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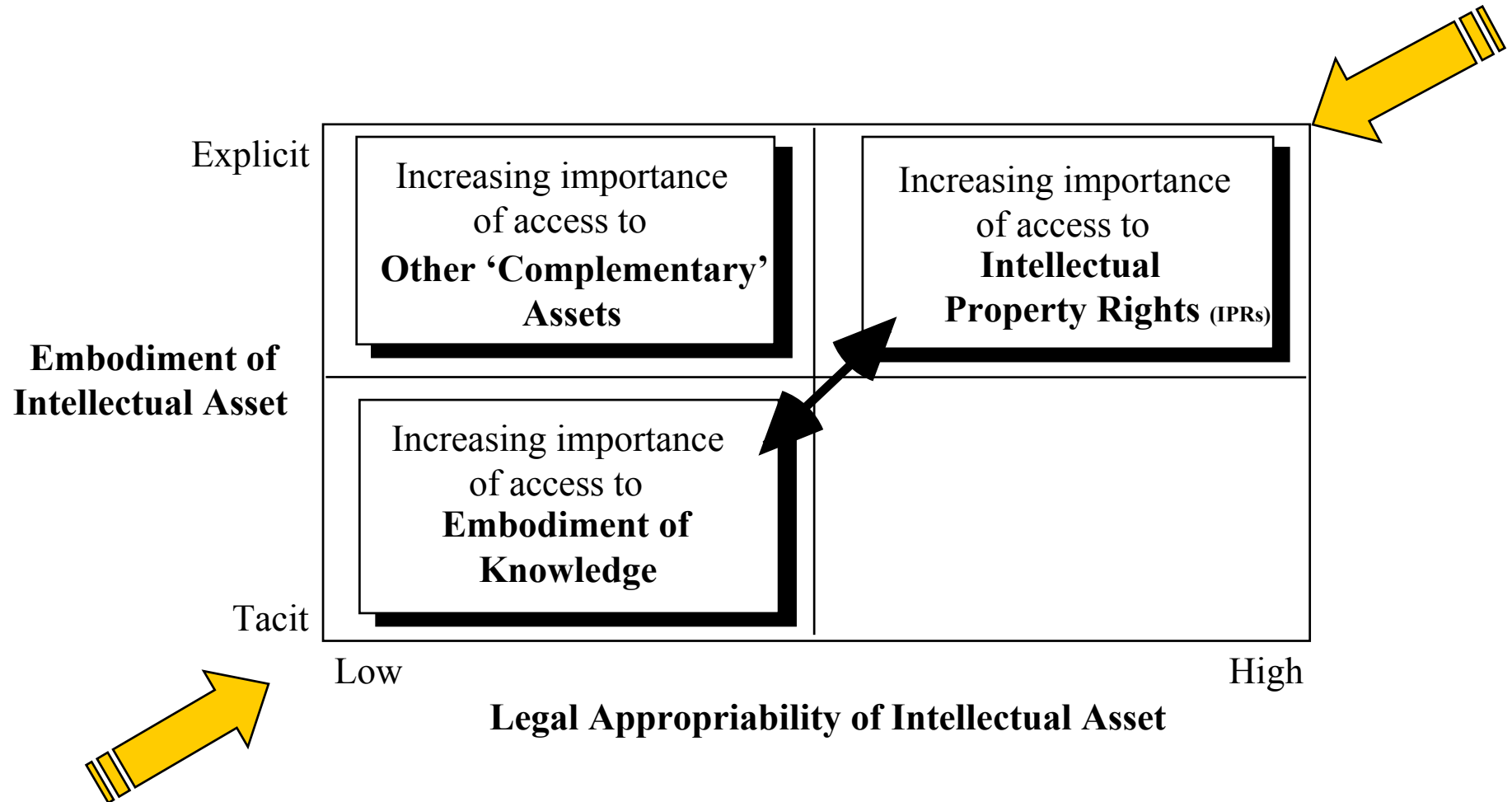
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# Intellectual Property Management

Dr. Robert Pitkethly

Copies of these slides : <http://users.ox.ac.uk/~mast0140/SEC/SECIP.ppt>

# What needs Managing ?



Management of explicit, appropriable “Knowledge” or “IP” involves IPRs

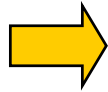
## **Intellectual Property Rights include :**

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- Copyright
- Rights in performances
- Patents
- Registered Designs
- Design Rights
- Trade Marks
- Passing off
- Confidential Information
- Semiconductor Chip protection rights
- Plant Variety Rights

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**IP Law is complex**



## ***Golden Rule #1 : Seek Professional Advice***

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- IP Law is complex and full of pitfalls for the unwary
- You cannot reasonably rely on just this talk or any general advice
- Get specific advice :
  - From a Patent Attorney for technical and general IP related matters  
<http://www.cipa.org.uk/>
  - From a Solicitor specialising in IP law for non-technical and specifically legal matters

## What is the purpose of "Intellectual Property Rights" ?

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- “A patent does not give you the right to do make something or to do anything except to appear in court as the plaintiff in an action for infringement”

Earl of Halsbury House of Lords 20/2/85

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### But IPRs can :

- Protect - an invention from use by others
- Appropriate - the returns / profits from an invention by using IPRs and any necessary complementary assets
- **CONTROL** - how an invention is exploited

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Even from a Firm perspective, IPRs are not just a matter of protecting IP

## Two Cases of IPR exploitation - II

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- Penicillin
    - Neither penicillin nor production methods were patented by the discoverers Fleming and Florey for legal and other reasons
    - Production methods were patented by scientists in the USA
      - Andrew J. Moyer - Method for Production of Penicillin
        - US Patent Nos. 2,442,141; 2,443,989; UK Applications 45/13674-6 Etc.
    - Fleming received \$100k from US Penicillin Manufacturers in 1945 to fund medical research
  
  - Cephalosporin-C
    - In 1957, Abraham and Newton isolated cephalosporin-C, the first cephalosporin antibiotic. This was patented.
    - The E P Abraham Research Fund and the Guy Newton Trust, funded by royalties support medical, biological and chemical research in Oxford.
    - Cephalosporin patents generated gross revenues of over £150m
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Attitudes to Patenting are still changing

## IPRs - Lost Opportunities

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- Monoclonal Antibodies  
Discovered in Cambridge by Kohler & Milstein in 1975 using Medical Research Council (MRC) Funding but **not** patented by the MRC.
  - Almost certainly involved £millions of lost research funding
- 
- Even without basic patents, improvement patents are important
  - The patents that do exist decide who reaps the most benefits

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**No organisation can afford to ignore IPRs**

# IPRs - Ideals and Reality

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- Ideals
  - Research should not be subject to financial pressures
  - Research results should be freely available to all
  - Research should not be hindered by IP laws
- Reality
  - IP laws aim to promote Innovation not hinder it
  - Invention related IPRs are temporary
  - Financial pressures make allowing protection of IP likely to be optimal  
&
  - Abandoning IPRs abandons responsibility for the way IP is exploited

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**If you don't control your inventions someone else will**

