IP evaluation and protection
Innovation processes & systems
About Donal O’Connell

- Managing Director of Chawton Innovation Services Ltd.
- Adjunct Professor of IP at Imperial College Business School in London.
- IAM300 (global IP strategist) member.
- Ex VP of R&D and Director of IP at Nokia.
- Author of ‘Inside the Patent Factory’; ‘Harvesting External Innovation’; and over 150 papers on innovation and IP.

Source:
www.chawtoninnovationservices.co.uk.
http://www.iam-media.com/strategy300/

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Opinions expressed in this presentation are those of the speaker and not necessarily those of the European Patent Office.
Series One - IP Strategy

β Module 1: “IP Strategy at the heart of Business Strategy 1”
β Module 2: “IP Strategy at the heart of Business Strategy 2”
β Module 3: “IP creation strategies to generate value”
β Module 4: “IP value extraction strategies to realize value”
β Module 5: “Innovation environments and influencing factors”
Series Two - IP evaluation and protection

β Module 1: “Innovation processes & systems”

β Module 2: “Economic aspects of innovation”

β Module 3: “Evaluation dimensions”

β Module 4: “Scrutinizing the invention”

β Module 5: “Patent filing tactics and managing the patent life cycle”

Now onto Series Two, Module #1
Agenda

- The Innovation process
- Different approaches
- Open innovation
- The role of IP in the innovation process
- IP and open innovation
- Some key IP sub-processes
  - Invention handling process
  - IP licensing process
  - IP risk management process
- Key take-aways
The innovation process
Innovation

“A new method, idea, product, etc.”

“The act or process of introducing new ideas, devices, or methods”

“The process of translating an idea or invention into a good or service that creates value or for which customers will pay”
Process

- A process is an interrelated set of activities designed to transform inputs into outputs, which should accomplish your pre-defined business objectives.
- Processes should produce an output of value.
- Processes very often span across organisational and functional boundaries.
- Processes exist whether you choose to document them or not.
The innovation process

Morphing the "Bright Idea" into a "Final Product" is a process of thinking through issues and adaptations, working out details, and defining all the specifics.

However it oftentimes involves a long and complex process.

Recognising and understanding the process and navigating through it can mean the difference between success and failure.
The memory of the organisation

The innovation process …

- is an agreement to do certain things in a certain way.
- defines what, when and how tasks are done and by whom, to ensure repeatability.
- enables one to set performance criteria and measurement.
- facilitates good communication.
- must never be allowed to become static, because it is there to serve the organisation and not vice versa.
- is the memory of your organisation.
Different approaches
No one size fits all

The innovation process will differ from one organisation to another.

The innovation process in companies frequently ranges between inflexible over-disciplined at one end of the scale to flailing about at the other end.
Multiple step process

### Three step process:
- Generation;
- Acceptance;
- Implementation.

### Five step process:
- Idea Generation and Mobilization.
- Advocacy and Screening.
- Experimentation.
- Commercialization.
- Diffusion and Implementation.

### Seven step process:
- Idea / Insight.
- Research.
- Development.
- Management / Strategy.
- Manufacturing / Distribution.
- Sales / Marketing.
- Marketplace.

Source:
The Five Stages of Successful Innovation
https://sloanreview.mit.edu/article/the-five-stages-of-successful-innovation/
A stage gate process

- The innovation process is typically a stage gate process.

- A Stage-Gate process can be defined as a framework where large innovation programmes are divided into phases (stages).

- Each phase or stage is preceded by a review session (gate), where ideas are assessed and deemed worthy of further development or not.

Source: Peter Andrews @ IBM Advanced Business Institute - Roles for innovation – The right people at the right time
Stop / Go

At each gate, continuation is decided by:

- a manager,
- a steering committee,
- a governance board.

The decision is made on available data and forecasts:

- the business case,
- market analysis,
- technology analysis
- availability of necessary resources (e.g., money, people)
- IP
Although very common, the stage gate process is not the only approach with respect to innovation.

Agile

- Agile describes an approach to software development under which requirements and solutions evolve through the collaborative effort of self-organizing and cross-functional teams and their customer(s) / end user(s).
- It advocates adaptive planning, evolutionary development, early delivery, and continual improvement, and it encourages rapid and flexible response to change.

Source:
Agile Alliance
https://www.agilealliance.org/
Open vs closed forms
Major change in innovation process

β Traditionally, internal innovation was the paradigm under which most firms operated.

β Most innovative companies keeping their discoveries highly secret and no attempt made to assimilate information from outside their own research & development (R&D).

β However, in recent years the world has seen major advances in technology and society which have facilitated the diffusion of information.
Companies have also begun to realise that "not all the smart people work for us and that we need to work with smart people inside and outside our company".

Source: “Not all of the smart people work for us” - Bill Joy, co-founder of Sun Microsystems
Open vs closed forms of innovation

The closed form of innovation management may be viewed as the command and control approach by the company developing a new product or service.

