



2015

Comparative Patent Quality

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Law in the Global Marketplace Conference Intellectual Property and Related Issues

Comparative Patent Quality November 4, 2015 Keynote Address

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Patent quality is an international priority

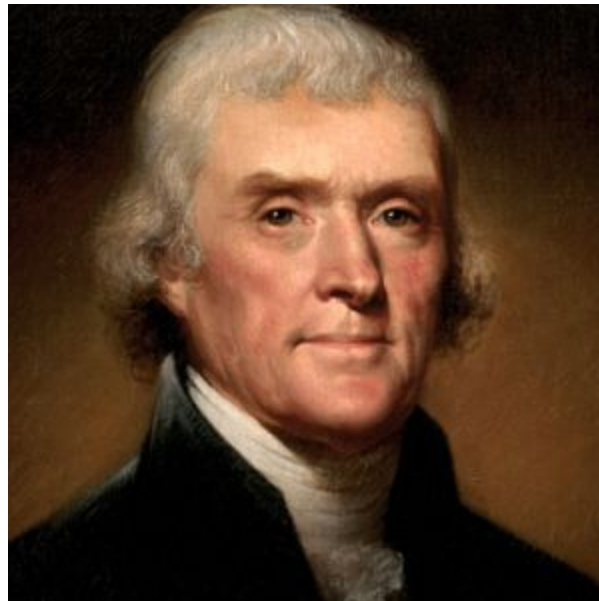


“Only high-quality patents and processes serve the needs of inventors, innovation and society alike”
- EPO Annual Report 2014



The difficulty in ensuring patent quality are not new

"I know well the difficulty of drawing a line between the things which are worth to the public the embarrassment of an exclusive patent, and those which are not." – Thomas Jefferson, 1813



But recent developments highlight the cost of low-quality patents

DataTreasury Patents Nixed By PTAB In AIA Review

By Matthew Bultman



And the question of when and how broadly quality filters should be applied

Stage of Patent Lifecycle	Quality Mechanisms
Pre-Application	Legal requirements, fees, quality of submission, third-party submissions
Pre-Grant	Prosecution levers
Post-Grant	Post-Grant Procedures, Reissue, Reexam, Maintenance Fees

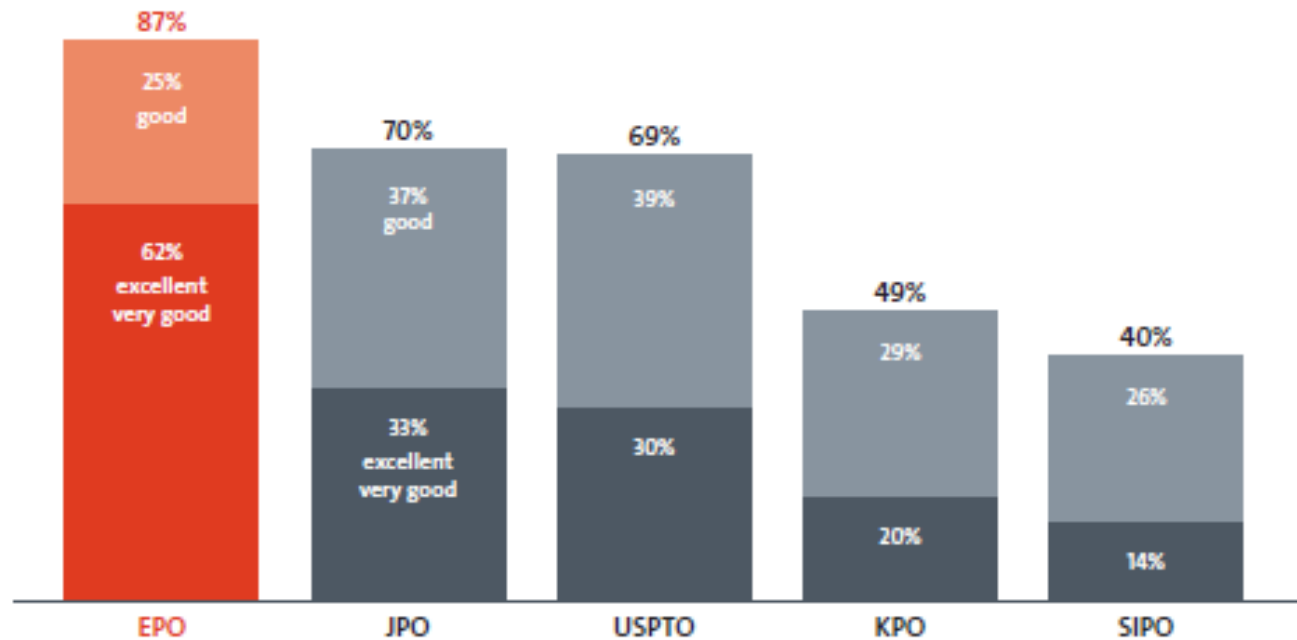
This presentation applies a comparative lens to patent quality



Rating of the quality of patents issued by each of the five largest IP offices

Intellectual Asset Management Magazine benchmark survey 2015 among 650 patent professionals

Private practice
lawyers and attorneys



Bearing in mind that there are many differences between the European and US systems...

Factor	US	Europe
Examiner Pay	US civil service grades	Double US levels, limited taxes
Examiner Turnover	~33% per year	5% per year
Bifurcation of Search & Examination	No	Yes
Loser Pays	No	Yes

“And the wisdom to know the difference...”



Sources: Drahos (2010), van Pottelsberghe de la Potterie (2011), Temmerman (2013), EPO, USPTO 2015

This presentation considers US and EP outcomes at aggregate and “matched pair” levels

- “Exact match” matched pair approach for prosecution outcomes (Graham & Harhoff, 2006). Filing date / priority date matches.
- Data sources: Innography, Lex Machina, PATSTAT, Google Patents, WIPO/Schmcoch, NSF, PTO/EPO
- Related work: Jensen, et al. (2005, 2007, 2008 2011, 2014), Graham & Harhoff (2006, 2009), Wright (2009), Sampat et al. (2015)

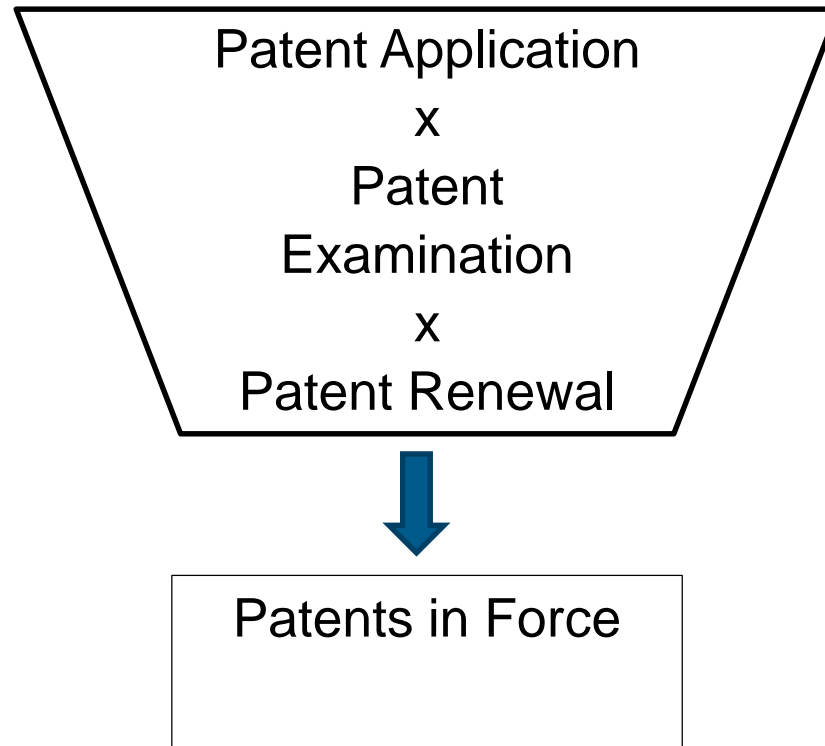
Family Relationships between Patent Documents

