From Gutenberg to Blackberry: Challenges for the European Patent System(s)

October 2008, Nice, France

INFONORTICS

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Chaire Solvay d'Innovation Technologique
Senior Fellow, Bruegel

Gutenberg

- 1394/1400 - 1468
- Strasbourg, Mainz
- Inventor (and innovator) of movable type printing
- Honored by archbishop of Mainz in 1465
- Died poor
- Recognized as inventor 50 years later, post mortem

Parte Veneziana : First law on patent (1474)

Sap. Consilij vj.
p Marcus Cor. mil.
p Ludovicus Foscari doctor
p Paulus Maurocenus
p Bernardus Iustinianus mil.
p Christoforus Lando doctor et mil.

Sap. terrefirme.
Antonius de priolis
Lodovicus Faletro
Zachar. Barbaro mil.
Andreas Trivisano.

MCCCCLXXIIII. Die XVIIII Martii

El sono in questa Cità, et anche ala zornada per la grandeza et bontà soa concorre homeni da diverse bande, et acutissimi ingegni, apti ad excogitar et trovar varij ingegnosi artificij. Et se el fosse provisto, che le opere et artificij trovade da loro, altri viste che le havessero, non podessero farle e tuor l'honor suo, simel homeni exercitariano l'ingegno, troveriano, et fariano de le chosse che sariano de non picola utilità et beneficio al stado nostro. Però l'andarà parte che per auctorità de questo Conseio, chadaun che farà in questa Cità algun novo et ingegnoso artificio, non facto per avanti nel dominio nostro, reducto chel sarà a perfection, siche el se possi usar, et exercitar, sia tegnudo darlo in nota al officio di nostri provededori de Comun. Siando prohibito a chadaun altro in alguna terra e luogo nostro, far algun altro artificio ad imagine et similitudine de quello, senza consentimento et licentia del auctor, fino ad anni X. Et tamen se algun el facesse, l'auctor et inventor predicto habia libertà poderlo citar a chadaun officio de questa Cità, dal qual officio el dicto che havesse contrafacto, sia astretto a pagarli ducati cento, et l'artificio subito sia desfacto. Siando però in libertà de la nostra Signoria ad ogni suo piaxer, tuor et usar nei suo bisogni chadaun de dicti artificij et instrumenti, cum questa però condition, che altri cha i auctori non li possi exercitar.

de parte — 116
de non — 10
non sinceri — 3

Sap. Domino duce

Die xviiij Martij.

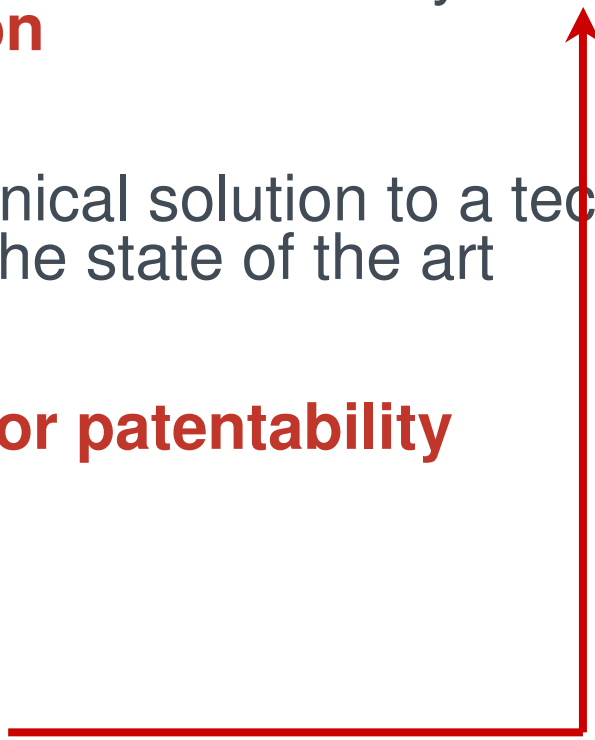
Quoniam per partem captam in hoc Consilio die xxv. Augusti MCCCCLXX. super subventione compellendis ad restitutionem penarum indebite acceptarum a Iustitiis processit causis et aequissima intentione. Que fuit, ut pecunie a nostro dominio perceptum absolute restitueretur. Et sic intelligi recto sensu et interpretatione debeat. Nihilominus quoad formam verborum meretur procul dubio declarationem et correctionem aliquam. Propterea vadit pars. Quod stricturam in parte ipsa contentam prohibens partem ipsam posse

What is a patent?

- A patent gives its owner the right to **prevent** others from commercially using his invention for 20 years in exchange **for disclosing the invention**

- An invention is a technical solution to a technical problem which is contributing to the state of the art

- Three **main criteria for patentability**
  - novelty
  - inventive step
  - applicable in industry



A policy tool to stimulate innovation

- Patents provide **incentives to inventors**, while hampering the use of their inventions

- **Trade-offs** :
  - Static efficiency vs dynamic efficiency
  - compensate for the cost of past R&D
  - Allow to exclude others from using the technology
  - WW disclosure of information (zero cost?)
  - Natural right for inventors ?
  - Reduce waste of resources, avoids duplications ?

Today's Menu

- Context: why does patent policy matter?
- Challenges for the European patent system
  - A fragmented market for technology
  - The cost factor
  - The quality factor 1: examination
  - The quality factor 2: 'quality' of filings
  - Quality vs Quantity

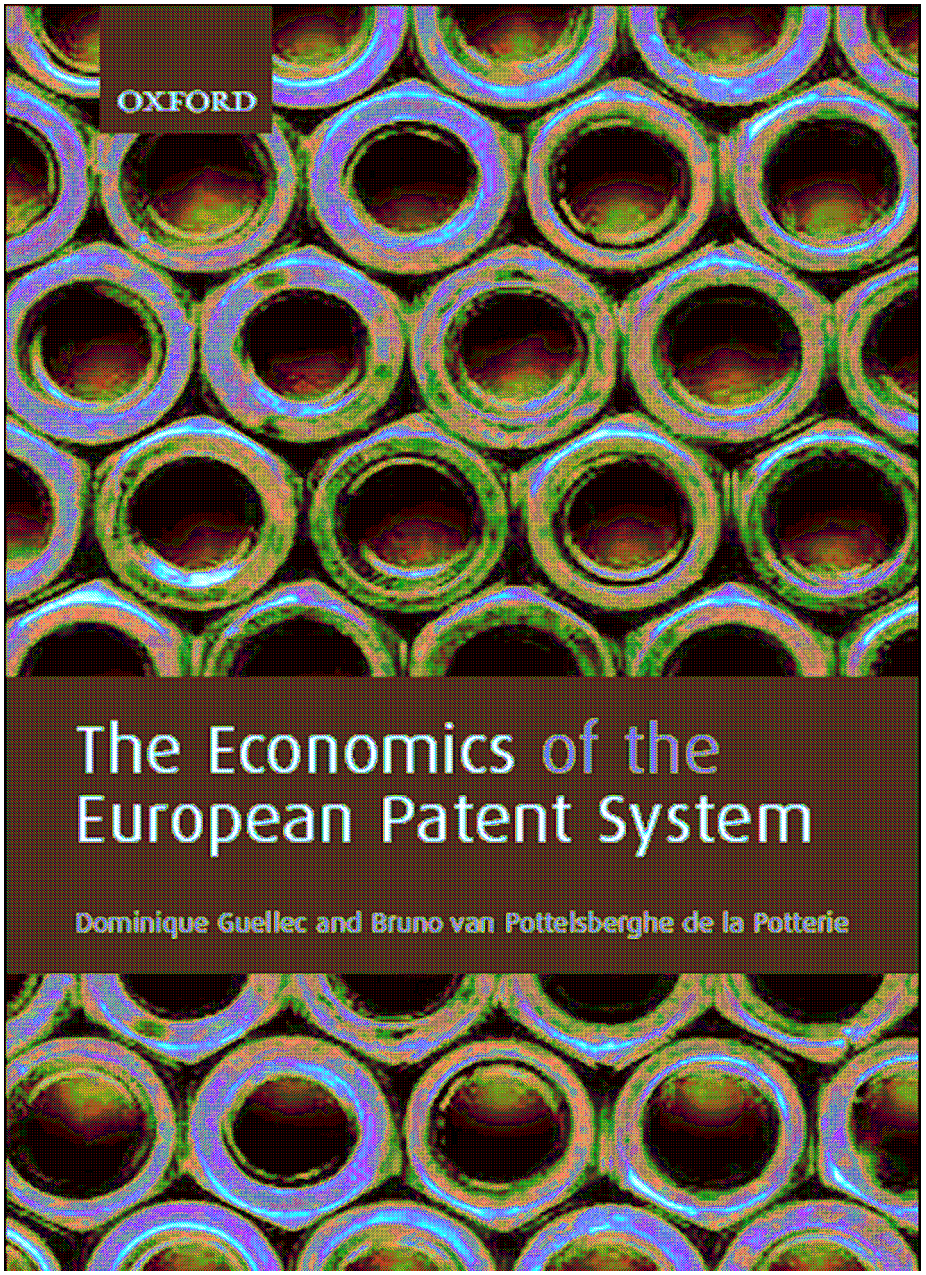
References: This book (Oxford University Press)

