



## The Function of IP in the Innovation Cycle

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Intellectual Property as a Tool to Enhance Innovation  
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## Introduction



## Concept of IP

intangible asset protected by law = monopolies

- IP creates exclusive rights
- IP prohibiting free use by any other persons

Example: Slide to unlock-mechanism

- Patented mechanism used by Apple's i-Phone
- Competitors are forced to construe their smart phones without it or ask Apple for a license

IP-Rights have effect on the commercial well-being of a company – and its competitor

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## 1. Concept of IP

### Real Property = Intellectual Property

**Corporeal Property** confers a monopoly on its owner – the use by other will restrict or inable the owner's use

**Intellectual Property** can be re-used and duplicated indefinitely without diminishing the original

Why is only the owner entitled to use IP?

- Legislator protects IP to stimulate innovation
- As little protection as possible to reach this aim

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## Origin /Aim of IP

## Origin of Intellectual Property Rights

- British Statute of Anne (1710) and Statute of Monopolies (1623)
- **French Revolution:** Acceptance as a legal right
- American / French Constitution: IPRs as fundamental freedom
- 19th century: European states enact specific statutes
- 20th century: IP-law commonplace in the majority of the world
- 1967: Establishing of **WIPO**
- 1994: **TRIPS-Agreement**

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## Encouragement

*Art. 7 TRIPS – Objectives*

*“The protection and enforcement of intellectual property rights should **contribute to** the promotion of technological **innovation** and to the transfer and **dissemination** of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations”.*

## Role of IP in the innovation cycle

- **Incentive to invest** in R&D and produce innovative works
- **rewards disclosure** of novel information to the benefit of the society at large
- prevents double inventions and thereby avoids double investments
- furthers the dissemination of the respective innovation

In theory right holder, potential user and society at large mutually benefit from the existence of IP

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## Encouragement

*Exquisite and innovative products can be marketed for a higher price.*



## By artificial shortage

- Economic worth declines according to the number of users
- Creators will not have sufficient incentive to invent unless they are legally entitled to capture the full social value of their inventions

Basic concept of IP: Construe shortage of resources

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## Justification

- ✓ *Natural Justice*
- *Theory of Reward*
- *Amortisation Theory*
- *Incentive Theory*

*„A person has a natural right over the labour and the products which he produces“  
John Locke*

## Natural Rights / Justice Argument

Concept:

Treating physical and intellectual work equally

Criticism:

- Granting IP for every product of the human mind would overstretch the concept
- Protection on the basis of a policy consideration
- Concept of Natural Justice important from a historical perspective, but does not match the current system

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## Theory of Reward

Concept:

Not everything created is worthy of protection.  
The legislator conducts a selection and rewards the intellectual goods he intends to foster by an IPR

Explanation for

- many exceptions in the IP-Statutes
- why trade secrets are not protected as an IPR

Criticism:

Very coarse schedule to distinguish between protectable and non protectable IP



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## Amortisation Theory

Concept:

IP should allow the owner to compensate his costs

By granting an exclusive right the owner can demand a monopoly premium to

- amortize his investments in R&D
- reinvest the gain into further R&D

Criticism:

Whether this concept works in practice depends on structure of the respective industry sector and the term of the innovation cycle

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## Amortisation Theory: Example

### *The Smart-Phone-War:*

- More than 150 different sets of litigation between telecommunication companies
- Production of any smartphone make use of about 1000 patents
- Term of the innovation cycle is very short

### Problem:

Patent rights reach far beyond what would be necessary to recompense his expenses.

Although patent only covers a minor element, the injunction will cover the entire smartphone.

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## Deficiencies

*The size of the **patent portfolio** no longer is a reliable indicator for economic growth, but instead may be a mere **sign of market failure!***

## The more the better?

Studies: IP has adverse effect, if protection becomes too broad

### Example: Smartphone-Market

- Time for gaining a patent exceeds the innovation cycle
- Applications are often blurry & broad
- In case of doubt examiners grant the patent

The combination of these deficiencies promotes patent thickets

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**19th century America:**  
„By providing innovators with durable and tangible return on their investment of time, labour and other resources IPRs seek to maximize social utility.“

## Incentive Theory

Concept: Entrepreneur as *homo oeconomicus*

Criticism: Impact on social welfare

- IP constrains freedom of speech, access to knowledge and free exchange of information
- System can be detrimental for society at large
- IP may direct investments to the wrong fields of innovation

Yet it is acknowledged that economic growth benefits from IP-System

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## Justification

### Incentive leads to Spill Over

Not every reasonable investment / genuine innovation will lead to a protected IPR or render the promised benefit

- Novelty or formal requirements are not met
- Competitor has filed a similar application first
- The innovation is not protectable

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## Inventory Control Provisional Summary

IP-System:

A deliberate act of government policy in order to

- foster innovation
- contribute to the general level of public knowledge & education
- contribute to economic and social development

One size fits all?

IP system is developed for the traditional areas of industry, but neither well adapted to fast moving markets, nor to markets which are very sensitive with regard to ethical and social demands

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## Alternatives

## Trade Secrets

Differences between trade secrets and IP:

- Trade secrets only protect against theft or unlawful misappropriation
- If a competitor has the same idea or gains knowledge by legal means, there is no remedy

Main risks:

- Misappropriation by an employee or a business partner (85 % of trade secret cases)
- Reverse engineering
- Difficulties to detect, prove and enforce misappropriation of trade secrets

Despite this risks increasing reliance on Trade Secrets

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## Alternatives

*Henry Chesbrough,  
„The new imperative for  
creating and profiting  
from technology“*

*Center for Open  
Innovation, University of  
California,  
Berkeley*



## Open Innovation

Factors for change of innovation paradigms:

- Increasing availability & mobility of skilled workers
- Growth of the venture capital market
- External options for ideas sitting on the shelf
- The increasing capability of external suppliers

Trade secrets and IPRs hinder cooperation and lead to inefficiency

To avoid these disadvantages Chesbrough suggest to:

- closely cooperate with partners by sharing risk and reward
- open the innovation process of the R&D division



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## Alternatives

## Models of open innovation

- Seeking customer response
- Public offer for reward
- Collaborative product design and development
- Cooperation with competitors and exchanging of ideas

Problem:

The fact that a party cooperates in innovation does not necessary imply it does not hold any IPRs on its contribution.

Open Innovation requires limitations of IP-law to ensure fair play.

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## Summary

*To profit from trade secrets & open innovation you must have the required policies in place (secrecy policy, assurance of reciprocity)*

## From a User Perspective

IP is still a useful system, but it is possible to choose trade secrets as an alternative form of protection or combine IP with open innovation.

Trade secrets and open innovation are promising alternatives with regard to all industries if

- inventions are not protectable under the applicable IP-scheme
- the cost of protection exceed the benefit
- the market moves fast
- many competitors enmesh a narrow market

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## Summary

## From the Legislator's Perspective

IP is a useful and indispensable system, but should be supplemented by innovation friendly alternatives for fast moving markets (trade secrets & open innovation)

Adequate level of protection:

- Trade secrets should be protected against misappropriation, but may not provide comparable protection to patent/design law
- Secrecy arrangements must be valid and enforceable under employment law
- IPR ambushes should be prevented by concept of tacit licences / prohibition of abuse of law