

Smartphone Litigation and Standard Essential Patents

Stanford University
Hoover IP2 Conference

May 19-20, 2014

Kirti Gupta*, Director of Economic Strategy, Qualcomm Inc. *and*
Mark Snyder, Vice President and Patent Counsel (Litigation), Qualcomm Inc.
{kgupta, snyderm}@qualcomm.com

The sensation of “Smart Phone Wars”, Technology Standards, and IP Policy

Active antitrust scrutiny has been driven by concern over smartphone litigation being driven by SEPs, in particular, by using the threat of injunctions

- Examples in the literature abound, a recent example, “*The use and threat of injunctions*”, Ratliff and Rubinfeld, Journal of Competition law and economics, 2013

“There exists a commercially valuable body of standards over which litigation is and will continue to be frequent”

“These issues have recently come to the forefront in the context of smart phone patent wars, which have led to regulators expressing concerns about firms potentially using the threat of injunctions on SEPs to disadvantage competing smart phone platforms”

- On March 25, 2014, at GCR, Renata Hesse, Deputy Assistant Attorney General, Antitrust Division, DOJ, in “*IP, Antitrust and Looking Back on the Last Four Years*”, states:

“A lot has happened since the DOJ and the USPTO issued [a] joint policy statement [on the remedies for SEPs].

Interestingly, the number of patent infringement matters has decreased significantly....”

Overview

A empirical study examining the litigation data in the smart phone industry – to explore the potential role and effects of SEPs – by creating a novel data-set for representing the recent “smart phone litigation”

- Methodology
- Data
- Results and Trends
- Discussion

Methodology and Data (1)

What are the so-called smart phone wars?

Defining the products

- All **active** firms that are **makers/suppliers of high computing mobile wireless devices** including cell phones and tablets* (i.e., manufacturers/suppliers of specific components, e.g.: chips, processors, displays etc. are not included) **in the U.S. during the years (2000-13)**
- Identified **22 firms** (including several subsidiaries that roll up to these), that represent the universe of active device manufacturers in the U.S. per Strategy Analytics, Gartner and other industry analyst reports;
- Interested in cases **between the universe of these firms**, to represent the “smart phone patent wars in the media”, which usually refers to the litigation occurring amongst the major mobile wireless device suppliers (The goal is to analyze the “smart phone wars” not overall litigation, or NPE litigation)

Methodology and Data (2)

What are the so-called smart phone wars?

Defining the cases

- All United States District Court (USDC) and International Trade Commission (ITC) cases from 2000-13, identified from multiple sources: Docket Navigator, Lexis, and Pacer
- Filtered to identify cases between the firms, and the cases that are “patent” or “contract” (FRAND). Farther hand-coded all the cases that involved a potentially infringing mobile wireless device
- Identified **82 USDC lawsuits and 28 ITC investigations**, involving **402 unique patents** which have been **asserted 851 times** (some patents have been asserted multiple times) from Docket Navigator, Lexis, and Pacer
 - Manually identified and coded all the cases that are related to mobile devices
 - For each case, all case-specific and patent-specific data is collected, such as: **Filing** date; **status** (pending or concluded); whether and when a **Markman hearing** occurred; **outcome** of the case if concluded (along with date)

Methodology and Data (3)

Defining the SEPs

- Utilized the case pleadings to determine whether the patent was pleaded as an SEP by the plaintiff
- Further utilized the patents that are **declared as potentially essential** to major standards (SSOs do not usually check whether the declared patents are technically or commercially essential)
- For this paper, collected patent declaration data from: **ATIS, ARIB, ETSI, IEEE, IETF, ITU, OMA, TTA**

Summary of data sources

Firms

- Dataset **22 firms** (including several subsidiaries that roll up to these), that represent the universe of active device manufacturers in the U.S. per Strategy Analytics, Gartner and other industry analyst reports; all the cases filed **amongst** these firms from **2000-2013** in USDC or ITC
- Identified **82 USDC lawsuits and 28 ITC investigations**, involving **402 unique patents** which have been **asserted 851 times** (some patents have been asserted multiple times) from Docket Navigator, Lexis, and Pacer
- For each case, all case-specific and patent-specific data is collected, such as: **Filing** date; **status** (pending or concluded); whether and when a Markman hearing occurred; **outcomes** or case (patent-level) findings including **injunctions**, determination of **validity**, determination of **infringement** per patent
- **Patents declared as potentially essential, from patent** declaration data sources developed from scraping the websites of several large wireless technology SSOs: ATIS, ARIB, ETSI, IEEE, IETF, ITU, OMA, TIA
- Publicly available characteristics of asserted patents (citations, claim count, no. of countries filed in, etc.) from Thomson Innovation