Several articles and WP by/with:

Dominique GUELLEC
Gaetan DE RASSENFOSSE
Nicolas VAN ZEEBROECK
Malwina MEJER

Collaboration at EPO:

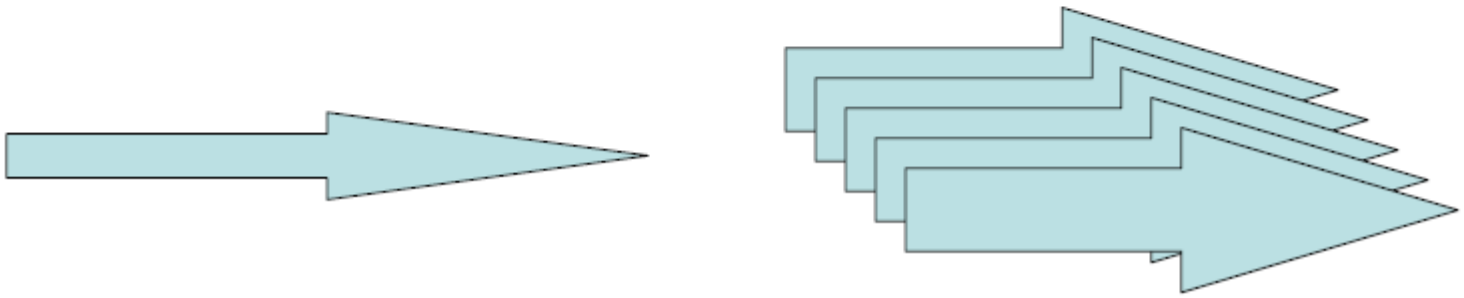
Eugenio ARCHONTOPOULOS
Niels STEVNSBORG
George LAZARIDIS



Patenting Processes

The case of the European Patent Office

- European phase
  - filing
  - search
  - examination
  - grant
- National phase
  - transformation into a bundle of national patents



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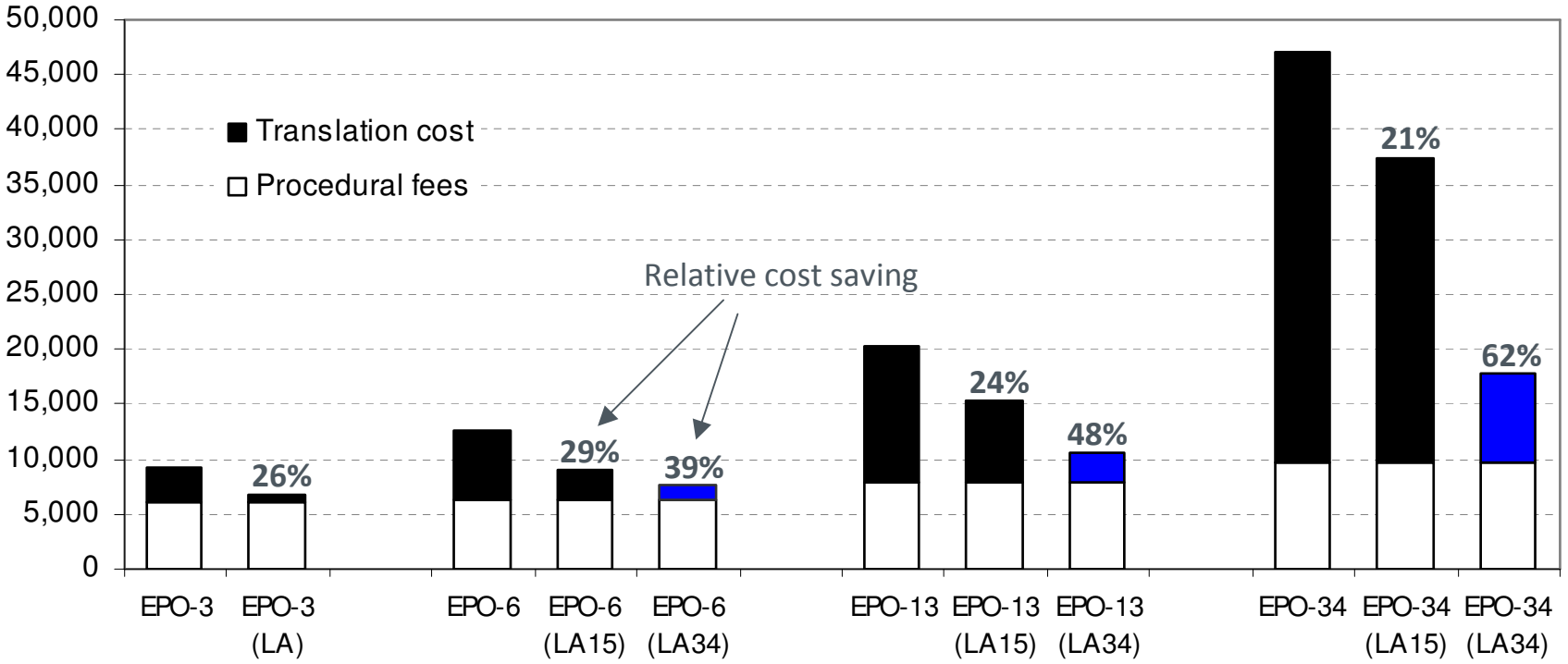
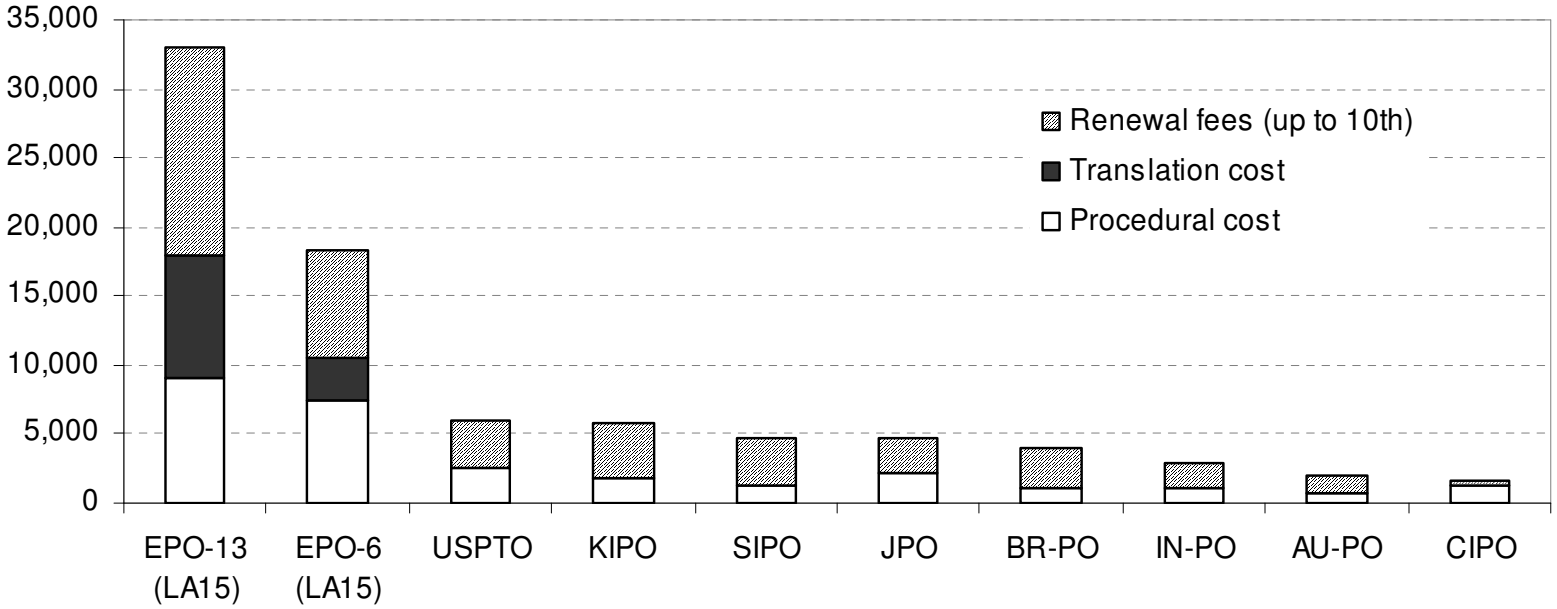
The impact of London Agreement on the cost of patenting in Europe, May 2008 (*)



EPO-3: DE, FR, UK - with more than 70% of the EP patents validated in 2003;
EPO-6: DE, FR, UK, CH, IT, NL - more than 30%;
EPO-13: DE, FR, UK, CH, IT, NL, AT, BE, ES, DK, FI, IE, SE - more than 12%;
EPO-34: all the EPC contracting states as of May 2008;

