University of Trento School of Law
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An Introduction to Patent Doctrine & Policy

Craig A. Nard
Galen J. Roush Professor of Law
Director, Spangenberg Center for Law, Technology & the Arts
Case Western Reserve University
Cleveland, Ohio U.S.A.

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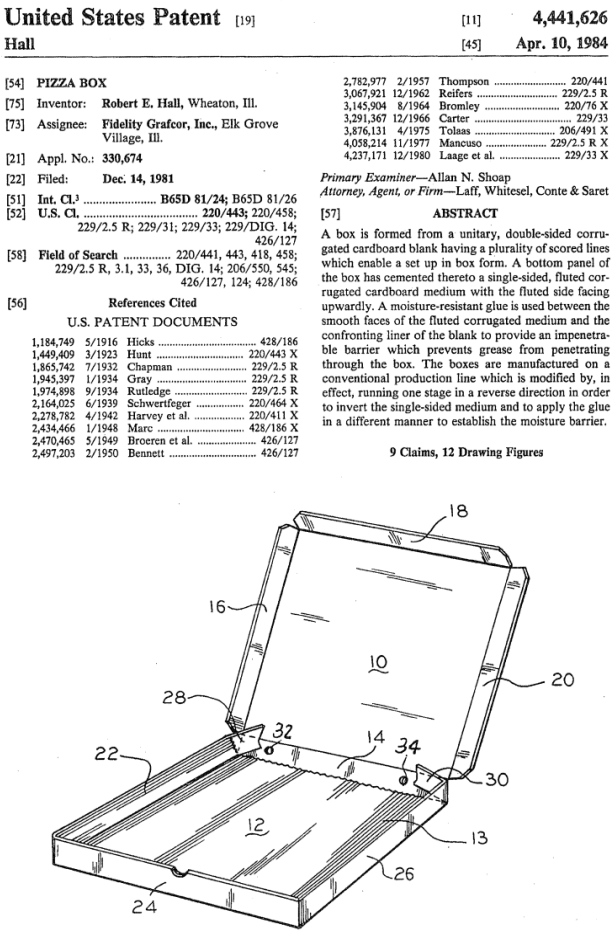
Facoltà di Giurisprudenza

What is a patent?



United States Patent [19]
Hall

[11] **4,441,626**
[45] **Apr. 10, 1984**

[54] **PIZZA BOX**

[75] Inventor: **Robert E. Hall**, Wheaton, Ill.

[73] Assignee: **Fidelity Grafcor, Inc.**, Elk Grove Village, Ill.

[21] Appl. No.: **330,674**

[22] Filed: **Dec. 14, 1981**

[51] **Int. Cl.**³ **B65D 81/24**; B65D 81/26

[52] **U.S. Cl.** ..... **220/443**; 220/458; 229/2.5 R; 229/31; 229/33; 229/DIG. 14; 426/127

[58] **Field of Search** ..... 220/441, 443, 418, 458; 229/2.5 R, 3.1, 33, 36, DIG. 14; 206/550, 545; 426/127, 124; 428/186

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Primary Examiner—Allan N. Shoap
Attorney, Agent, or Firm—Laff, Whitesel, Conte & Saret

[57] **ABSTRACT**

A box is formed from a unitary, double-sided corrugated cardboard blank having a plurality of scored lines which enable a set up in box form. A bottom panel of the box has cemented thereto a single-sided, fluted corrugated cardboard medium with the fluted side facing upwardly. A moisture-resistant glue is used between the smooth faces of the fluted corrugated medium and the confronting liner of the blank to provide an impenetrable barrier which prevents grease from penetrating through the box. The boxes are manufactured on a conventional production line which is modified by, in effect, running one stage in a reverse direction in order to invert the single-sided medium and to apply the glue in a different manner to establish the moisture barrier.

9 Claims, 12 Drawing Figures

-Derived from *literae patentes*, meaning "open letters"

-No such thing as common law patent rights. Rather, a patent is a government issued grant conferring the ***right to exclude*** others from making, using, selling, offering for sale the claimed invention

Patent rights are territorial

-A patent does **not** give its owner a right to use the claimed invention.

The Right to Exclude and Freedom to Operate

Claims **A, B, and C**

Patent

A – Back

B – Bottom Support

C - Legs

Competing Product – Infringement or Free to Operate?

B – Bottom

C -

- Back

No **A**

Arm Rests

· Bottom port

· **C** - Legs

Economics of Patent Law

The Nature of Information

- Two relevant qualities:
  - 1. Non-rivalous: "He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me."
  - 2. Non-excludable: You cannot build a fence around your idea as you can your backyard or ranch.
- These two traits are common in what economists call public goods

Arrow's Information Paradox and the Free-Rider Problem

- Inventors often need to disclose their ideas to secure venture capital, to arrange for manufacturing capabilities, or otherwise efficiently utilize their invention
- But absent a property right, the inventor will likely be reticent to disclose information for fear of inducing competition.
- Thus, there is an inherent conflict between the desire to disclose information and the need to limit access and use to those whom the inventor has authorized.