# Intellectual Property Rights

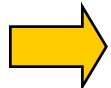
	Creativity		Reputation/Goodwill
No Formal Application	Artistic	Industrial	Passing Off
	<i>Copyright</i>	Design Right	
Formal Application /Registration Required	Registered Designs Plant Varieties	<i>Patents</i>	<i>Trade Marks</i>

Based on Bainbridge 1999

# Copyright

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- For : Original literary, dramatic, musical or artistic works that have been recorded in some form, and various other works, such as films. Computer programs, however recorded, are "literary works".
- Formalities : None in the UK. However, for maximum protection marking with the proprietors name, the year of first publication and © is advisable. (e.g. © R.Pitkethly 1994). Recording the work's creation and author's employment or contract details is also advisable to prove ownership.
- Protection : Protection from, inter alia, copying or adaption of the whole or a substantial part of a work. Some exceptions exist such as copying for research or private study. Moral rights, covering attribution and how the work is used, remain with the author even if the copyright is sold.
- Duration : In most cases the life of the author plus 70 years.
- N.B. : In general, Copyright does not protect ideas but only protects the way they are recorded or expressed from copying.
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**Ensure you keep records of who created what and when and under what contract...**

## Registered Trademarks (& the law of "Passing Off")

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### Registered Trademarks

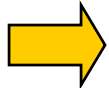
- For : Marks capable of distinguishing goods or services from those of others
- Formalities: Application with examination for registrability including distinctiveness and lack of conflict with existing registered marks.
- Protection: From use of the mark or one confusingly like it.
- Duration : Potentially indefinite, though renewal and use is required.

### Rights under the law of "Passing Off"

- For : Business "goodwill" or trading reputation
- Formalities: None, though goodwill must have been established by trade.
- Protection: From "passing off" goods as those of the genuine trader.  
One must show that a misrepresentation to customers that damages the genuine trader's business has occurred or is likely to occur.
- Duration : Potentially indefinite so long as the "goodwill" is maintained

Trademarks aim to protect reputations and prevent deception. The law of Passing Off is more flexible than Trade mark law and can protect unregistrable trade marks BUT proof of infringement is more complex. Other rights may also be relevant in such cases (e.g. malicious falsehood, etc.).

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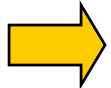
**If you intend using a trademark consider applying to register it first.  
Consider several alternative names (& don't forget to register domain names).**

## Confidential Information / Trade Secrets

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- For : Confidential unpublished information.
- Formalities: None, though proof that the information was either expressly or impliedly conveyed in confidence is necessary to pursue litigation.
- Protection: From unauthorised disclosure which is detrimental to the party communicating the information. Remedies may include injunctions to prevent an anticipated disclosure or to prevent those who have disclosed the information from using it to gain an unfair advantage.
- Duration : As long as the information remains confidential.
- N.B. : Marking documents as "In Confidence" is useful but not sufficient on its own. The information should also be treated as confidential.

A trade secret's disadvantage is that once in the public domain any form of protection is lost. Disputes often centre around ex-employees who may be expected to keep trade secrets after leaving but not to keep contracts which unfairly restrict use of skills they develop.



**Do you need a standard Confidentiality / Non-Disclosure Agreement ?**

## Other Intellectual Property Rights

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- Registered Designs :  
Protects “eye appeal” “aesthetic articles”  
Protects features not dictated by function  
Maximum 25 year protection.
  - Unregistered Design Rights :  
Any aspect of shape or configuration  
Protects functional articles  
but not must fit / must match features.  
Maximum 15 years protection - usually 10.
  - Database Rights  
Protects database from others extracting or re-utilising substantial parts of it. 15 years protection extendable if database revised.
  - Semiconductor Design Rights :  
Similar to unregistered design rights but for semiconductor chip designs.
  - Domain Name Registrations
  - Plant Varieties Act 1997
  - Community Plant Variety Rights.
  - Community tradeMarks
  - Community Designs
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# What is a Patent?

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- Contract
    - induces disclosure of inventions
  - Incentive
    - encourages R&D
    - induces investment in businesses rendered unprofitable by many entrants/free riders
- 
- Moral Right
    - protects moral rights of inventors
  - Reward
    - rewards commercialization (but not lack of it)
- 

A monopoly in the public interest

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**All IPRs involve balancing public & private benefits**

# Patents

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For : **New** and **non-obvious** inventions **capable of industrial application** and not excluded by law. In UK/Europe they should have some technical effect.

Formalities : Complex application procedure requiring publication of the application and examination for both novelty and inventiveness.

Protection : A monopoly protecting the new and inventive essence of the invention from anything within the patent's scope, even if no copying occurs.

Duration : Usually 20 years from the initial filing date. Renewal fees are payable.

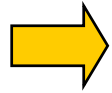
N.B. : **The novelty requirement means almost any public disclosure of an invention prior to filing a patent application will invalidate it.**

Inventions excluded include inter alia : schemes rules or methods for performing mental acts or doing business, computer programs and the presentation of information.

Inventions using computer programs may in some cases be patentable if a technical effect is present.

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**Each country has its own often different Patent System - you need to consider the implications of the laws of all the countries you might be interested in**



## *Golden Rule #2 : File first, Publish later*

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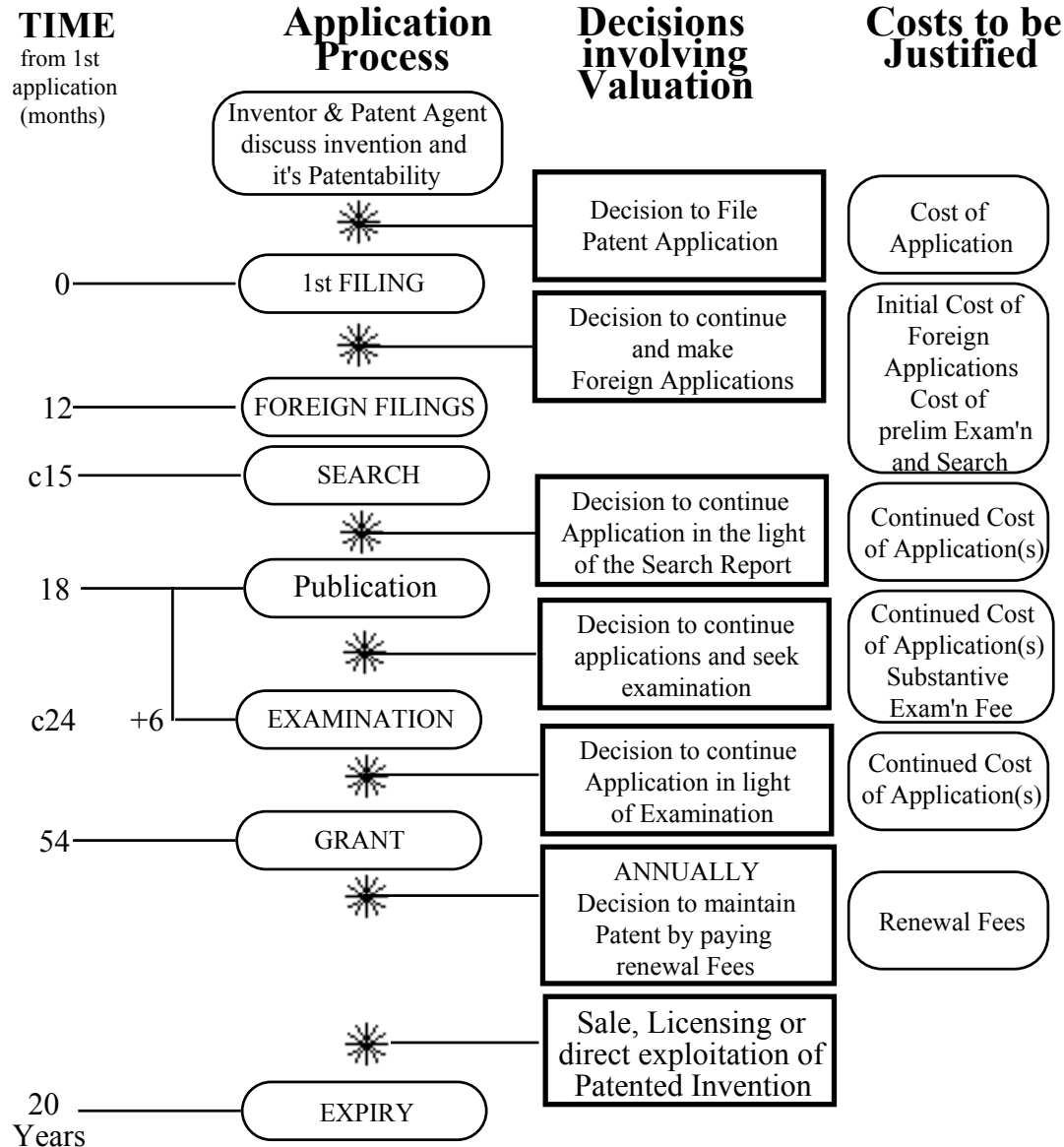
Since any public disclosure of an invention before filing a patent application invalidates it :