Exact Match

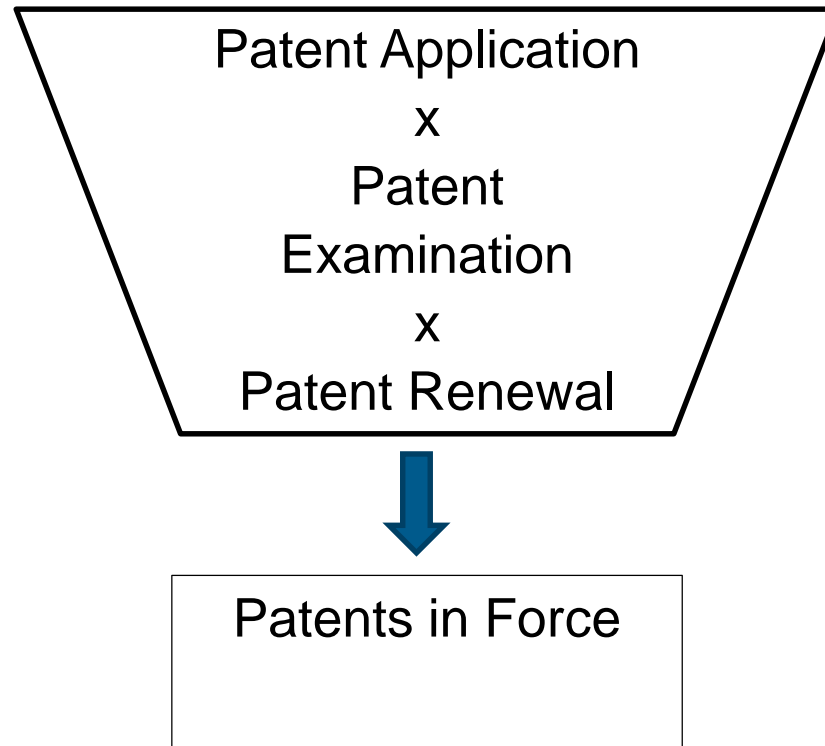


Document D1	Priority P1		
Document D2	Priority P1	Priority P2	
Document D3	Priority P1	Priority P2	
Document D4		Priority P2	Priority P3
Document D5			Priority P3

The quantity and quality of patents in force is the result of three sets of decisions