Whose patents are involved

Firm	No. of cases involved in as Plaintiff	No. of cases involved in as Defendant	No. of unique patents asserted in all actions
Apple	20	27	72
Motorola	27	11	62
Nokia	19	9	72
Samsung	6	17	54
HTC	5	15	19
Interdigital	12	3	18
Microsoft	3	11	23
RIM (now Blackberry)	3	7	9
Ericsson	7	2	45
Huawei	0	4	0
Kyocera	1	3	3
S3 Graphics (now HTC)	3	1	10
Audiovox	1	1	0
LG	0	3	0
Sony	3	0	15
Google	1	0	0
Pantech	0	1	0
ZTE	0	4	0
Curitel	0	0	0
Sanyo	0	0	0

Summary Statistics

	Total	USDC	ITC
Total No. of cases filed	110	82	28
No. of pending cases	22	16	6
No. of concluded cases	88	57	31
Settled	20	9	11
Trial Verdict	10	1	9
Dismissed	45	34	11
Other (e.g: administrative closing)	13	13	0
No. of cases with patent(s) found infringed	8	2	6
No. of cases granted an injunction	8	2	6
No. of cases granted damages	1	1	0
No. of cases with some form of adjudication	19	5	9
No. of cases with Markman hearing	20	9	11
No. of cases with 1 or more patents plead as SEP	35	26	9

Majority of the asserted patents are not SEPs

Total number of unique patents asserted

402

By pleadings (Source: case data)

“SEPs” = 134 (33%)

Non-SEPs = 138 (34.3%)