Arrow's Information Paradox and the Free-Rider Problem, cont.

- The two distinctive features of information goods (non-rivalrous and non-excludable) can lead to a free-rider problem — that is, consumers who exploit the information without sufficiently contributing to its creation.
- As such, information will tend to be under produced, or not produced at all, due to the riskiness associated with disclosing information or others discovering the information

Addressing the Free-Rider Problem

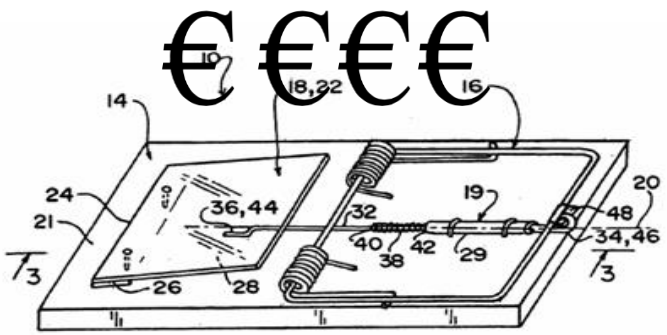
- A common response to this problem is government intervention, which can — for example — take the form of research grants (subsidies), or using the taxing power to fund production or create incentives. National defense — a classic public good — is provided for through tax revenue.
- Another form of government intervention is to create a **private property right** to induce the production of information goods, which has been a government response in the form of patent legislation since 1790 in the United States.

Patent Law and the Marketplace

- The patent system works hand-in-hand with the marketplace
- It is the private market that signals to innovators where to channel their inventive energies
- The patent system provides a property right as an inducement to innovate, but does not channel the direction of the innovation
- Thus, the patent system and the marketplace work hand-in-hand to foster innovation in a decentralized setting

Patent Law and Monopolies

- A patent provides its owner with a legal monopoly
- But a patent rarely provides its owner with an economic monopoly
- The reason is that a patent typically does not provide sufficient market power because there are almost always viable substitutes



Economic Theories of Patent Law

- Even though patents do not provide an economic monopoly, they still impose costs on society.
- With exclusivity comes the risk of:
  - reduced output,
  - excessively high prices; and
  - therefore less access to the patented product
- This is referred to by economists as deadweight loss

So, Why Have a Patent System?

What are the Economic Theories (Justifications) for a Patent System?

Incentive to Invent

- Focuses on efficiency gains and the internalization of externalities
- This theory seeks to address the effects of Arrow's paradox, and holds that — due to the public goods nature of information — without the prospect of a property right, inventors would be unable to recoup (internalize) their research and development costs because third parties could simply copy the invention and compete with the inventor unencumbered by the need to recover fixed costs. In an increasingly competitive market, prices will be driven down, resulting in an under-investment in invention.

Incentive to Disclose

- The prospect of a property right will induce inventors to seek patent protection, and thereby disclose their inventions in accordance with patent law's disclosure requirements
- Without the availability of patent protection, inventors are more likely to opt for trade secret protection, thus depriving competitors (and the public generally) of a technical disclosure — that is, information that can be used by competitors to improve the patented technology or design around it

Incentive to Commercialize

- This theory focuses on the role of patents in inducing the transformation of inventions into downstream, commercialized products by serving as a signal to relevant parties, namely investors (e.g., venture capitalists), potential licensees, and downstream players (e.g., entities with marketing, distribution, advertising, and manufacturing capabilities).

Weaknesses of These Theories

- The incentive to invent theory assumes the inventive act is driven by the prospect of a patent, rather than reputational gains, monetary prizes or rewards
- With respect to the incentive to disclose theory, an "enabling" disclosure seldom suffices for potential licensees to practice the claimed invention. This results in licensees asking the licensor/patentee to provide them with an "enabling package," which includes technical know-how and other forms of tacit knowledge not required to be disclosed under § 112.
- Moreover, this theory does not fully take into account that — because of reverse engineering concerns or other issues associated with confidentiality — trade secrecy is sometimes not a viable option.
- In contrast, trade secret is the preferred option

Weaknesses of These Theories, cont.

- The incentive to innovate theory loses some of its force when one considers that oftentimes patentees neither commercialize, nor license their patented technology.
- In other words, the development and realization of downstream products may not be consistent with the preferences of the patentee
- Why do firms patent?

The Economic Welfare Problem

- Our understanding of patent law's relationship to economic welfare is incomplete as is the the question of whether stronger patents increase *or* decrease innovation.
- "If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible on the basis of our present knowledge, to recommend abolishing it." Fritz Machlup (1958)

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fu•sion
fyoo-zhuhn: noun
the process or result of joining two or more things or ideas together to form a single entity.