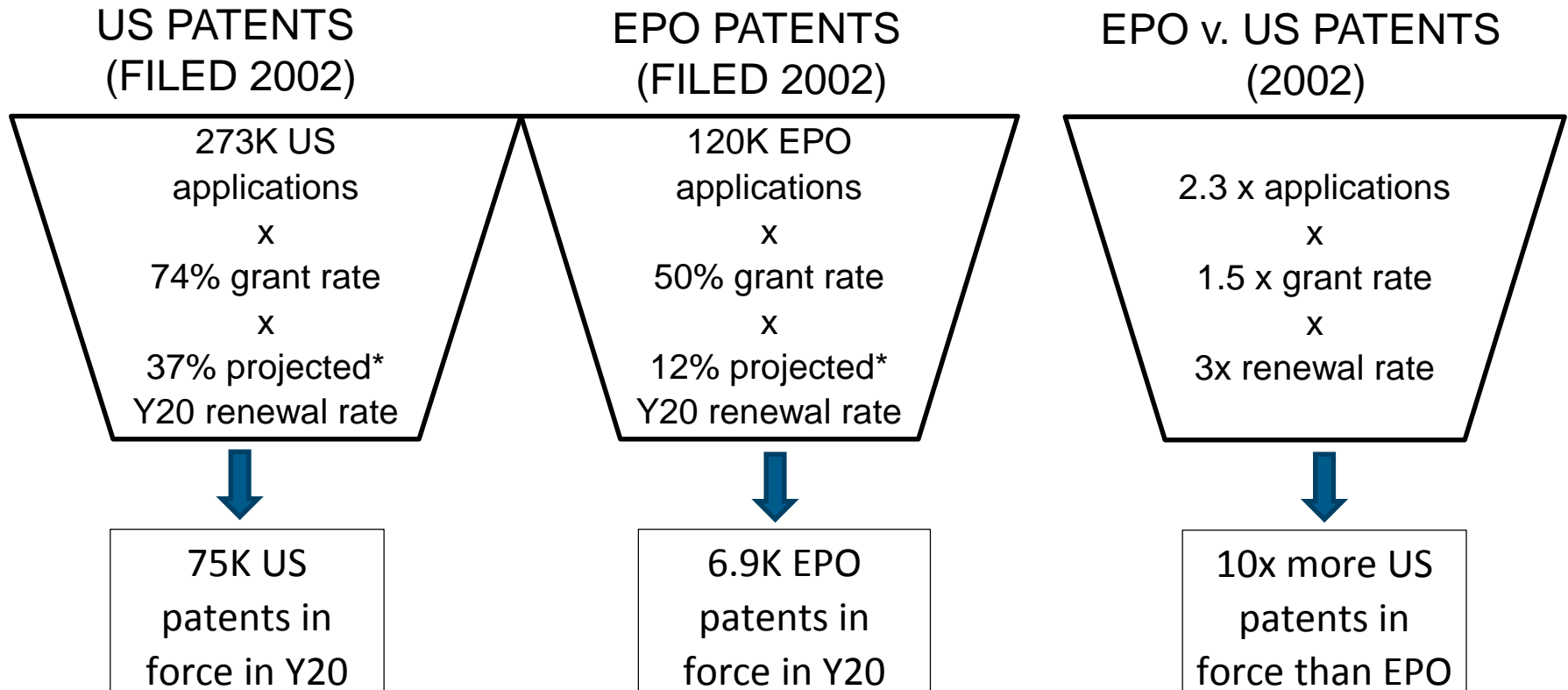


Each is influenced by doctrinal, institutional, economic, and market factors



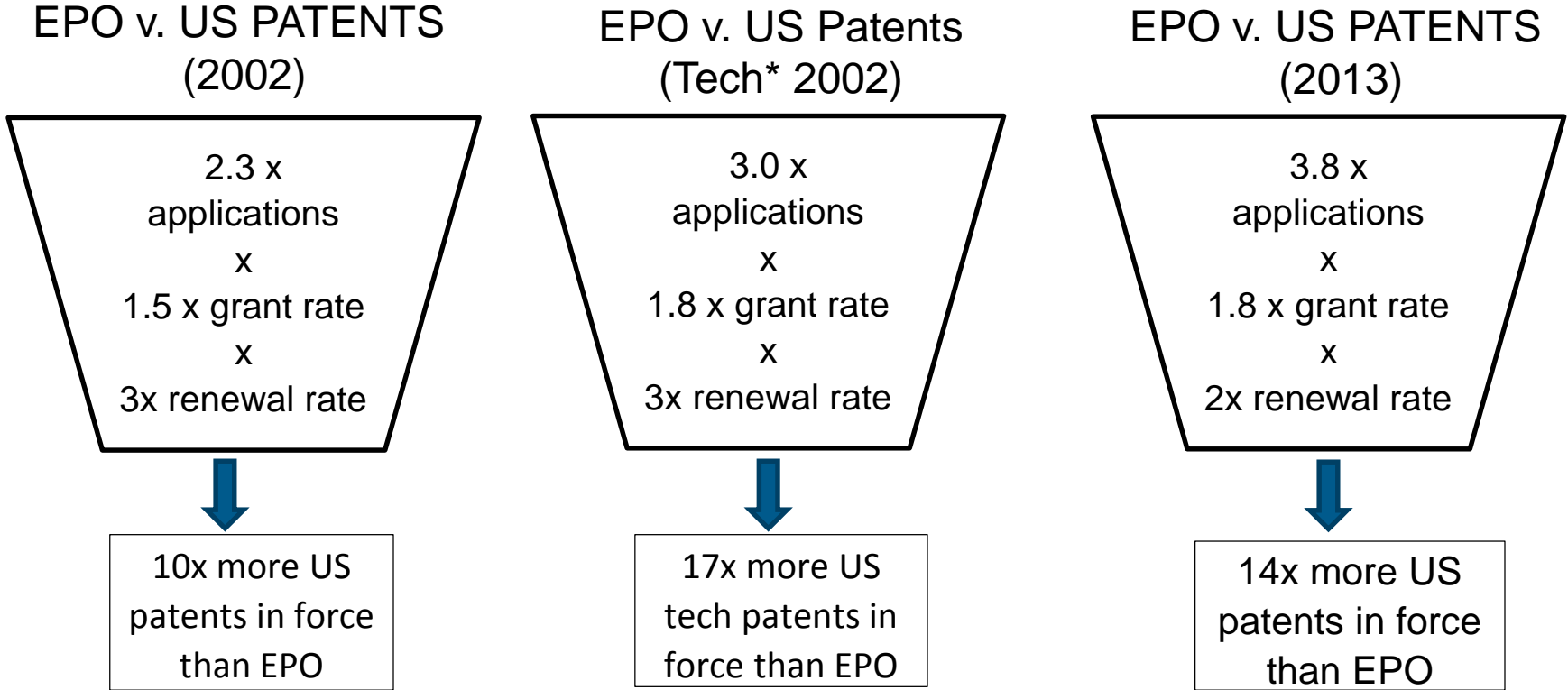
Comparing the US and EP at each of these stages...

At each stage, the US tilts towards more quantity – ex: 2002



Sources: PATSTAT 2015 (application and grant numbers), Trilateral Statistics 2002 Report (projected renewal rates).

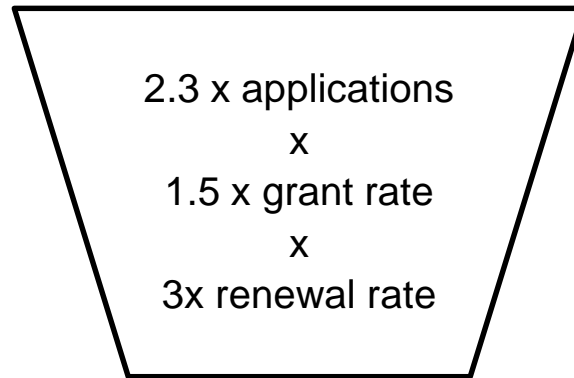
The disparities are greatest in tech, and growing



Sources: PATSTAT 2015 (application and grant numbers), Trilateral Statistics 2002 Report (projected renewal rates). *"Electrical Engineering" patents as defined by WIPO/Schmoch

What explains the differences in applications?

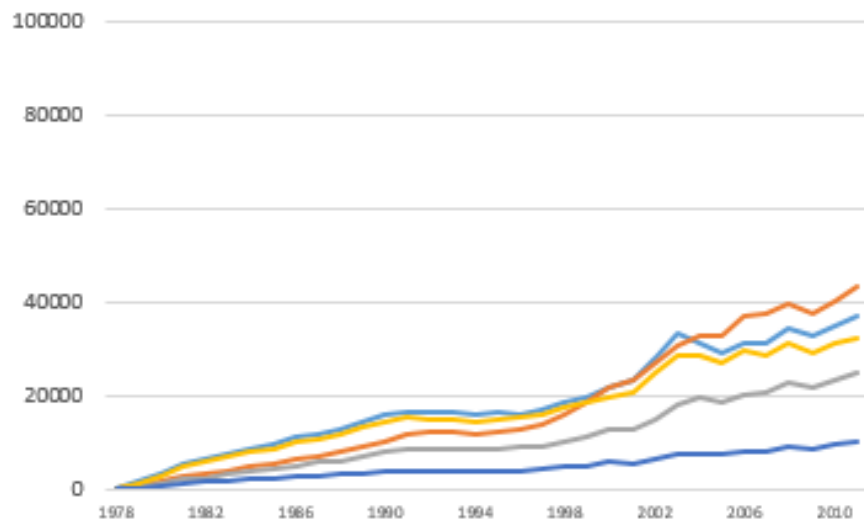
EPO v. US PATENTS
(2002)



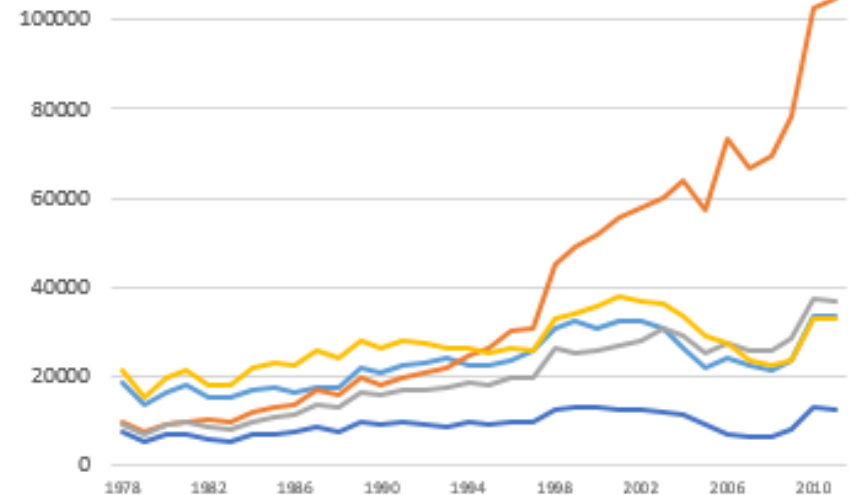
10x more US
patents in
force than EPO

The EPO did not experience the same surge in tech patenting that the US did

EPO Patents (1978-2011)



US Patents (1978-2011)