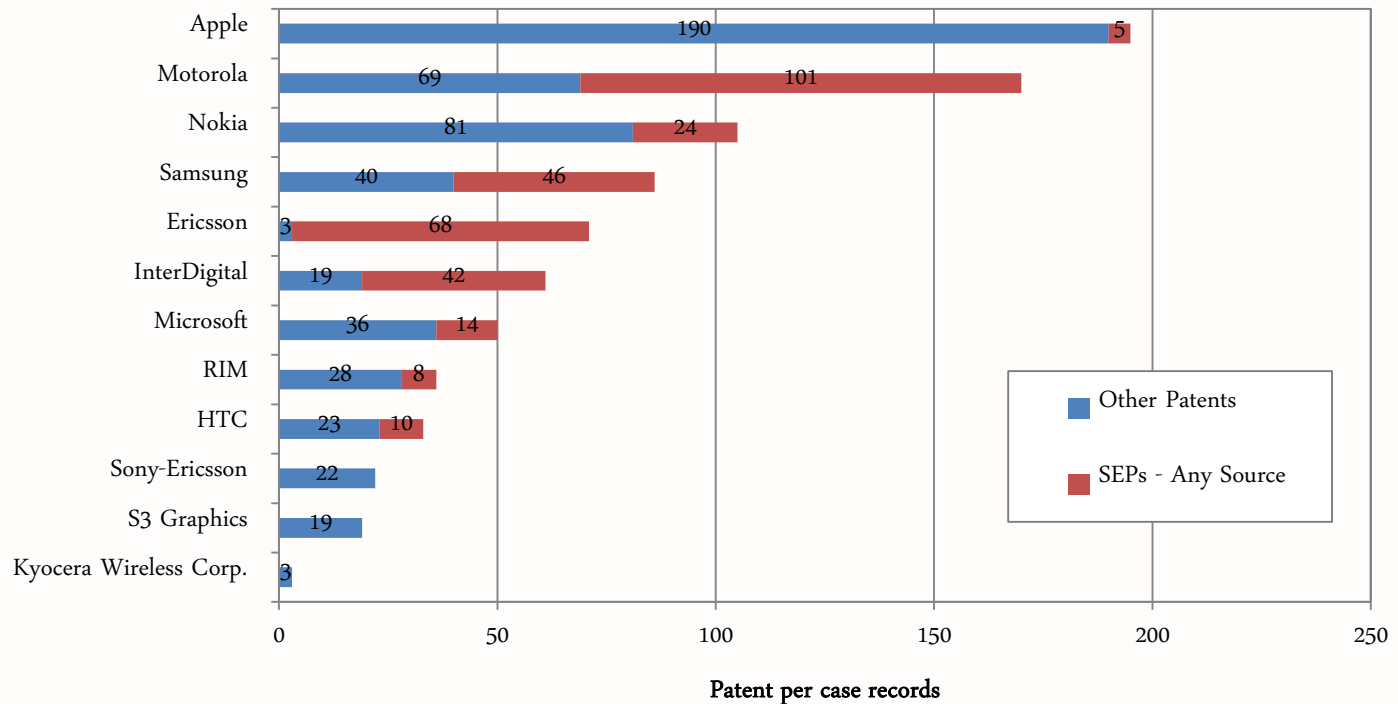
By pleadings + standards declarations

“SEPs” = 144 (36%)

Non-SEPs = 258 (64%)

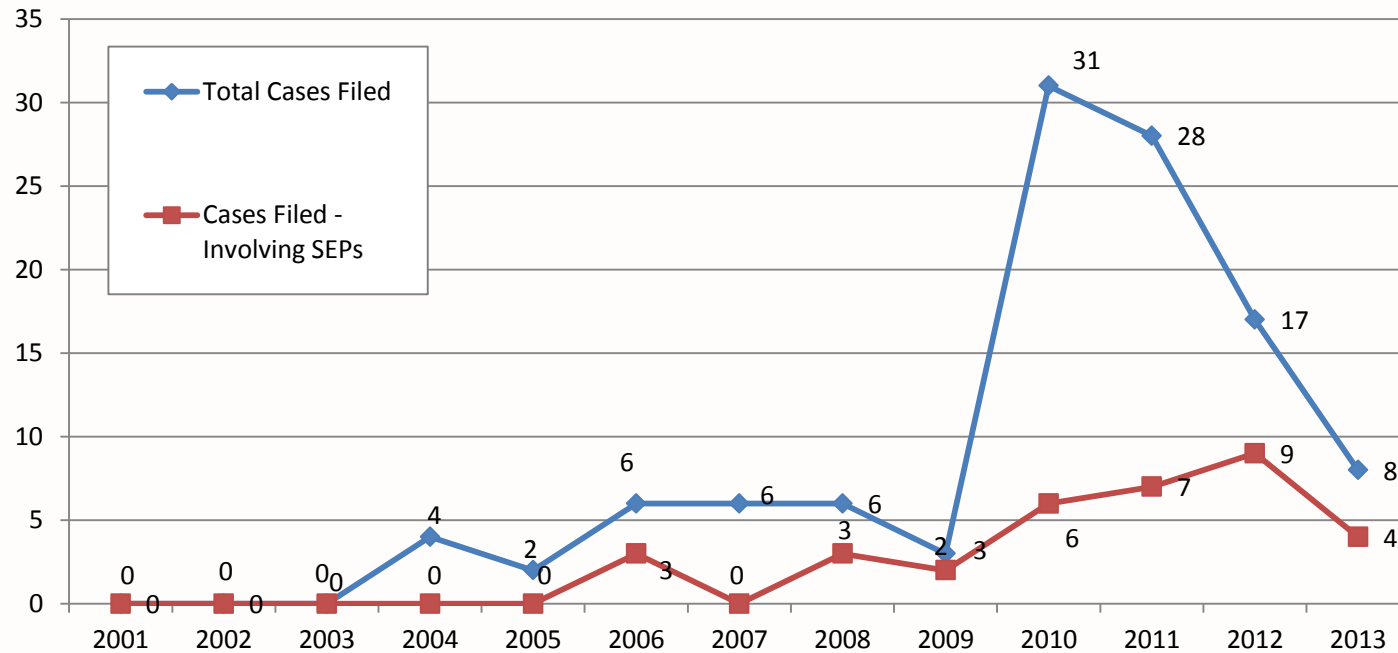
(Any Source)

