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# Patent litigation across countries

Nicolas van Zeebroeck  
*ULB, SBS-EM and ECARES*

*Co-authors:*

*Stuart Graham (GeorgiaTech and USPTO)  
Alan Marco (Washington and Lee University)*

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Brussels – September 9, 2011

# Developing story...

## Bloomberg

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### Samsung Puts New Tablet on Hold After Apple Win

By Jun Yang - Sep 5, 2011

Samsung Electronics Co. lost a chance to showcase its latest tablet computer at one of the world's largest electronics shows after [Apple Inc.](#) ([AAPL](#)) won a second injunction blocking Galaxy Tab sales in Germany.

Samsung, Apple's closest rival in tablet computers, pulled the just-unveiled Galaxy Tab 7.7 out of the [IFA](#) consumer- electronics show in Berlin after a Dusseldorf court on Sept. 2 granted Apple's request to ban sales and marketing of the product, [James Chung](#), a Seoul-based spokesman for Samsung, said by telephone yesterday.

Samsung and Apple, maker of the iPad, are involved in legal disputes across three continents, as Apple -- also one of the biggest customers for the South Korean company's chips and displays -- claims the Galaxy devices copied its iPhone and iPad. Last month, the Dusseldorf Regional Court granted Apple a temporary sales ban on the earlier Galaxy Tab 10.1 model in 26 of the 27 European Union member countries.

"Samsung respects the court's decision," Chung said yesterday, adding that the company believes it "severely limits consumer choice in [Germany](#)." Samsung will pursue all available options, including legal action, to defend its intellectual property rights, he said.

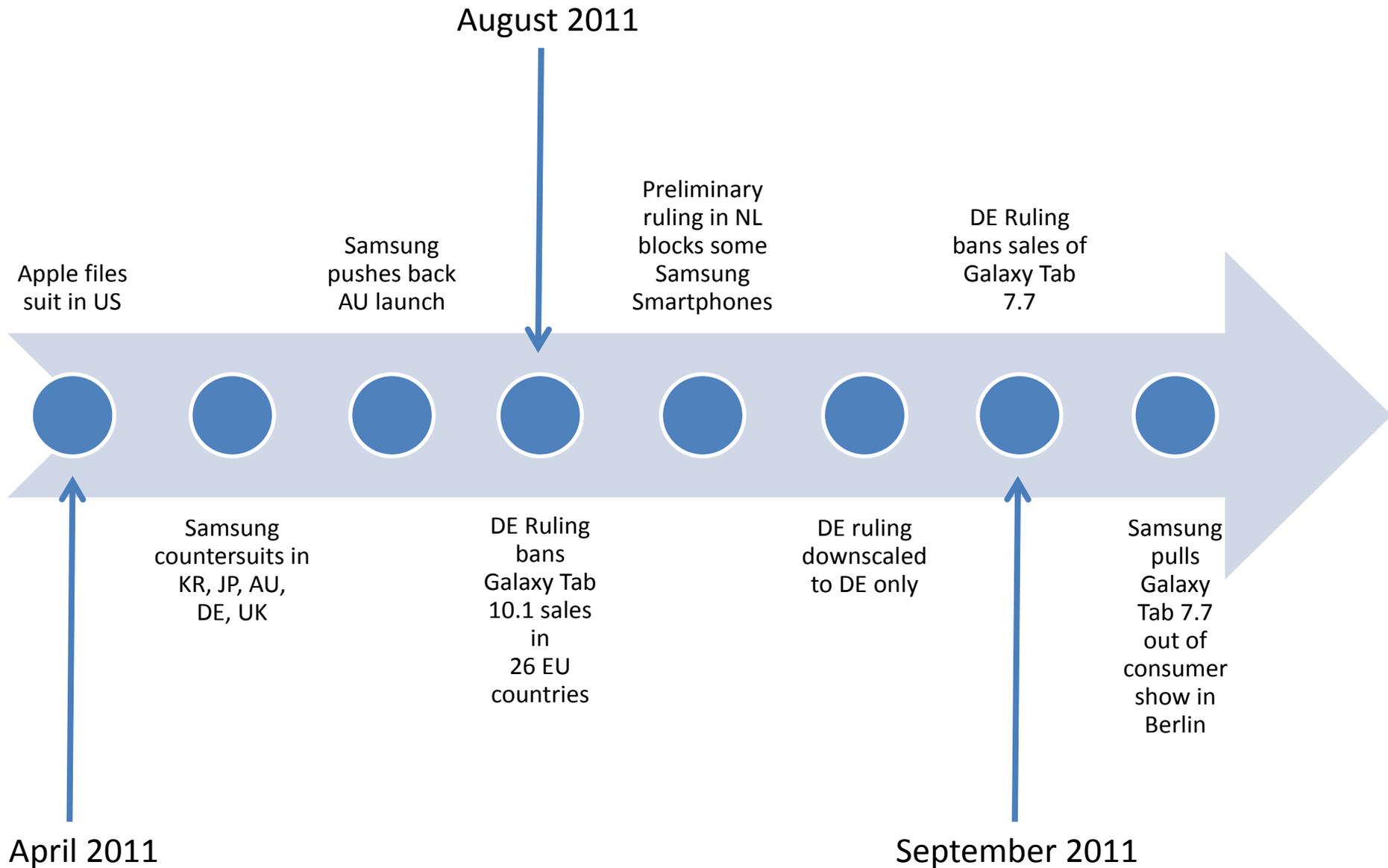
Chung couldn't confirm if Samsung has received the court order, while [Steve Park](#), a Seoul-based spokesman for Apple, couldn't immediately comment on the ruling.

