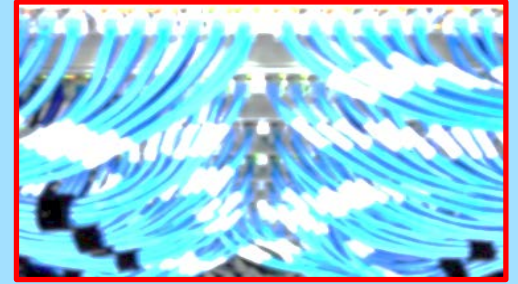


The SEP Wars:

How We Got Here, Where We Are Now, And Where We Are Going

Gil Ohana, Cisco Systems^{*/}
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What I Will Talk About



How we got here

- Industry structure and the rise of licensing-based business models
- The “Discontents” respond
- Standards Development Organizations (mostly) do not respond

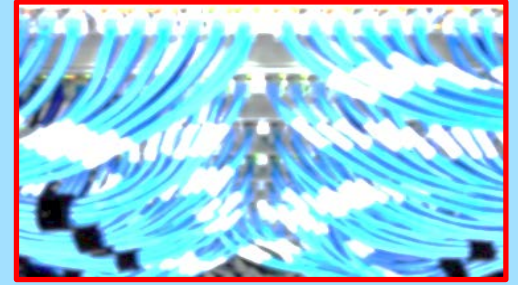
Where we are today

- New players emerge
- Industry responses to the SEP wars: exit, voice, and (little) loyalty
- Open source and standards
- The competition-law pendulum swings back?

Where we are going

- The playing field narrows (and widens)
- Will industry structure revert?

How we got here (1)



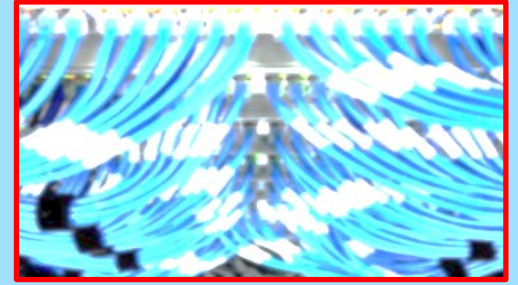
“First world” telecoms equipment industry, circa 1985:

- National monopolies implementing national standards: Alcatel, Ericsson, Lucent (Western Electric), GEC-Marconi, Northern Telecom, Siemens
- Each monopoly is vertically integrated, from R&D to product
- Patent assertions are infrequent

Trends (1985-2000):

- National markets deregulate, become competitive
- Companies and standards globalize (X.25, Frame Relay, ATM, TCP-IP, Ethernet)
- Companies dis-integrate, increasingly license-in innovations
- Mobile standardization (GSM, CDMA, and Wi-Fi 802.11)

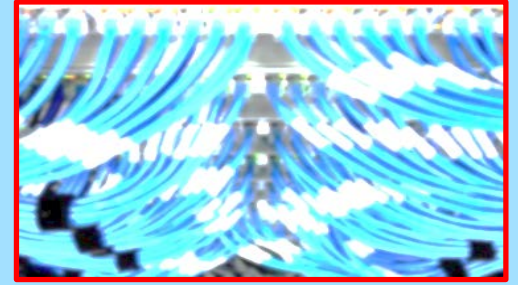
How we got here (2)



Meanwhile, US patent system is changing in ways that encourage licensing-based businesses:

- Specialized patent appeals court
- International Trade Commission emerges as forum for patent enforcement
 - licensing is “domestic industry” meriting protection
- Rise of patent-friendly trial courts (Eastern District of Texas, etc.)
- Patentee-friendly developments in substantive law, notably easy availability of injunctions, “entire market value” principle of patent damages

How we got here (3)



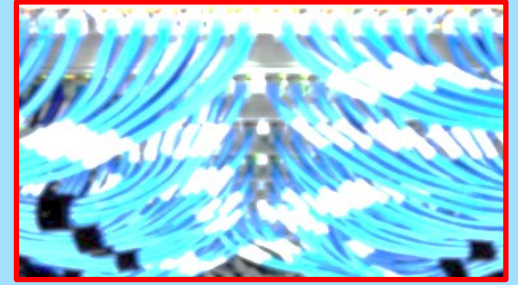
Combination of industry dis-integration and increasing appropriability of patented inventions increases attractiveness of licensing as a business model:

- Demand: Equipment suppliers do less of their own R&D, license-in more technology
- Supply: Licensors can appropriate value they add (and maybe more?)

