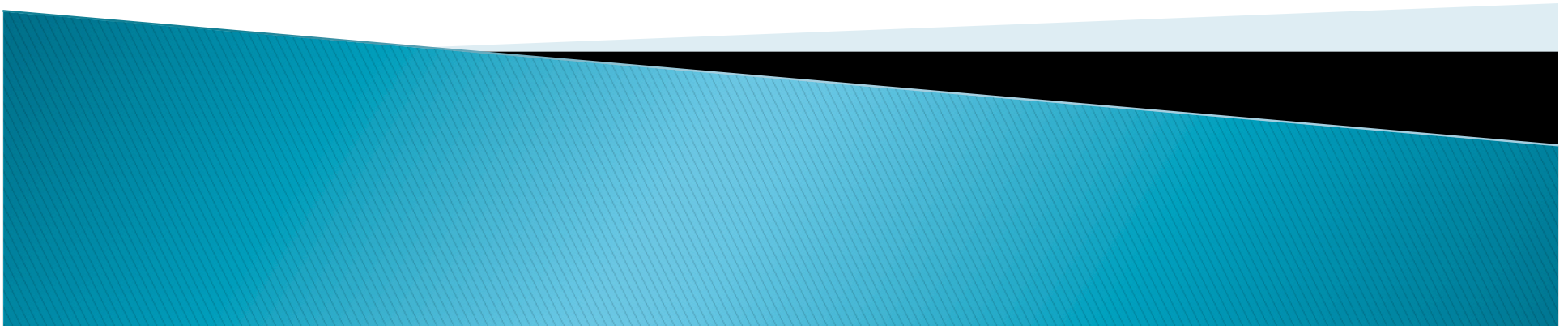


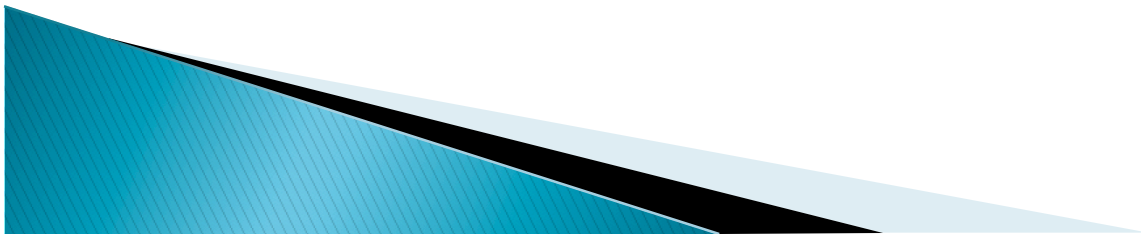
Economics of Innovative Health (in the Internet)

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For Silicon Flat Irons
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Thank you

- ▶ Thanks to the organizers.
- ▶ Thanks for giving me the opportunity to speak, and for giving me the excuse to put these thoughts down on paper.



Recognizing healthy behavior

- ▶ What are the symptoms of healthy behavior in an innovative industry such as the Internet?
 - Seemingly simple Q, actually rather elusive A.
 - Yogi Berra << *ANSWER* << Precise economic model.
 - Goal: Move past *ad hoc* “know it when you see it,” but no aspiration to reach precision required for court.
- ▶ Why care?
 - Internet exceptionalism: is this market (or innovative behavior in it) different from any other?
 - Concern in calls for/against intervention, and in aspiration for “third way” through regulatory issues.



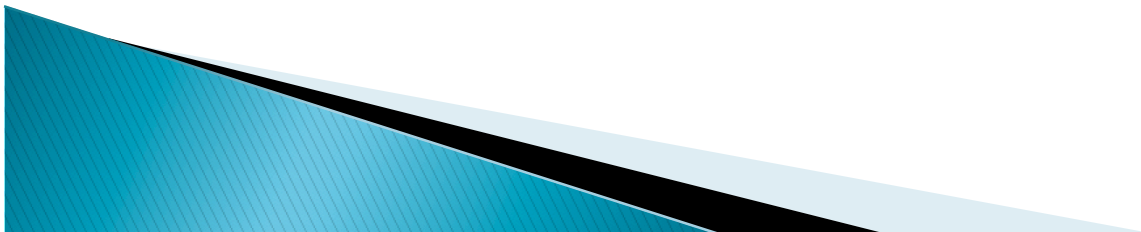
Four symptoms

- ▶ The list:
 - Economic experiments
 - Vigorous standards competition
 - Entrepreneurial invention
 - Absence of unilateral bargaining
- ▶ Why is this list interesting?
 - Matches *ad hoc* intuition of many policy analysts (i.e., that the communications world has changed).
 - The list is not part of typical policy tool kit or checklist (Question: steps b/w this & tight rules).
 - Not what lawyers/engineers are taught in school.



Another reason: Value chain for Internet not constant. Never will be

- ▶ “5th of a 9 inning game w/no rain delay in sight.”
Intervene in moving target one cannot track?
 - Broadband (duopoly) replaces dialup (competition).
 - Platforms to organize interdependent commercial behavior. Proprietary, open source, in-house. Microsoft, Intel, Cisco, RIM, Apple, Google, Oracle...
 - Contractual incompleteness: multi-lateral bargaining impossible; renegotiation due to changing market conditions (due to tech change); Legal ambiguities over new services.
- ▶ Concerns linked to these moving targets....
 - ▶ How to know when mkt is bad/in need of help? Perhaps a list of symptoms of healthy innovativeness...