Patents and Applications Held by Start-Ups: The Importance of Patents to VCs

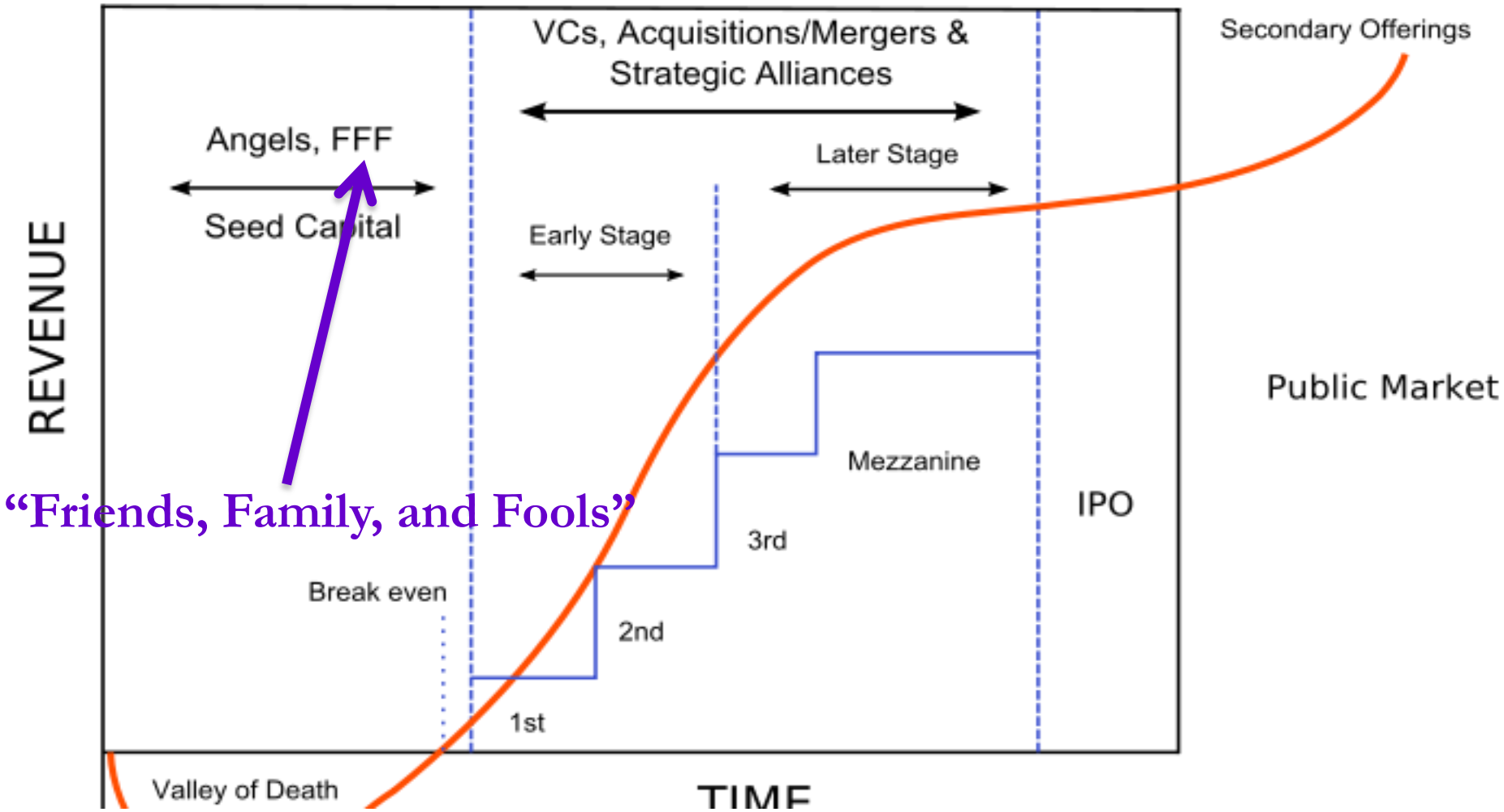
Source	Industry	All Respondents	Biotechnology	Medical Device	Software	IT Hardware
Population of companies (D&B)						
Companies holding patents/apps (share)		39%	75%	76%	24%	-----
Average # patents/apps held		4.7	9.7	15.0	1.7	-----
Average # filed by company		8.1	8.5	13.0	5.0	-----
Average # from founders		1.9	2.0	3.0	0.9	-----
Average # acquired		2.1	2.4	3.7	0.9	-----
Venture-backed companies						
Companies holding patents/apps (share)		82%	97%	94%	67%	91%
Average # patents/apps held		18.7	34.6	25.2	5.9	27.4
Average # filed by company		15.8	22.9	16.1	7.1	23.6
Average # from founders		2.5	3.8	3.8	0.7	3.1
Average # acquired		4.2	9.0	6.5	0.7	3.5

What is Venture Capital?