**Don't tell anyone about your invention until :**

**a) you have spoken to a patent attorney and**

**b) filed a patent application**

# Golden Rule #3 : Plan for Patent Filings and Costs



## Patent Management Decisions:

**As soon as you file an application a clock starts ticking.....**

**If you want Patent protection abroad you have to file corresponding foreign patent applications within 1 YEAR of your initial application**

## How many patents? How many applications?

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### How many *Patent Applications* do you need?

- Some international application systems cover several countries => Several
  - European Patent application
  - PCT application (which can also delay some foreign filing costs).

### How many *Patents* do you need?

- There's still no “international” patent => 1 patent / Country

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But some harmonisation of IP law has occurred.....

# International Harmonisation?

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**Two main forms of harmonisation exist:**

- **Standardisation :**

- Bilateral - e.g. Semiconductor Chip Protection Act
- Multilateral - e.g. Paris Convention / WTO **TRIPS**

- **Unification**

- Partial - Pre-Grant e.g. European Patent Convention (EPC) & PC  
\_\_\_\_\_ (currently enable filing single application in respect of several countries)
  - Total - Pre- and Post-Grant e.g. Community Patent Convention (CPC)  
(not yet in force despite many years under discussion)
-

# European Patent Convention : EU & EPC Membership differs

## 25 Members of EU:



- Austria
- Belgium
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia**
- Lithuania**
- Luxembourg
- Malta**
- Poland
- Portugal
- Slovakia
- Slovenia
- Spain
- Sweden
- Netherlands
- United Kingdom

**NB** The EU has applications from:  
Bulgaria  
Croatia  
Romania  
Turkey

## 29 Members of EPC:



- Austria
- Belgium
- Bulgaria**
- Liechtenstein
- Cyprus
- Czech Republic
- Germany
- Denmark
- Estonia
- Spain
- Finland
- France
- United Kingdom
- Greece
- Hungary
- Ireland
- Iceland**
- Italy
- Switzerland**
- Luxembourg
- Monaco
- Netherlands
- Poland
- Portugal
- Romania**
- Sweden
- Slovenia
- Slovakia
- Turkey**

**Extension states :**  
Albania  
Croatia  
Lithuania  
Latvia  
former Yugoslav Republic of Macedonia  
Serbia and Montenegro

**EPC a success - Languages still delaying CPC implementation**

## Key Questions

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- **What do I need to do to preserve my rights?**
  - File patent applications, plan foreign filing programmes, keep records
  - Register Trademarks
  - Keep information confidential
  - Ensure that I own relevant IPRs and preserve relevant documentation
  - Be aware of the activities of competitors
  
- **What do I need to do to avoid infringing others' rights?**
  - Ensure that new products / services do not :
    - Infringe others patents by searching /being aware of other's IPRs
    - Infringe others trademarks/reputation by conducting name searches / registering trademarks.
  - Always take legal advice before taking legal action against infringers

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***Golden Rule #4 : Take steps to preserve all one's own IPRs, not just patents***

***Golden Rule #5 : Beware of infringing other's IPRs***

## Ownership of IPRs

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- **Patents** : Belong to inventor or the employer if the inventor was normally employed to invent or had special obligations to the employer.

Any Patent assignment must be in writing  
and should ideally also be registered

Compensation may be available to employee inventors for  
exceptionally valuable inventions

- **Copyright** : Belongs to Author unless the author is an employee in which case the copyright belongs to the employer.  
Any assignment of Copyright must be in writing.

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**Golden Rule #6 : Check Employment and Consultancy contracts to retain ownership of IPRs. ....Get it in Writing....**

<http://www.admin.ox.ac.uk/rso/policy/intpol.shtml>

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# Intellectual Property Policy

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## Research Services

The following documents set out the University's intellectual property policy and the procedures which are used to administer it:

- \* [Oxford University's Intellectual Property Policy](#)
- \* [Procedures for the administration of this policy](#)

Research Services staff will be pleased to help with any queries you may have regarding this policy.

Members of the University may also find it useful to browse the web site of [Isis Innovation Limited](#), the University's technology transfer company, for further information about the exploitation of intellectual property arising from University research.

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# Strategy

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“Strategy can be defined as the determination of the long run goals and **objectives** of an enterprise and the adoption of courses of action and the allocation of **resources** necessary for carrying out these goals”.

Alfred Chandler (1962), Strategy & Structure

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**Organisations have a duty to make the most of the resources under their control**

## Resources

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- Company Staff (Human resources)
- Financial resources
- Tangible assets (Buildings and equipment)
- Intellectual Property (Intangible Resources)

「知的財産権を人、モノ、金に次ぐ第四の経営資源として活用しよう」

"Lets use IPRs as the fourth resource of business as well as People, Things and Money."