However, the internet has enabled businesses to approach innovation in different ways, which includes engaging with others such as suppliers, partners, customers and end-users in many collaborative forms of innovation.
Collaboration partners

Collaboration partners can vary:

- working with universities and research institutes,
- cooperating closely with suppliers and vendors,
- collaborating with application developers and content providers,
- working with various communities including ‘open’ communities, innovation networks, standardisation bodies,
- collaborating with customers and end-users,
- working with start-ups and SMEs (small & medium sized enterprises),
- engaging with Government bodies
- Etc.
Not easy

- Cooperation and collaboration between two or more parties is not easy.

- Various internal barriers exist which need to be overcome

- What is each party bringing to the table in terms of knowledge, competence and skills?

- What is each party going to contribute?
Key issues to resolve

Companies who embrace open innovation have some key issues to resolve:

- With whom should you collaborate?
- What is the best approach to take?
- What type of innovation best suits open innovation?
- How should your company re-organise to help open innovation succeed?
- What legal framework is needed?
- **How should IP be handled?**
  - Is it just about taking? What about giving?
  - What metrics to use?
  - What should be communicated?

IP & the innovation process
It is important to note that the innovation process is not the preserve of R&D.

All corporate functions have crucial roles to play in morphing the "Bright Idea" into a "Final Product"

This includes the IP function.
The innovation process & IP

During the innovation process different IP relevant decisions need to be taken at different stages associated with different uncertainties.
The role of IP in the innovation process

At each stage of the innovation process, IP has a crucial role to play

- What is the external IP environment like?
- How can IP data & IP data analytics help?
- What are the key innovations and how should these be best protected?
- What IP risks exist and how should these risks be mitigated?
- Are there control points of interest (e.g. Standards), and can IP assist here?
- What about the business relationships with others (suppliers, collaboration partners, customers), and how is IP best handled here (contractually)?
- Can IP encourage investment / support?
- Are there key IP messages to be communicated?
IP & open innovation
Some misunderstandings

- Some people have taken open to mean open to all.

- Others have understood open to mean free.

- Others still have taken the word open to mean that it is an intellectual property rights or patent free zone.
Different IP environments

Some open innovation environments are ‘calm’ with the company in control of how the IP ‘game’ is played.

- e.g. a Multi National Enterprise (MNE) collaborating with a Small or Medium sized Enterprise (SME).

Some open innovation environments are ‘turbulent’ with external entities having control and the company having to accept the rules of the IP ‘game’.

- e.g. open source software, interoperability standards.
Different levels of IP maturity

Another key challenge with open innovation from an IP perspective is that in many cases, the collaborating parties are at very different levels of IP maturity and sophistication.

- #One: those who have a visionary approach to IP
- #Two: those who have integrated their IP activities
- #Three: those who have come to realize that IP is an asset class
- #Four: those who understand that there are processes associated with IP
- #Five: those who focus solely on the defensive nature of IP
- #Six: those who can’t spell IP

Source:
“Edison in the Boardroom Revisited: How Leading Companies Realize Value” by Patrick H. Sullivan and Suzanne S. Harrison
Different IP positions in the eco system

Yet another key challenge with open innovation from an IP perspective is that in many cases, the collaborating parties are in different locations in the eco system, with different perspectives on IP value and IP risk.

- A goldfish has low IP strength and low sales
- A target has low IP strength but high sales
- A glasshouse has high IP strength and high sales
- A shark has high IP strength but little if any sales
The role of IP in open innovation

- Open (or collaborative) innovation is reliant on some form of management and control.

- IP is the means to manage knowledge-based collaborations, as knowledge and technology needs to be managed as a transaction of objects in the development stages.

- Without IP, collaboration especially in technology development, becomes prohibitively difficult.

Source: Harvesting External Innovation – Donal O’Connell
Invention handling process
Invention handling process

Within any innovation process, there are a variety of subprocesses.

One key one of interest to this audience should be the invention handling process.

The exact name of this process will vary from one entity to another. Some call it the invention disclosure process.
Invention handling process – 3 steps

Inventor(s)
- Inventive idea capture

Analyst(s)
- Analysis of the inventive idea

Reviewer(s)
- Decision on next course of action

- Triggers
- Harvesting
- Pull vs Push

- Alignment
- Ownership
- Novelty
- Patentability
- Actuals vs targets
- Funding

- Structure
- Membership
- Review criteria
- Decision options
- Metrics
- Rating

European Patent Office

https://www.linkedin.com/pulse/seven-cs-donal-o-connell/

https://www.linkedin.com/pulse/pull-vs-push-approaches-dealing-inventors-donal-o-connell/
The importance of an invention template

Simplified invention report template
- Title
- Problem
- Solution
- Inventor details

Detailed invention report template
- Title
- The basis / need
- Description of invention
- Advantages
- Current state
- Use / commercial applications
- Prior art / Freedom to operate
- Dates
- Public disclosure
- Funding
- Support material
- Inventor details