VC investment strategy typically has the following attributes:

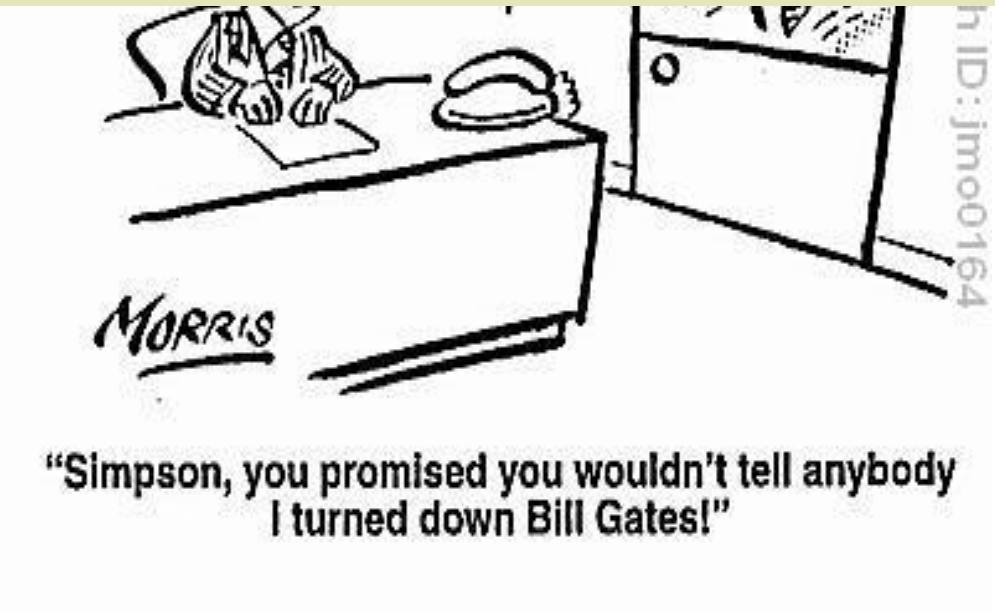
- 1. Emphasis on new technology;
- 2. Active (and sometimes controlling) participation of the VC in actual management of the business;
- 3. Investment in outstanding people (entrepreneurs) at least as much as in outstanding business plans;
- 4. Investment in an early stage of development, but **after** IP (typically patents) has been secured;
- 5. A time horizon ranging from a year or two to as long as ten years, followed by an "exit" through an IPO or sale of the entire enterprise; and
- 6. Investments where the VC can add value through technical, financial, and management expertise

Seeds and Rounds: The Financing Cycle



"Friends, Family, and Fools"

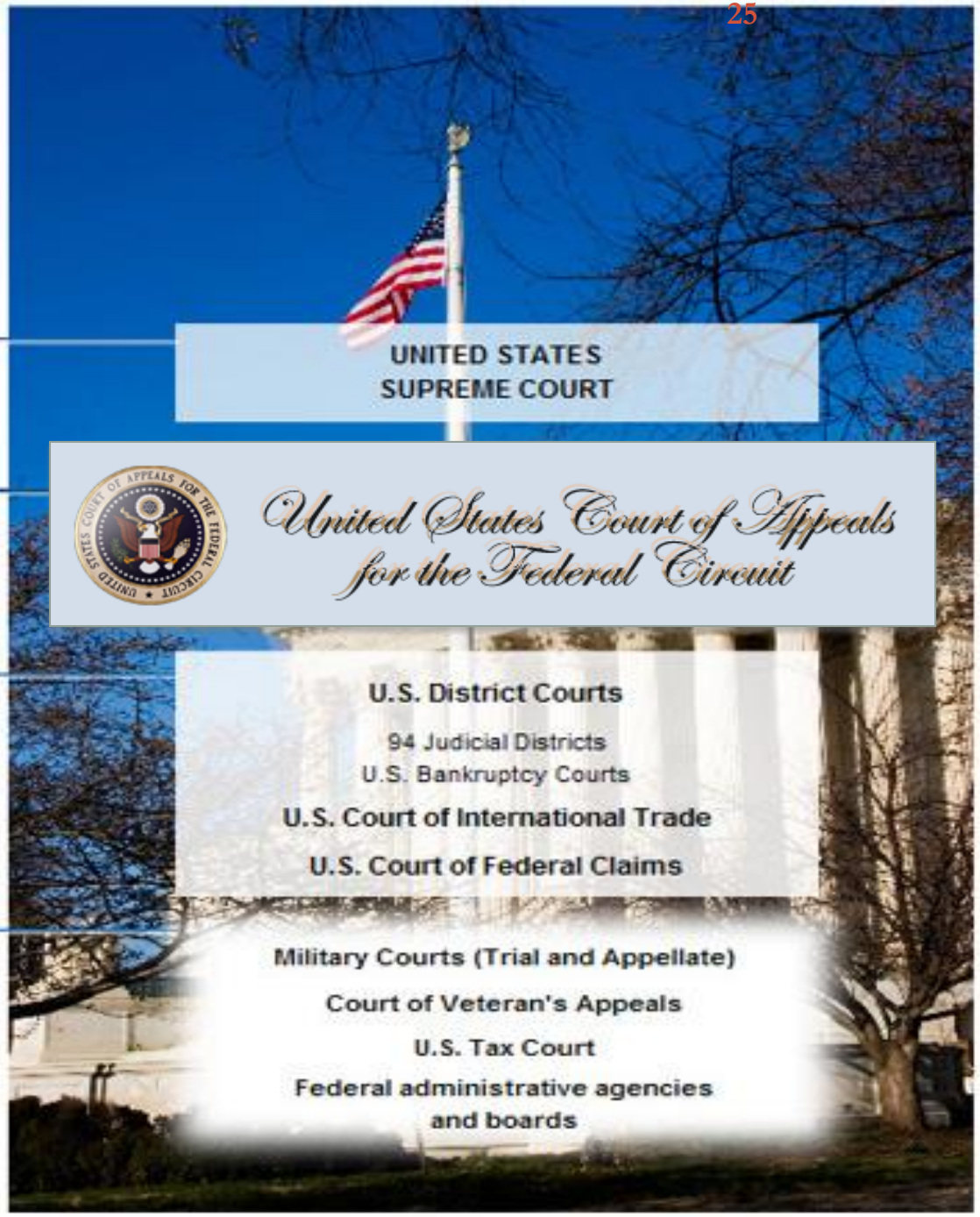
But VC financing remains a very important part of the U.S. economy: **According to one survey, U.S. companies that have relied on venture capital financing at some point in their history generate revenue equal to approximately 21% of GDP**. *See* National Venture Capital Assoc, Venture Impact 2 (6th ed. 2011)



