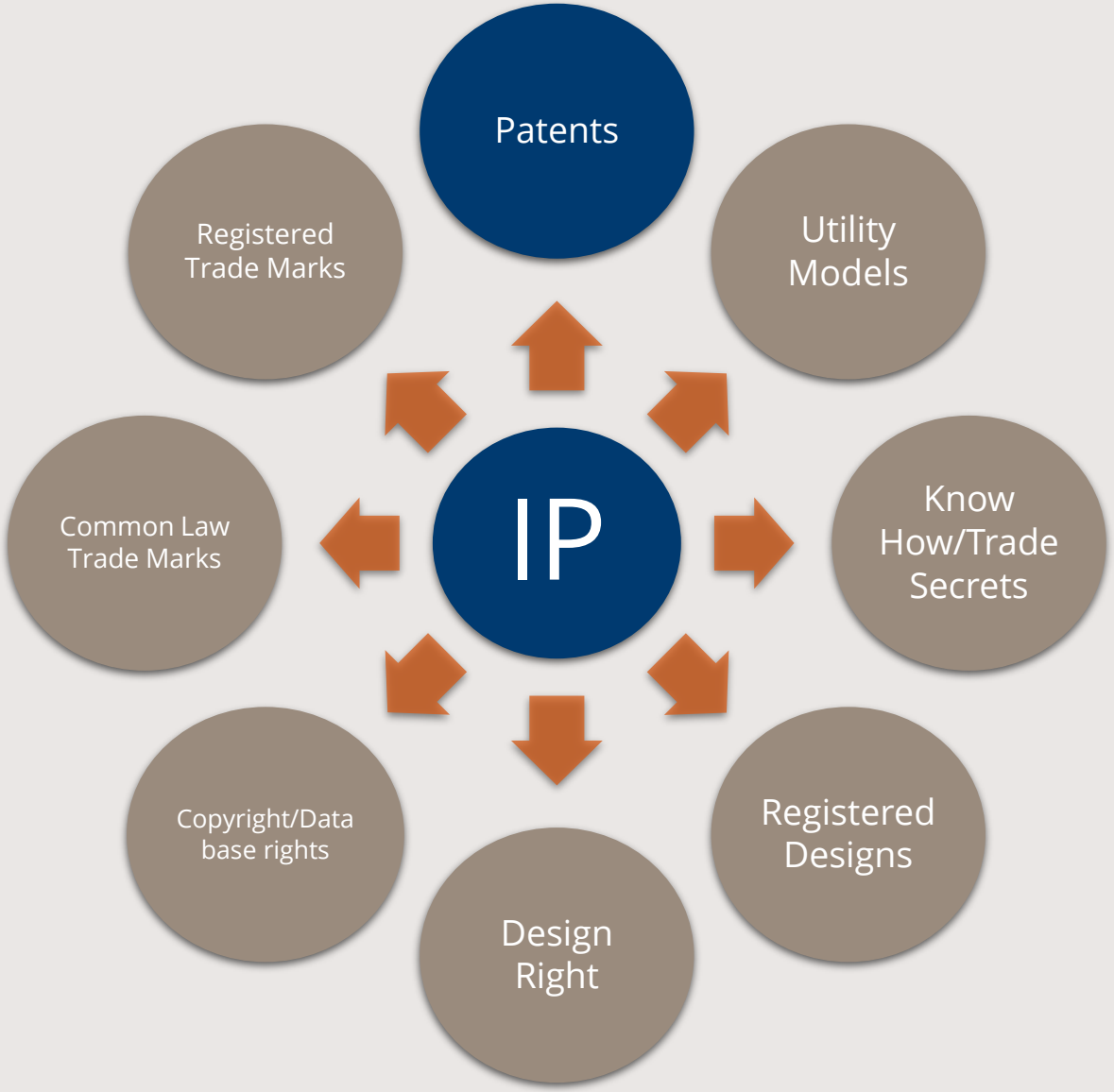
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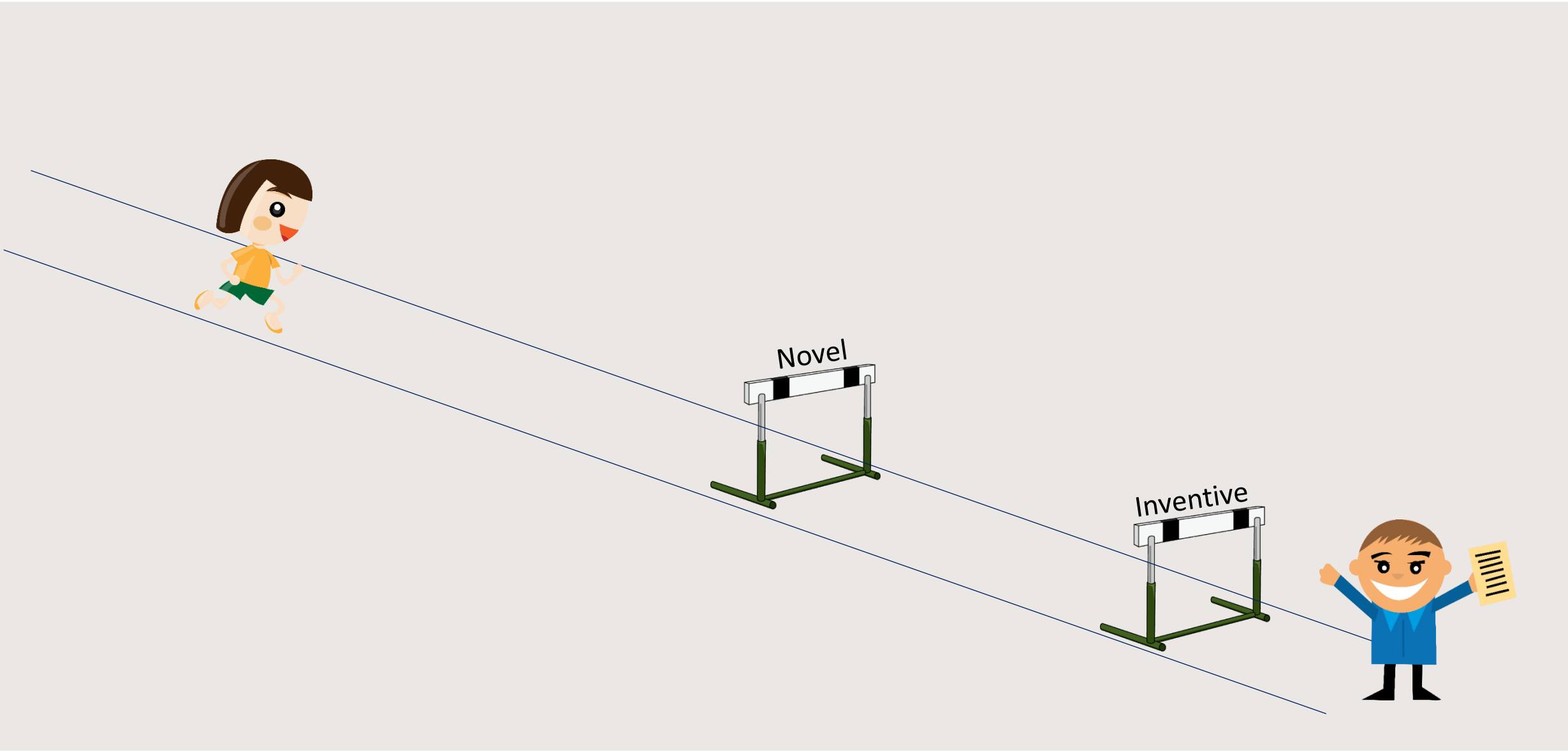
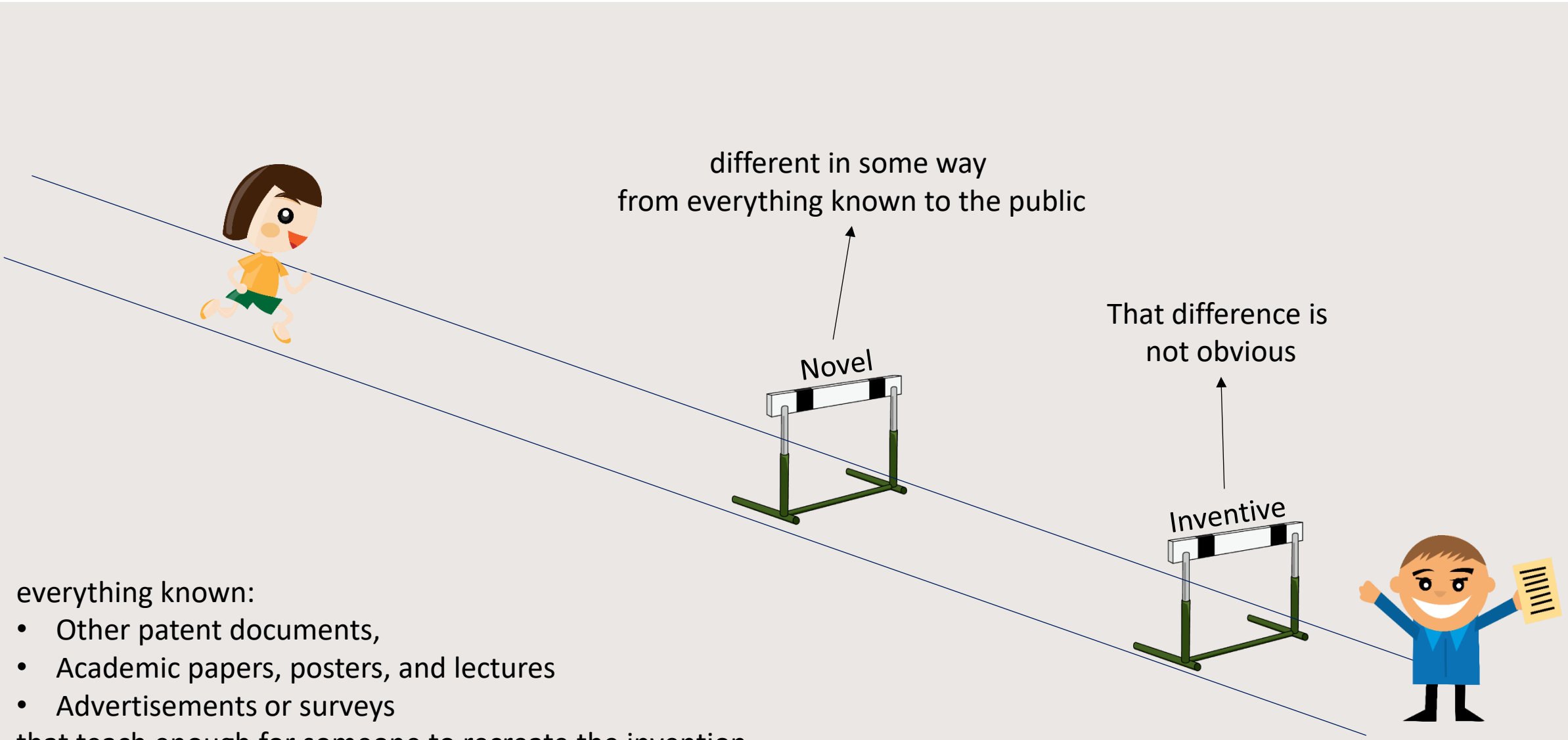
Patents