Samsung shares fell 4.9 percent, the most since Aug. 18, to 731,000 won at the 3 p.m. close in Seoul trading, extending their drop this year to 23 percent. The benchmark Kospi index declined 4.4 percent today.

#### Lost Sales

The Dusseldorf court's August ruling, scaled back to only Germany on jurisdictional grounds, could have cost the Suwon, South Korea-based Samsung sales of as many as half a million units this year, according to an estimate by [Strategy Analytics](#).

# Developing story...



# What we are missing...

...in the literature on the economics of patent litigation



Shortcoming #1:  
Europe?

Shortcoming #2:  
Multinational dimension of disputes?

# On the economics of patent litigation

- Why do parties fail to come to a cooperative private solution, and endure costly public ordering (court) solutions?
- What are the dynamics of litigation processes and what makes parties reach a settlement in the course of the proceedings (or not)?
- How does litigation shape the ownership and value of patents?
- How does litigation affect innovation?
- Who does or should bear the costs of public dispute resolution mechanisms?

# On the economics of patent litigation

- Main drivers of (patent) litigation

Asymmetric expertise or sophistication of the parties  
(e.g. small v. large firms) (Lanjouw and Schankerman 2004)

Hidden  
Information  
(Nalebuff 1987;  
Spier 1992)

Divergent  
expectations  
(Priest and Klein 1984;  
Yildiz 2004;  
Galasso 2007)

Asymmetric stakes  
Positive litigation  
externalities  
(Meurer 1989;  
Siegelman & Waldfoegel  
1996;  
Lanjouw & Lerner 1998)

**COSTS [-]**  
(Priest and Kline 1994)

**STAKES (transfer amount) [+]**  
(Priest and Kline 1994)

# Prior work on patent enforcement

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- By and large a U.S. field of research, both theoretically and empirically:
  - Lerner 1994; Lanjouw & Schankerman 2001, 2004; Somaya 2003; Bessen & Meurer 2005, 2006, 2007, 2008
- Multinational character of disputes???
  - Most models look at only one country, abstracting from potential parallel disputes in other jurisdictions
- Dynamics of patent litigation???
  - Most models and studies look at a static trade-off, whereas costs and information accrue non-linearly over time
  - Most models overlook downside risks in patent litigation

# Prior work on patent enforcement: Europe

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- Very limited evidence and studies in Europe
  - CJA 2003; Cremers 2004, 2006; Harhoff 2009; van Pottelsberghe 2009
  - Systematic data collection from courts absent (to date)
- Some work on oppositions at EPO
  - Harhoff et al. 2003; Harhoff & Reitzig 2004; Cincera 2011
- A few international comparisons
  - EPO Oppositions / US reexaminations (Graham et al. 2003; Hall et al. 2004)
  - EPO Oppositions / US litigation (Graham & Harhoff 2006; 2009)
- Ongoing ZEW SEEK Project

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# Comparing Patent Litigation across Europe: A First Look

*Nicolas van Zeebroeck*

*Stuart Graham*

SSRN Working Paper #1924124

<http://ssrn.com/abstract=1924124>

# Filling in the gap: Europe

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- Darts-IP
  - Brussels-based venture collecting IP litigation data all over Europe
  - 105,000 decisions on patents from 20+ EU jurisdictions
    - Of which 66,000 (63%) EPO Oppositions or Appeals
    - Of which 15,000 (14%) from national administrative instances
    - Of which 24,000 (23%) judicial decisions
      - 10,566 (10%) published in 2000-2010
  - What they offer:
    - Search tools and case law for IP practitioners
    - Full-text of the decisions
    - Manual annotations for 60% of the decisions (parties, type of action, outcomes, damages, etc.)