Patent per case records by Patent Owner - SEP & Non-SEP



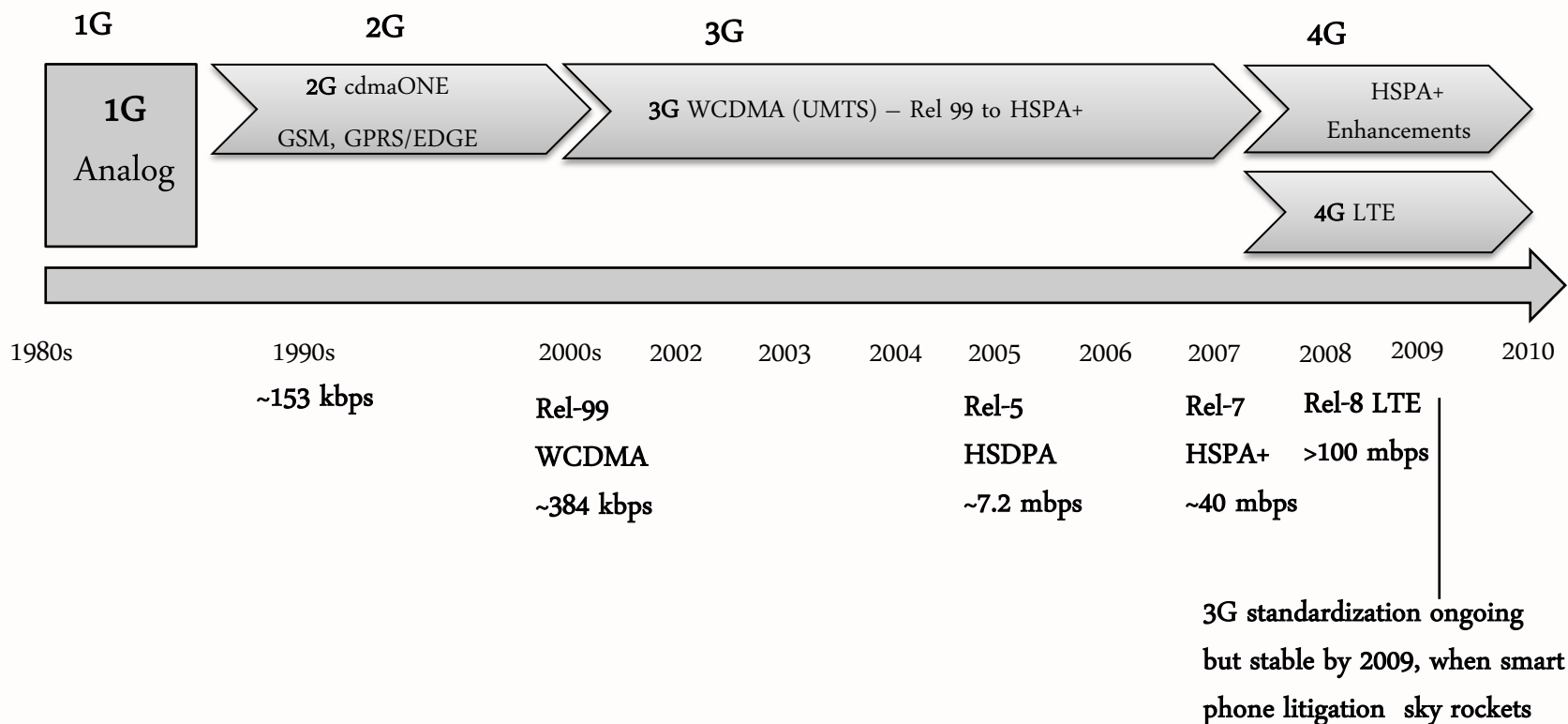
Time trend by cases filed

- Cases involving (≥ 1) “SEPs” (by any source) always a fraction of cases not involving “SEPs”
- The recent (potentially temporary) rise in smart phone litigation may primarily be driven by patents not related to the major wireless standards and new market entrants



Industry fact: Wireless cellular standards timeline

- 87% of the “SEPs” involved in smartphone litigation data were declared to 2G/3G wireless cellular standards



- Most of the smart phone litigation occurs well after 3G standardization is completed and deployed (the wireless cellular standard employed by the smart phone devices during the litigation activity)
- Recent disruptive market entry of downstream manufacturers explains a great share of smart phone litigation
 - Apple entered the smart phone market in 2007 and explains 43% of the total smart phone litigation activity