Source: https://www.linkedin.com/pulse/creating-inventive-ideas-template-donal-o-connell/
The importance of proper decision making

- **IP**
- **Business**
- **Technical**

**Inventive Ideas Review Board**

- **Membership**
- **Decision Options**
- **Review criteria**

**Inventive Ideas**

- The idea
- Summary of idea
- Patentability analysis
- Compared against filing targets
- How such an idea adds value
- Rating
- Opinions of technical experts
- Prior art search analysis

**Decision Options**

- Submit a patent application
- Publish the idea
- Keep the inventive idea as a trade secret
- Reject the inventive idea
- Request more information

**Review criteria**

- The problem?
- Design around?
- Detect infringement?
- Other solutions?
- Differentiation?
- To be implemented?
- Licensing?
- Alignment with targets?
- Control point?
- SEP?
- Value to business?
- ROI?

**Sources:**
- https://www.linkedin.com/pulse/running-good-patent-board-meetings-donal-o-connell/
- https://www.linkedin.com/pulse/reviewing-inventive-ideas-group-decision-making-donal-o-connell/
- https://www.linkedin.com/pulse/rating-inventive-ideas-patent-applications-patents-donal-o-connell/
You typically get what you measure

Inventors  Classification  Date  Team

Status  Decision  Time  Next steps

Funding  Legal costs
IP licensing process
Another key IP process of interest to this audience should be the IP licensing process.

I would argue that almost all forms of innovation (whether closed but especially open) will involved some IP licensing of one sort or another.
What is an IP license

β An IP license in its simplest form is an agreement where an IP owner (the Licensor) permits another person (the Licensee) to engage in activities that, in the absence of the IP License Agreement, would infringe the Licensor’s legal rights attaching to the IP.

β Many general agreements between entities may actually include IP licensing provisions,
### Each IP license is unique

<table>
<thead>
<tr>
<th>Forms of IP involved</th>
<th>Patents; Trademarks; Copyright; Designs; Trade Secrets, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of IP licenses</td>
<td>Exclusive; Sole; Non-exclusive; Cross licensing; Licensing pools; In-licensing; Out-licensing; Software to patent; Software to software; Patent to software; Pass through licenses; etc.</td>
</tr>
<tr>
<td>Terms &amp; conditions</td>
<td>Scope; Field of use; Geographical coverage; Duration; Milestones; Termination; Financial terms; Confidentiality; Dispute resolution; Jurisdiction; Audit rights; Grant back; Indemnification; Liabilities; etc.</td>
</tr>
</tbody>
</table>

Source: [https://www.linkedin.com/pulse/ip-licensing-donal-o-connell/](https://www.linkedin.com/pulse/ip-licensing-donal-o-connell/)
Typical phases

Completing an IP license project is no simple task and comprises of a number of key phases.

- Prepare business case
- Obtain management approval
- Project launch
- Engage licensee
- Define scope
- Technical discussions
- Business discussions
- Negotiate terms
- Management approval
- Signatures
- License administration
The different roles

Simple deals may only need the one person.

Complex IP license deals may require a number of different roles:
- Project manager
- Negotiator(s)
- Defensive IP analysts
- Legal / litigation expert
- Business representative
- IP portfolio expert
- Translator
- Local coordinator
IP risk management process
IP related risks

β By its very nature, there are both rewards and risks associated with IP.

β For anyone involved in IP, then IP related risks are part of working life.

β Any company involved in innovation (whether closed or open) faces a variety of IP related risks, some foreseen, others unforeseen.

Source:
https://www.linkedin.com/pulse/tackling-scourge-counterfeiters-online-donal-o-Connell/
https://www.linkedin.com/pulse/when-take-ip-risk-management-seriously-donal-o-Connell/
## Breaking down IP related risks

<table>
<thead>
<tr>
<th>Name of IP risk</th>
<th>Person managing it</th>
<th>Date IP risk materialises</th>
<th>Date first identified</th>
<th>Business unit impacted</th>
<th>General IP risk mitigation approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability</td>
<td>Person who identified it</td>
<td>Specific IP risk mitigation action</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td>Products / services potentially impacted</td>
<td>External IP risk mitigation help</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geo coverage</td>
<td>Source</td>
<td>Unique / others affected</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IP risk management

IP risk management is the systematic application of management policies, procedures and practices to the tasks of establishing the context, identifying, analysing, assessing, treating, monitoring and communicating.

Source:
https://www.linkedin.com/pulse/psychology-ip-risk-management-donal-o-Connell/
Key take aways
Innovation process & system

β The IP community must have a good thorough understanding and appreciation of the innovation process.

β IP must play an active role at each stage in that process.

β This is true for both closed and open forms of innovation

β IP can often times be the difference between success and failure.

β Some key IP sub-process are as follows:
  • invention handling process.
  • IP licensing
  • IP risk management
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Much more details on the remaining Modules in Series 2 is available from the EPO Academy.