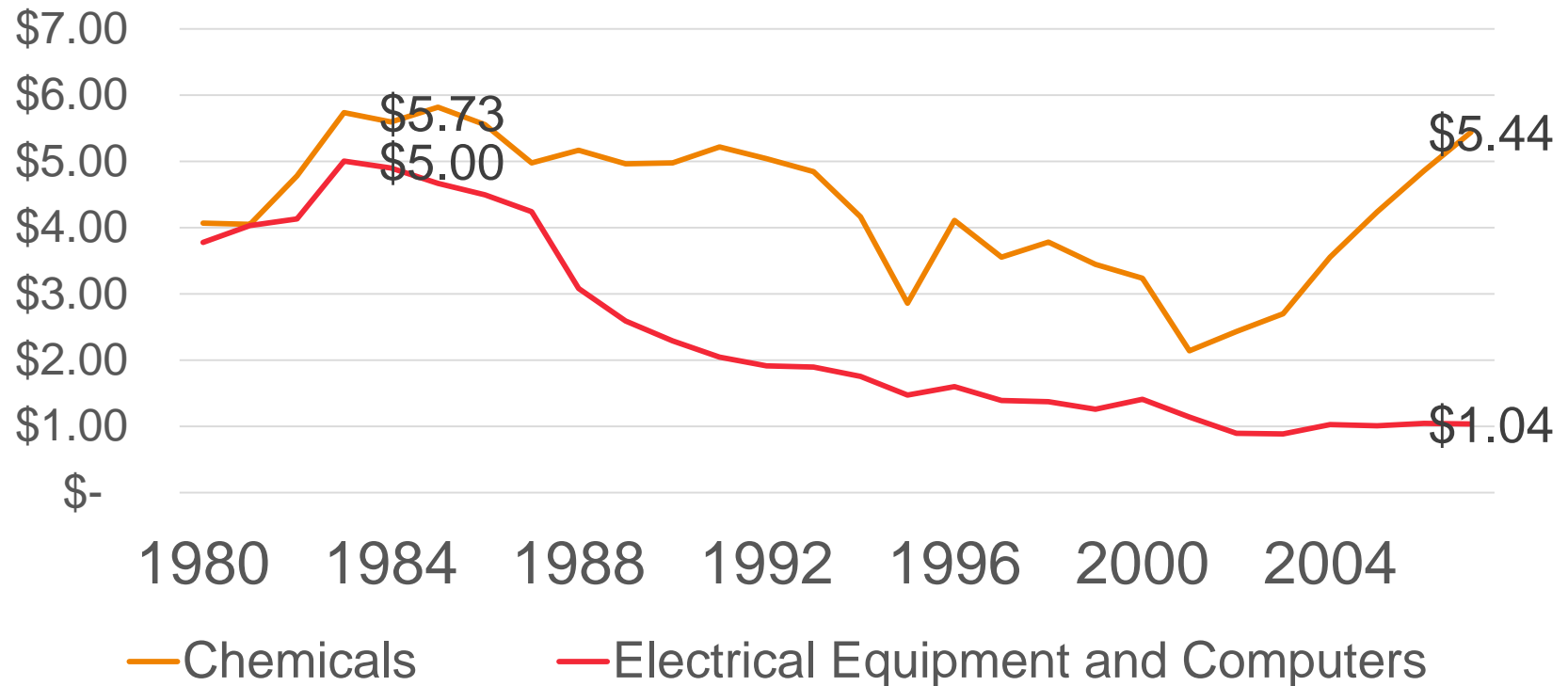


— Chemistry — Electrical engineering — Instruments — Mechanical engineering — Other fields

Source: PATSTAT 2015, Sector data based on WIPO in accordance with Schmoch (2008)

What has driven the surge in US tech patents? Defensive/FTO driven patenting is likely one factor

FIG __: R&D (in \$M) per US Origin Patent Application
1980-2007 (inflation adjusted)



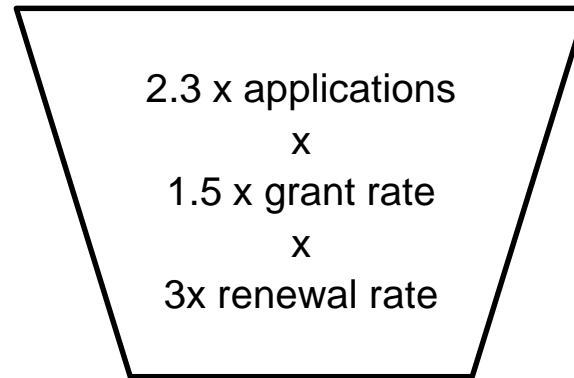
Source: NSF, USPTO via PATSTAT 2015, Lybbert and Zolas 2013

Other factors that contribute to the differences

- Relative value of US v. EU patents
- Scope of patentability
- Size, importance of US v. EU markets
- Loser pays in EU, overall enforcement climate

What explains the differences in grants?

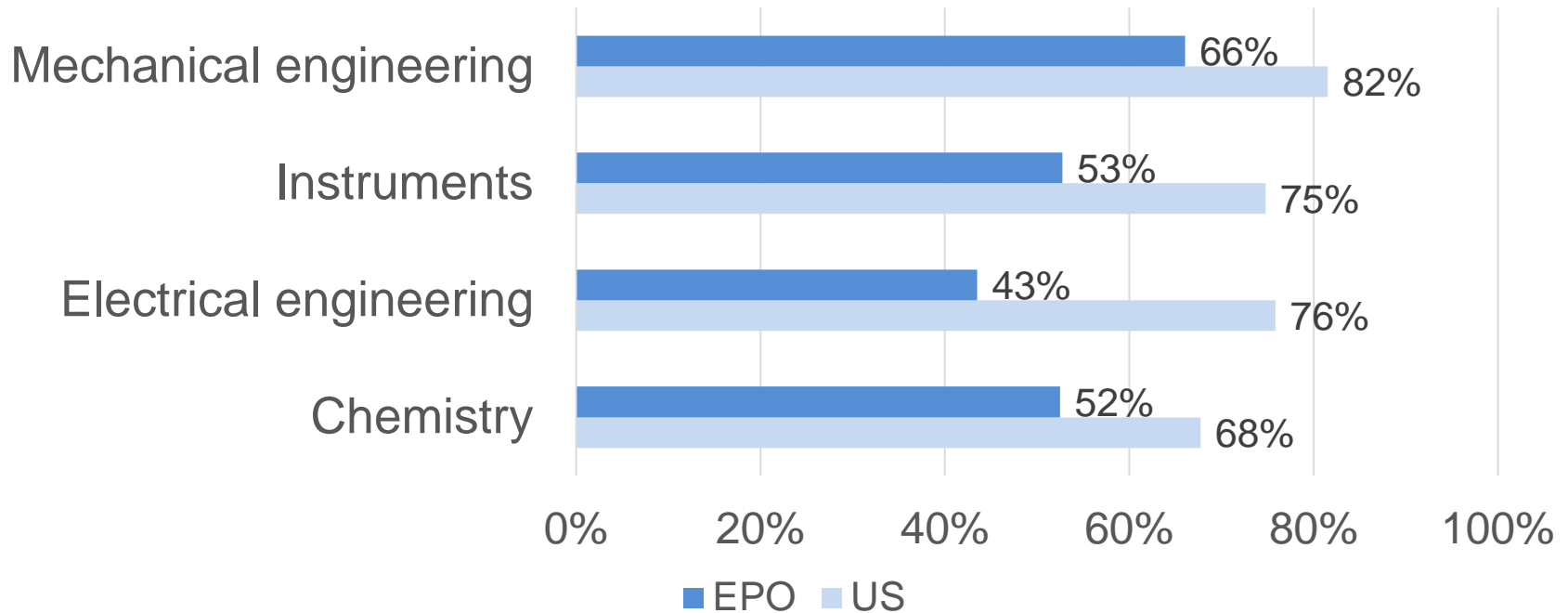
EPO v. US PATENTS
(2002)



10x more US
patents in
force than EPO

Across categories US patents are more likely to be issued than EPO patents, on the same applications

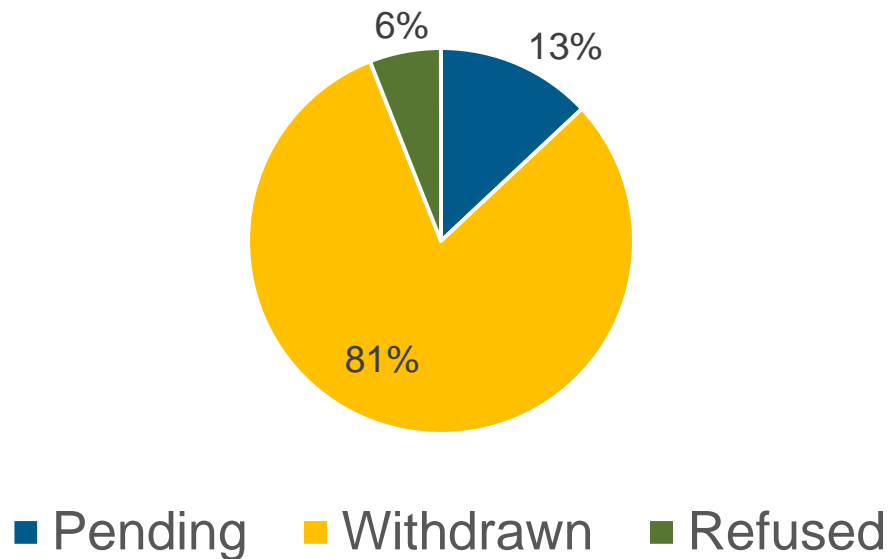
Comparative Patent Grant Rates
(September 2002 ~7K Matched Patent Applications)*