# Filling in the gap: Europe



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## General Search (94,773 decisions)

**Parties**

Party 1 contains

vs.

Party 2 contains

**Patent**

Patent Title

Inventor

Patent # Pub#

Search in family

IPC

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**Country / Court**

Refine Further: Europe

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Decision Level

Decision type

**EPO - Board of Appeal**

Distribution code

Technical board

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Reference

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Free text

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Points of Law  
(94,773 decisions)

Damages Search  
(94,773 decisions)

The points of law are set out in the same way as the index of a book - or like a tree structure - starting with broad subject headings and moving on to more specific topics.

[Look up point of law](#) [Show complete overview of points of law](#)

### Point of Law:

- Refine Further*
- EXCLUSIONS FROM PATENTABILITY
  - NOVELTY
  - INVENTIVE STEP
  - SUSCEPTIBILITY OF INDUSTRIAL APPLICATION
  - RIGHT TO PRIORITY (Paris Convention)
  - CONDITIONS TO BE MET BY AN APPLICATION
  - AMENDMENTS AND DIVISIONAL APPLICATIONS
  - PROCEDURAL ISSUES
  - RIGHT TO THE PATENT - OWNERSHIP - LICENCE
  - REVOCATION - LOSS OF THE PATENT
  - RIGHT CONFERRED BY THE PATENT
  - PATENT INFRINGEMENT
  - SUPPLEMENTARY PROTECTION CERTIFICATE (SPC)

### Current Selection:

No point of law selected

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# Filling in the gap: Europe



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77 decision(s) found

No stats, why?

Decision Date Reference	Parties	Patents Related decisions Inventor	Graphical representation	Level Court (Country/Instance)	Classes Points of Law Languages
24-08-2011 nl-kg-za-11-730	Apple vs. Samsung Eletronics	PORTABLE ELECTRONIC DEVICE FOR PHOTO MAN... (EP2059868) Touch event model (EP2098948) UNLOCKING A DEVICE BY PERFORMING GESTURE... (EP1964022)		1st instance 's Gravenhage (The Netherlands)	G06F Case comments (1) nl
23-12-2010 r-EP06001840	Apple	Input processing method, device and prog... (EP1657628)		1st instance Examining Division (EPO) (European Instances)	G06F Points of Law en
23-12-2010 r-EP06001841	Apple	Input processing method, device and prog... (EP1657629)		1st instance Examining Division (EPO) (European Instances)	G06F Points of Law en
19-11-2010 fr-04-03555-d	Novasep Process (Applexion) (O... vs. T.A.M.I. Industries (Technolog...	Inorganic multichannel element for filte... (FR2720953) All decisions on this patent (10) Inorganic multichannel element for filte... (EP0686424) All decisions on this patent (10) Multi-channel inorganic element for flui... (FR2720954) All decisions on this patent (10)		Appeal Paris (France)	B01D fr
26-10-2010 fr-07-14011 fr-R09-16610	TAMI Industries vs. Applexion ; Céramiques techniqu...	(Anonymous) vs. (Anonymous)		Appeal Paris (France)	- fr
26-10-2010 fr-R09-16610	APPLEXION ; CÉRAMIQUES TECHNIQUE... vs. TECHNOLOGIES AVANCÉES ET MEMBR...	(Anonymous) vs. (Anonymous)		Judicial Review Cour de Cassation (France)	- fr
28-04-2010 r-EP05788888	Apple ; Apple ; Apple Computer	WIDE TOUCHPAD ON A PORTABLE COMPUTER (EP1782159) HUPPI, Brian, Q.,KERR, Duncan,ORDING, Bas,CHAUDHRI, Imran,STRICKON, Joshua, A.,HOTELLING, Steven, P.,CHRISTIE, Greg,ANDRE, Bartley, K.,LIGTENBERG, Chris		1st instance Examining Division (EPO) (European Instances)	G06F H05K en
07-04-2010 r-EP99118818	Apple	Unicode conversion into multiple encodin... (EP0989499) Gonzalez Julio A, Edberg Peter K		1st instance Examining Division (EPO) (European Instances)	G06F Points of Law en

# Filling in the gap: Europe

The screenshot shows a web browser window with the URL <http://www.darts-ip.com/darts-web/client/patent/results-patent.jsf>. The browser's address bar and search bar are visible. The page content is as follows:

**General**

Id	456491
References	nl-kg-za-11-730
Decision Date	24-08-2011
Level	1st instance
Country/Instance	The Netherlands
Court	's Gravenhage

**Patents**

Application No EP20070814633  
Publication No EP2059868  
Title  
PORTABLE ELECTRONIC DEVICE FOR PHOTO MANAGEMENT  
Classes G06F