How does your innovation work?

Hurdles to get a Patent



Hurdles to get a Patent

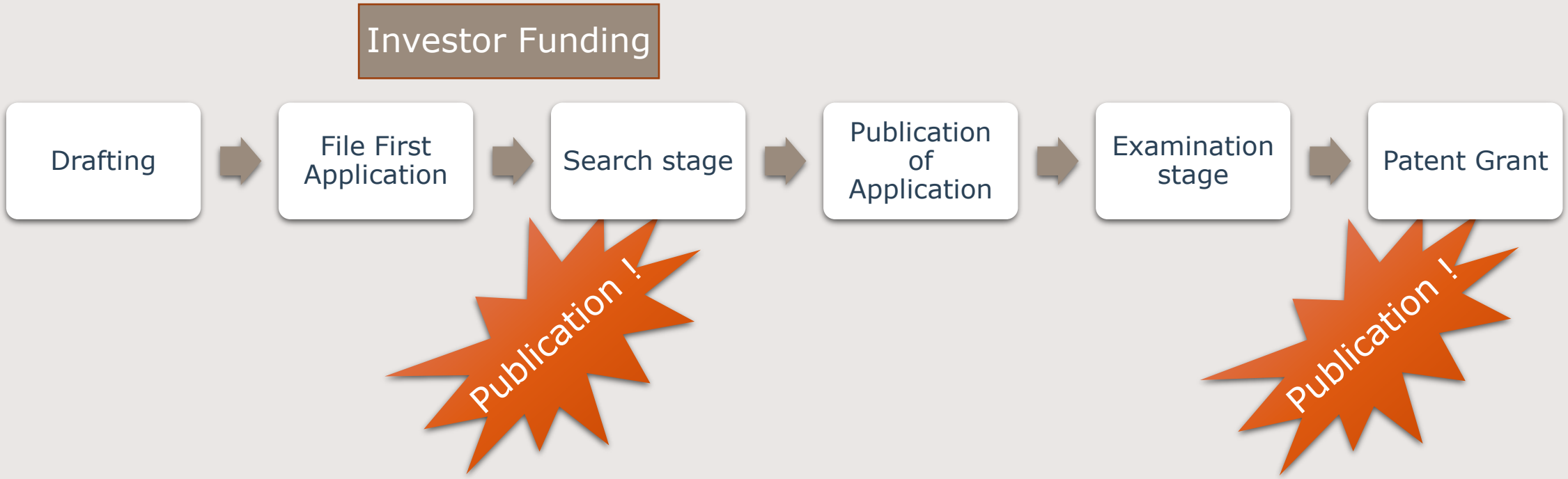


everything known:

- Other patent documents,
- Academic papers, posters, and lectures
- Advertisements or surveys

that teach enough for someone to recreate the invention

How do we get patents?



- Timescale to grant is usually 2 to 5 years in the UK, 4 to 8 years in Europe.
- Remember that renewal fees are payable after grant.

Securing Overseas Patents and “Priority”

Initial GB application

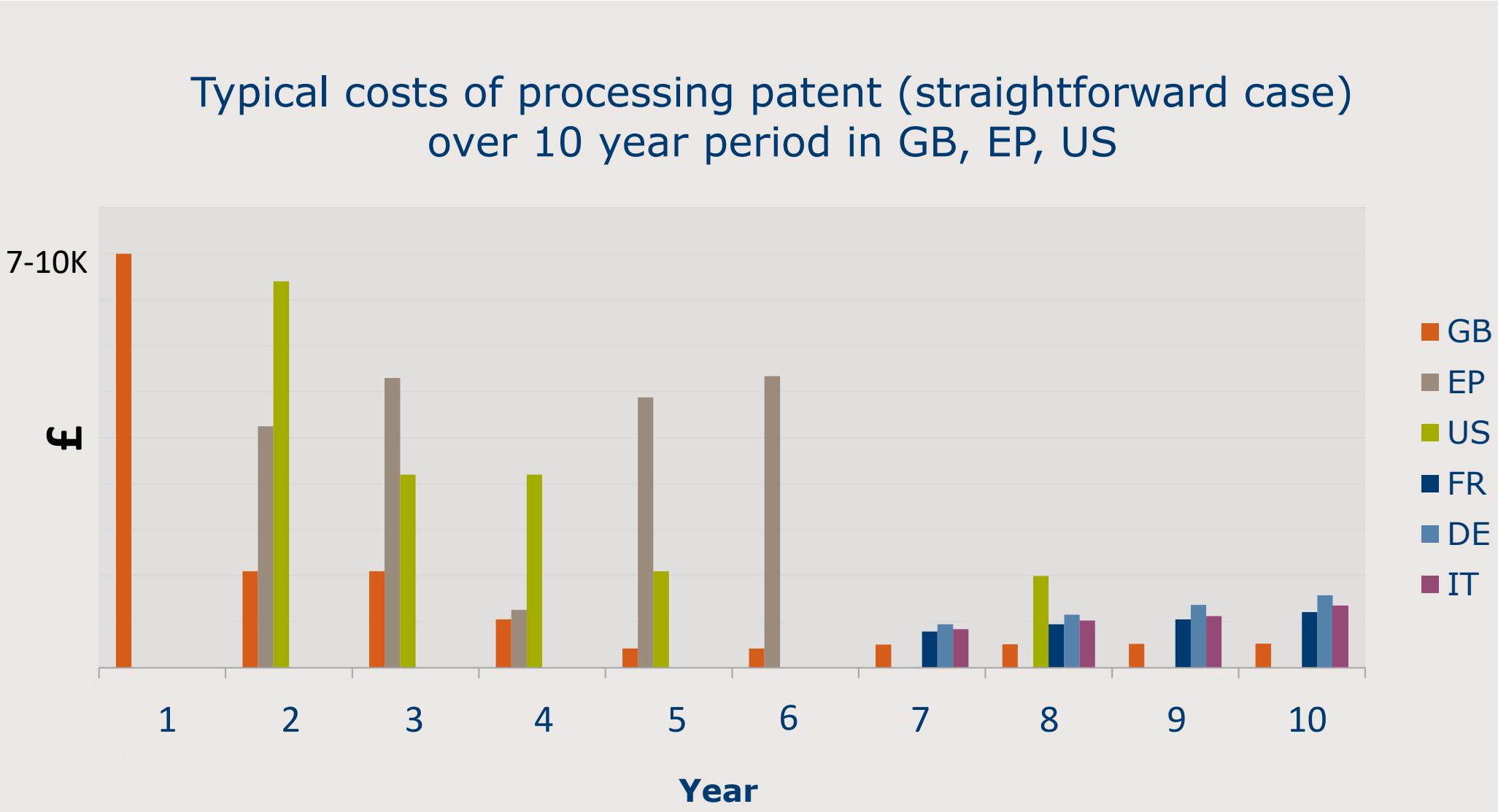
Foreign patent applications

File “PCT” application

File national and regional phase applications

12m

18m


Typical costs of processing patent (straightforward case) over 10 year period in GB, EP, US
7-10K
£
1
2
3
4
5
6
7
8
9
10
Year
GB
EP
US
FR
DE
IT