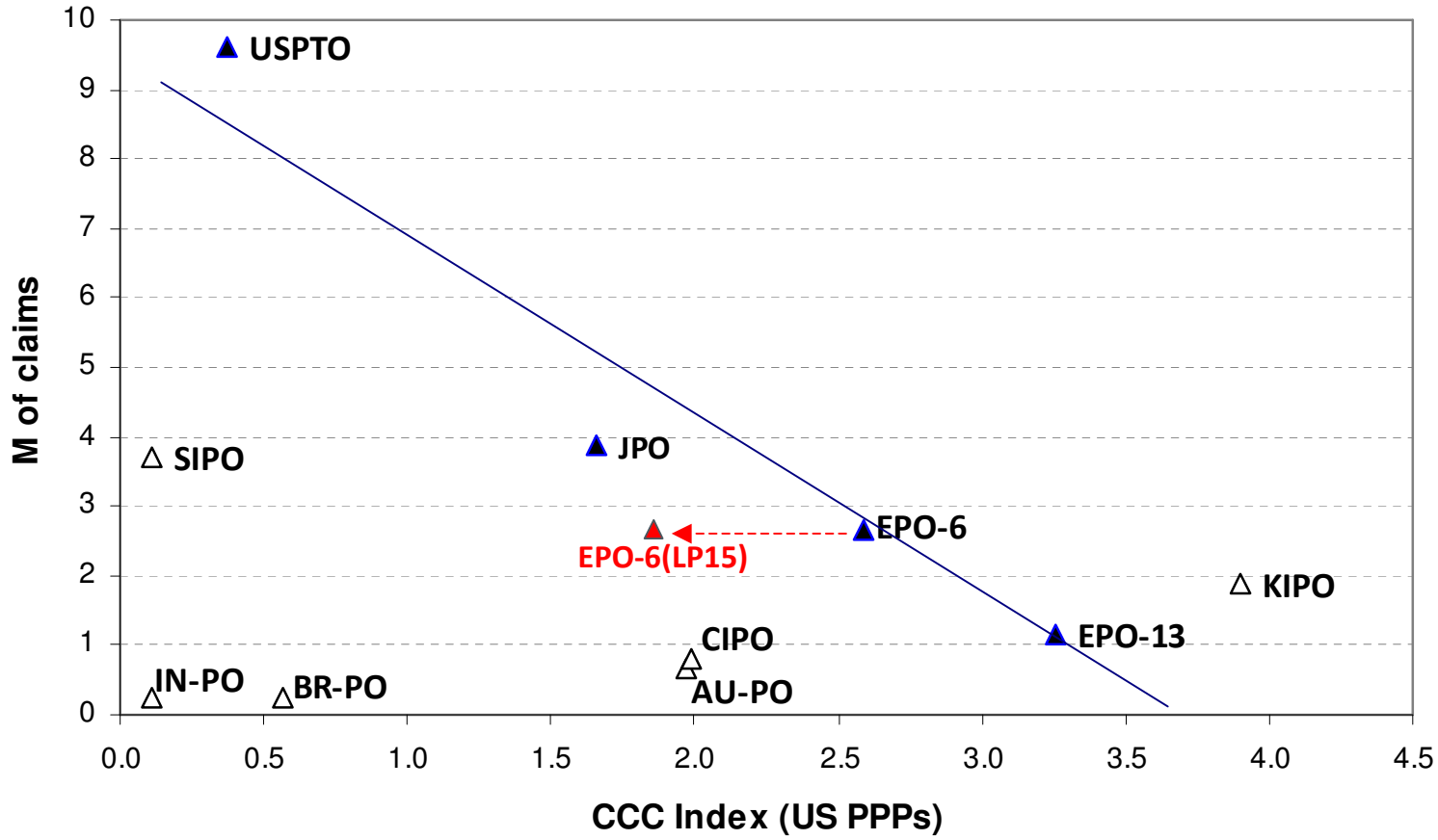
Source: van Pottelsberghe and Mejer, 2008, forthcoming

Cost structure of direct patent fillings and 10 year of maintenance, May 2008 (in US PPP)



Source: van Pottelsberghe and Mejer, 2008, forthcoming

Millions of claims filled v. procedural and translation cost per claim per million capita (2006)* (10%-15% increase)



Note: * The axis x-shows cost per claim per million capita, expressed in US PPPs 2006, and includes process and translation costs. The axis-y shows the total number of claims filled in 2006 in each patent office. The line indicates the trend between three main regional offices: EPO, JPO and USPTO.

Source: van Pottelsberghe and Mejer, 2008, forthcoming

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Source: van Pottelsberghe and François, 2008

Qualitative indicators in the two regional offices, 2004

	EPO	USPTO
Procedure pendency (in months)	Search: 12 Exam : 38	27
Total number of claims filed	2.1 Million	7.9 Million
Filings per examiner	34.6	96.9
Grants per examiner	17.8	47.8
Claims filed per examiner	624.1	2,235
Claims granted per examiner	326.9	1,103
Grant rate[2]	59% (QW: 67%)	64% (QW: 87 to 97%)

3 to 4

The EPS - Quality induced (smaller) backlog

- A relatively small grant rate (higher rigor)
- Longer time spent on each patent = more in-depth examination
- Less patents per examiner
- Less domain of patentability
- Much more expensive (relative to market size)

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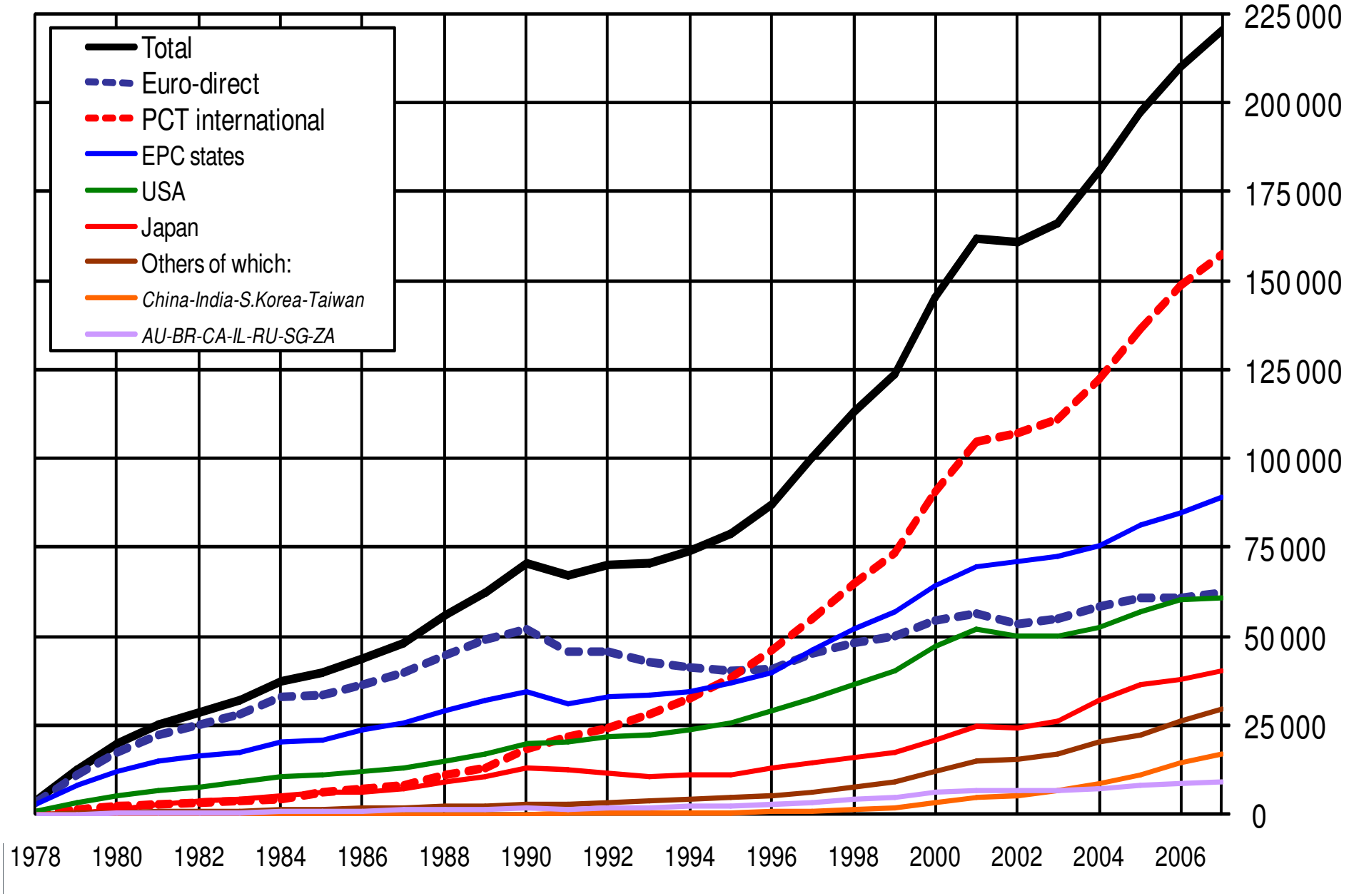
Total European patent filings - Origin