Patent assertion and patent litigation increase:

- Increasing number of US patent cases, ITC investigations
- Liquid market for patents and rise of Patent Assertion Entities and privateering

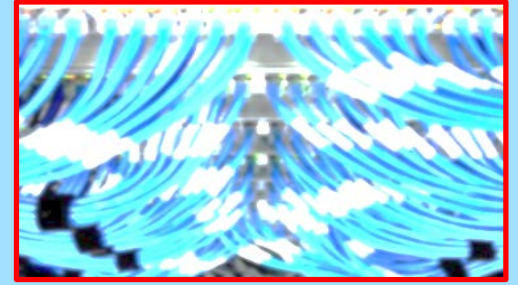
How we got here (4)



Among patents being enforced are SEPs, in particular for interoperability standards used in ICT

- Open nature of standards development means companies focused on licensing free to participate and contribute
- SEPs for widely implemented standards can be valuable: large market of potential licensees, easier to prove infringement
- At least in the short-medium term, infringer can't design around patent while preserving interoperability
- Scope for opportunism: rules of standards development organizations governing patent disclosure and licensing often (highly) "incomplete contracts"
 - Are injunctions available to enforce patents subject to voluntary licensing commitments?
 - What does "fair and reasonable" mean, anyway?

How we got here (5)



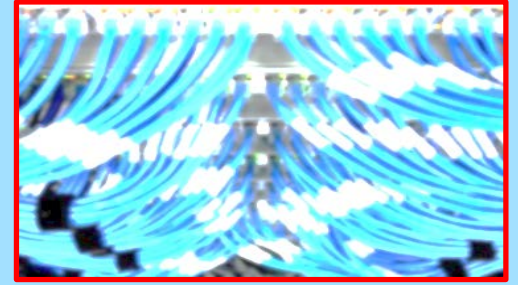
Beginning in early 2000s, targets of infringement cases begin to respond

- Lobbying on patent reform efforts leading to American Invents Act
- Academic interest: Jaffe and Lerner, *Innovation and its Discontents* (2007)
- Substantive law on injunctions: *eBay v. MercExchange* (2006)

Increasing interest by enforcers and policy-makers in SEP licensing issues

- Federal Trade Commission's *Rambus* investigation
- Nokia, *et al.* complaint against Qualcomm (2005)
- IPR policy discussions at ETSI in run-up to widespread 4G implementation (2005-2007)
- Advocacy from competition enforcers
 - Examples: DOJ business review letters (2006, 2007), FTC *Evolving IP Marketplace* report (2011), DOJ/PTO statement on remedies (2013)

How we got here (6)



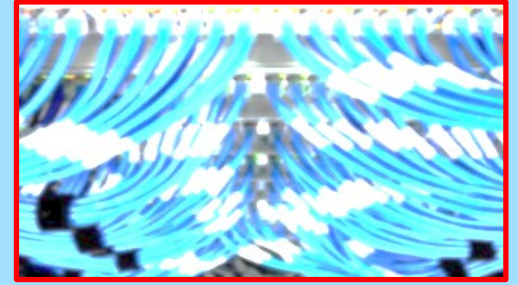
Success of reform efforts varies, based on nature of forum in which reform is urged

- Courts: incremental victories (*Ericsson v. D-Link* (US CAFC); *Huawei / ZTE* (ECJ))
 - Reasonable royalty limited to *ex ante* value, no injunctions against “willing licensees”
- Competition enforcement and advocacy: increasing interest and activity, especially around availability of injunctions for SEPs licensor committed to license
- But, limited progress in reforming SDO rules

Why Do SDOs Not Respond?

- Consensus-based nature of standards development (extends to IPR policy reform discussions)
- Intensity versus numbers: SEP licensors have the most to lose, and fight reform
- IEEE-SA (2015) is exception, becomes target of vilification by SEP licensors

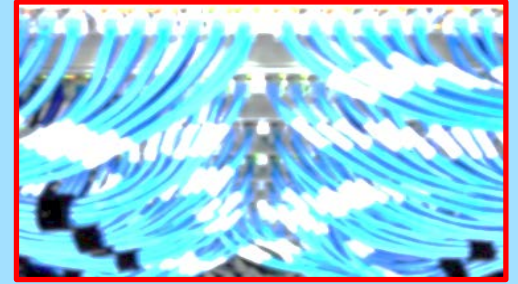
Where we are now (1)



New combatants and new battlefields:

- The apogee of dis-integration: Qualcomm, Ericsson, and Nokia
 - Compare wireless industry structure in 1998 and 2017: who makes baseband processors, handsets, and wireless infrastructure?
- The mega-licensees emerge: Apple and Samsung
- New applications: If everything has wireless functionality, everyone is a licensee
 - BMW, Daimler, Volkswagen
 - “Application-dependent” licensing
- SEP licensing issues globalize: China, India, Korea, Taiwan

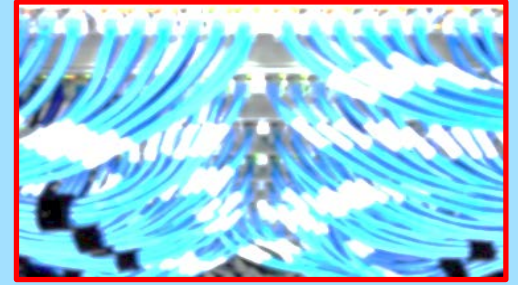
Where we are now (2)



Industry responses to SEP wars:

- Asymmetric responses:
 - SEP licensors fight to preserve IPR status quo in wireless (ETSI, 3GPP, ITU-T)
 - The rest of the ICT industry exits formal standardization in favor of SIGs / Consortia
 - IoT: the empire fights back (for relevance)
- Result: narrowing scope of formal standardization
 - Challenge to government-led model of formal standards development (Geneva, CEN/CENELEC/ETSI)
 - Video codecs: Desire for licensing predictability drives innovator / implementers away from formal standards development

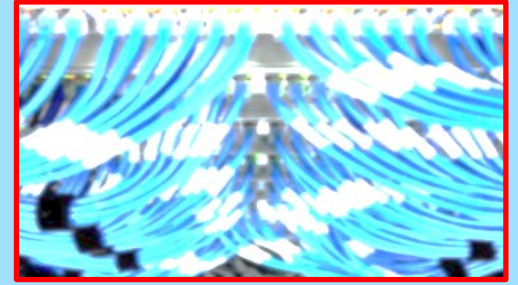
Where we are now (3)



Open Source and Standards: A Slow Collision

- Software beats hardware
- Formal standards development organizations: on the wrong side of the generation gap?
- How do formal standards development organizations respond?
 - The practical limits of “FRAND-source”
- Consequences for formal standardization: evolve or wither?

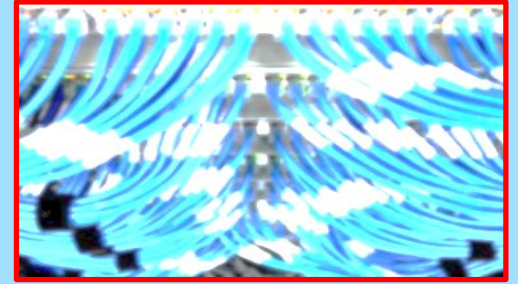
Where we are now (4)



Competition enforcement and standards development: Is the pendulum swinging back?

- SDO IPR policies become a political issue(!)
- US Antitrust Division (2017): SDO self-regulation as a “buyer’s cartel”?
- Implications beyond US?

Where we are going (1)



More fights ...

- Failure of reform in formal SDOs means more licensing disputes will reach courts

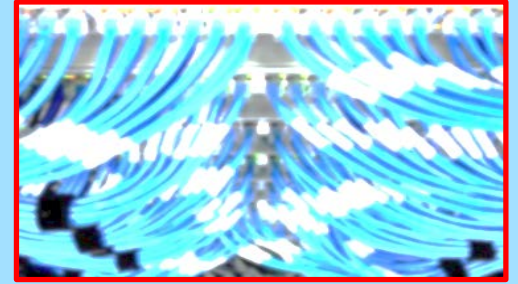
In more places ...

- IWNComm vs. Apple: private SEP enforcement in China

About fewer standards

- The (relative) demise of formal standardization and the rise of RF / open source

Where we are going (2)



Is telecom equipment re-integrating?

- Apple and Samsung: baseband ambitions
 - May underlie disputes with Qualcomm over interpreting FRAND to require licensing to component vendors
- Huawei and ZTE: The new Ericsson and Nokia?
- Implications for the SEP wars:
 - Short term: incumbents use SEPs to discourage customer self-supply
 - Longer term: back to the future?
 - Industrial policy overlay

Thank you

Gil Ohana
Senior Director, Antitrust and Competition
Cisco Systems^{*/}
gilohana@cisco.com

^{*/} Views presented are personal to the author, and do not necessarily reflect views of author's employer.
Affiliation provided for identification purposes only.