Patents are **DURABLE** assets

Comparative Enforcement Architecture: U.S. and Europe

The United States Federal Courts

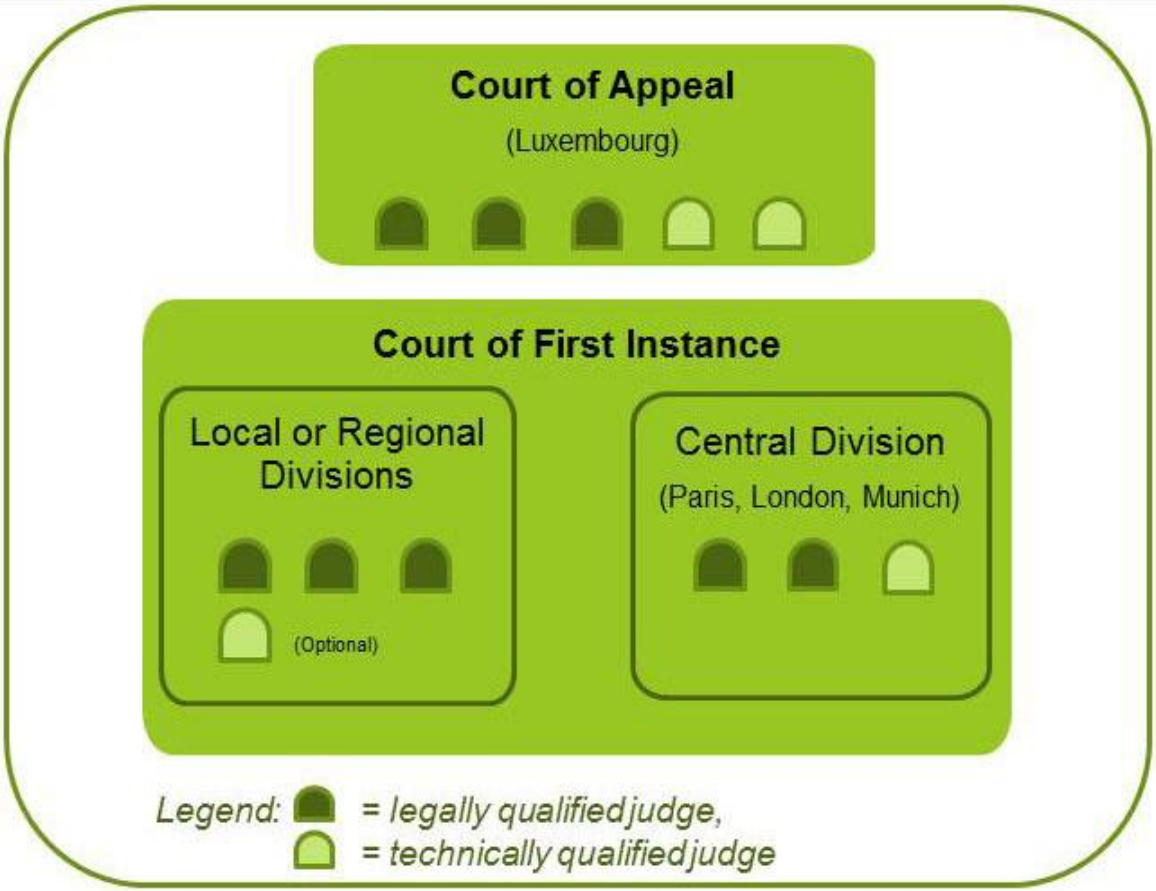


Compare European Model

- Enforcement resides in national jurisdictions
- There is no federalized system of courts for patents
- Can be expensive, lead to forum shopping, and fractured rulings
- Creation of **Unified Patent Court** that will have validity and infringement jurisdiction over all unitary patents and traditional European Patents
- Translation is required if infringer is from member state with language other than three official EPO langauges

Unified Court Structure

Court Structure (UPC)