Application No EP20090154313  
Publication No EP2098948  
Title  
Touch event model  
Classes G06F

Application No EP20060846405  
Publication No EP1964022  
Title  
UNLOCKING A DEVICE BY PERFORMING GESTURES ON AN UNLOCK IMAGE  
Classes G06F

**Parties**

Apple  
vs.  
Samsung Eletronics

**Analysis**

Case comments [Show](#) [Create](#)  
Languages [nl](#)

**Translation**

- Translate full decision
- Translate parts of the decision

**vonnis**

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**RECHTBANK 's-GRAVENHAGE**

Sector civiel recht

**Vonnis in kort geding van 24 augustus 2011 (bij vervroeging)**

in de zaak met zaaknummer / rolnummer: 396957 / KG ZA 11-730 van

de rechtspersoon naar buitenlands recht  
**APPLE INC.**,  
gevestigd te Cupertino, Californië, Verenigde Staten van Amerika,  
eiseres,  
advocaat: mr. P.J.M. von Schmidt auf Altenstadt te 's-Gravenhage,

tegen

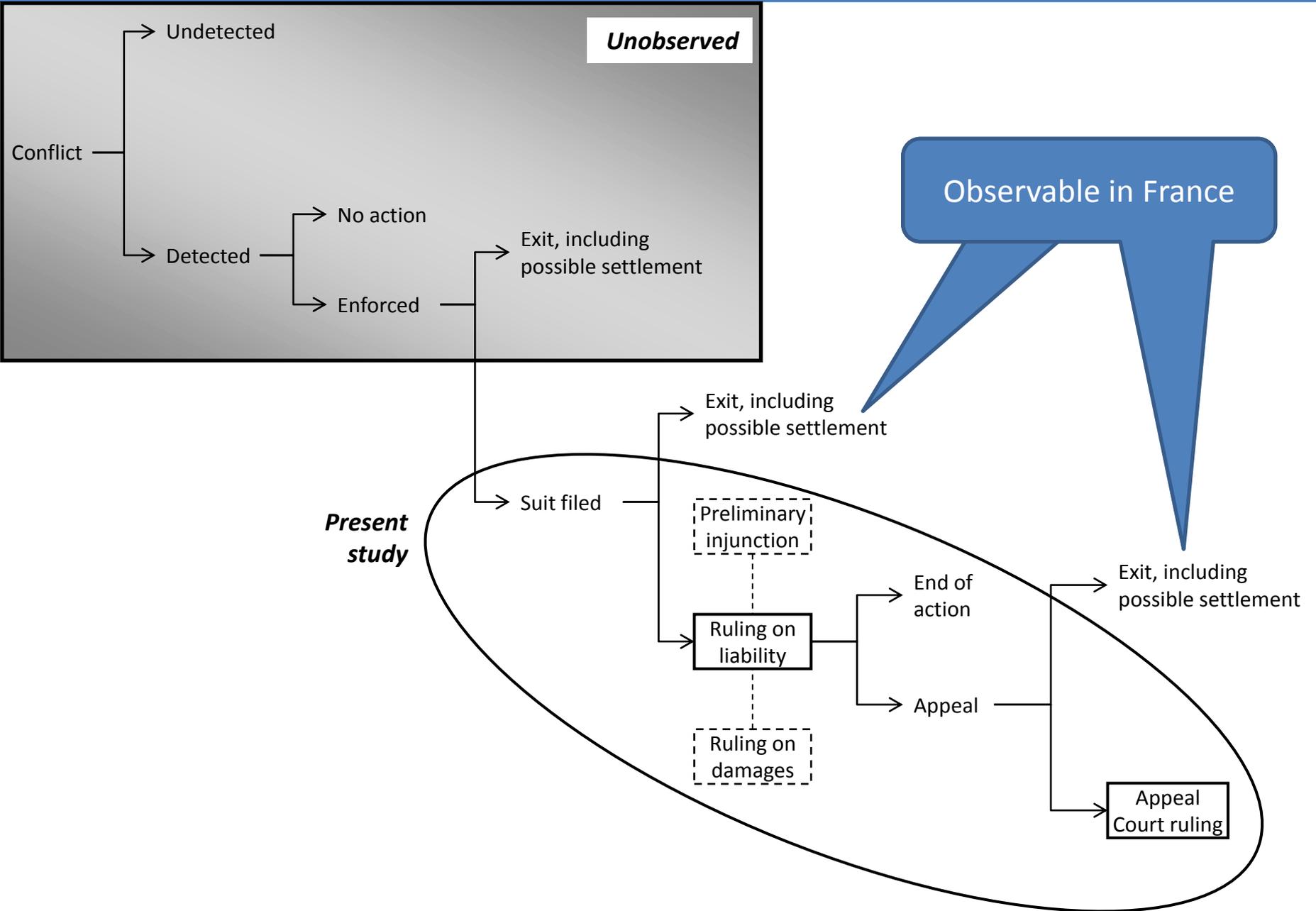
- de vennootschap naar vreemd recht  
**SAMSUNG ELECTRONICS CO. LIMITED**,  
gevestigd te Suwon City, Kyungki-Do, Zuid-Korea,
- de besloten vennootschap met beperkte aansprakelijkheid  
**SAMSUNG ELECTRONICS BENELUX B.V.**,  
gevestigd te Delft,
- de besloten vennootschap met beperkte aansprakelijkheid  
**SAMSUNG ELECTRONICS EUROPE LOGISTICS B.V.**,  
gevestigd te Rijswijk.