Euro-direct + PCT international



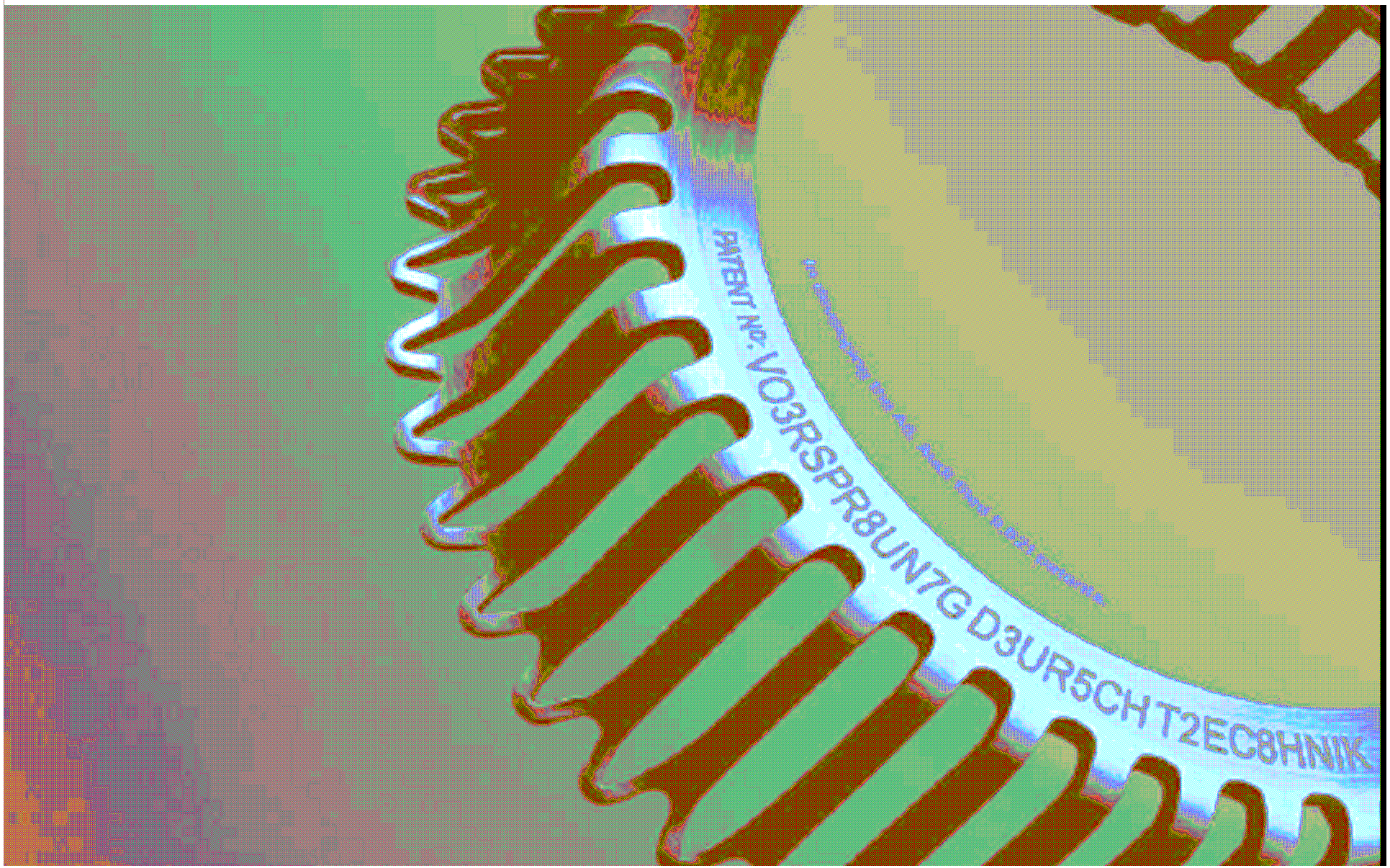
- **Patent systems face a boom in filings…**
  - Globalization of markets,
  - Harmonization of patent systems (PCT,…)
  - New and dynamic countries in the arena (BRICS)
  - New technologies (Bio, nano…)
  - New actors (SMEs, universities)
  - New management of R&D: open innovation
  - New strategies (portfolio, thikets, flooding, marketing…)

- **… and in the size of applications (e.g., # of claims)**

- **Growth much stronger than growth in R&D**

Audi's recent A6 ad campaign claimed:

« To date NASA has filed 6,509 patents. In developing the A6, Audi filed 9,621 ». Patenting is sold as a proof of innovation



And filing strategies (CH. 6, with N. Stevnsborg)

Good will and fast track	Good will and slow track	Bad will and slow track	Deliberate abuse of the system

	Patenting route	Drafting	Interaction with EPO
Deliberate abuse of the system	- US priority followed by PCT	- deliberately deficient* - long list of prior art - extremely complex - high number of claims - many independent claims - long claims - cross references between claims - unclear, long description - invention hidden - lack of unity - successive Divisionals each with slow prosecution	- delayed interaction - wait for communication for amendments of claims - request maximum extension for replies - file Divisionals and possibly Divisionals of Divisionals - late payment of fees - file an appeal on some decisions

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 December 2002 (27.12.2002)

PCT

(10) International Publication Number
WO 02/102993 A2

(51) International Patent Classification[7]: C12N

(21) International Application Number: PCT/US02/08123

(22) International Filing Date: 19 March 2002 (19.03.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/277,340	21 March 2001 (21.03.2001)	US
60/306,171	19 July 2001 (19.07.2001)	US
60/331,287	13 November 2001 (13.11.2001)	US

(71) Applicant *(for all designated States except US)*: **HUMAN GENOME SCIENCES, INC.** [US/US]; 9410 Key West Avenue, Rockville, MD 20850 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **ROSEN, Craig, A.** [US/US]; 22400 Rolling Hill Lane, Laytonsivlle, MD 20882 (US). **RUBEN, Steven, M.** [US/US]; 18528 Heritage Hils Drive, Olney, MD 20832 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

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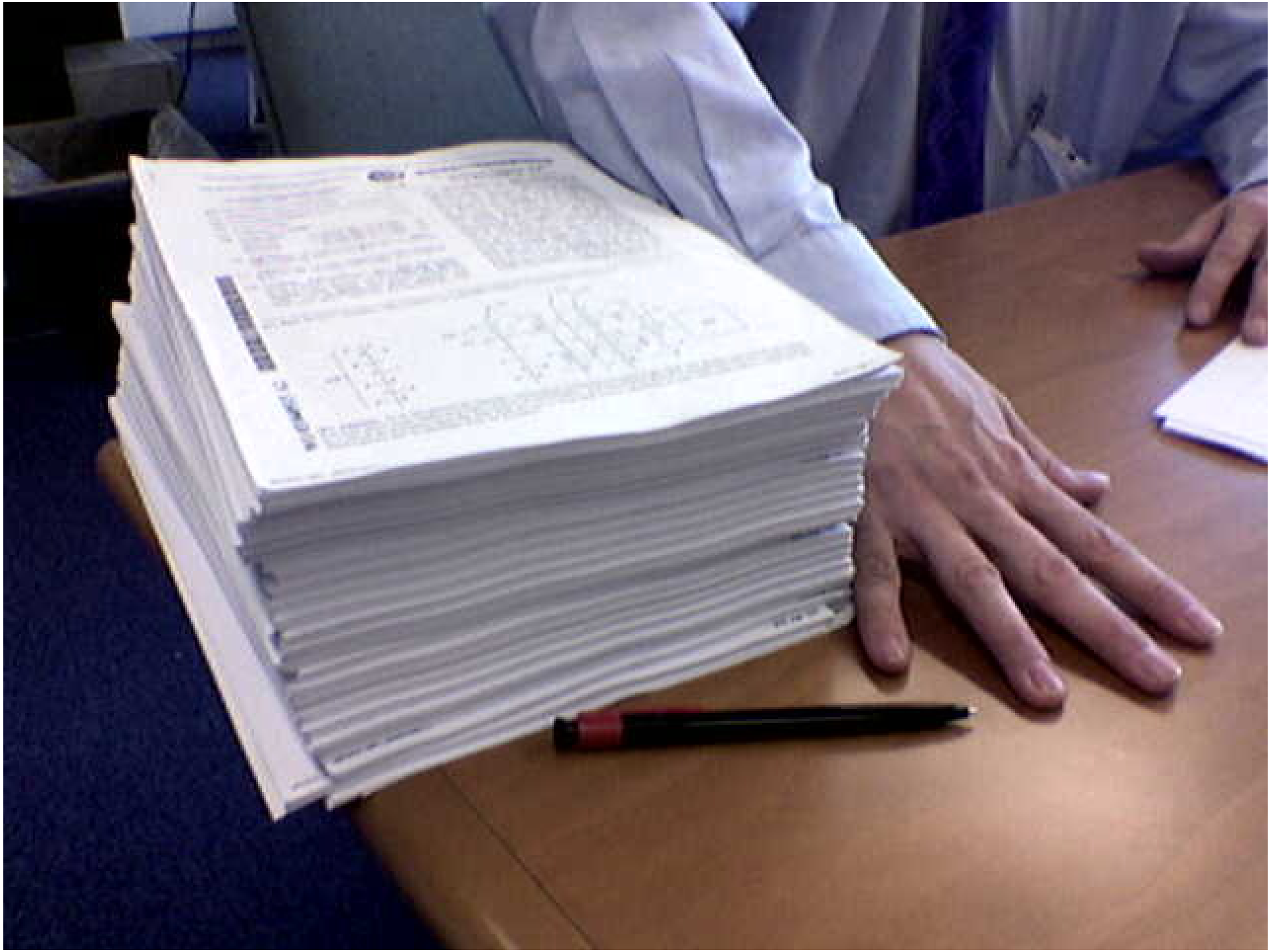
3205 Pages
7 Claims
Filed at EPO