London: Chemistry and Pharma **Munich**: Mechanical Eng **Paris**: Everything else

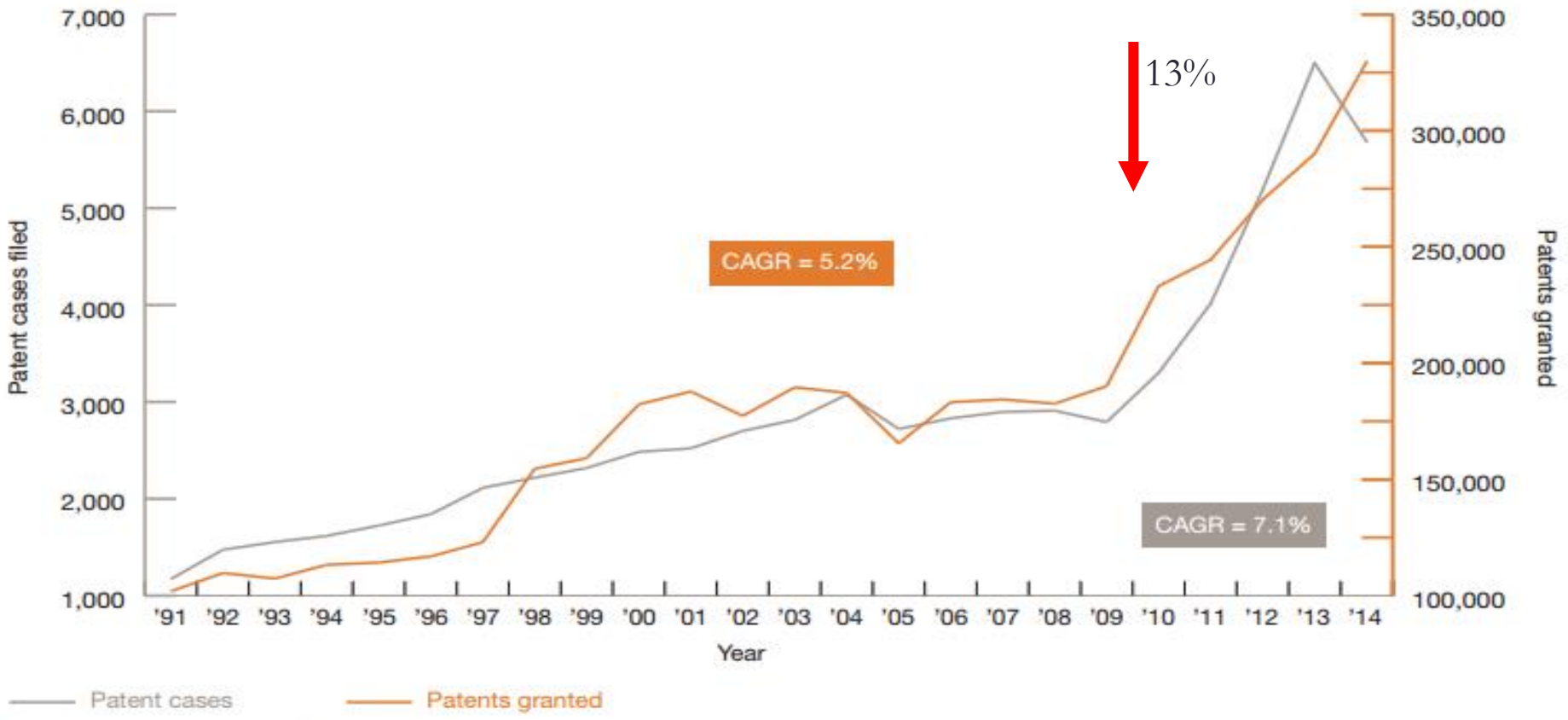
Jurisdiction of UPC

Central Division	• Declaration of non-infringement • Revocation actions
Local / Regional Division *where infringement occurred or defendant domiciled*	• Infringement actions and preliminary injunctions • Counterclaims for revocation with discretion to either – Proceed with revocation action, – Refer revocation to central division and suspend or proceed with infringement case, or – Refer entire case to central division (with agreement of the parties)

Parties can agree to bring an action before the division of their choice

Patent Litigation Trends: 1991-2014

Figure 1. Patent case filings and grants



Years are based on September year-end.
Sources: *Performance & Accountability Report* (USPTO) and *Judicial Facts and Figures* (US Courts)

Source: PwC Patent Litigation Study 2015

Median Litigation Costs (one patent at issue)

- Less than $1million at risk
  - 600K
- $1-10 million at risk
  - $2,000,000
- $10-25 million at risk
  - $3,100,000
- More than $25 million at risk
  - $5,000,000