*Matched on priority date. Source: PATSTAT 2015, Innography 2015. Accord, Jensen et al 2008, Graham & Harhoff, 2009

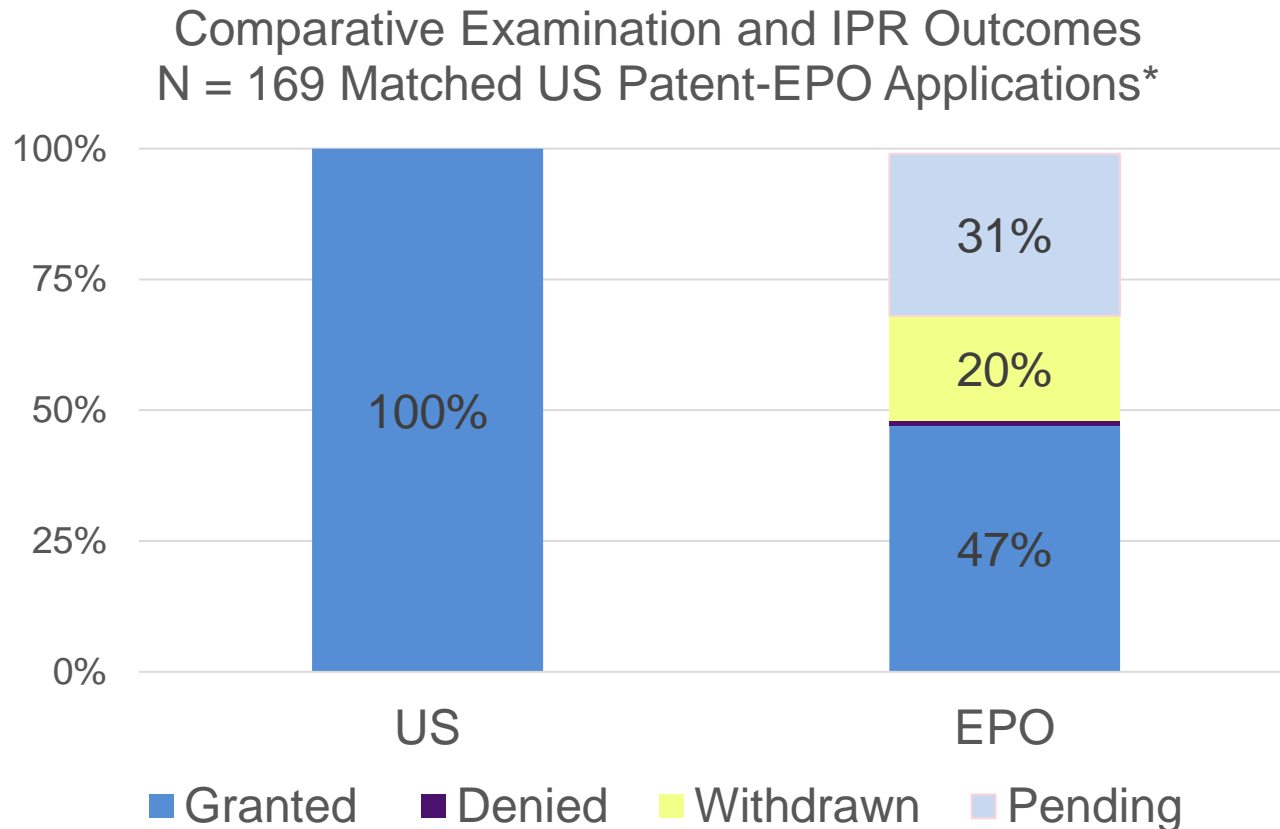
EPO's lower grant rate is due to higher applicant withdrawal rates (not refusals)

FIG ____ The Resolution of Non-Granted European Patent Applications (N= 3,517 2002 Matched Pairs)



The majority of nongranted apps in the EPO are withdrawn, not refused

Less than half of IPRed US patents* that were filed for in Europe have actually been granted in Europe... with many of the remainder withdrawn...



*IPRed patents that have been the subject of a final decision as of June 2015.
Source: Lex Machina, Innography

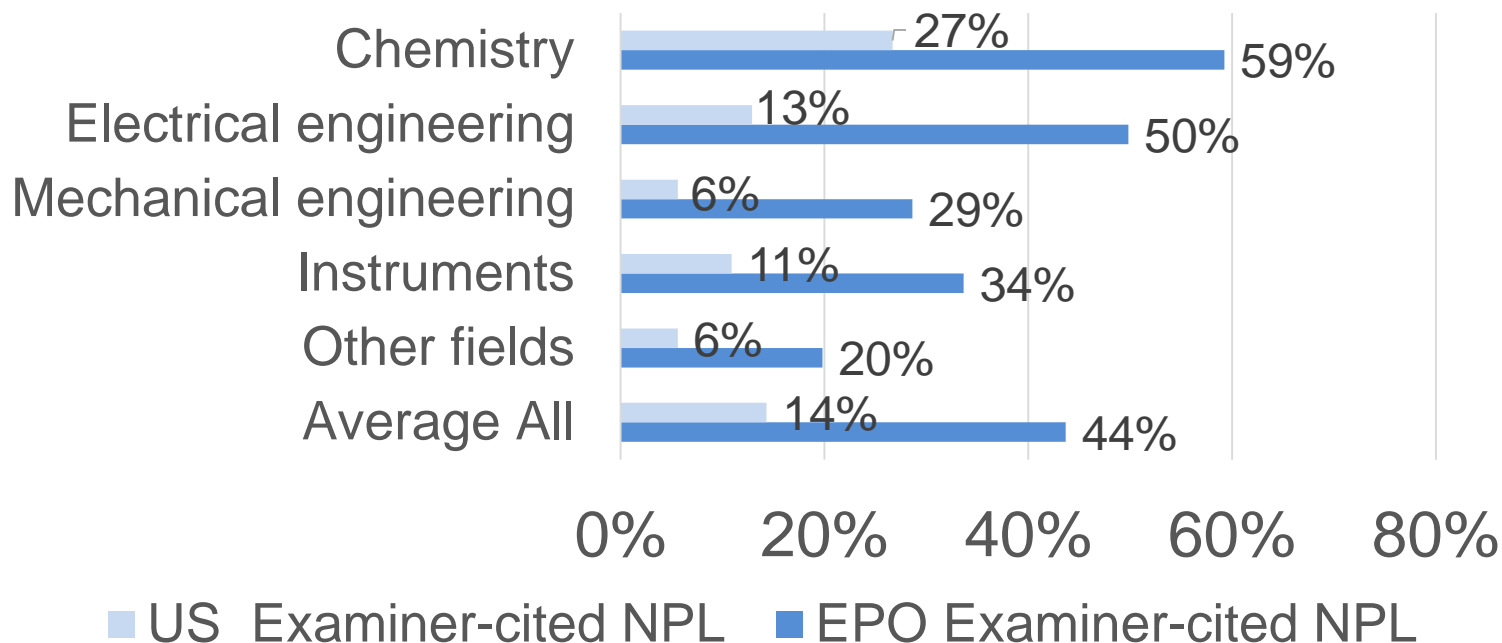
The '137 DataTreasury patent was the subject of 7 EP Applications, none of which matured into a patent

DataTreasury Patents Nixed By PTAB In AIA Review

By Matthew Bultman

EPO examiners are more likely to cite non-patent literature (NPL)

FIG __: US v. EPO Examiner Use of Non-Patent Literature (~7K 2002 Matched App Pairs)



Source: EP Register 2015, USPTO PAIR 2015, Google Patents (Front Page information)

Sources of Data

(12) United States Patent Guevremont et al.