Economic experiments

- ▶ A market-oriented action designed to help a firm learn or resolve uncertainty about an unknown economic factor.
- ▶ Usually such lessons cannot be learned in a laboratory or controlled environment.
 - Learning about nuances of market demand.
 - Learning about procedures for providing services.
- ▶ The last fifteen years of internet markets
 - In virtually all aspects of the value chain.
 - Stuff fails (webvan, pets.com). So it goes. Some survives and grows (Ebay, Google, Facebook).



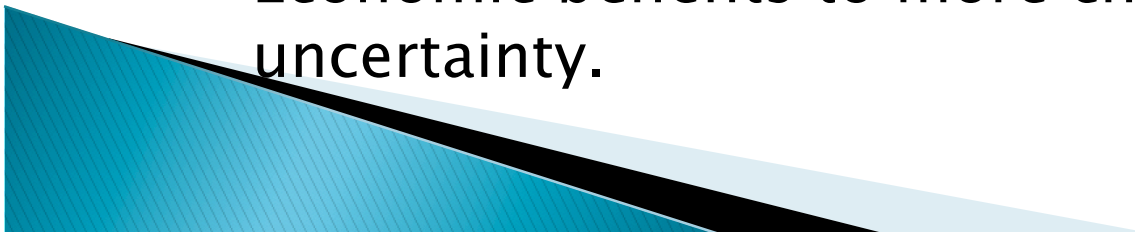
Economic experiments

- ▶ Firms learn from own experience, communities of firms learn from each other.
 - Wall street focuses on firms, not communities.
 - Learning from the invention of the commercial “hot-spot” → entire 802.11 community benefited
- ▶ Policy could focus on learning in community.
 - Importance of variety of players using different capabilities, milestones, beliefs about profitability.
 - Foster lower cost to initiatives.
- ▶ Stress the “market wide” sense of urgency, range of options, lower prices.




Vigorous standards competition

- ▶ Bleeding edge technologies often cannot deploy on a wide scale without some routines processes, and/or coordination of activities.
 - Ratification of new standards can signal the pending arrival of technological progress.
 - While standards do not arrive at a regular rate, a slow pace is an alarming sign (e.g., see Simcoe).
 - Challenging measurement issues: some standards are more important than others...
- ▶ Why competition? Multiple solutions *ex ante*.
 - Economic benefits to more choice in face of uncertainty.



More on vigorous standards competition


- ▶ Inherently messy & confusing to outsiders.
 - Frustrating open-endedness. Never static.
 - ▶ Policy could focus on multiple options.
 - The cost of monopoly: attempts to quiet life. Reduce options that cannibalize its own products.
 - Extreme ex: IBM & EBCDIC. AT&T & retail CPE.
 - Wall Street tends not to favor plethora of options.
 - ▶ Competition among sponsoring institutions
 - Fuel sense of urgency, costly in short run.
 - More than about design, also decision processes.
 - ▶ Once again, key role in “market-wide” gains.
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Entrepreneurial invention

- ▶ Financially risky & organizationally challenging business pursuing new opportunity.
 - First attempts at deploying, distributing, servicing.
 - Small start-ups & small divisions in large firms.
 - Most start-ups involve entrepreneurs, but not all entrepreneurs must have venture funding → cannot use VC funded entry as only sign.
- ▶ After reaching a minimal level then more entrepreneurs does not improve things much.
 - However, their complete absence is a symptom of poor innovative health...



More entrepreneurial invention

- ▶ Entrepreneurs often are first to perform an economic experiment w/new standard.
 - Overlapping determinants
 - Additional factors: low development costs, low delay to market, strong appropriation.
 - Astoundingly low cost w/low delay today (Web 2.0).
 - ▶ Many determinants out of control of entrant, but incumbent firms can shape some factors.
 - Releasing design info (e.g., Intel & mother boards).
 - Buyout options for new firms (e.g., Cisco, Microsoft)
 - ▶ Once again, key role in market-wide gains.
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Absence of unilateral bargaining

- ▶ One party has bargaining–power to proffer a take–it–or–leave–it offer & others have no choice but to accept.
 - Bargaining pervasive due to technical interrelatedness
 - Absence of unilateral is healthy, but presence (by itself) is not sufficient to presume unhealthy.
- ▶ Bargaining breakdowns are distinct issue
 - Common in high tech (e.g. Intel/Dell), unproblematic in the face of options/substitutes.
 - Cogent’s dispute with Sprint after peering. Paying for the connection or renegeing on an agreement? Users get caught in the use of hard–nosed bargaining tactic.




More on bargaining

- ▶ The policy issues with one-sided negotiation
 - Dominant firms can use dictates to hurt competitive process, reduce experiments, & encumber entrants.
 - Example: Microsoft & “out-of-box” experience. Help screens for users of Netscape. Pushing Compaq around for experimenting w/Netscape.
- ▶ Key issue: consistency of policies to all firms.
 - Microsoft recent declaration to developers. Not altering managerial discretion nor transparency.
- ▶ Once again, stress market wide gains.
 - Profitability of firm one of several considerations.



Healthy innovative competition among dominant firms.

- ▶ The analysis leads very specific concerns:
 - No justification for broad regulatory intervention.
 - Targeted when experimentation slows, standards introduction delayed, rate of entrepreneurial invention slows, selfish one-sided bargaining used.
 - ▶ Question: FCC principles not clear guidance.
 - Cogent/Sprint. Entrant/incumbent bargaining is really the key competition policy issue.
 - Comcast/Bit-Torrent. Two externalities. One is user to use, other is Comcast to other innovative entrant.
 - Tilted toward what “not to do”. Not very clear on what range of managerial actions are acceptable.
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Thanks for your attention.

- ▶ Thank you.