Source: van Zeebroeck et al. (2006)

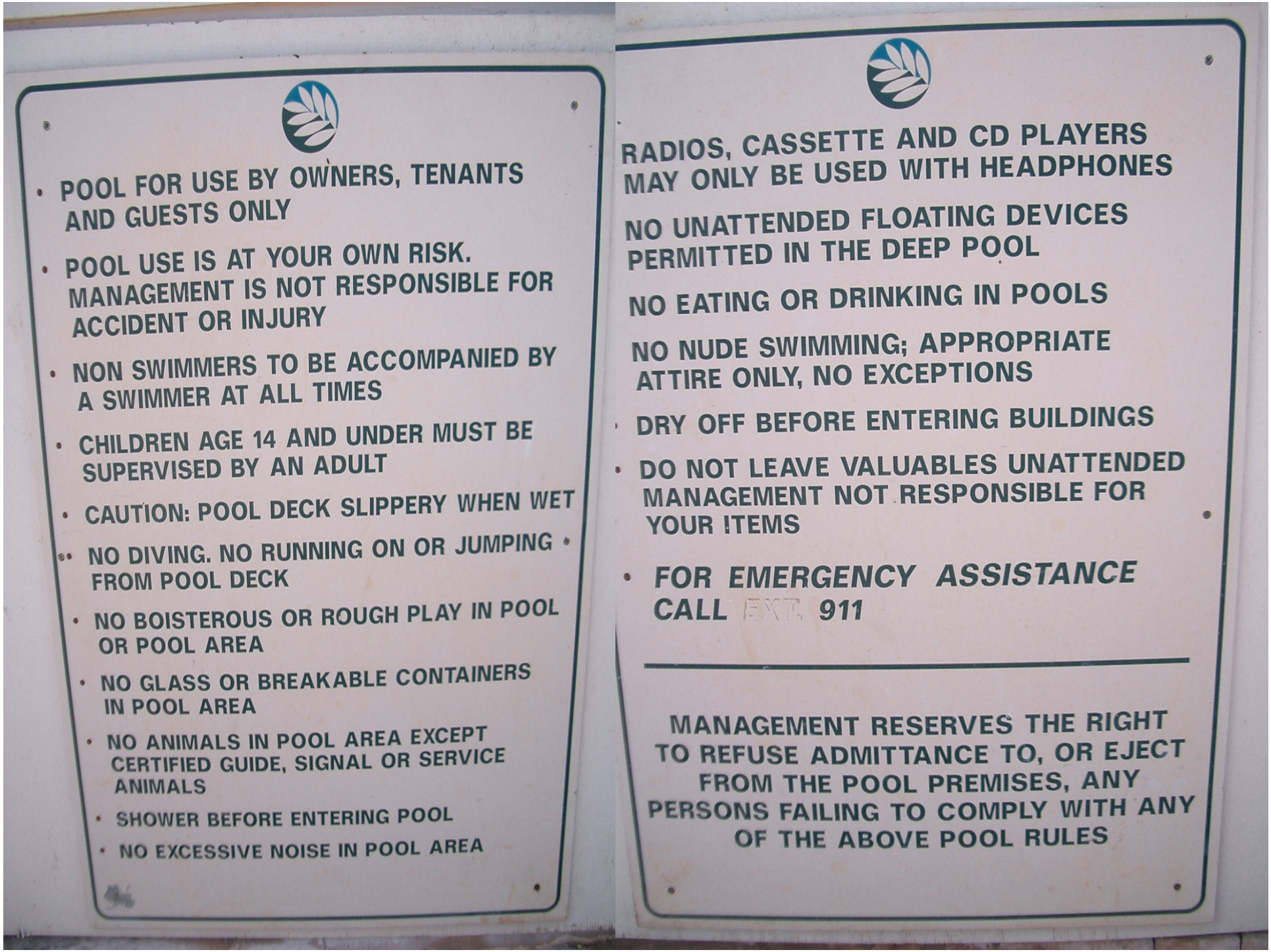
H1: National practices?

Priority Country	% of Top 1000 filings in # of claims	% of Top 1000 filings in # of pages
Denmark	0,3%	0,6%
France	0,1%	1,2%
Germany	0,6%	1,2%
Italy	0,2%	0,0%
Netherlands	0,1%	0,0%
Spain	0,2%	0,0%
Sweden	0,1%	0,0%
Switzerland	0,0%	0,2%
Continental Europe	***1,6%***	***3,2%***
United Kingdom	1,3%	3,4%
EPO	0,2%	0,5%
Total Europe	***3,1%***	***7,1%***
Canada	0,2%	0,2%
USA	82,0%	80,5%
North America	***82,2%***	***80,7%***
Japan	4,4%	8,7%
Other	10,3%	3,5%
Total	**100,0%**	**100,0%**

Implications

- PCT filings generally designate USPTO
  - ➔ Draft once, file everywhere
  - ➔ Use US template since US = largest market & fastest granting
- US IP System leads to more voluminous applications
  - File history estoppels (cf. FESTO case)
  - Role of Courts
  - Harsher competitive pressure
  - Fee regimes (cf. effect of 2004 fee schedule)
  - ➔ Common law v/s Civil law **???**
    (cf. size of contracts or other legal documents)
- + Global propensity to more voluminous literature

Why would US applicants draft longer applications?



- POOL FOR USE BY OWNERS, TENANTS AND GUESTS ONLY
- POOL USE IS AT YOUR OWN RISK. MANAGEMENT IS NOT RESPONSIBLE FOR ACCIDENT OR INJURY
- NON SWIMMERS TO BE ACCOMPANIED BY A SWIMMER AT ALL TIMES
- CHILDREN AGE 14 AND UNDER MUST BE SUPERVISED BY AN ADULT
- CAUTION: POOL DECK SLIPPERY WHEN WET
- NO DIVING. NO RUNNING ON OR JUMPING FROM POOL DECK
- NO BOISTEROUS OR ROUGH PLAY IN POOL OR POOL AREA
- NO GLASS OR BREAKABLE CONTAINERS IN POOL AREA
- NO ANIMALS IN POOL AREA EXCEPT CERTIFIED GUIDE, SIGNAL OR SERVICE ANIMALS
- SHOWER BEFORE ENTERING POOL
- NO EXCESSIVE NOISE IN POOL AREA

RADIOS, CASSETTE AND CD PLAYERS MAY ONLY BE USED WITH HEADPHONES

NO UNATTENDED FLOATING DEVICES PERMITTED IN THE DEEP POOL

NO EATING OR DRINKING IN POOLS

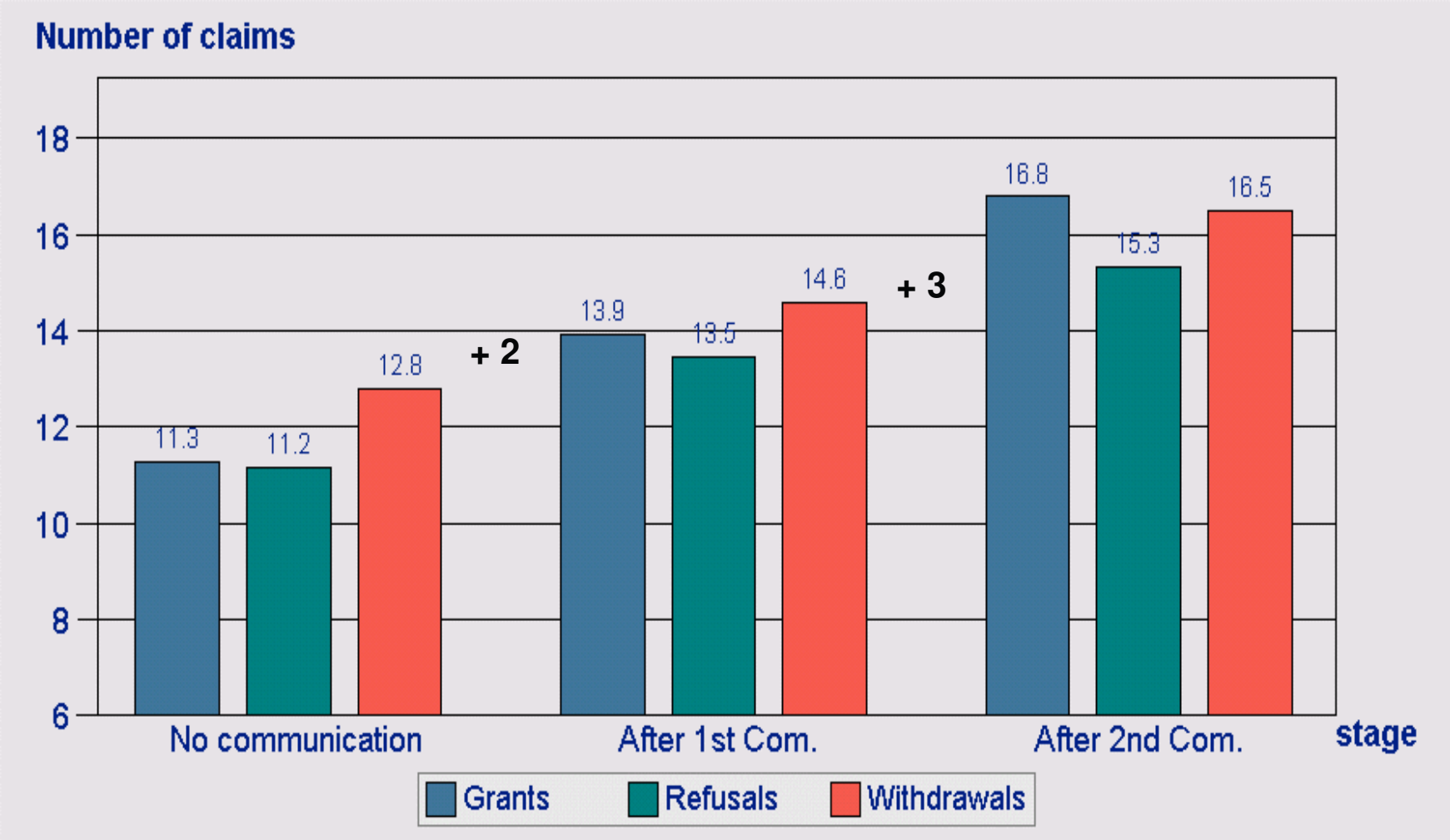
NO NUDE SWIMMING; APPROPRIATE ATTIRE ONLY, NO EXCEPTIONS