Software patents

People often say:

You can’t patent software

Software patents

Today's message:

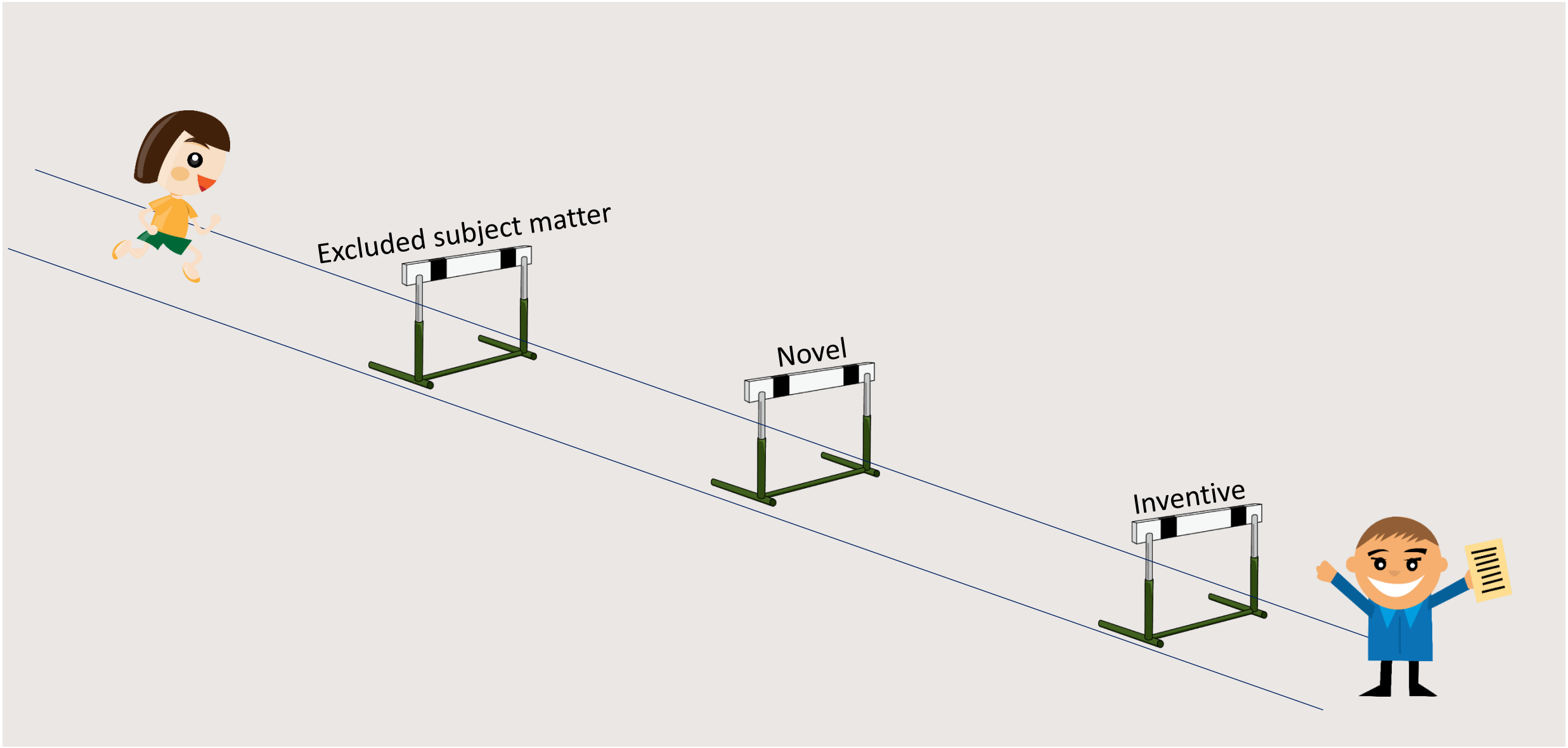
You can patent software

Software patents

Today's message:

some
You can patent software
^

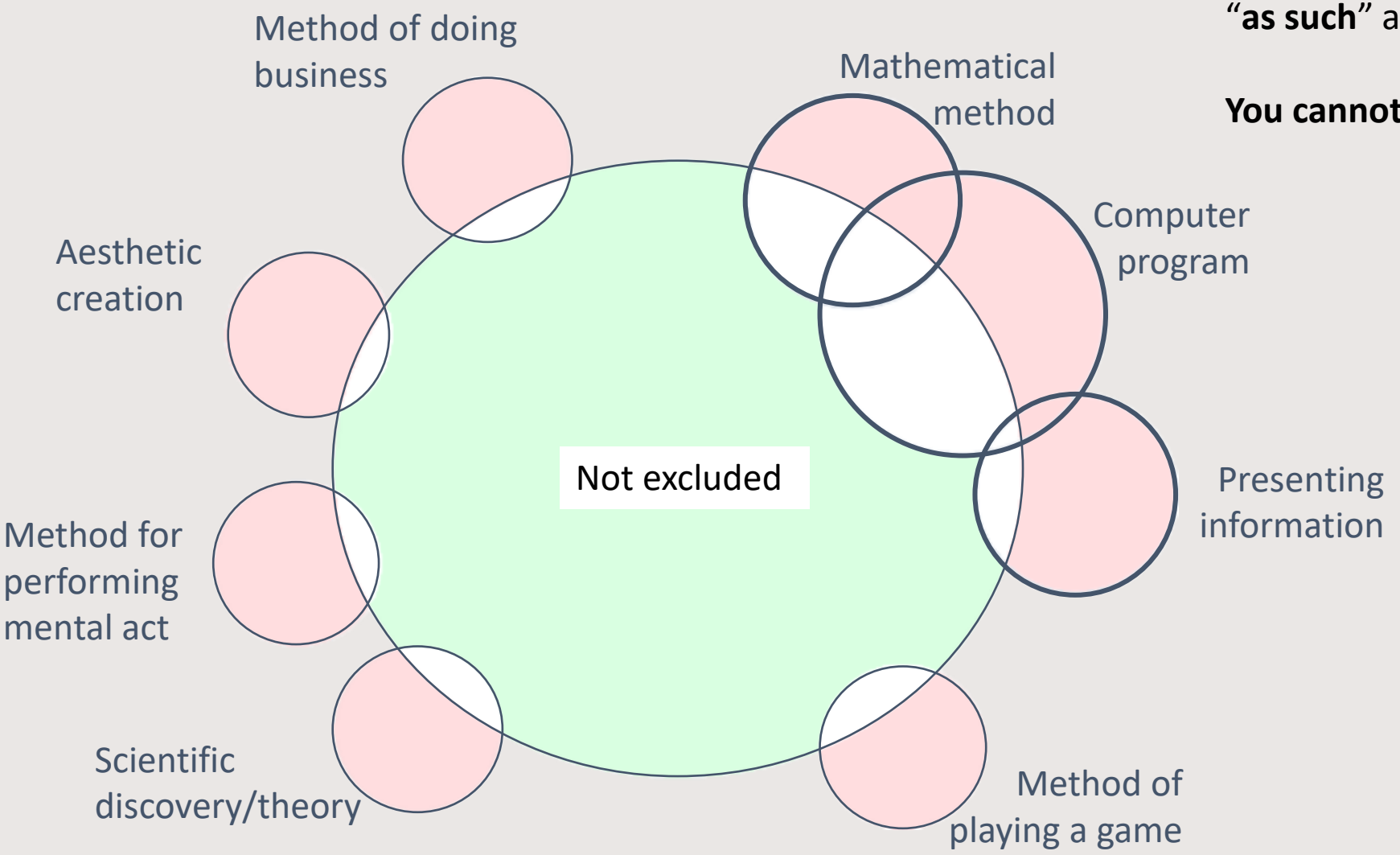
Hurdles to get a Patent



Excluded Subject Matter

Computer programs etc. "**as such**" are excluded.