(54) TANDEM FAIMS/ION-TRAPPING
APPARATUS AND METHOD

(75) Inventors: **Roger Guevremont**, Gloucester (CA);
Randy Purves, Gloucester (CA); **David
Barnett**, Orleans (CA)

(10) Patent No.: **US 6,703,609 B2**

(45) Date of Patent: **Mar. 9, 2004**

(56) References Cited

U.S. PATENT DOCUMENTS













5,248,875	A	*	9/1993	Douglas et al.	250/282
5,811,800	A	*	9/1998	Franzen et al.	250/288
6,124,592	A	*	9/2000	Spangler	250/287
6,489,608	B1	*	12/2002	Skilling	250/281

OTHER PUBLICATIONS

Guevremont et al. "Atmospheric pressure ion focusing in a high-field asymmetric waveform ion mobility spectrometer", vol. 70, No. 2, Review of Scientific Instruments, pp. 1-14, Feb. 1999.*

* cited by examiner

Citations: EP1266394

 Refine search	 ST36	 Espacenet	 Submit observations	 Report error	 Print
Cited in	International search				
Type:	Patent literature				
Publication No.:	 US5283199				[Y]
Type:	Patent literature				
Publication No.:	 WO0008454				[Y]
Type:	Patent literature				
Publication No.:	 US4311669				[A]
Type:	Patent literature				
Publication No.:	 US5420424				[AD]
Type:	Non-patent literature				
Publication information:	[AD] BURYAKOV I A ET AL: "A NEW METHOD OF SEPARATION OF MULTI-ATOMIC IONS BY MOBILITY AT ATMOSPHERIC PRESSURE USING A HIGH-FREQUENCY AMPLITUDE-ASYMMETRIC STRONG ELECTRIC FIELD" INTERNATIONAL JOURNAL OF MASS SPECTROMETRY AND ION PROCESSES, ELSEVIER SCIENTIFIC PUBLISHING CO. AMSTERDAM, NL, vol. 128, 1993, pages 143-148, XP000865595 ISSN: 0168-1176 cited in the application				
DOI:	 http://dx.doi.org/10.1016/0168-1176(93)87062-W				
Type:	Non-patent literature				
Publication information:	[AD] PURVES R W ET AL: "MASS SPECTROMETRIC CHARACTERIZATION OF A HIGH-FIELD ASYMMETRIC WAVEFORM ION MOBILITY SPECTROMETER" REVIEW OF SCIENTIFIC INSTRUMENTS, AMERICAN INSTITUTE OF PHYSICS, NEW YORK, US, vol. 69, no. 12, December 1998 (1998-12), pages 4094-4105, XP000918121 ISSN: 0034-6748 cited in the application				
DOI:	 http://dx.doi.org/10.1063/1.1149255				

Google Patents, 2015 Edition: NON-PATENT CITATIONS

Reference

1 * See references of [WO0169647A2](#)

* Cited by examiner

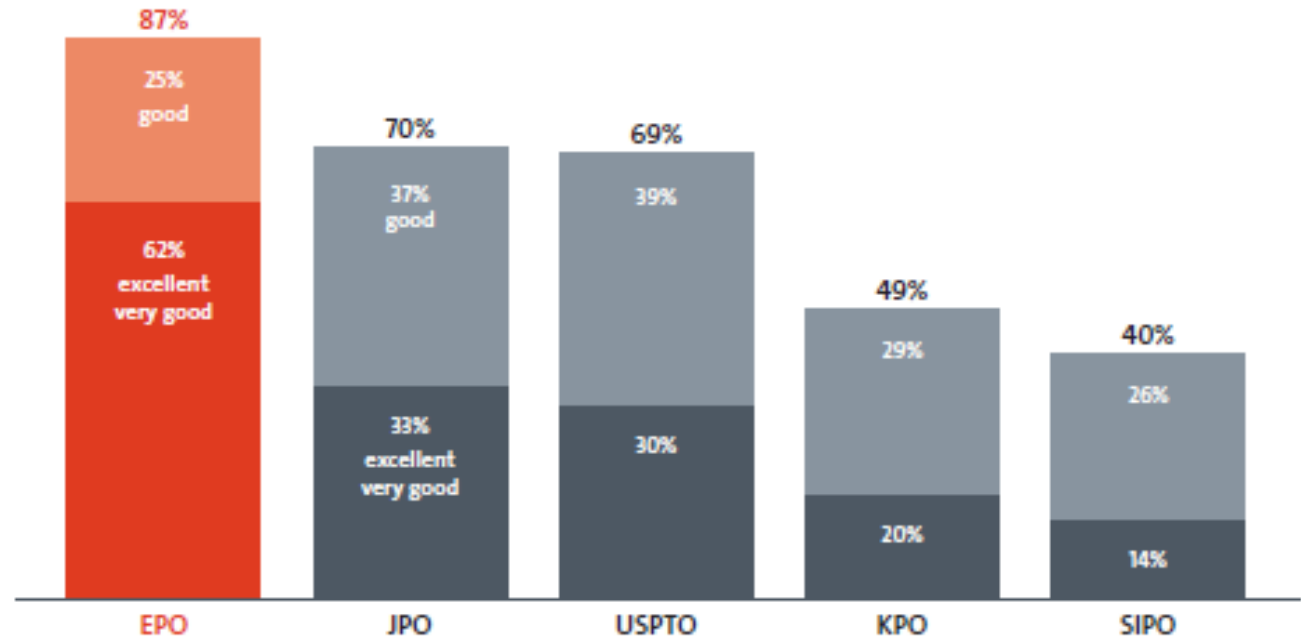
Why does EP have high satisfaction even with relatively lower grant rate?



Rating of the quality of patents issued by each of the five largest IP offices

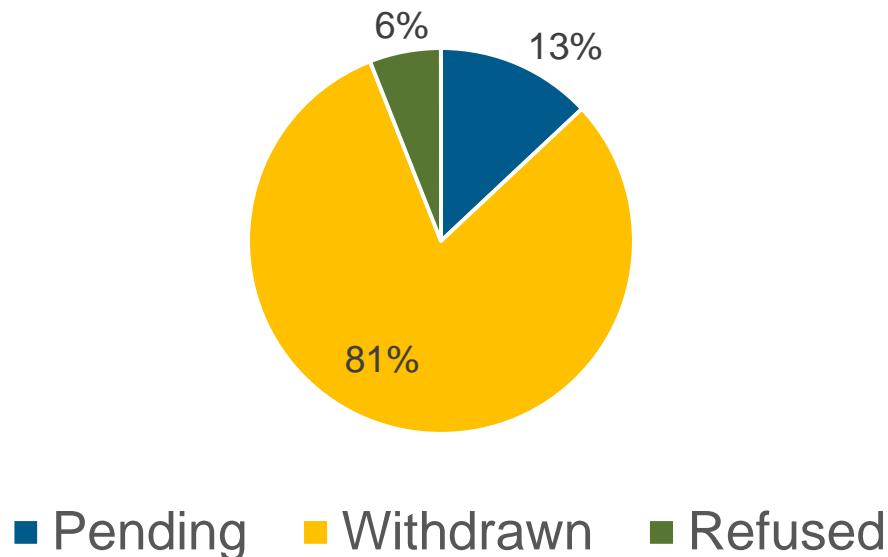
Intellectual Asset Management Magazine benchmark survey 2015 among 650 patent professionals