- DRY OFF BEFORE ENTERING BUILDINGS
- DO NOT LEAVE VALUABLES UNATTENDED MANAGEMENT NOT RESPONSIBLE FOR YOUR ITEMS
- *FOR EMERGENCY ASSISTANCE CALL EXT. 911*

MANAGEMENT RESERVES THE RIGHT TO REFUSE ADMITTANCE TO, OR EJECT FROM THE POOL PREMISES, ANY PERSONS FAILING TO COMPLY WITH ANY OF THE ABOVE POOL RULES

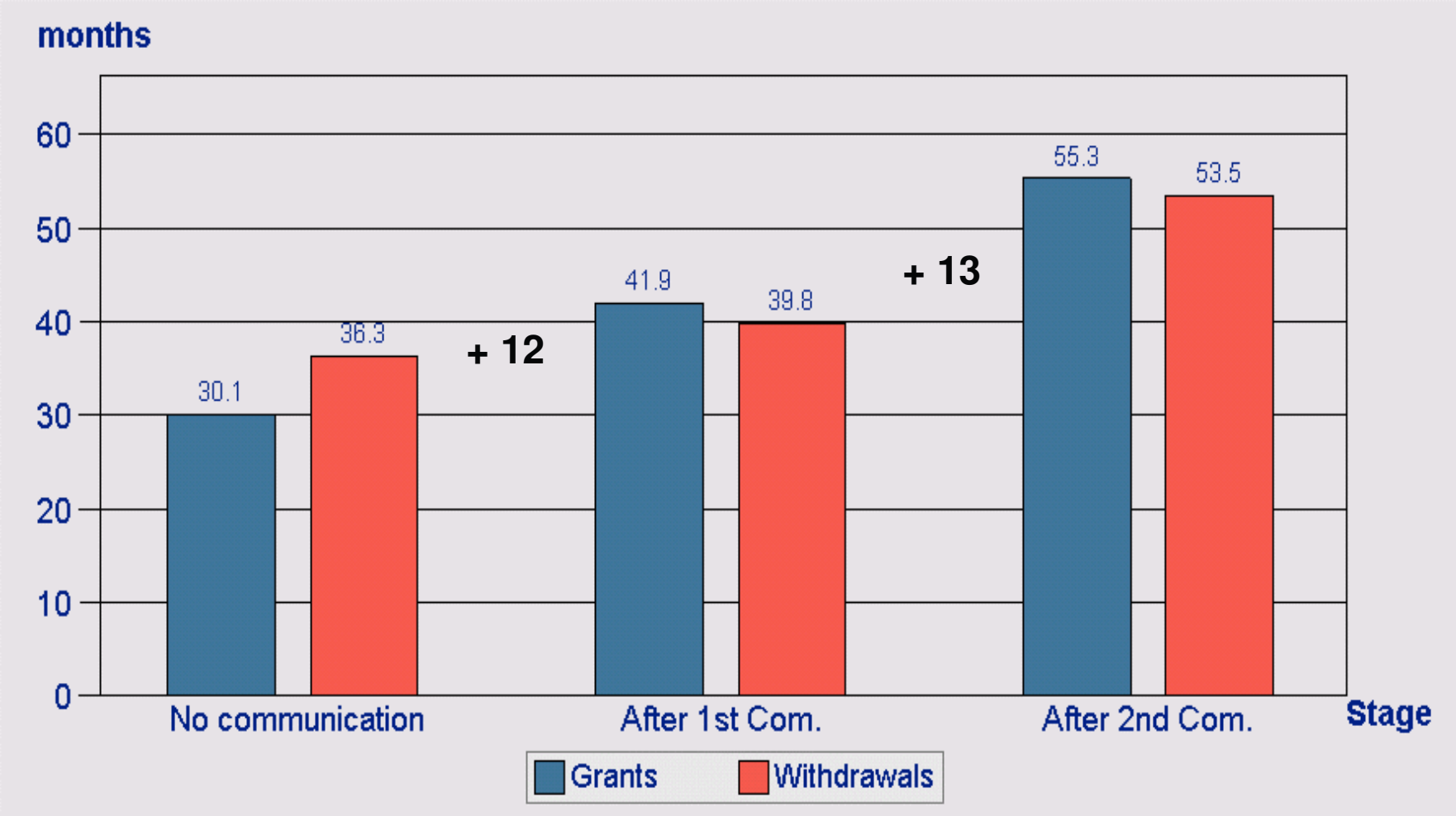
Source: Lazaridis and van Pottelsberghe (2007)

Average number of claims of applications filed between 1997 and 1999, per communication status



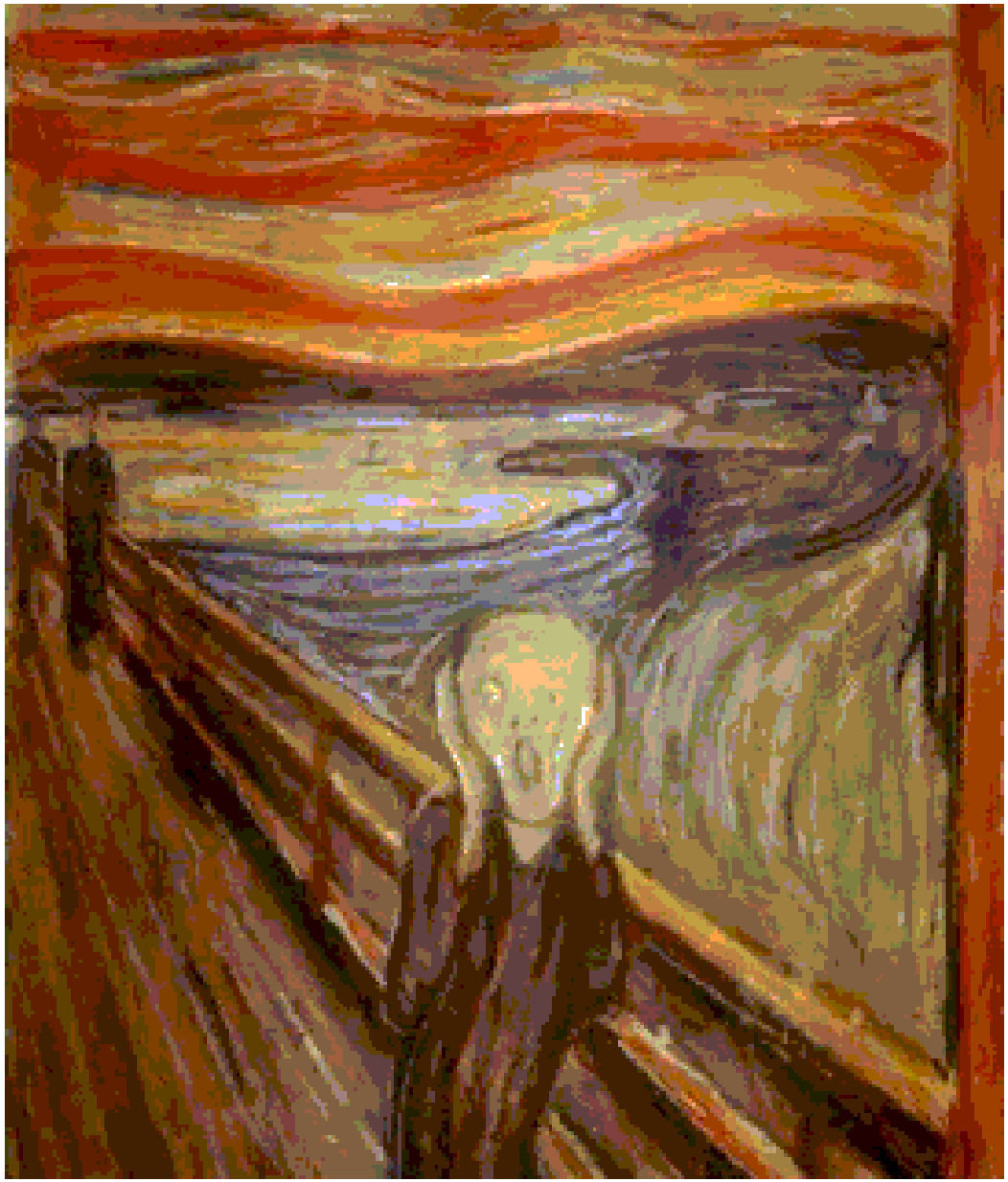
Source: Lazaridis and van Pottelsberghe (2007)

Average age of granted and withdrawn files, 1985-2004 , per communication status



QUALITY

(SIZE up)



QUALITY

(CONTENT ?)