You cannot patent code.



Signposts that a Computer Program is Patentable

i) Does the invention have an effect outside of the computer?

ii) Does the invention have an effect on the level of the computer architecture (irrespective of computer program)?

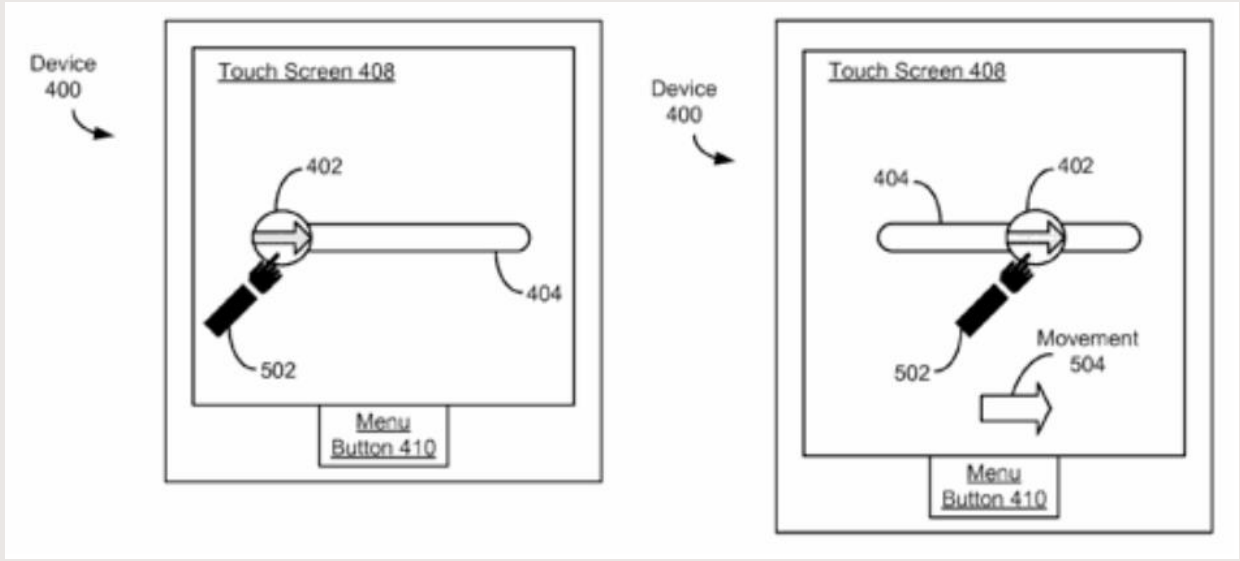
iii) Does the invention make the computer operate in a new way?

iv) Does the invention make the computer a better computer (more efficient/effective)?

v) Does the invention overcome a perceived problem – not just circumvent it?

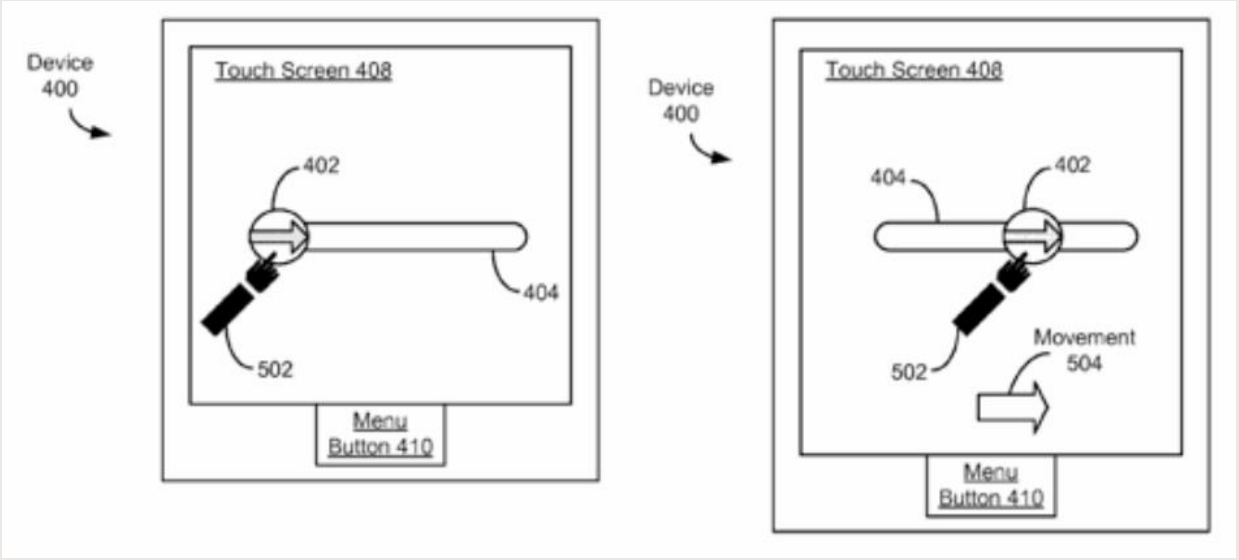
Patentable?

Example:
Swipe to unlock



GUIs and User input

Example:
Swipe to unlock



Presenting Software to the Patent Office

Describing your invention:

Option 1

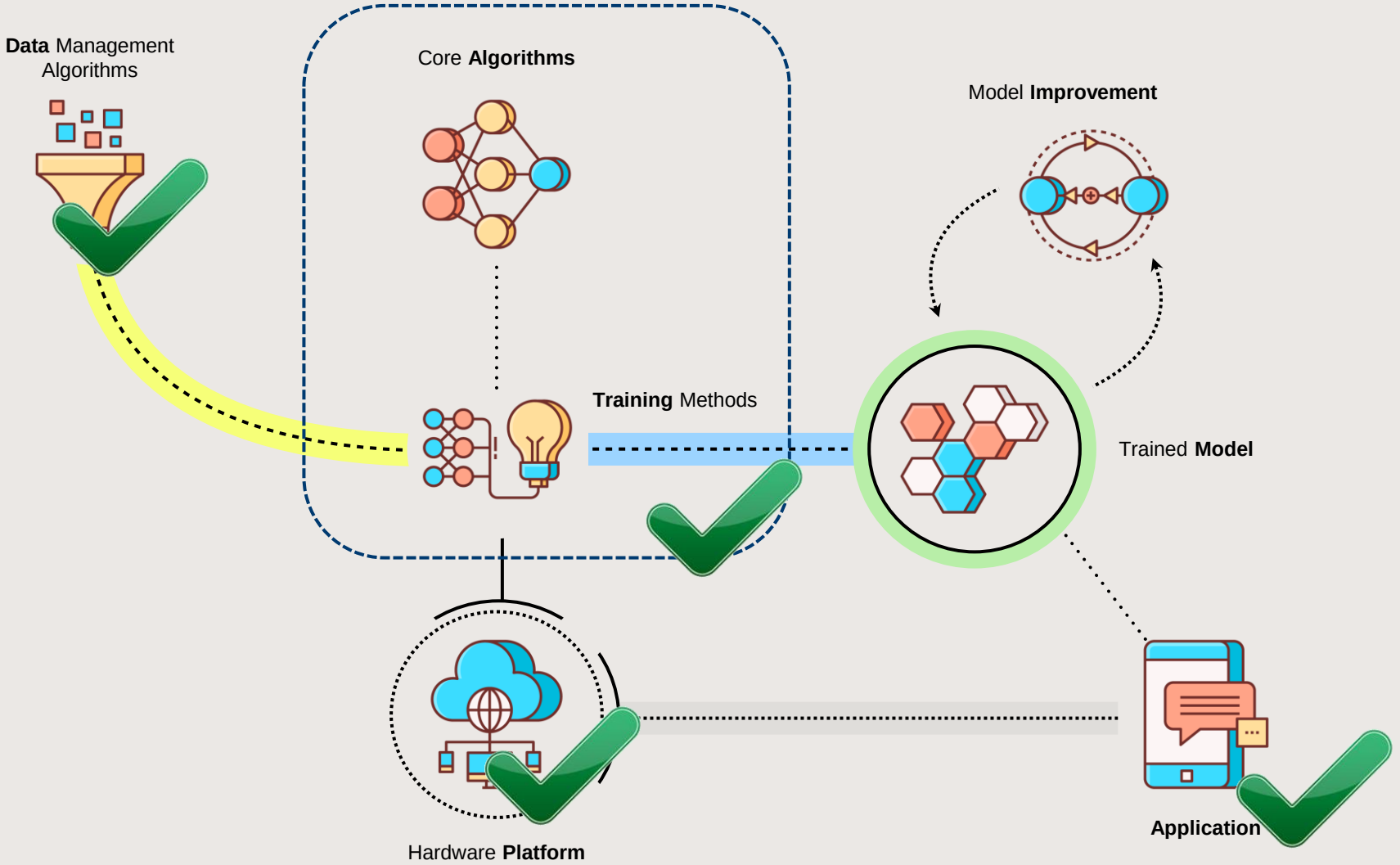
Power usage data Trained Neural Network Optimisation of control of a power plant