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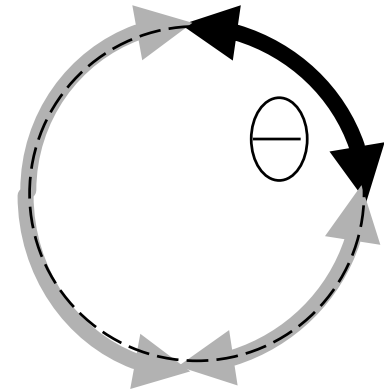
**How do firms maximise returns to these resources?**

# Strategic Appropriability

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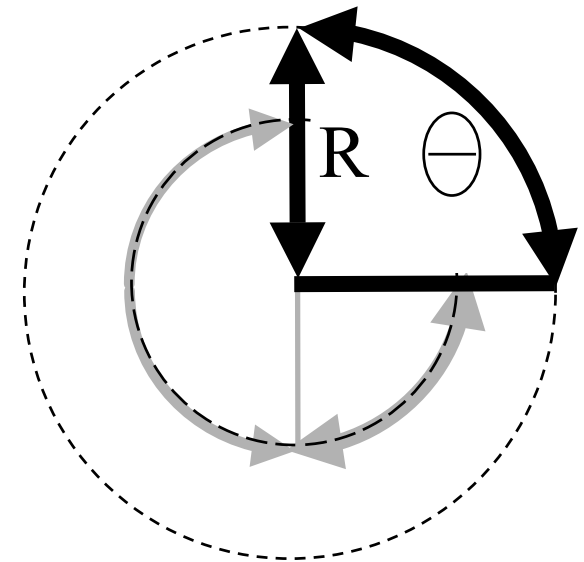
## Appropriability

- Legal Appropriability & Complementary Assets
- Deciding the % of returns players appropriate
- How much of the cake - RADIANS



## Strategic Appropriability

- Ability of a given player to maximise returns
- Deciding the returns a player appropriates
- How much of the cake - RADIANS  
& How large a cake - RADIUS



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How can one use control over IPRs to increase the returns ?

# Innovation Outcomes

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	<b>INNOVATOR</b>	<b>IMITATOR -FOLLOWER</b>
<b>WIN</b>	<ul style="list-style-type: none"> <li>• Pilkington (Float Glass)</li> <li>• GD Searle (Nutrasweet)</li> <li>• Dupont (Teflon)</li> </ul>	<ul style="list-style-type: none"> <li>• IBM pc</li> <li>• Matsushita VHS VCR</li> <li>• Seiko Quartz Watch</li> </ul>
<b>LOSE</b>	<ul style="list-style-type: none"> <li>• RC Cola (diet cola)</li> <li>• EMI CAT Scanner</li> <li>• DeHavilland (Comet)</li> <li>• Xerox office computer</li> </ul>	<ul style="list-style-type: none"> <li>• Kodak instant photography</li> <li>• DEC personal computer</li> </ul>

**Success linked to :**

- appropriability
- **complementary assets**
- dominant design

(Teece, 1986)

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Innovators don't always win

## CAT Scanners

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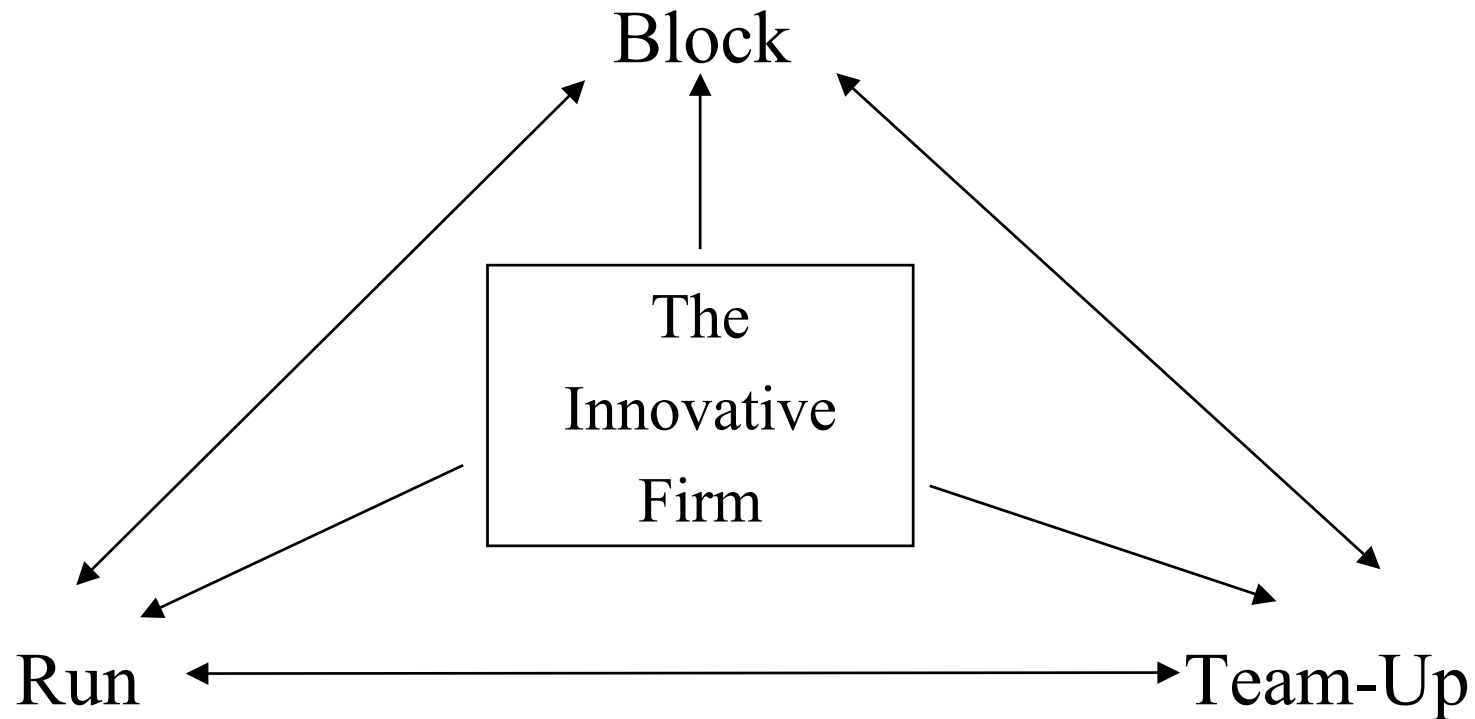
- 1967 G.Hounsfield invents the CT X-ray Scanner files first patent application
- 1972 first patent granted
- 1972/4 customers waiting 12 months for delivery
- 1975 250 systems sold 85% in USA      Sales = £20m pa 800 people hired
- 1975 GE enters market
- 1977 Sales in Japan via Toshiba under licence
- 1977 EMI share of US market drops to 50%
- 1978 purchasing restrictions in US slow sales  
EMI has applied for over 500 patents
- 1979 Sales decline further, companies fail
- 1979 EMI merged with Thorn Electric  
G.Hounsfield receives Nobel prize  
EMI Medical Electronics sold to GE

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**EMI needed more than just patents...**

## Block - Run - Team-Up

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May be pursued in combinations & at different stages of the value chain.