Private practice
lawyers and attorneys



EPO's lower grant rate is due to higher applicant withdrawal rates (not refusals)

FIG ____ The Resolution of Non-Granted European Patent Applications (N= 3,517 2002 Matched Pairs)



The majority of nongranted apps in the EPO are withdrawn, not refused

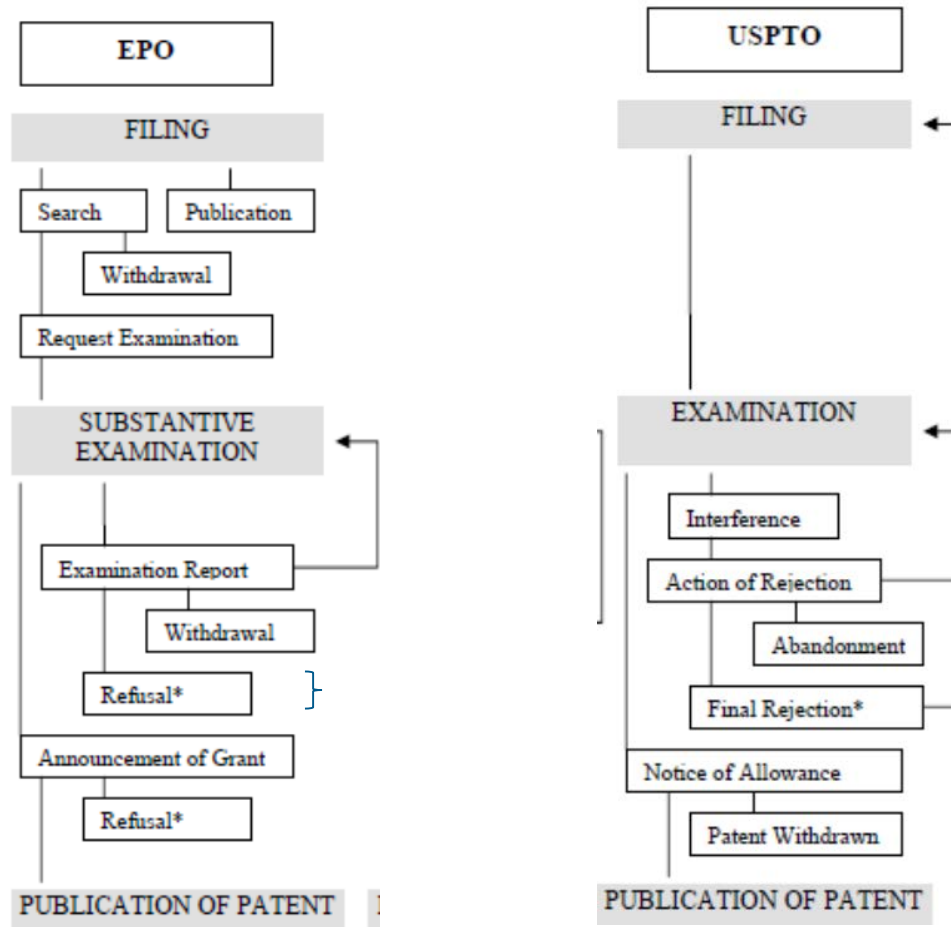
What makes EPO applicants withdraw?

“In the EPO, patents are granted in 49% of total filings, with 22% of applications abandoned after the search report and 29% abandoned after examination.”

- EPO President Battistelli at the 30th Annual US Bar- EPO Liaison Council Meeting, 10/30/2014

EPO conducts a single search, invests in quality upfront. PTO is more tolerant, allows refilings

No continuations

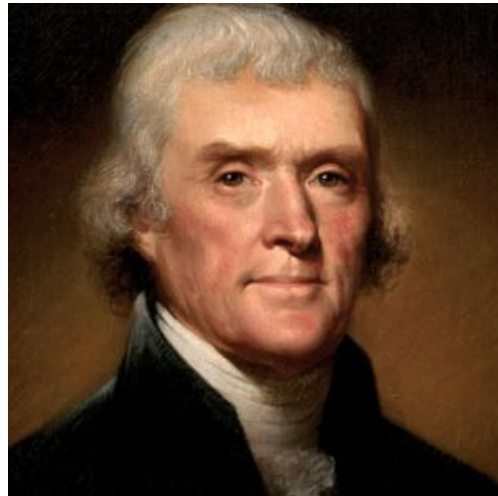


Can refile through continuations

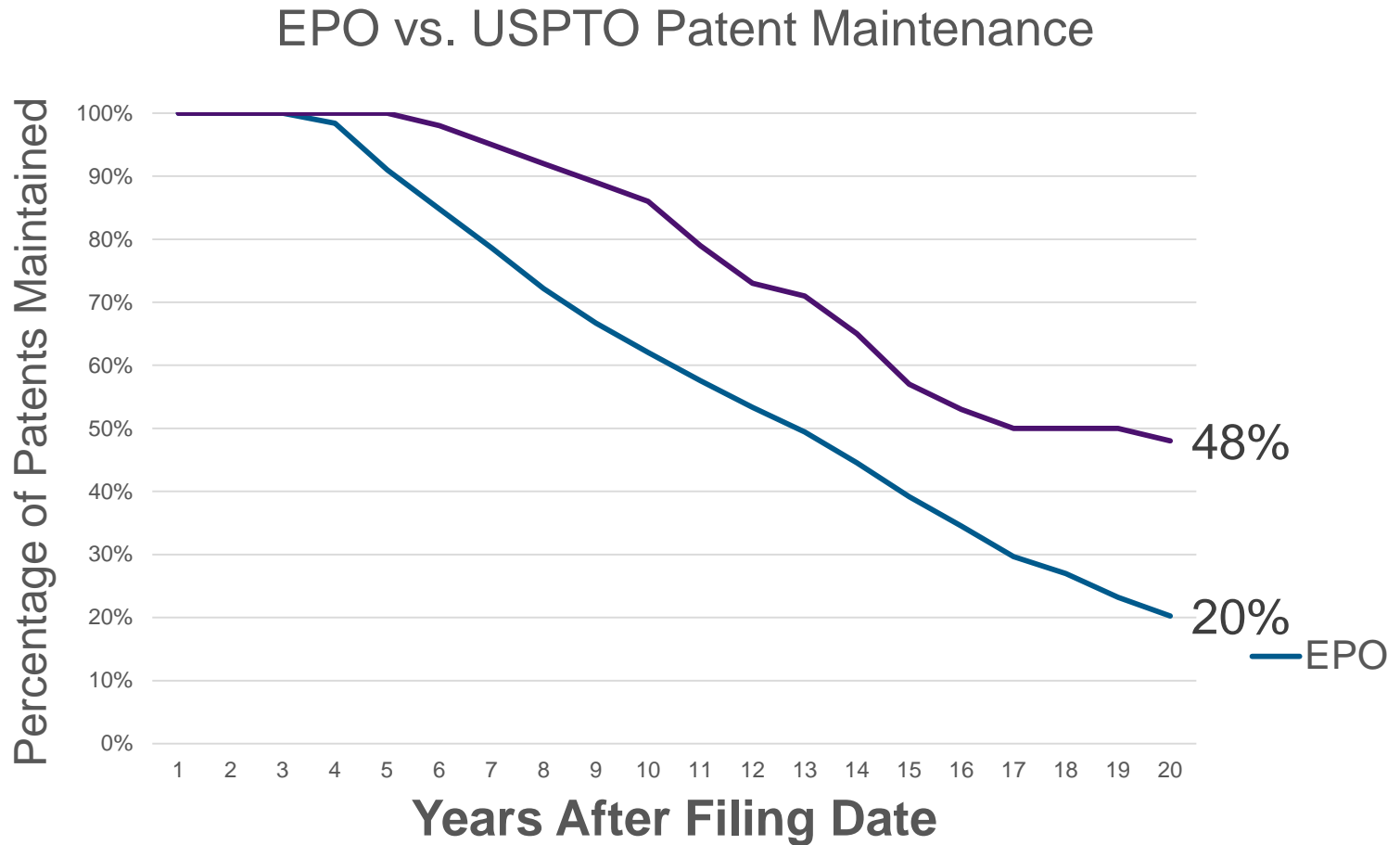
While time for searching prior art varies, EP prior art searching take ~8-12 avg., vs. ~2 hours on average at the PTO (van Pottelsberghe de la Potterie (2011), EPO)