OR

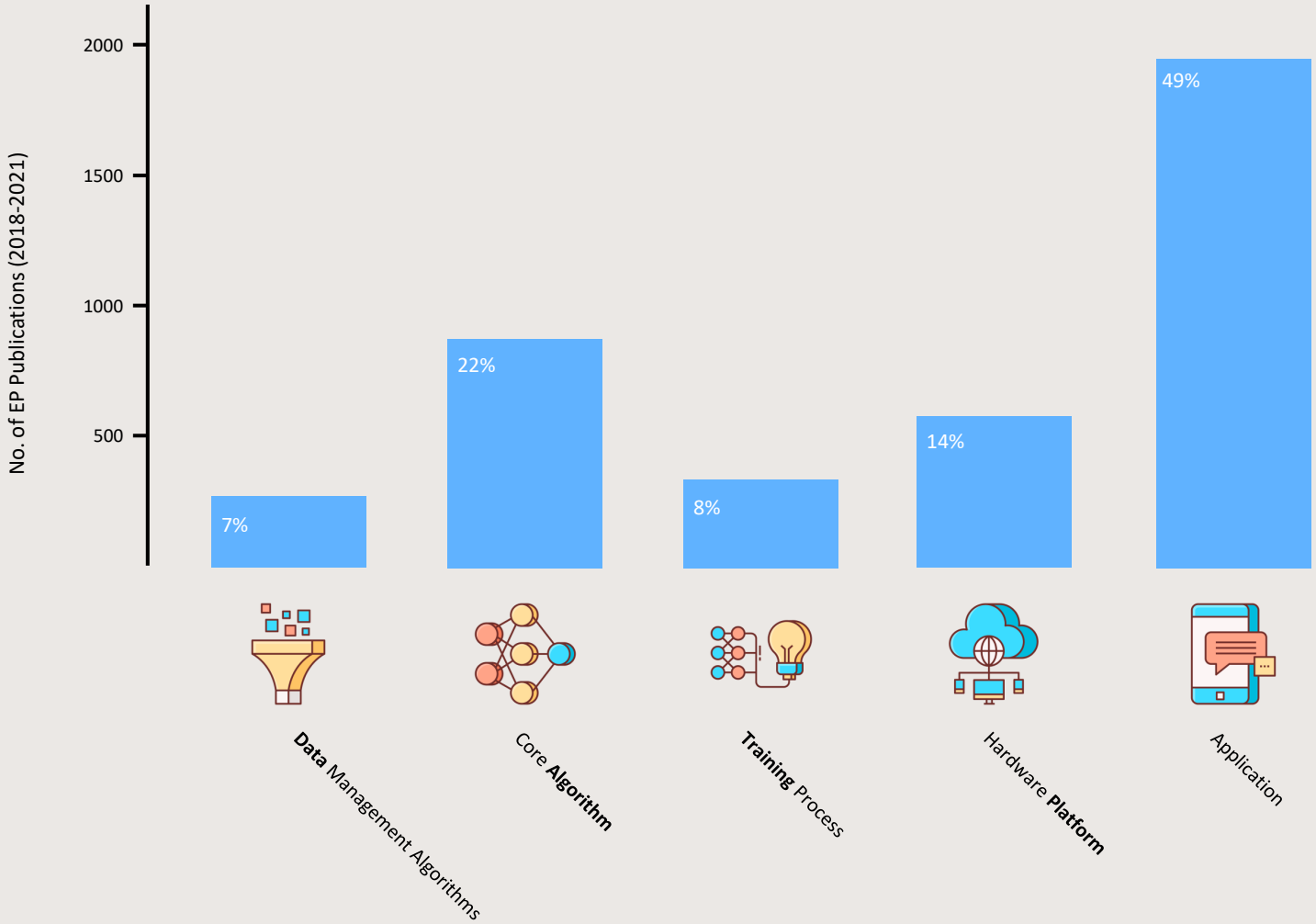
Option 2

Power usage data Trained Neural Network Optimisation of a customer's energy tariff

Categorising Machine Learning Inventions



Distribution of EP Publications



Alternatives to software patents

Copyright

- Automatic and free
- Life of author + 70 years
- Protects code like it protects a book
- Must show infringer has copied you
  - Place distinctive comments in code to help prove copying

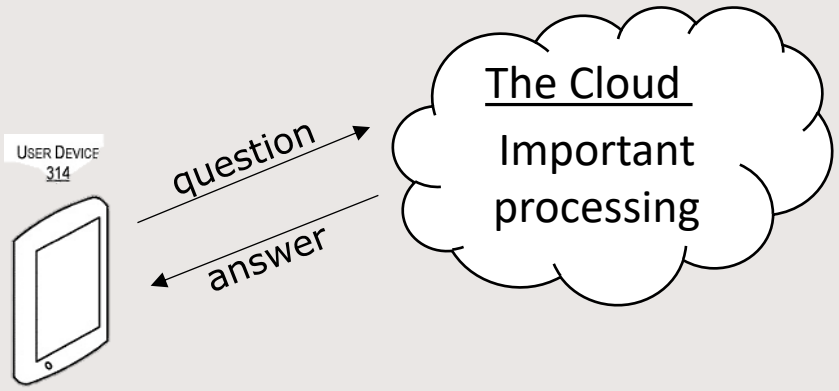
```
#include <iostream>
using namespace std;

int main()
{
    //say hello
    cout << "Hello C++" << endl;

    system("PAUSE");
    return 0;
}
```

Database (other than ©)

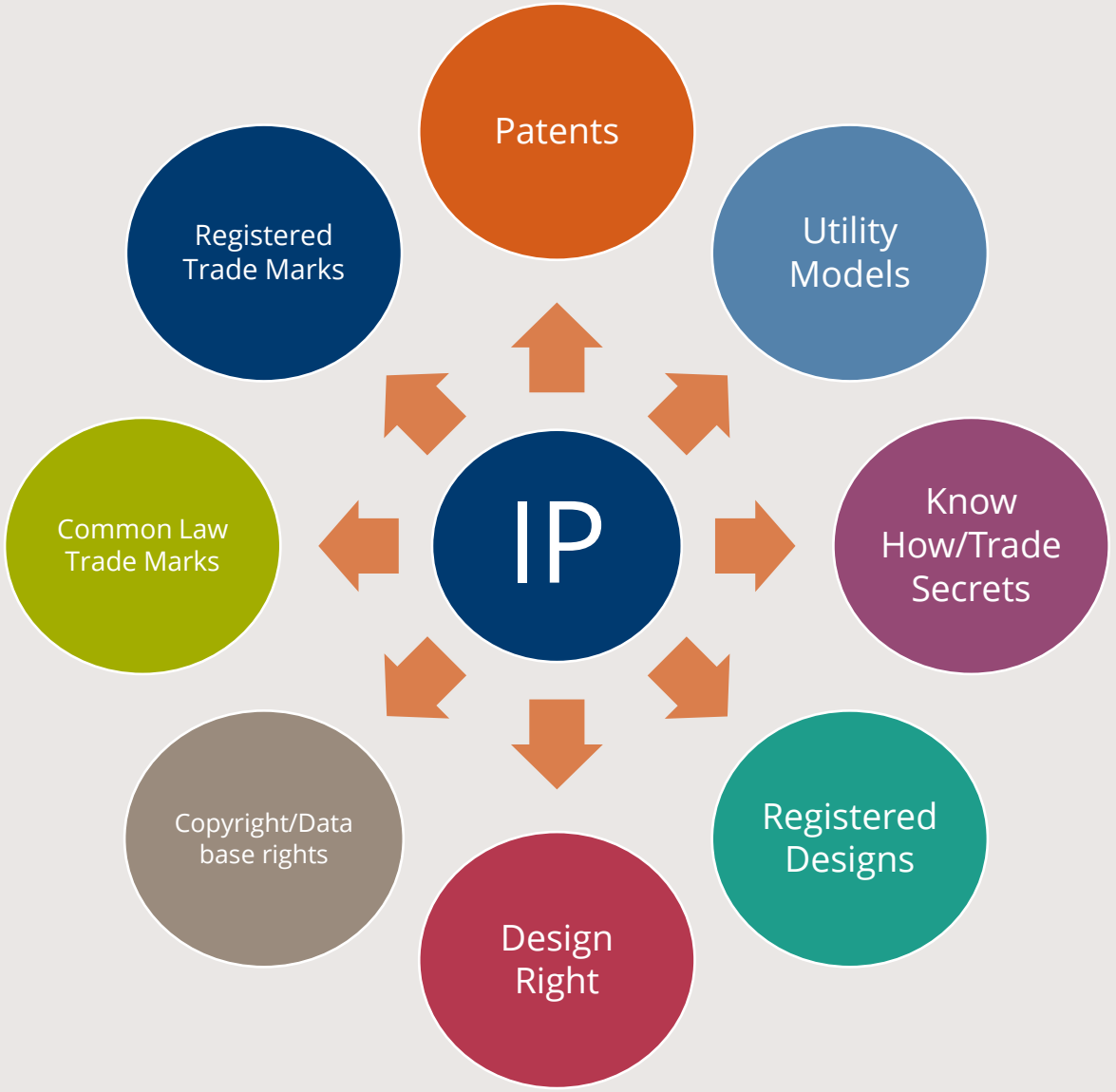
- Database rights protect the investment which goes into the creation of a database
- At least 15 years from completion or publication
- Infringer must 'extract' or 'republish' all or a substantial amount to the detriment to you