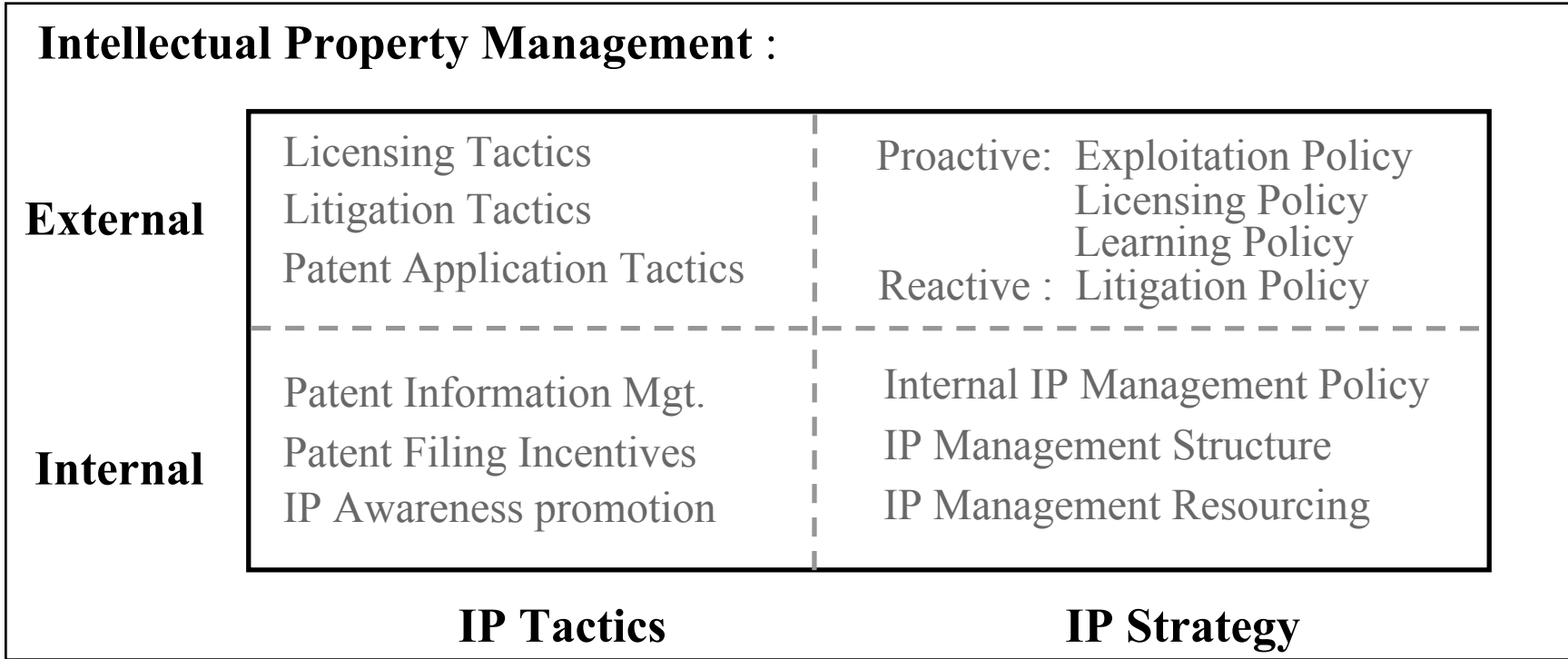
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Based on Afuah, A. (1998). *Innovation Management*. OUP.

How sustainable is the strategy?

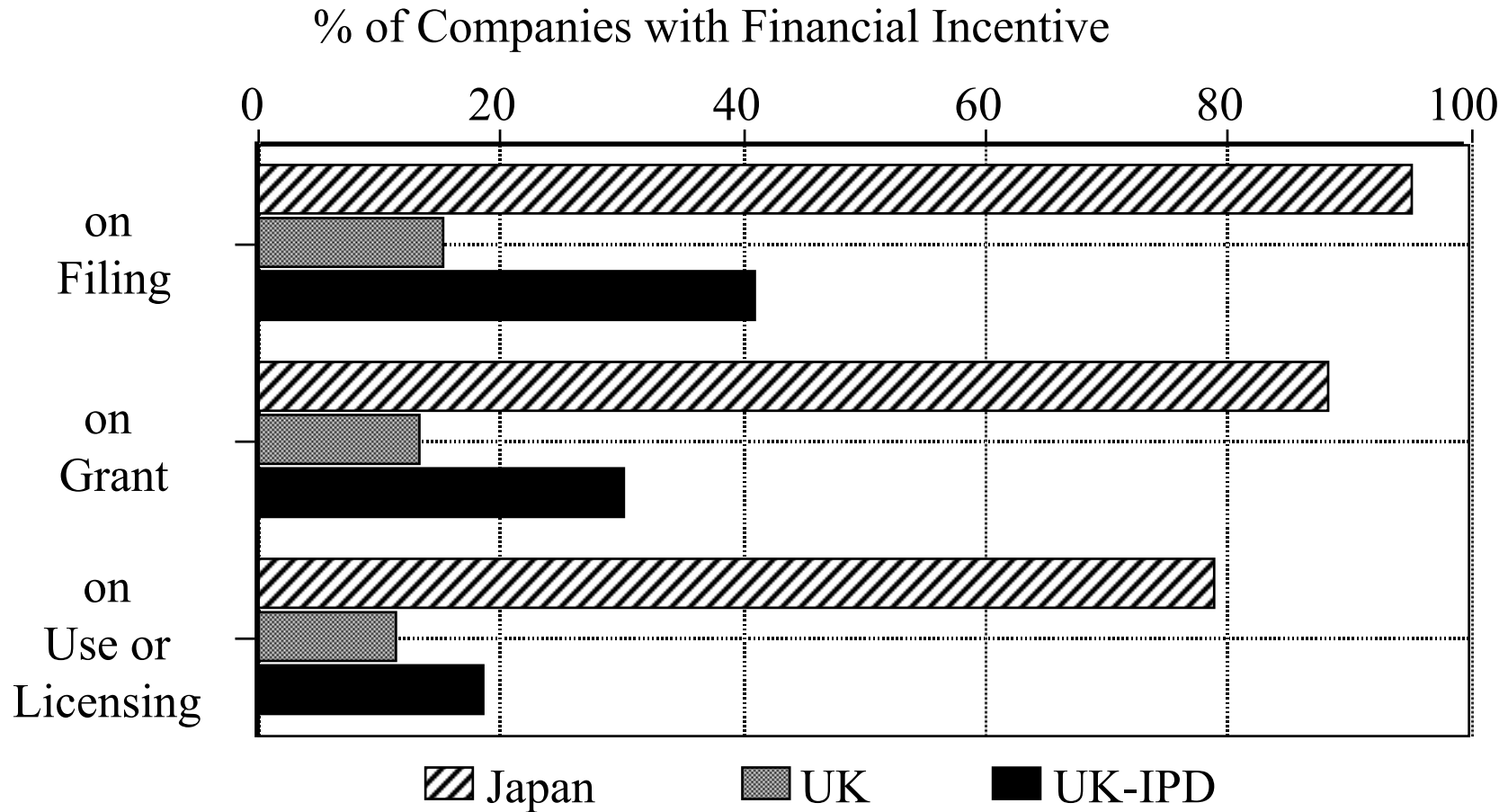
# Intellectual Property Management

**IP Law**



**Strategic Management**

## Direct Financial Incentives



**Significantly more financial incentives exist in Japan - but what are the rewards?**

## IP Department Structure

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### IPR Training

- **Involves : IP Department Professionals  
& R&D Staff  
& staff throughout the Co.**
- **IPR is a company wide issue**
- **In Fujitsu, since at least the mid-1980s, all new staff are given 2-4 hours basic training about the company's patent operations and basic details of the patent system.**

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**IP Training should involve the whole company**

## **Inter Departmental Coordination**

**IP / R&D liaison at Toray**

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**Japanese companies put a heavy emphasis on developing links between the IP department and other departments**

## **Patent Information Management - Uses**

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### **Use related to general management strategy**

- i) Basic analysis of technological trends & special fields  
Assessment of future growth trends and developments
- ii) Analysis by Companies and Technical Fields  
Assessment of entrants to new fields  
Assessment of strengths of competitors over time  
Analysis of inventors by name and numbers  
Analysis of Industry Groupings via joint applications

### **Use related to the research process**

- i) Prevention of duplication of research
- ii) Technology crevice strategies  
(Analysis of patents may reveal room for me too products or developments)

### **Use related to patent applications**

- i) Removal of wasted applications
- ii) Improvement of patent applications by prior art searches.