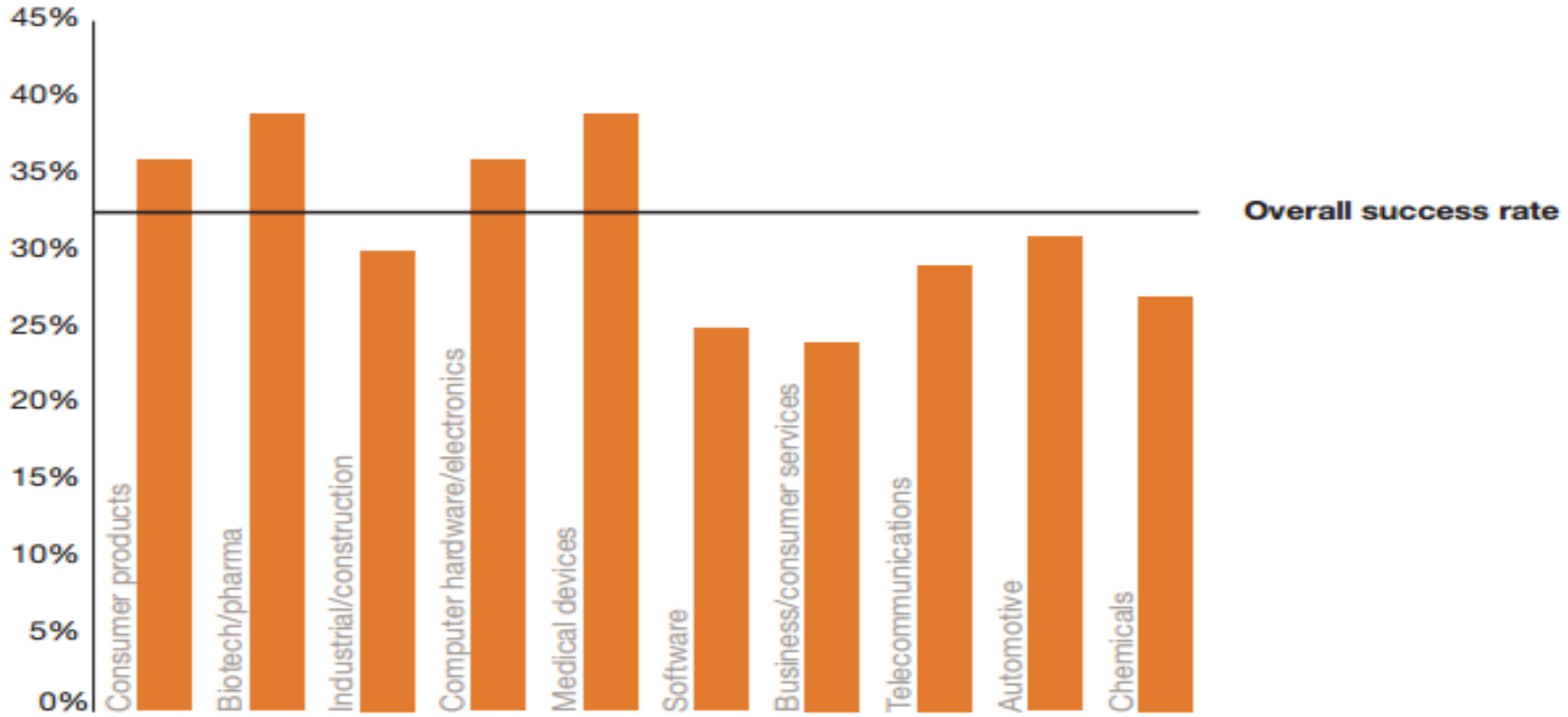
Defined as:

1. Legal and paralegal service;
2. Local counsel;
3. Travel and living expenses;
4. Fees and costs for reporters;
5. Photocopies;
6. Courier services;
7. Exhibit preparation;
8. Analytical testing;
9. Expert witnesses;
10. Translators;
11. Jury advisors

Source: AIPLA Report of the Economic Survey 2015

Patent Holder Success Rates

Figure 13. Patent holder success rates: top ten industries, 1995–2014



Source: PwC Patent Litigation Study 2015

Patenting Strategies in the U.S.

Understanding the New Novelty Provisions

Novelty - Section 102(a)(1)

(a) NOVELTY; PRIOR ART.--A person shall be entitled to a patent unless--

(1) the claimed invention was **patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date** of the claimed invention…

Prior Art Events: "Disclosures"

Critical Date

Prior Art Activity that is Patent Defeating

Your invention was:

1. Patented;
2. Described in a printed publication;
3. In public use;
4. On sale;
5. Otherwise available to the public

When? Before the effective filing date of your patent application

Section 102(b) - Exceptions

(1) DISCLOSURES MADE 1 YEAR OR LESS BEFORE THE EFFECTIVE FILING DATE OF THE CLAIMED INVENTION.--A **disclosure** made **1 year or less before the effective filing date** of a claimed invention shall **not** be prior art to the claimed invention under subsection (a)(1) if—

(A) the **disclosure** was made by the **inventor** or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

(B) the subject matter disclosed had, **before such disclosure**, been **publicly disclosed by the inventor** or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