Trade secrets

- Free
- Good where no one can see how invention works (e.g. processing in your servers)
- If invention gets out, you have no protection
- Needs careful management (e.g. education of employees)

IP Wheel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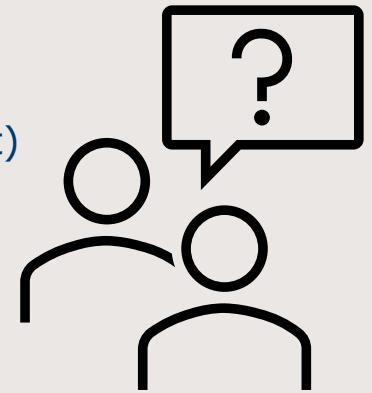
Questions

- How do I create a patent strategy to become the market leader with a textile/material, including protecting variations in structure and manufacturing methods?
  - Single patent, single invention.
  - A single invention can be legally defined as: structural product, process of manufacture the product, system, Tx-Rx, etc.
  - Patent strategy = business strategy
- When should I seek a patent & when will patents publish?
  - MVP developed, and before a public disclosure, typically have seed funding or grant funding.
  - 18m later - start-up with a patent(s) and developed markets, will typically be at least series-A funding with a good idea of who competitors are.
- Can patents defend and protect my market from wealthier organizations that attempt to work around patents and exploit the market I've developed?
  - Patents are a tool for your business, and should support the start-up (not necessarily the market)
  - Well thought-out patents/designs should be hard to work around (e.g., Designs – Trunki).
  - Patents can be a tool for licencing, cross-licencing, investment, money (mortgage).
  - Don't forget Freedom-to-Operate (market = consumer demand)



IP Ownership and Invention Harvesting

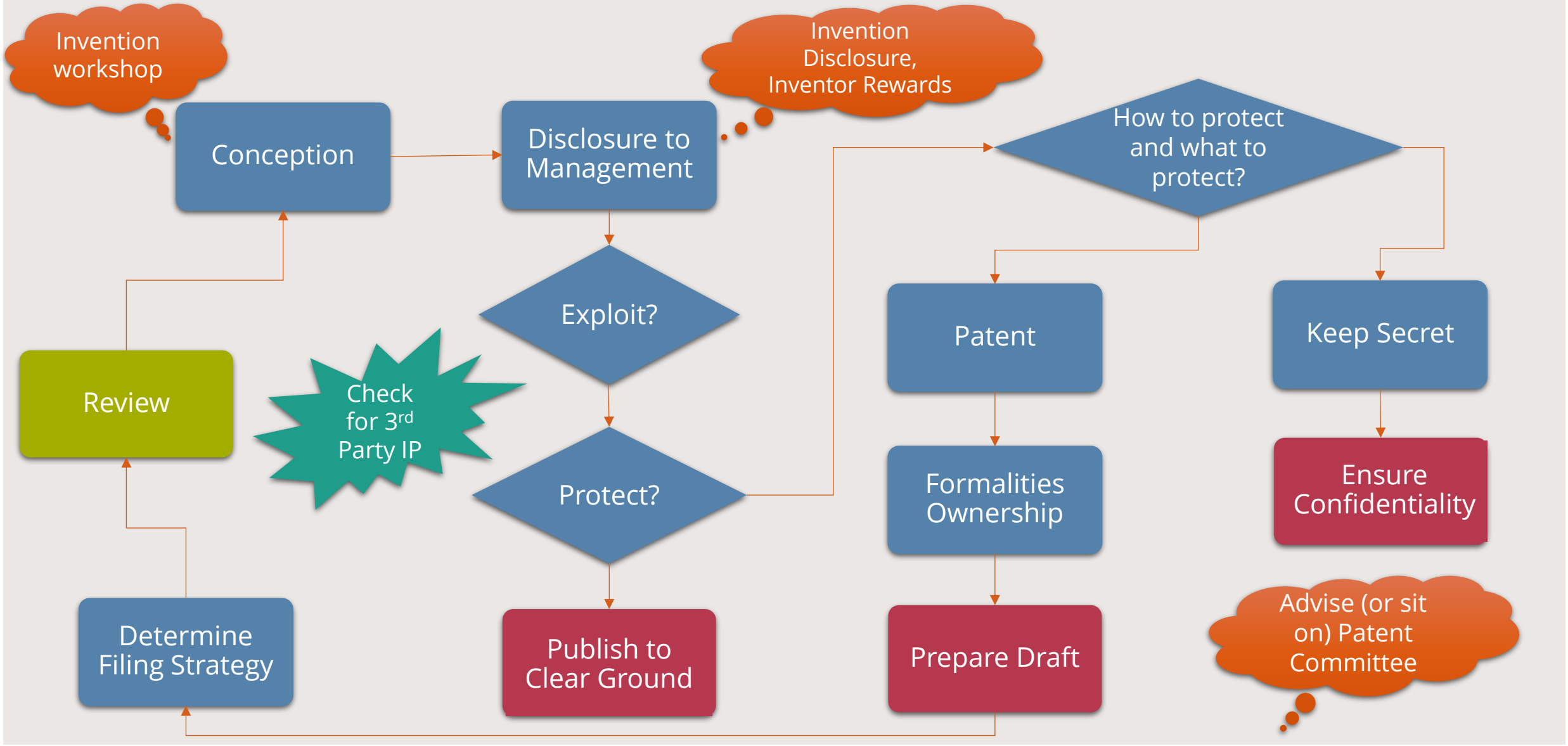
Invention Harvesting

1. Identification: The R&D team develop or identify a new inventive concept

2. Evaluation:
   Is the idea new and unique?
   Can the idea be practically implemented?
   Does the idea have commercial value?

3. Protection: Identify which right is most appropriate (e.g. trade secrets, patents, designs etc)

Invention Harvesting



Importance of Ownership

- Ownership is **crucial** for all IP rights
- Best practice to keep records to ensure that you can demonstrate ownership if necessary
- Best practice is to ensure ownership established at the outset - can be costly and time consuming to resolve ownership issues
- Jointly owned IP is possible but is restrictive

Patent Ownership

- Inventor is the first owner
- Exceptions:
  - Employed to invent within job duties
  - Senior position within the company
- Who is the Inventor?
  - The actual devisor of the inventive concept
  - Conceives or implements the concept, or solves problems during implementation
- Not Considered Inventing:
  - Routine tasks without initiative
  - Mere management or financing without technical contribution

IP Ownership Considerations in Academic Institutions

- **IP Ownership in Contracts:** Ensure contractors and placement students have IP clauses in contracts
- **Payment ≠ IP Transfer:** Payment alone doesn't transfer IP ownership.
- **Design Work:** Clear IP assignment is crucial
- **Formal Transfers:** Use formal documents for clarity, common in universities
- **Student Status:** PhD students often employed; undergraduates usually not
- **Funded Studentships:** Check for IP clauses
- **Verify Policies:** Refer to the appropriate Imperial IP policies (i.e. Intellectual property for students or IP for staff), or seek advice from the Enterprise Labs

Freedom to Operate

Be aware of competitor activities

Practical Pitfalls – Company Collaboration

Company A

University B

Best Practice Tips – Company Collaboration

1. **Collaboration Agreement:** Establish a clear agreement before starting the project, outlining IP ownership and contributions from each party

2. **Inventorship Criteria:** Define inventorship based on contributions to the inventive concepts. Only those who make significant contributions should be listed as inventors

3. **Documentation:** Keep detailed records of contributions during meetings and research activities to clarify who contributed to specific inventive concepts

4. **Communication:** Maintain open and regular communication to address potential IP issues promptly

Best Practice Tips – Company Collaboration

5. **Formal Transfers:** Use formal IP transfer documents to ensure clarity and prevent disputes, which is common practice in universities