Top patent holders in 2G/3G/4G wireless cellular standards

- The smartphone litigation data in this paper covers a large number of the top patent holders for wireless cellular technologies defined by 3GPP (those included in the smartphone litigation data in **bold**)

Top 10 patent holders for 3GPP standards – per ETSI declarations

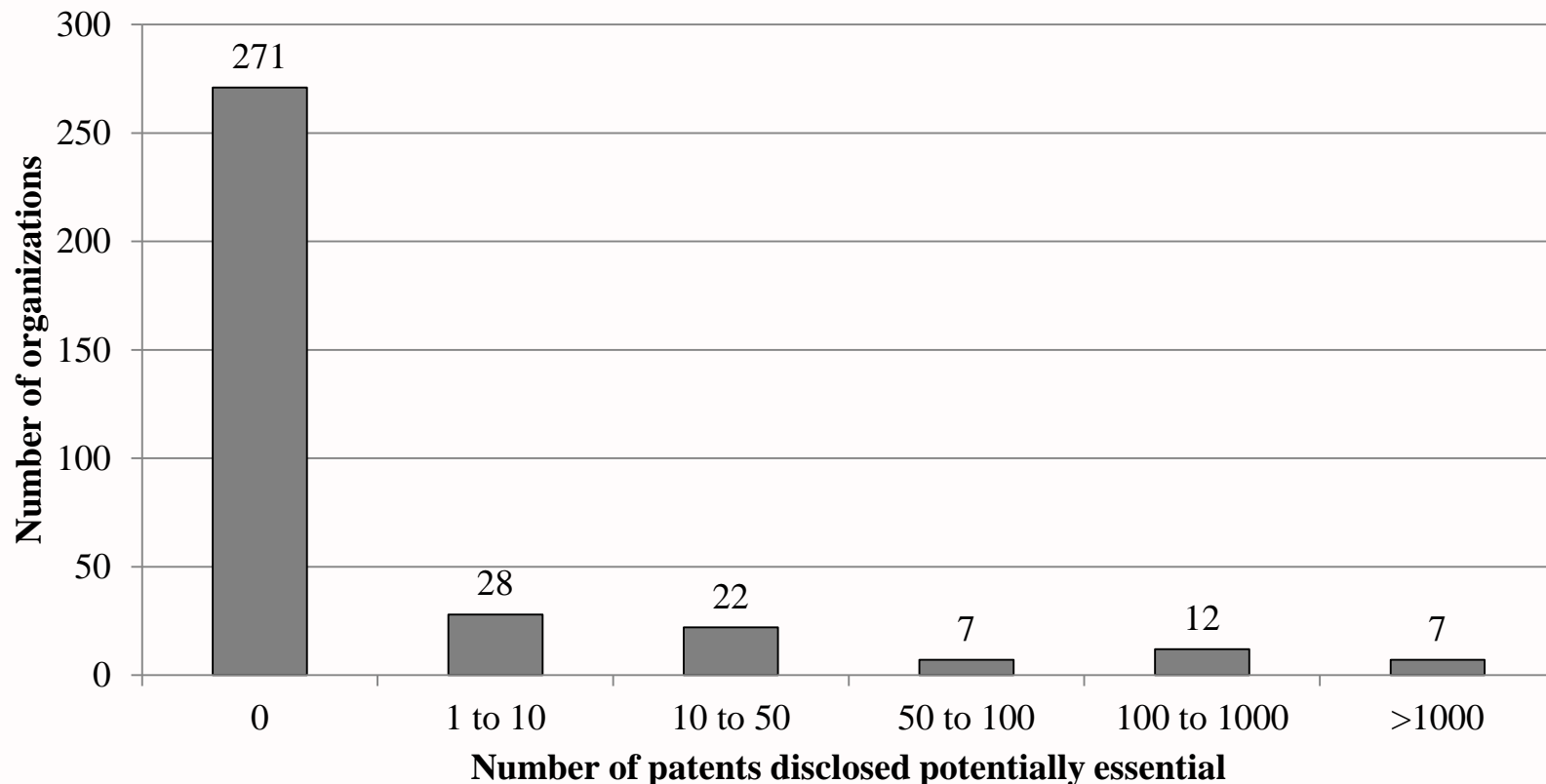
Firm Name	Patents *
Qualcomm	6230
Nokia + NSN	4397
Motorola	3800
Interdigital	3730
Ericsson	2023
Huawei Technologies	1480
Samsung	1106
Philips	740
Siemens	624
LG Corp	467
Alcatel Lucent	356