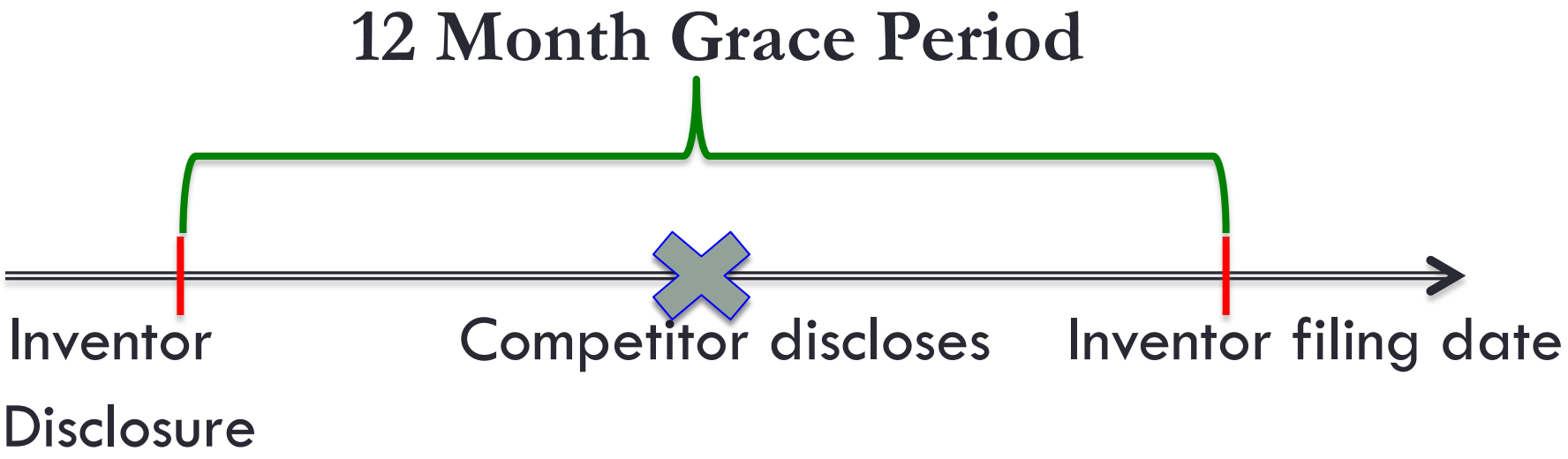
1. **Exception One**: Inventor files within 12 months of his own disclosure; no intervening competitor disclosure

(e.g., publication or non-informing public use)

Question: What type of inventor disclosure qualifies under 102(b)(1)?

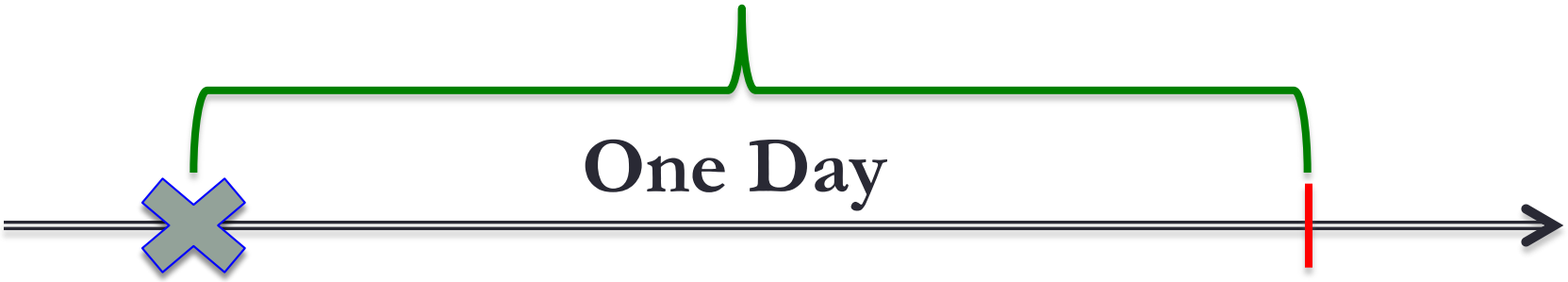
Answer: Any type of "disclosure" as defined in 102(a)(1), namely patents, publications, public use, on-sale activity

2. **Exception Two:** Inventor **publicly** discloses prior to a third-party disclosure and files within 12 months of Inventor's public disclosure



Absolute Novelty Scenario

Inventor discloses or files **after** a third-party disclosure



Competitor discloses

Inventor filing date

102(b) - Important Points

1. Absolute novelty attaches if third party publicly discloses claimed invention **prior** to inventor disclosing or filing patent application. Compare Art. 54 EPC. This is new to U.S.
2. But grace period triggered if:
   - A. Inventor discloses and files application within one year from his disclosure (same as old 1952 grace period in sec. 102(b)); OR
   - B. Inventor discloses **prior** to third-party public disclosure or filing of patent app AND Inventor files patent app within one year from Inventor disclosure

Response: File a **provisional** patent application to buy time, and perhaps a non-provisional within 12 months of provisional to buy more time and preserve trade secrecy

A provisional patent application allows you to file without a formal patent claim, oath or declaration, or any information disclosure (prior art) statement.

Questions