# Filling in the gap: Europe

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- After cleaning, filtering and matching the patent data, we end up with:
  - 8,726 judicial decisions on patent cases
    - From 7 European countries: BE, DE, ES, FR, IT, GB, NL
    - Closed in the period 2000-2009
    - 400+ cases in each country (except BE: 215 cases)
  - Data coverage
    - Very high in FR, NL (90-100%) and UK (+/- 75%)
    - In the 60-70% range in BE, ES, IT
    - Germany: 30% yield rate in 2000-2004, 50% in 2004-2009
  - But nature of what we observe differs across countries
    - FR, BE, NL: Close to universe of patent disputes FILED into court
    - DE, ES, IT, UK: Mainly patent cases that went some way into court

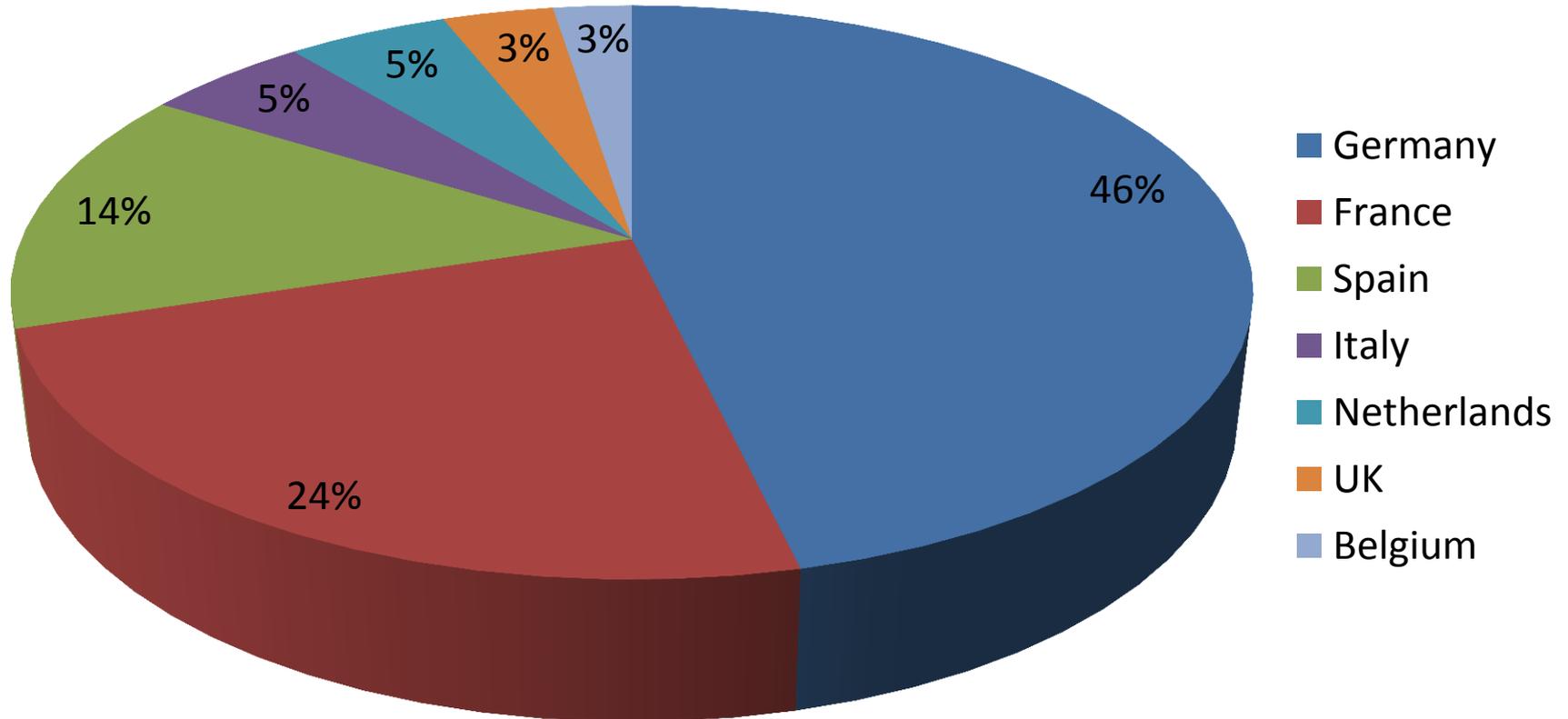
# Dispute paths



# Stylized facts of patent litigation in EU7

- About 1350 decisions per year:

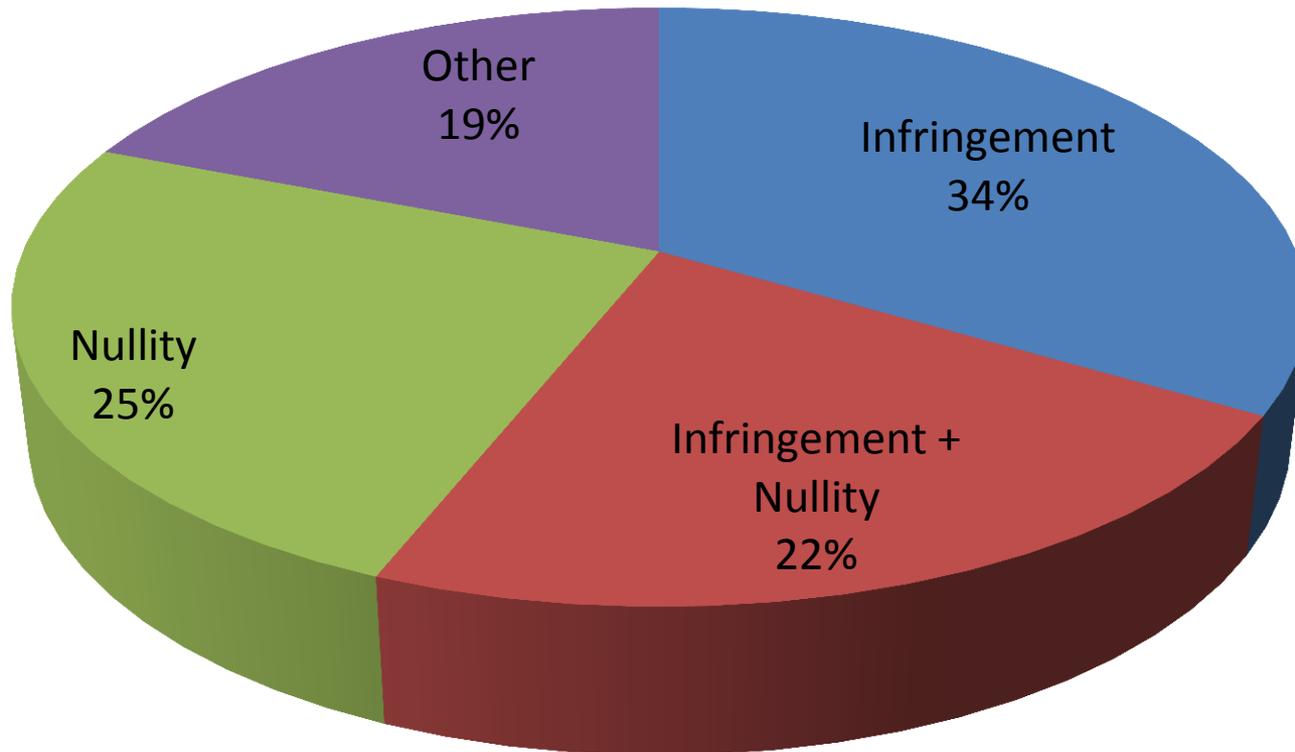
Share of EU7 decisions in 2005 \*



\* After correcting for missing cases in our data. Shares are consistent over time.

# Stylized facts of patent litigation in EU7

Share of decisions by type of action (2000-2009) \*



\* Based on about 50% decisions analysed

# Assessing litigation intensities: countries

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- UK: lowest litigation on all counts
  - UK is most expensive jurisdiction in EU (Harhoff 2009)
- DE has highest litigation / GDP
  - DE also has highest patent to GDP ratio
  - Patent suits as a share of economic activity significantly higher than in US, criticized as “highly litigious” wrt patent rights (Bessen and Meurer 2008)

# Assessing litigation intensities: technologies

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- In absolute terms,
  - biggest share of EU patent litigation is in Civil Engineering and Industrial Processing classes (40%)
- In relative terms,
  - litigation twice more likely in pharma & biotech (x3 in NL, UK)
  - litigation least likely in chemicals & materials, electronics, and machines & transport
- Patterns vary across countries, beyond differences in technological specialization
- More details: <http://ssrn.com/abstract=1924124>