***Golden Rule #7 : Be aware of your IPR environment***

## Patent Searching

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UK Patent Office Website : <http://www.patent.gov.uk/>

UK/EPO Patent Searching: <http://gb.espacenet.com/>

Former IBM patent database: <http://www.delphion.com>

British Library : <http://www.bl.uk/services/information/patents.html>

Basic searching may be free but for more complicated searches, more information or watching searches you will need to consult a patent attorney or specialised patent searching firm.

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For one link to all the above sites : <http://www.oiprc.ox.ac.uk/Links.html>

# IP Valuations

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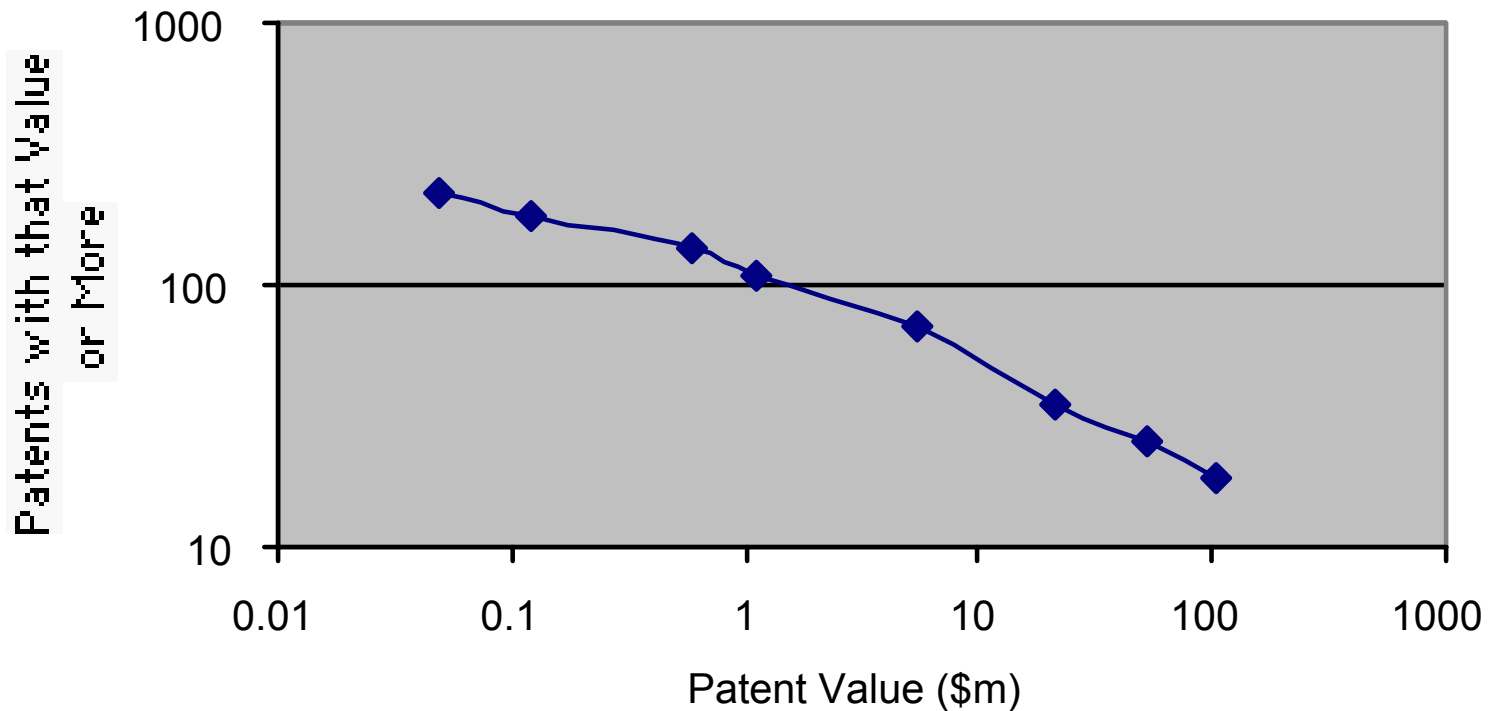
- Brand Valuations
    - Nestlé’s bid for Rowntree 1988
  - Damages
    - Litton Systems Inc. v Honeywell 1996
      - award of \$1.2bn damages : “pure fantasy”
- 
- External Transactions
    - Licensing / Purchase / Sale / Joint Ventures
    - Raising Finance
    - Valuing IP for use as security for debt
  - Internal Management
    - Internal IP Management Decisions
      - First Filing, Foreign Filing, Examination, Renewal
- 

IP valuations ought to be as objective as possible

# Patent Value Distributions from Interview Data (Scherer 1997)

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Pareto Plot of US Patent Values (N=222)  
(Scherer 1997)