Time pressure during examination is nothing new

Jefferson was “quite favorable to the granting of patents, and granted them with great consideration, the other duties of members of this Board, in view of their high offices, made it impossible for them to devote much time to this work. As a result the law was changed in 1793 to make the granting of patents a clerical function.” – PJ Frederico, 1952

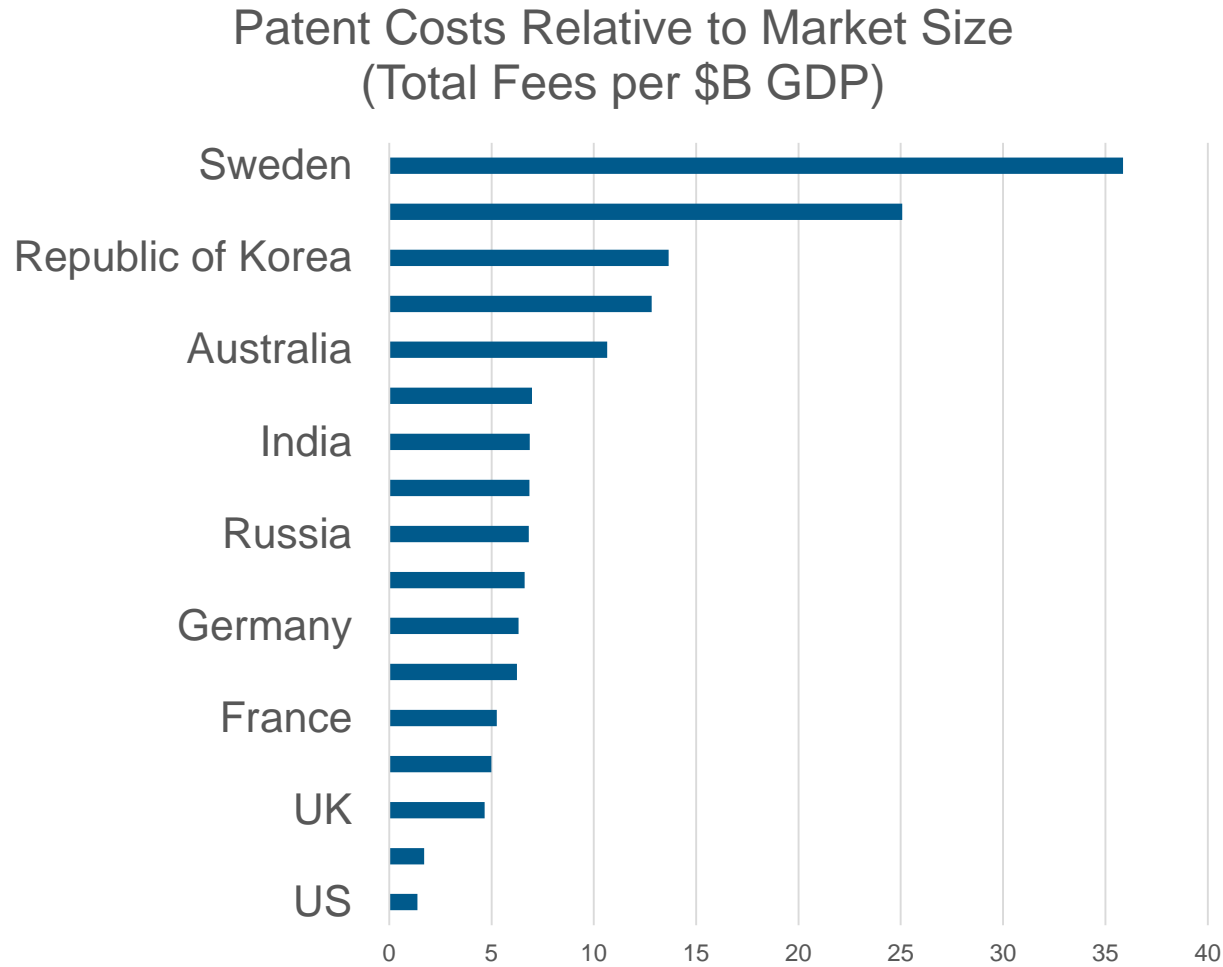


What explains the difference in renewal rates?



Source: IP5 2013 Report

US Patents may be more valuable – they are also cheaper and easier to renew



Source: Park, *On Patenting Costs*, 2010, updated to 2014 data

Stepping back...

Should we worry about quality for every patent? When is the right time?

Sorting between patents that matter and patents that don't

Stage of Patent Lifecycle	Quality Mechanisms
Pre-Application	Legal requirements, fees, quality of submission, third-party submissions
Pre-Grant	Prosecution levers
Post-Grant	Post-Grant Procedures, Reissue, Reexam, Maintenance Fees



Who should decide?

Sorting between patents that are likely to be enforced and those that aren't

Quality Mechanisms	Third Parties	Patentees?
Post Grant	Post Grant Procedures	

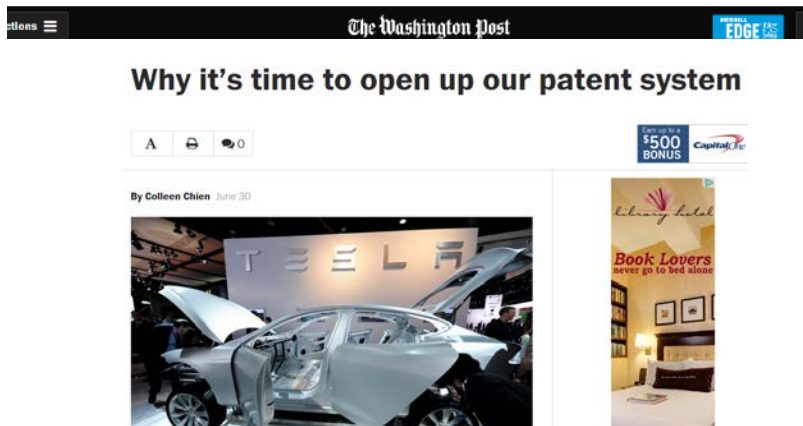
My proposal to enhance quality: reward patentees for designating patents as defensive only or available for FRAND-licensing

Sorting between patents that are likely to be enforced and those that aren't

Quality Mechanisms	Third Parties	Patentees?
Post Grant	Post Grant Procedures	Defensive only/FRAND-friendly patent option

Facilitating “Defensive Only” / “FRAND” friendly patent options

- Patentee can elect at any time to make patent “defensive” or available on FRAND and in return, get a 50% discount on fees
- Once a patent becomes defensive, must remain defensive
- Demand expressed in the marketplace through proliferation of defensive pledges: OIN, DPL, LOT, Tesla, many others
- Companies that go defensive will reduce their own costs and costs of entry/patenting for startups
- Akin to DE/UK License of Right



Sources:

Chien, *Exclusionary and Diffusionary Levers in Patent Law*, 2015

Chien, *Why Its Time to Open the Patent System*, 2015.

Thank you

Colleen Chien

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