Represent total number of patents filed world-wide, related to a declared patent to ETSI (dated 2011)

Patenting behavior in 2G/3G/4G wireless cellular standards

- Only 23% of all the 3GPP member organizations have more than one patent disclosed as potentially essential to ETSI (European Telecommunications Standards Institute)
- Consistent with the number of technical contributions submitted by firms participating in standards
- The distribution of patents held is highly skewed

Count of organizations with patents disclosed potentially essential to ETSI



Injunctions – Not what you may have heard

Injunctions have been granted for 8 cases and 16 patents – **no injunctions for SEPs!**

- As of July 2013, there had been no patents plead as SEPs for which an injunction or exclusion order has been granted
- In July 2013, an exclusion order was granted by the ITC for one patent alleged to be a SEP but never determined by the ITC to be a SEP (Samsung v Apple, 337-TA-794), however the exclusion order was vetoed by the President (through the U.S. Trade Representative)."

Infringement Finding – Is litigation working as it should?

- SEPs are no more or less likely to be found infringed. Infringement is likely explained by patent characteristics (28% of the patents found infringed were SEPs by pleading)

Dependent Variable: Found Infringed (1), Not Infringed (0)

	Coeff. (Std. Error)
SEP (any source)	0.16 (0.84)
Forward cites (predicted over lifetime) (log)	0.79*** (0.28)
Backward cites (log)	0.01 (0.28)
Geographic coverage	0.10* (0.06)
Number of claims (log)	0.21 (0.49)
First claim length (log)	0.67 (0.94)
Year of decision dummies	Yes
Constant	1.72

Number of obs: 314, LR χ^2 (p value) = 30.92 (0.001), Pseudo-R² = 0.30

Infringement Finding – Is litigation working as it should?

- SEPs are no more or less likely to be found infringed. Infringement is likely explained by patent characteristics (28% of the patents found infringed were SEPs by pleading)

Dependent Variable: Not Infringed (1), Settled/Voluntary Dismissal (2); Infringed (3)

	1 = Not Infringed	2 = Settled/Voluntary Dismissal
	Coeff. (Std. Error)	Coeff. (Std. Error)
SEP (any source)	0.18 (0.94)	0.52 (0.89)
Forward cites (predicted over lifetime) (log)	-1.07*** (0.004)	-1.07*** (0.003)
Backward cites (log)	0.39 (0.35)	0.21 (0.34)
Geographic coverage	-0.06 (0.07)	-0.16 (0.77)
Number of claims (log)	0.21 (0.56)	-0.09 (0.06)
First claim length (log)	-1.16 (1.09)	-2.07 (1.5)
Year of decision dummies	Yes	Yes
Number of obs: 314, LR χ^2 (p value) = 66.82 (0.001), Pseudo-R ² = 0.30		

Validity Finding – Is litigation working as it should?

- SEPs are no more or less likely to be found valid. Validity is likely explained by patent characteristics and based on how often a patent may have been litigated

Dependent Variable: Found Invalid (1), Valid (0)

	Coeff. (Std. Error)
SEP (any source)	0.16 (0.84)
Forward cites (predicted over lifetime) (log)	-0.27 (0.25)
Backward cites (log)	0.18 (0.28)
Geographic coverage	-0.05* (0.37)
Number of claims (log)	0.29 (0.46)
First claim length (log)	1.05 (0.87)
No. of times litigated	-0.45*** (0.15)
Year of decision dummies	Yes
Constant	1.82

Number of obs: 314, LR χ^2 (p value) = 22.82 (0.001), Pseudo-R²= 0.32

Concluding Remarks

- Smartphone wars do not appear to be driven by SEPs, the large majority of the patents asserted that are not plead/declared as potentially essential to standards and unencumbered by FRAND commitments
- No granted injunctions or active exclusion orders for SEPs, compared to 16 for patents that are not plead/declared as potentially essential to related to standards. In general, injunctions are very difficult to obtain
- The potentially temporary increase in smartphone litigation was after the 2G/3G standards had been established, and was primarily driven by a couple of device manufacturers
- Litigation outcomes, such as infringement and validity findings of patents, are likely determined by the quality of patents and not based on whether the patents are SEPs or not