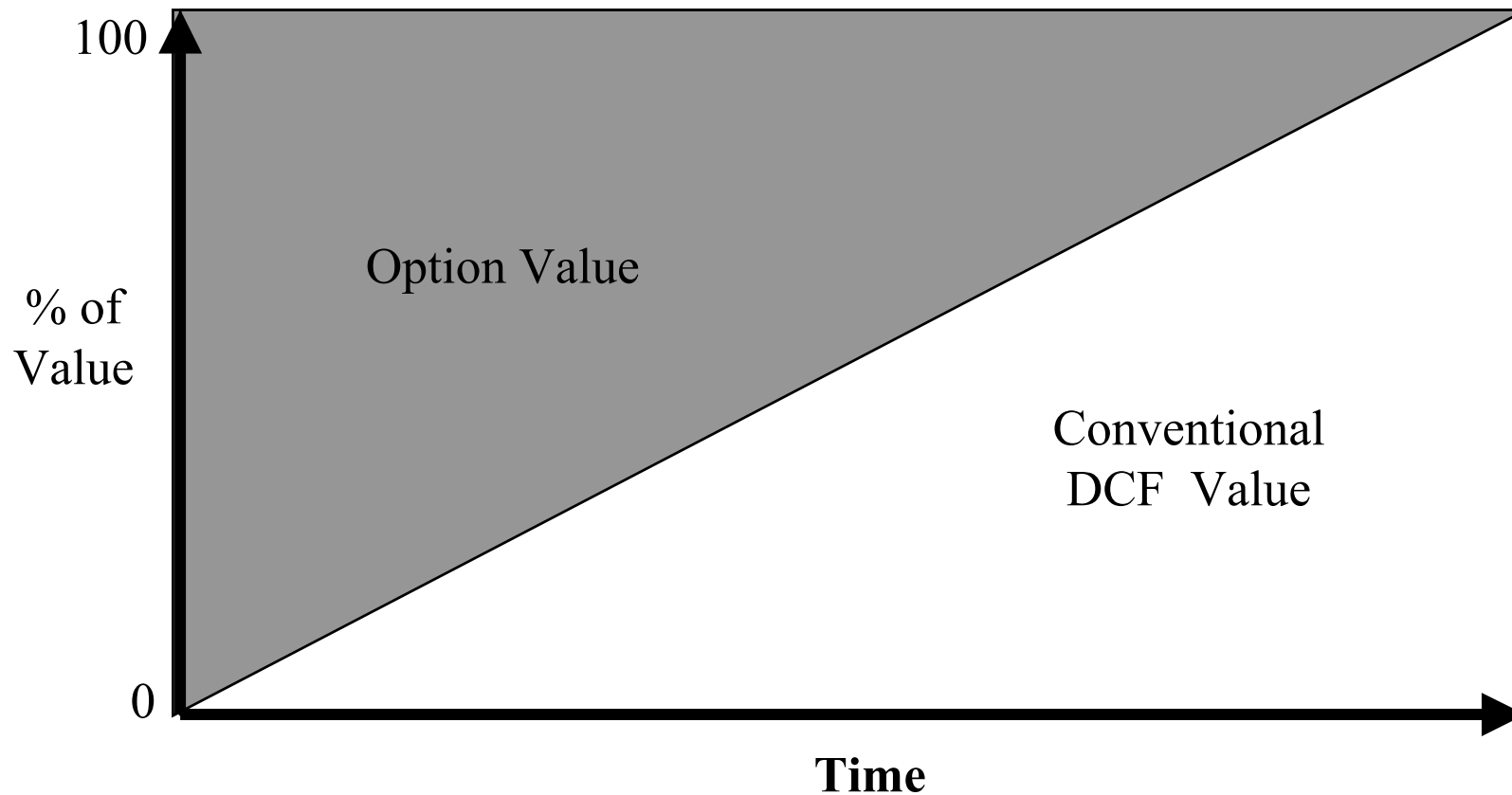


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Little worth Lots - Lots worth little

## The relative importance of the option value changes over an IPR's life

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## **Patents/Patent Applications can be considered as real options**

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Theoretically Complex but the Practical Implications are important :

- Importance of the Option component of patent value
  - option values critical in early patent life & less so later
  - conservative filing / early renewal decisions justifiable
  - “When in doubt, file an application” (Grubb 1982)
- There will come a time for patents not producing current returns when the option value is too small to justify renewal
- Foreign filing decisions need to account for the fact that patents represent options on potential future market values which may be considerable in rapidly developing foreign markets

# Litigation

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- Watch Out for infringers :
  - Never threaten litigation without first seeking legal advice
  - If you do spot an infringement don't delay take advice IMMEDIATELY
- Remember that litigation is the absolutely last resort
  - It's expensive whoever wins or loses - not least in management time
  - Both sides would settle if losing were certain but one *must* lose
- Insurance against the cost of litigation may be possible :
  - May be of benefit in improving the bargaining position of a small company
  - BUT May turn out to be so limited as to be useless in practice
- Be prepared to settle but beware the consequences of licensing infringers

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***Golden Rule #8 : Leave Litigation to Lawyers but not in Isolation***

## Use / Exploitation of Technology

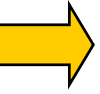
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- In-House Exploitation of technology
  - development and marketing of own products
- Licensing Out of technology developed in-house
  - for revenue
  - for lack of resources to fully exploit it in-house
  - to entrap licensees
  - to allow use by others under patentees control
  - for cross-licensing purposes
- Outright sale of technology
  - exit from technical field

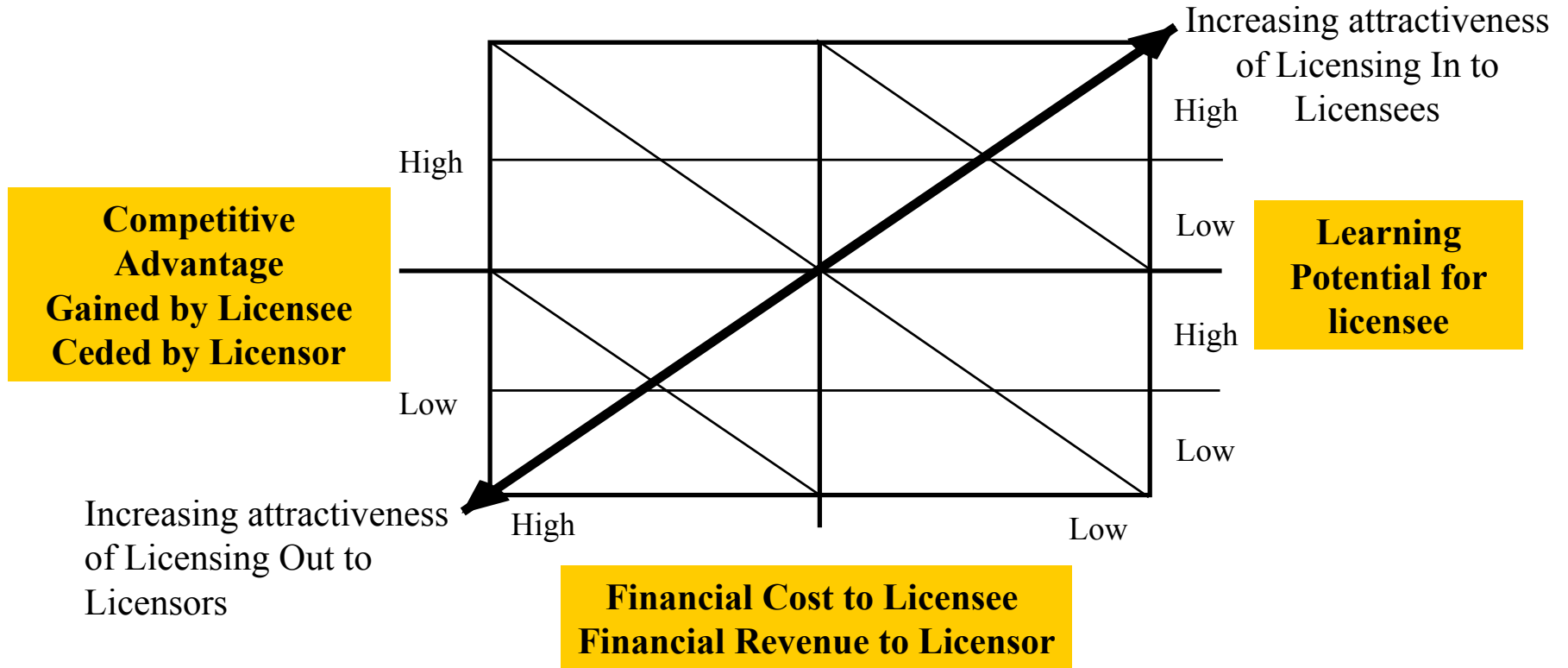
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**Consider as many options as possible but remember their consequences...**