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# Multinational patent disputes: a first look

Ongoing work with

*Stuart Graham*

*Alan Marco*

# Multi-country actions within Europe

- <5% litigated patents are litigated in multiple countries
  - An upper-bound estimate of potentially duplicated cases?
  - 4 times larger in pharma/biotech than average (20% of litigated patents litigated in 2 countries or more)
  - <4% in Machines, Civil Engineering and Ind. processes

OST Class	Number of countries where litigated					
	1	2	3	4	5	>1
Elec. Eng. & Electronics	92.55	6.71	0.15	0.52	0.07	<b>7.45</b>
Instruments	93.37	5.04	0.96	0.56	0.08	<b>6.63</b>
Chemicals & Materials	86.77	9.04	2.65	1.32	0.22	<b>13.23</b>
Pharma & Biotech	80.50	11.00	5.91	1.70	0.89	<b>19.50</b>
Industrial processes	96.22	2.99	0.64	0.10	0.05	<b>3.78</b>
Machines & Transport	97.76	1.98	0.26	0.00	0.00	<b>2.24</b>
Cons. goods & Civil Eng.	97.25	2.39	0.18	0.12	0.06	<b>2.75</b>
<b>Overall</b>	<b>95.3</b>	<b>3.6</b>	<b>0.8</b>	<b>0.3</b>	<b>0.1</b>	<b>4.7</b>

# Multi-country actions within Europe

- Some patterns in pairs of countries appear
  - Not necessarily reflecting actual concentration of suits across countries
  - E.g.: NL disputes disproportionately multinational
    - > See Apple v. Samsung

*Patent families with multi-country litigation  
(Mono-country litigated patents on the diagonal)*

	BE	DE	ES	FR	IT	NL	UK
BE	161						
DE	26	2240					
ES	9	20	1004				
FR	22	134	18	2283			
IT	11	55	13	38	597		
NL	36	65	15	47	13	481	
UK	14	48	12	34	13	50	262

# Multi-country actions within Europe

- How do decisions in one jurisdiction affect course of actions in other jurisdictions?
- A stylized model
  - Parties have a baseline probability of litigating in country  $x$  based on country, parties and patent characteristics →  $P(x)$ 
    - This probability is mainly affected by asymmetries in beliefs (e.g. on infringement and/or on patent validity) and by stakes (a patent effect) and costs (a country effect)
  - Final decision in country  $y$  provides information that reduces asymmetries in beliefs
    - Probability of final decision in  $x$  decreases after final decision is observed in  $y$ :  $P(x|y) < P(x)$
  - But update in beliefs will depend on reputation of court  $y$  in jurisdiction  $x$

# Empirical implementation

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- Does a decision about a patent in country  $y$  increase the probability of reaching a settlement in  $x$ ?
- Model: Probit with robust S.E.
- Data:
  - Dependent variable: did the case settle in France (0/1)
  - Sample: 2045 patent families litigated in France in 2000-2010
    - 15% settled, 85% went to final decision
  - Independent variable: was a decision about the same patent taken in another country (DE, ES, GB, IT, NL + EPO) before the settlement or final decision was reached in France (0/1)
  - Controls: Is patent validated in France, Is patent holder resident in France, 7 OST dummies, filing year dummies

# Preliminary results: probit

	1	2	3	4
Patent is validated in France	-0,011 -0,144	0,037 -0,148	0,033 -0,146	0,064 -0,149
Applicant is French resident	-0,234 -0,143	-0,161 -0,146	-0,242 (0,143)+	-0,17 -0,146
Patent appears in court decision elsewhere before final outcome in FR		0,527 (0,115)**		0,498 (0,118)**
Patent was opposed and opposition was decided before final outcome in FR			0,212 (0,099)*	0,144 -0,103
Constant	-1,082 (0,322)**	-1,22 (0,341)**	-1,112 (0,323)**	-1,233 (0,340)**
Observations	2045	2045	2045	2045
Pseudo-R2	0,09	0,10	0,09	0,10
Wald statistic	159,36	185,95	165,77	191,36

Dependent variable: settlement in France. Sample: all patents litigated in France in 2000-2009. Robust standard errors in parentheses. + Significant at 10%. \* Significant at 5%. \*\* Significant at 1%. Reference is a civil engineering patent. OST and year dummies included in all regressions.