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2006/0014125 A1**

St. Clair (43) **Pub. Date: Jan. 19, 2006**

(54) **WALKING THROUGH WALLS TRAINING SYSTEM**

(76) Inventor: **John Quincy St. Clair, San Juan, PR (US)**

Correspondence Address:
JOHN ST. CLAIR
4A
52 KINGS COURT
SAN JUAN, PR 00911 (US)

(21) Appl. No.: **10/890,635**

(22) Filed: **Jul. 14, 2004**

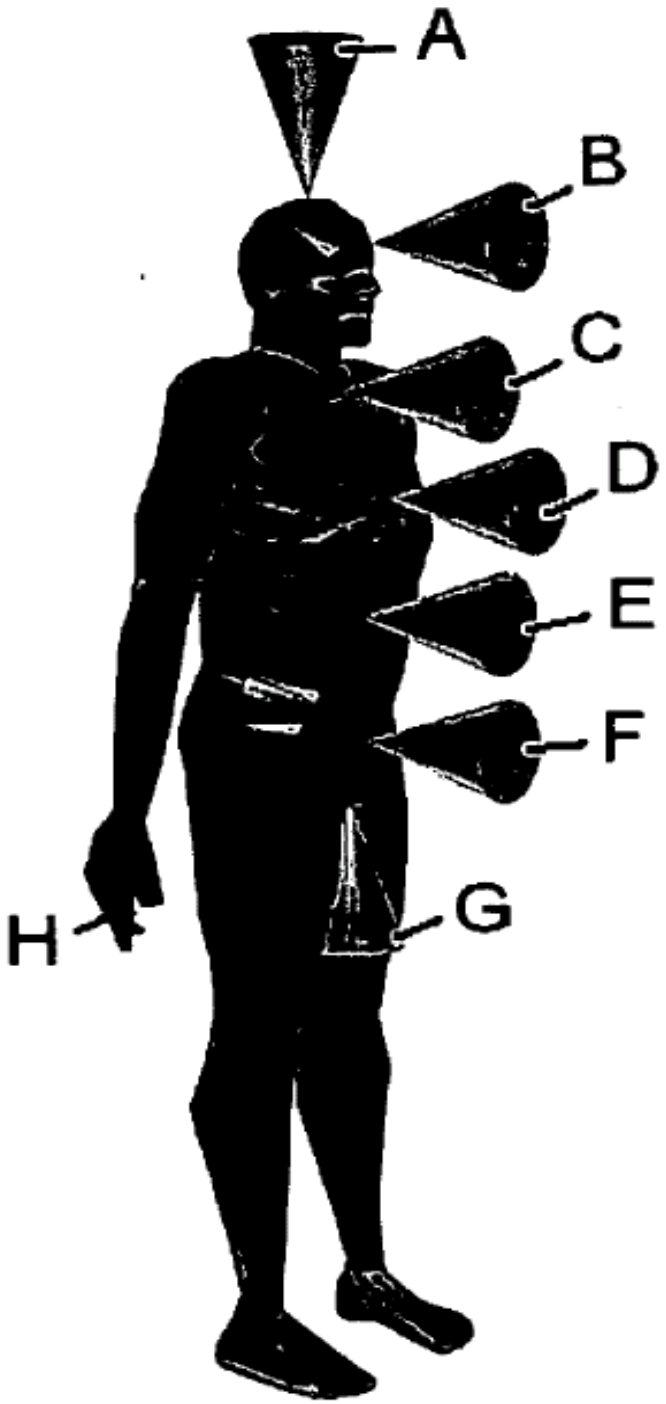
Publication Classification

(51) **Int. Cl.**
G09B 19/00 (2006.01)

(52) **U.S. Cl.** **434/258**

(57) **ABSTRACT**

This invention is a training system which enables a human being to acquire sufficient hyperspace energy in order to pull the body out of dimension so that the person can walk through solid objects such as wooden doors.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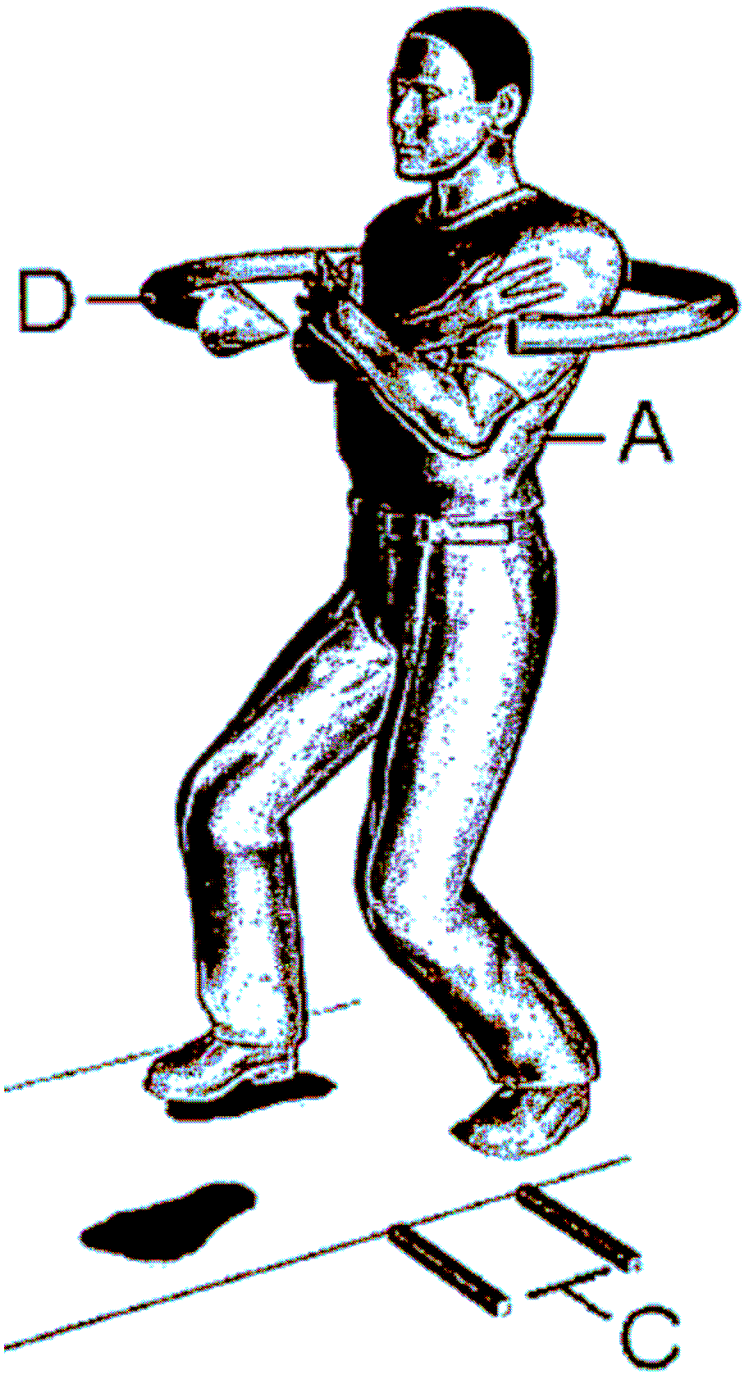
D
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Years enforced →

EPC Countr. ↓

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
C1										
C2										
C3										
C4										
C5										
C6										
C7										
C8										
C9										
C10										

Adds 1 for each country / year:

10 initial EPO member states

First 10 years after the filing date

➔ Maximum score: 100

Source: van Pottelsberghe and van Zeebroeck, 2008

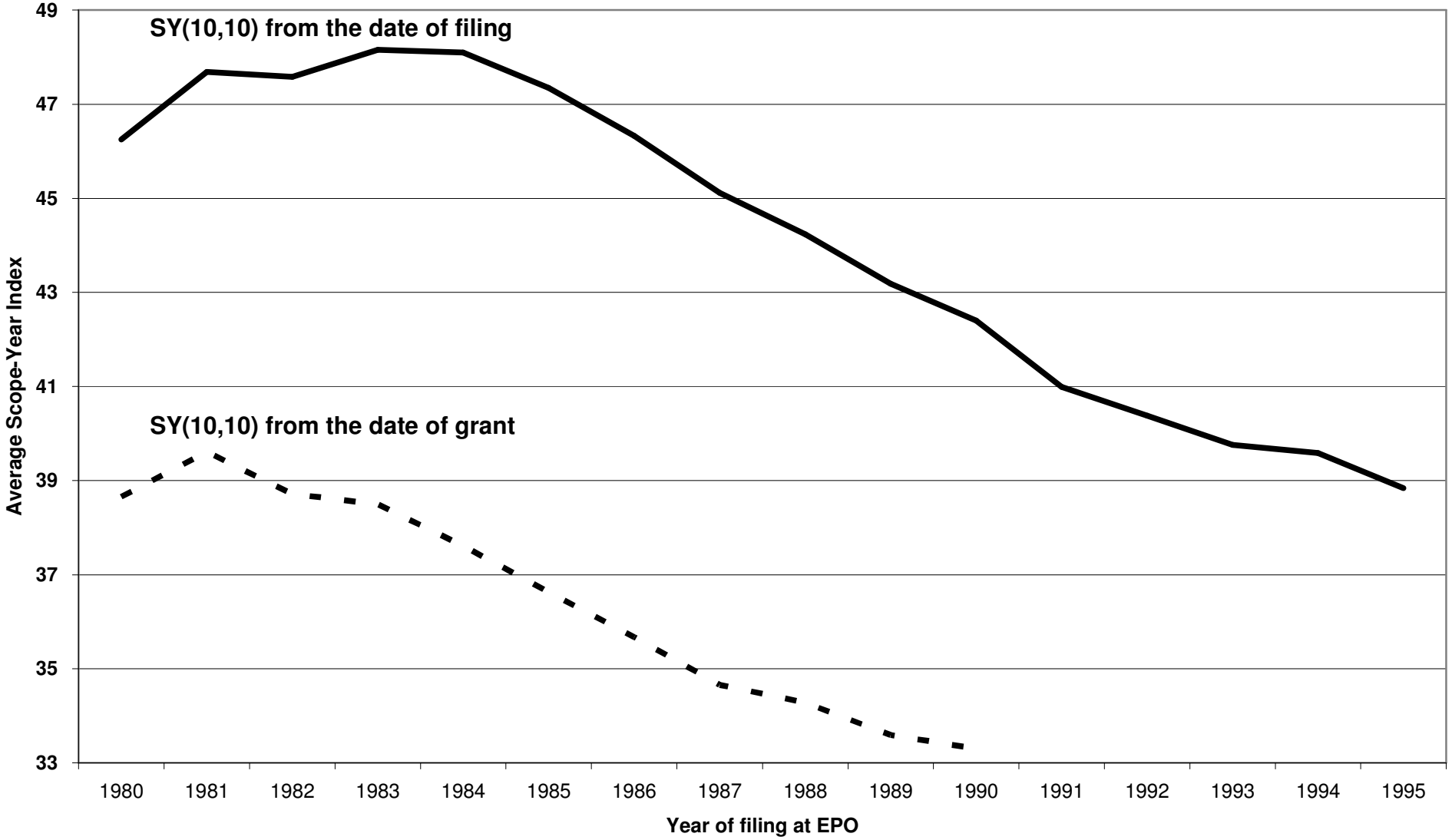
The Scope-Year index...

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
C1	■	■	■	■	■	■	■	■	■	■
C2	■	■	■	■	■	■	■	■	■	■
C3	■	■	■	■	■					
C4	■	■	■	■	■					
C5	■	■	■	■	■					
C6	■	■	■	■	■					
C7	■	■	■	■	■					
C8	■	■	■	■	■					
C9										
C10										

50, or 50%

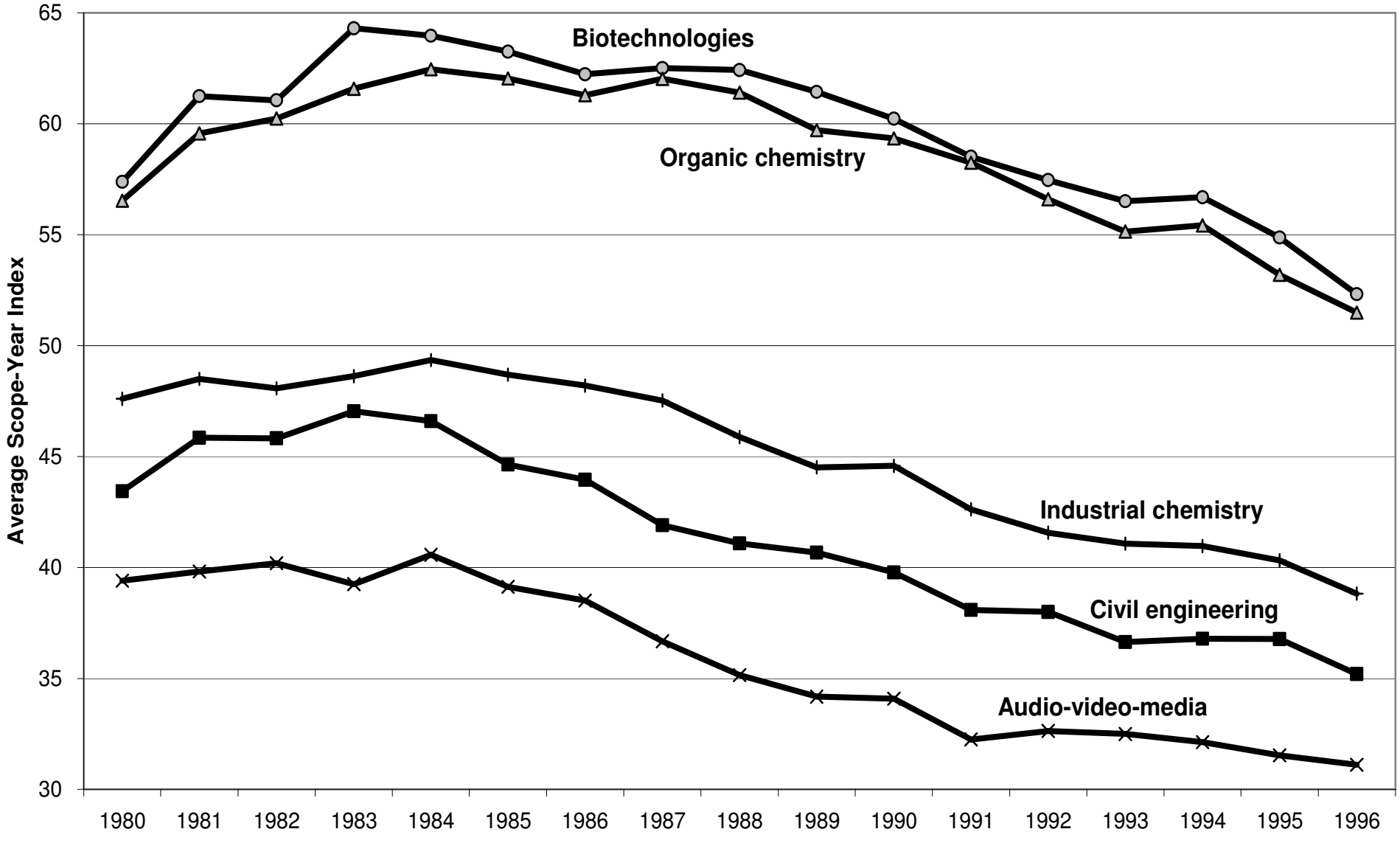
Source: van Pottelsberghe and van Zeebroeck, 2008

The Scope-Year index...
The average value of EP patents has decreased by 9 SY



Source: van Pottelsberghe and van Zeebroeck, 2008

Clear differences across technological fields, but common trends



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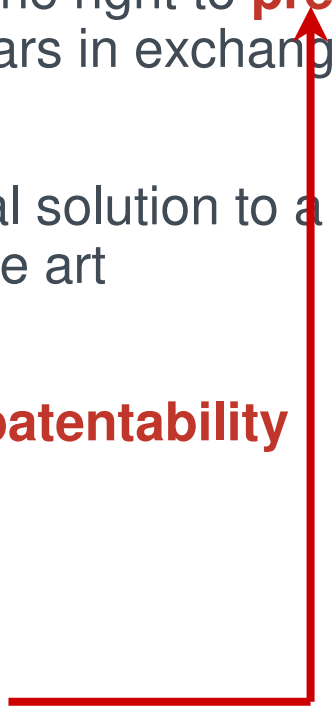

Blackberry : Why does quality matter?
An all-in-one solutions device

References: (cfr. also RePEc website)

Archontopoulos E., D. Guellec, N. Stevnsborg, N. van Zeebroeck and B. van Pottelsberghe de la Potterie, 2007, When small is beautiful: measuring the evolution and consequences of the voluminosity of patent applications at the EPO, **Information Economics and Policy**, 19(2), 103-132.

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Holder of the Solvay SA Chair of Innovation

Senior Fellow, Bruegel

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