## Licensing Attractiveness



### *Golden Rule #9 : Remember that Licensing involves Learning*

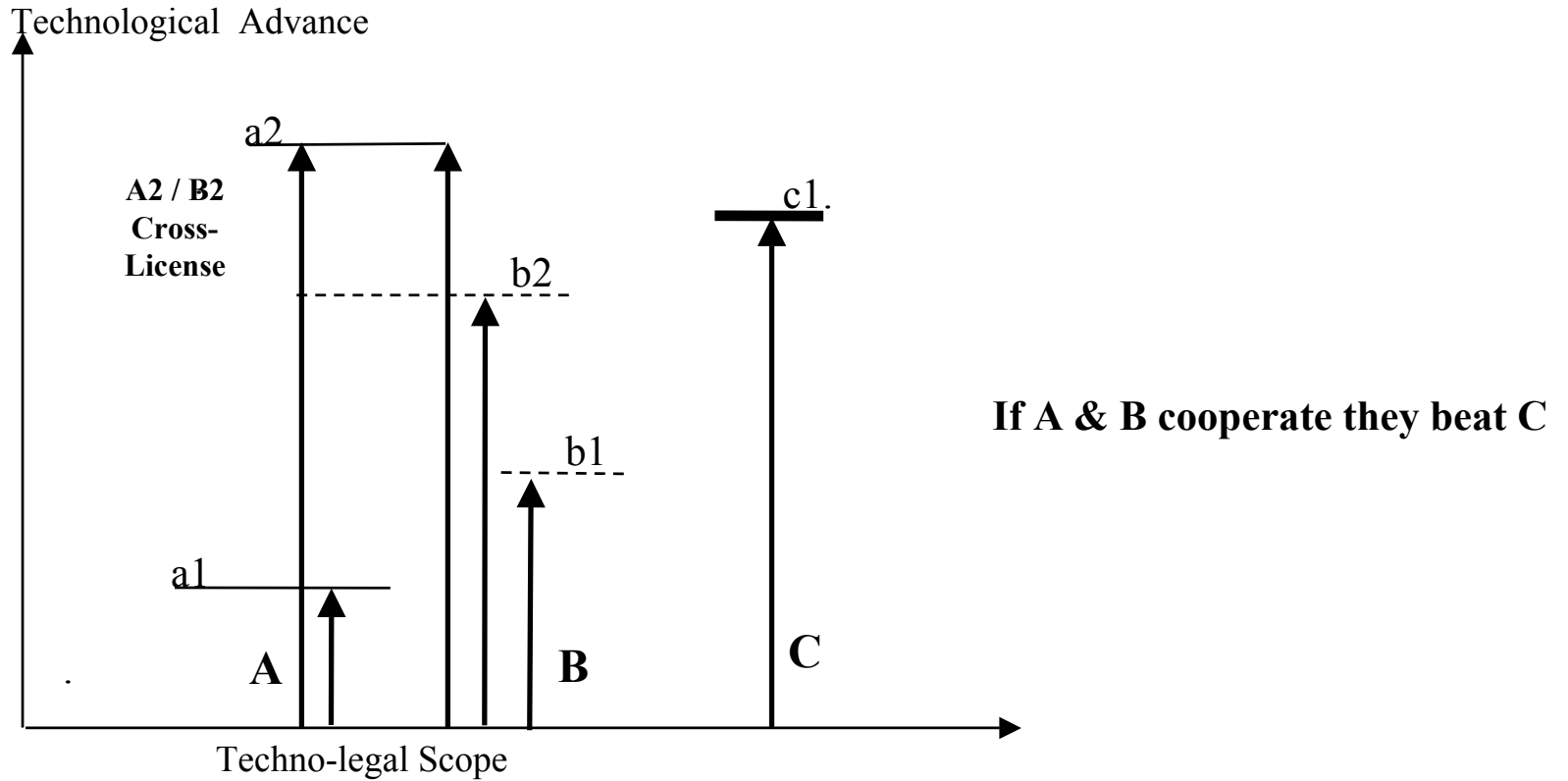


Licensees want to : Pay little, Catch-up a lot, Learn a lot  
Licensors want : the opposite

**But Licensing need not always be a zero-sum game .....**

# Cross-Licensing Advantages

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**But in the next round : Will B have learnt from such cooperation?  
Will C leap ahead of both A & B?**

## **IP & IPR Strategy**

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- **Fundamental Innovations are rare**
  - even when they occur significant commercialisation takes longer than most IPR protection lasts
- **Despite this strong IPRs are worth having**
- **Complementary assets are critical**
  - in capturing innovation's benefits even if IPRs are held
- **Innovators must be prepared, if need be, to :**
  - **License out the innovation**
  - **Contract for or license in complementary assets**

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IPRs are one of a firm's resources - they need managing in conjunction with the rest

## **IPR Administration - essentials**

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- **Close contact between Patent Agents and Inventors**
  - concern to obtain the best IPR possible for each invention
- **Excellent information acquisition and dissemination**
- **Liaison between Patent Agents and Product managers**
  - to work out IPR strategy
  - to ensure IPR strategy works with not against overall strategy
- **Ability to assess value of inventions and IPRs**
  - to make decisions
  - to convince senior management of value
- **Controls over licensing department and decisions**
  - to ensure that only that which should be licensed is

Conclusion

## **Golden Rules :**

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**#1 : Seek Professional Advice**

**#2 : File first, Publish later**

**#3 : Plan for Patent Filings and Costs**

**#4 : Take steps to preserve all one's own IPRs, not just patents**

**#5 : Beware of infringing other's IPRs**

**#6 : Check Employment and Consultancy contracts to retain IP ownership**

**#7 : Be aware of your IP environment**

**#8 : Leave Litigation to Lawyers but not in Isolation**

**#9 : Remember that Licensing involves Learning**

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**IPRs are not essential for success but neither can you afford to ignore them**

## Useful Books:

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- Good but detailed intro to Patent Law by a UK patent attorney:  
Grubb, P. W. (1999). Patents for Chemicals, Pharmaceuticals and Biotechnology. Oxford, Oxford University Press.
  - Leading Legal Textbook  
Cornish, W.R., Llewelyn, D. (2003) Intellectual Property: Patents, Copyrights, Trademarks & Allied Rights, Sweet & Maxwell, London.
  - General intro to Intellectual Property Law (emphasis on law)  
Bainbridge, D. I. (1999). 4th Edn. Intellectual Property. London, Financial Times Management (a Pearson Education company).
-

## Useful Web Sites :

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- **Oxford IP Research Centre**  
<http://www.oiprc.ox.ac.uk>
- **UK Patent Office**  
<http://www.patent.gov.uk/>
- **IPR Helpdesk**  
<http://www.ipr-helpdesk.org/>
- **Chartered Institute of Patent Agents**  
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