# Preliminary results: country effects

	1	2	3	4	5	6
Germany	0,32 (0,142)*	0,406 (0,128)**				
Spain	-0,124 -0,369		0,11 -0,354			
United Kingdom	0,197 -0,306			0,456 (0,261)+		
Italy	0,131 -0,263				0,23 -0,238	
Netherlands	0,342 -0,248					0,548 (0,212)**
Constant	-1,168 (0,336)**	-1,151 (0,329)**	-1,083 (0,322)**	-1,088 (0,322)**	-1,121 (0,333)**	-1,094 (0,322)**
Observations	2045	2045	2045	2045	2045	2045
Pseudo-R2	0,1	0,09	0,09	0,09	0,09	0,09
Wald statistic	177,75	170,62	159,34	163,76	161,45	166,47

Dependent variable: settlement in France. Sample: all patents litigated in France in 2000-2009. Robust standard errors in parentheses. + Significant at 10%. \* Significant at 5%. \*\* Significant at 1%. Reference is a civil engineering patent. OST and year dummies included in all regressions.

# Preliminary results

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- Parallel decisions in other jurisdictions increase likelihood of settlement
- Not all jurisdictions have the same impact
  - EPO Oppositions much less decisive than litigation overall
    - B/c only addresses validity + can be overturned in court?
    - B/c oftentimes comes BEFORE action is filed in court?
      - ➔ Opposed patents are MORE likely to be litigated anywhere in Europe
  - DE, NL, UK decisions are influential on FR Outcomes
    - Dutch decisions have the biggest effect
    - German decisions have the most significant effect

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# Conclusions

# Summary of main findings

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- Patent litigation is as intense in certain EU countries (DE, NL) as in the US, if not more
- Strong heterogeneity in frequency and nature of actions across countries and technologies
- Small share of cases brought before multiple jurisdictions (5% overall)
- First decisions reduce information or expectation asymmetries and lead to higher chances of settlement before final judgment elsewhere  
➔ Fastest jurisdiction most influential

# Main observations

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- Disputes are very often multinational in nature
  - Foreign patent holders or accused infringers
  - Multinational operations leading to
    - infringement suspected in multiple countries
    - manufacturing, sales and distribution in different countries
- Recourse to multiple forums is more frequent in certain industries (esp. biotech, drugs, chemicals)
- Firms use information provided by first forums to update their beliefs, influencing the dynamics of their dispute elsewhere

# Policy implications: a personal view

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- Enforceability/consistency of decisions across Europe?
  - Unified market v Fragmented pat. enforcement system
  - Should we worry (and care?) about forum shopping?
- Do we need a European Patent Court and what for?
  - Not so much to save money or resources, multi-country actions are infrequent (as predicted by Harhoff 2009)
  - But perhaps to increase predictability and consistency
    - higher harmonization + consistency of decisions across courts and time leads to easier and faster settlement (Galasso and Schankerman 2010)
- Do we need enforceable cross-border injunctions?
  - A very powerful weapon (see Apple v. Samsung)
  - Can one size really fit all?
- We DO need more studies and data, esp. Germany
  - How to improve transparency from EU Courts?

# What we need to fill in...



Shortcoming #1: Europe  
Data (Germany!) and studies

Shortcoming #2: Multinational  
EU and Global cross-country studies

Inform policy debates on patent  
enforcement system in EU and beyond

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# Appendix

# Most litigated IPC4 Classes

IPC4	OST7	Title
A01G	Ind. Proc.	Horticulture, forestry, watering
A23L	Pharma	Foods, foodstuffs, or non-alcoholic beverages, not covered by subclasses A23B to A23J
A61B	Instruments	Diagnosis surgery identification
A61F	Instruments	Filters implantable into blood vessels, prostheses orthopaedic, nursing or contraceptive devices
A61K	Pharma	Preparations for medical, dental, or toilet purposes
A61P	Pharma	Specific therapeutic activity of chemical compounds or medicinal preparations
A61Q	Pharma	Specific use of cosmetics or similar toilet preparations
B01D	Ind. Proc.	Separation methods, including filters
B29C	Ind. Proc.	Shaping or joining of plastics shaping of substances in a plastic state
B65D	Ind. Proc.	Containers for storage or transport of articles or materials
C07C	Chemicals	Acyclic or carbocyclic compounds
C07D	Chemicals	Heterocyclic compounds
E04G	Civil Eng.	Scaffolding, forms, shuttering, building implements or other building aids
E05D	Civil Eng.	Hinges or other suspension devices for doors, windows, or wings
E06B	Civil Eng.	Fixed or movable closures for openings in buildings, vehicles, fences, or like enclosures
G01N	Instruments	Investigating or analysing materials by determining their chemical or physical properties
G06F	Electronics	Electric digital data processing
G07F	Instruments	Coin-freed or like apparatus
H01L	Electronics	Semiconductor devices electric solid state devices not otherwise provided for