6. **IP Policies:** Refer to the IP policies of both the company and the university to ensure compliance and alignment with institutional guidelines

7. **Legal Advice:** Seek advice from legal experts or the university's IP office to mediate and resolve issues before they escalate

Using your IP

Getting the most out of your investment

Key uses of IP include:

- Prevention of competitors from entering the market with similar products – *Fortress*
- Prevention of competitors from entering the market with competing but dissimilar products – *Offensive registration*
- Generation of royalties from license deals
- To support spin-out ventures
  - provide credibility for investment and funding purposes
- Sale to provide direct revenue
- Inventor Prestige
  - can also assist in the generation of grant funding for academia
- Tax incentives – patent box

- **Each of the objectives above requires a different exploitation strategy**

Continually review and update strategy

Case Study 1

IP protection in F1

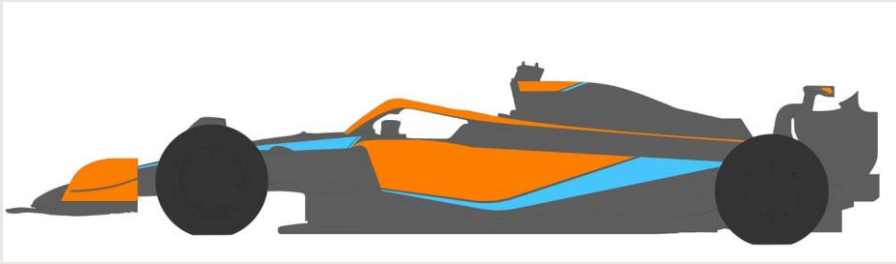
IP In Sport – Formula 1

- FIA (Fédération Internationale de l'Automobile) governs F1. Rules can change quickly
- FIA restricts teams filing patents on technology which would limit the level playing field
- Teams still file patents but often for technology which can be used outside of F1
  - Ferrari driver assistance system for position/orientation determination
- How do teams leverage IP against competitors in a fast moving environment?

IP In Sport – Formula 1 TM – Leveraging IP

Protection in the most technologically advanced sport in the world:

- Trademarks
  - Team Names – Scuderia Ferrari
  - Logos – Aston Martin
  - Race names – Las Vegas Grand Prix
  - Sponsor's – Estrella Galicia
- Registered Designs
  - Shape of the vehicle
  - The representation of colour on the vehicle
- Trade Secrets
- Copyright
  - Broadcasting rights
  - Design drawings



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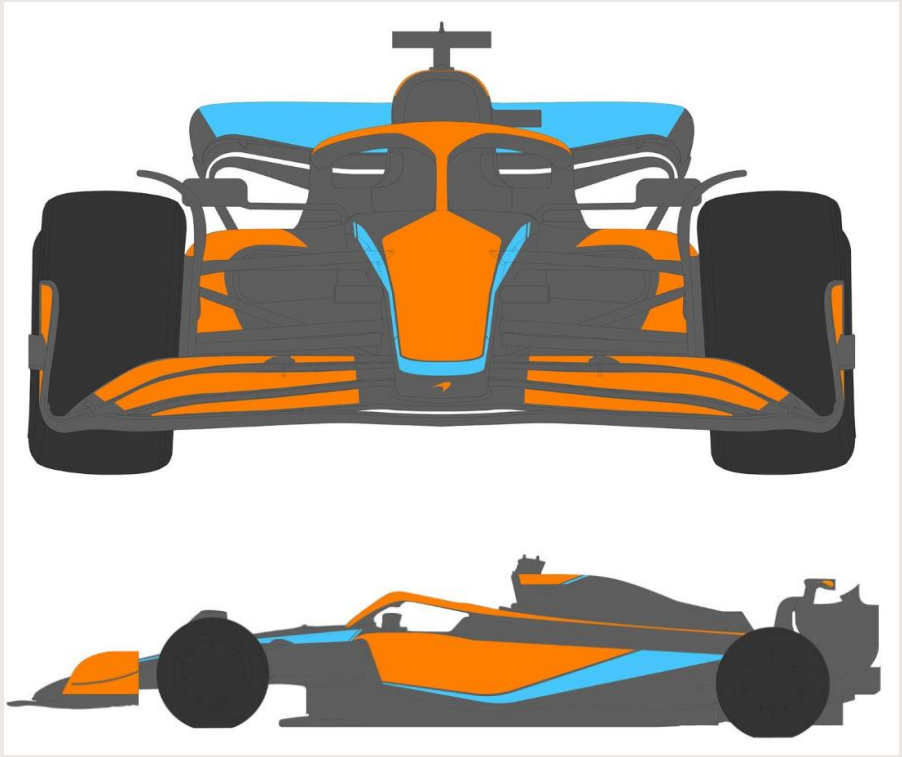
IP In Sport – Formula 1 TM – Licensing



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IP In Sport – Formula 1 – Enforcement

F1 teams unhappy as Racing Point fined but allowed to race with 'Pink Mercedes'

- Ferrari will appeal after rivals only docked points and fined
- Mercedes sound warning about their F1 future after 2020

Racing Point have admitted they copied the championship-winning 2019 Mercedes. Photograph: Clive Mason/Formula 1/Getty Images

F1 teams unhappy as Racing Point fined but allowed to race with 'Pink Mercedes' | Formula One | The Guardian

Racing point held liable for breach of FIA's rules as they were deemed to have copied Mercedes' industrial design of a previous season's vehicle

IP In Sport – Trade Secrets - Spygate

Ferrari F1 team accused a former employee, Nigel Stepney and a senior McLaren engineer Mike Coughlan and his wife Trudy Coughlan of the theft of intellectual property. Mike had a 780 page dossier of Ferrari technical information.

Ferrari filed a formal complaint against Stepney leading to a criminal investigation in Italy. Stepney was dismissed from Ferrari.

Ferrari were only tipped off that technical information had been stolen when a staff member of a photocopying shop in Woking contacted Ferrari saying that someone was wanting to photocopy confidential information for them.

The trade secret court case was brought in the UK High Court and settled before going to trial.

The FIA investigated McLaren and handed down a $100 million fine. This is the largest fine in sporting history. McLaren were also banned from the 2007 Constructors cup.

IP In Sport – Patents

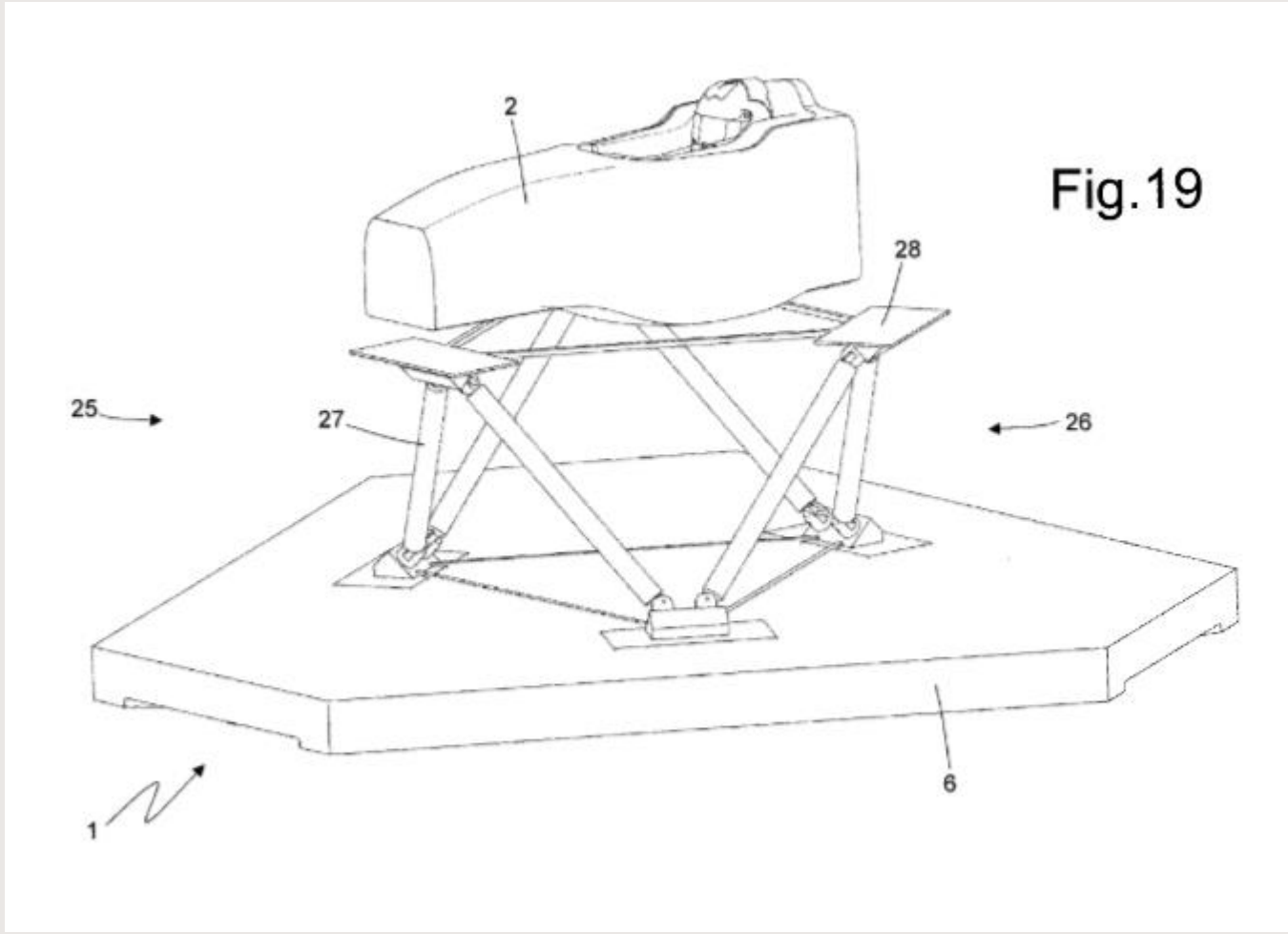
F1 Teams protect other aspects to lock out competition, e.g. simulation tech:

EP3133575B1 from Ferrari SPA

Other innovations from F1 which have made the jump to road vehicles are:

- Steering wheel buttons
- Active suspension
- Turbochargers
- Carbon fibre
- Aerodynamic body parts

Just because the FIA won't let a team stop another F1 team using some tech in the sport, does not mean they can necessarily prevent it in the real world!

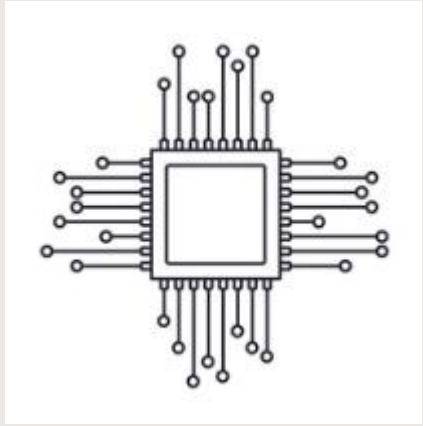


Case Study 2

Licensing IP

ARM

- Licensing of IP
- Established 1990 (a joint venture of Acorn, Apple & VLSI)
- RISC processors
- Sold to SoftBank in 2016
- Sale value £24bn



Case Study 3

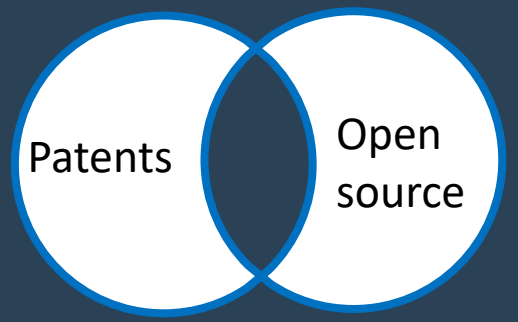
Open Source Patents

Case Study - Post Docs

Other Stages – commercialising Patents

- What about Open Source?
- Open source allows third parties to use, modify, and distribute the code freely.
  (subject to conditions)
- Patents enable control who gets to use the invention

Code ≠ Invention



https://creativecommons.org/licenses/

Case Study - Post Docs

Other Stages – commercialising Patents

- Why should I apply a patent if I aim to open-source my project?
  - **Control** how your invention is used (e.g. stop unethical uses)
  - Have **flexibility** in generating revenue (e.g. free for some, not for all)
  - **Give back** to the community (open source version 1) but maintain control of state-of-the-art (version 2 requires license)

Case Study - Post Docs

Other Stages – commercialising R

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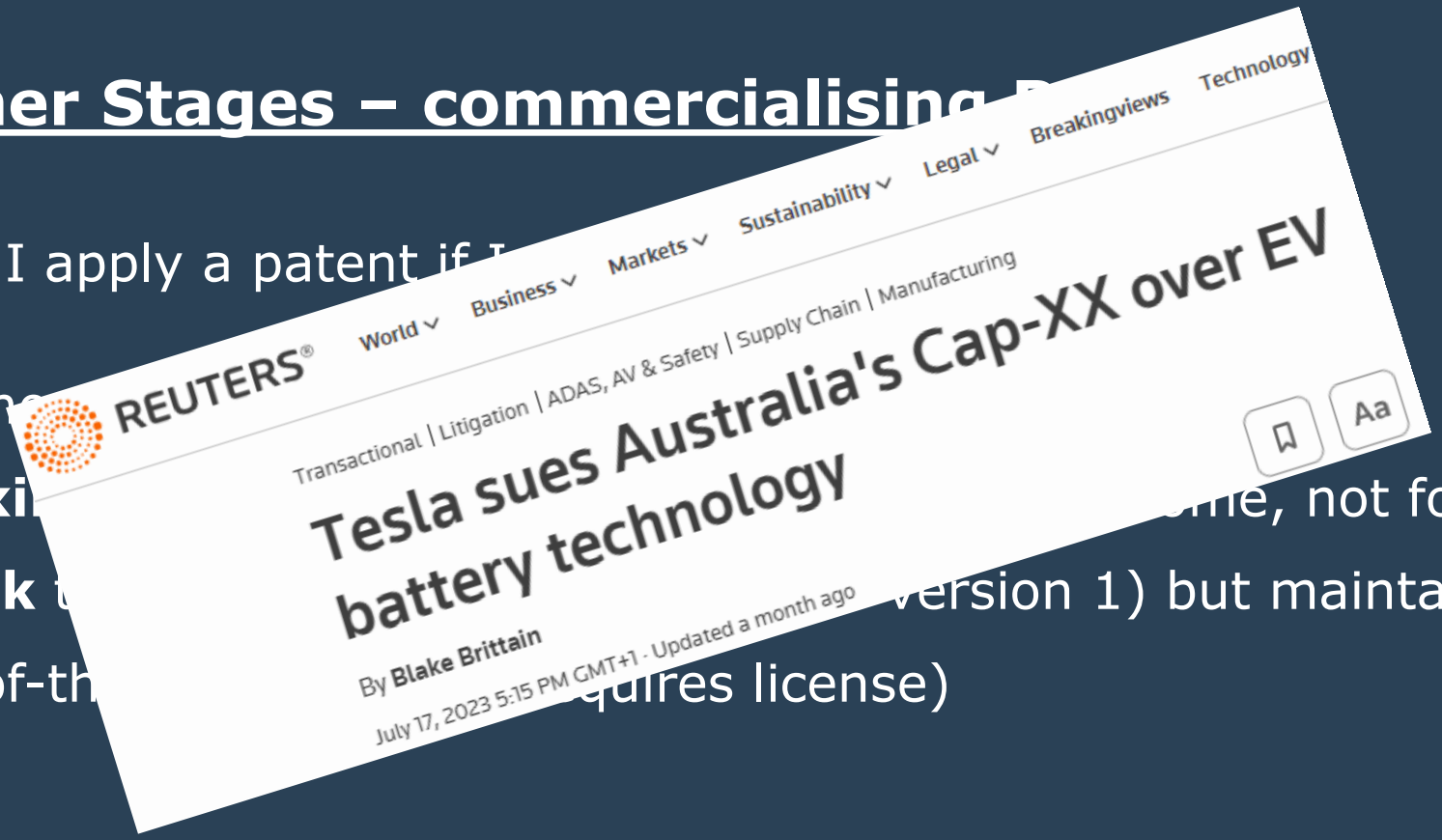

All Our Patent Are Belong To You

Elon Musk, CEO • June 12, 2014 TESLA

Some Examples of IP Rights
(can you now see the world through our eyes)

```
using System;

namespace Hello_World
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Hello World!");
        }
    }
}
```

Questions

- Can intellectual property (IP) laws effectively protect founders who try to enforce their rights against well-funded businesses who may seek to bankrupt the founder's start-up?
  - Short answer: Yes
  - IP insurance
  - Enforcement begins in negotiation, rarely ends in litigation (especially in UK)
  - Negotiation may include sale of the founder's company (exit for founder)
  - Patents/designs/TMs are not simply a tool for enforcement…
- How realistic is it to successfully protect IP against Chinese companies, and how many successful claims have there been against such theft?
  - Patent, Designs, etc. are jurisdictional, so are markets
  - JLR v Landwind (unfair competition, registered design and copyright) show that foreign companies can enforce, successfully, in China.
- I've heard some patent terms what do they mean?
  - "patent family"; "divisional"; "continuation"; "CIP"

Thanks for Listening!

www.withersrogers.com

Feel free to contact us with any questions

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