

## Micro Economics



# Symptoms of Healthy Innovativeness

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.....What are the symptoms of health in an innovative industry? This seemingly simple question isn't so easy to answer in the midst of a downturn, nor will it be easy to answer over the next year as high tech consolidates through exit and merger. Consolidation will lead to concentration, or what we might call pockets of monopoly. Monopolies tend not to be the most innovative organizations on the planet.

Economics teaches us to look for different symptoms. So, the real question isn't what are the symptoms, but rather how will we recognize symptoms of health in an innovative industry when we see them? Here, I focus on three symptoms.

### Economic experiments

The first symptom of health is the presence of many economic experiments. An economic experiment is a market-oriented action designed to help a firm learn or resolve uncertainty about an unknown economic factor. Such lessons can rarely be learned in a laboratory or controlled environment, either because they involve learning the nuances of market demand or learning about a sets of procedures for providing new services at a lower cost.

Internet markets have been full of economic experiments in the past 15 years. This was especially so in the late 1990s, when firms took a wide variety of bets about unknown aspects

of customer demand and the costs of meeting them using Web technologies. To be sure, not all experiments work out. Indeed, if they're risky, many won't. And, accordingly, some Internet application firms survived (such as Google, Amazon, and eBay), and some didn't (WebVan and Pets.com, for example). So it goes.

Against that backdrop it's pleasing to see that recent behavior looks similar. Some firms involved in the Web 2.0 movement (Facebook, Friendster, Digg, and so on) and this decade's frontier businesses (Salesforce.com and YouTube, for example) will make it and others won't. As long as many firms are trying to learn, the industry looks healthy in this respect.

Note how this assessment differs from the common discussion on Wall Street. By definition, economic experiments are risky learning exercises, designed to teach a firm (or set of firms) about an unknown. A little messiness isn't unusual. But messiness isn't a Wall Street value. Consider FiOS, Verizon's program to bring fiber optics to residences. Although many technologists think Verizon is late to the party, many stock analysts are dubious about FiOS's potential for large financial returns. In addition, FiOS doesn't have a utility's steady returns.

I say, good for Verizon. That is precisely the type of disagreement that

should arise if a firm's management undertakes a risky economic experiment. Profitable or not, pushing the envelope will teach Verizon's management a lot and might help them get it right next year.

What isn't healthy experimentation? Microsoft's lack of investment in Internet Explorer 6.0 at the start of this decade is one example. After introducing this version in August 2001, Microsoft deployed nothing new for five years. After spending so much money to win the monopoly on browsers from Netscape, this record was shameful. The company confirmed its critics' worst fears—that is, Bill Gates actually didn't care about innovating on the Web or the Internet at large, only about defending his company's dominant position. Only Firefox's appearance a few years ago seemed to rouse Microsoft from its slumber. I'm pleased these days to see even more new experiments coming out of the WebKit community (Safari, Chrome, and so on).

In short, nobody wants to see some of the Internet's biggest firms turn into Microsoft, sitting on its laurels. Experiments are a symptom of not standing still.

### Vigorous standards competition

Bleeding-edge technologies often can't deploy on a wide scale without

some routines or processes or coordination of activities across many firms. Thus, the ratification of new standards generally signals the pending arrival of technological progress and serves as another symptom of a healthy innovative industry.

This observation might surprise someone from outside the technology field, and with good reason. Few other markets have committees that draw members from throughout the industry to jointly design product specifications that all other firms then embody in their products. In addition, most participants in these committees might be surprised that I'm praising them so much. Most participants in the standardization process come out of the experience with nothing good to say about it.

Think of one of Winston Churchill's famous quotes. "It has been said that democracy is the worst form of government except all those other forms that have been tried from time to time." Similarly, existing standards processes have only one saving grace: standards designed by monopolies are worse.

If a monopoly designs a new standard it will roll it out slowly to prevent a firm from cannibalizing the monopoly's rents. Sometimes this strategy is baldly obvious. For example, back when IBM controlled a large part of the mainframe market, it couldn't bring itself to abandon Extended Binary Coded Decimal Interchange Code, its standardized proprietary language, or to help others migrate up from EBCDIC to the many other superior languages. Although IBM could have made plenty of improvements, the company's managers refused to do so, preferring instead to exploit locked-in users.

Monopolies also choose standards that castrate user choices because supporting a wide set of user needs can be costly and inconvenient. AT&T's monopoly until the 1970s over residential customer premise

equipment is an example. AT&T offered customers a limited menu of (overengineered and excessively rigid) handset design choices. Given the variety available in any Walmart today, it's remarkable that anyone ever thought such a limited choice was a good idea.

In general, publicly designed standards are better than selfishly designed ones. With monopolies, the likelihood of a selfish design is high.

There's another antidote to the selfish standards of monopolies: competition between standards. Indeed, this is the best antidote. For example, Wi-Max might turn out to be an unprofitable flop, but until we know for sure, it provides potential competition for the 4G community. This competition fuels a sense of urgency and gets the government bureaucracies behind wireless telephony to move quickly when they otherwise might not have. In this broad sense, competition among standards benefits all users and firms—except, perhaps, those in the losing coalition of a big standards battle. That is why, looking back over the last decade, it was generally good that there seemed to be at least one good standards fight a year, whether it was Wi-Fi versus HomeRF, or 56K Flex versus X2, or Blu-Ray versus HD DVD.

A similar, although more complex, principle applies to observations about competition among authorities for control of governance over standards. Although I have no particular beef with the Internet Engineering Task Force, World Wide Web Consortium, or ICANN, I'm happy to see vigorous suggestions from blogs and from members of committees in the IEEE, 3rd Generation Partnership Project (3GPP), and many more organizations. It's good to see them clash with each other over their domains of expertise, which infuses their decisions with a healthy tension.

Protecting healthy standards competition isn't easy. Consider Comcast's

recent unilateral decision to throttle P2P downloads on its line through occasional resets. Even though limiting the abuse by BitTorrent users has merit in the short run, some Internet watchers worry that a similar type of discretion could limit standards that others want to deploy in the future.

I confess to sympathy for this concern, even though I don't have much for Bit-Torrent users. In a few years, Comcast's rule will bind a measurable fraction of high-bandwidth users who have more legitimate needs and who tend to use frontier applications. The rule could then serve to limit the applications that users can deploy, and block functionality and standards other Web firms can develop. That is just too much unilateral and unchecked discretion to give to one market participant. It wouldn't be healthy.

### **Inventive entrepreneurialism**

Entrepreneurial initiatives involve organizations in risky and challenging businesses in pursuit of new economic opportunity. Both small startups and large firms pursue such initiatives. Sometimes small businesses that take such risks are bought by large organizations, such as Cisco, IBM, or Microsoft.

Entrepreneurs play a crucial role in tech markets because they make the first brave attempts at deploying, distributing, or servicing a new good to a wide range of customers with the intent of making a profit. Accordingly, entrepreneurs are often the first to perform an economic experiment with a newly designed standard.

The increasing presence of entrepreneurs in communications markets has been one of the sweetest developments in the last two decades. It has brought rapid change to many submarkets, albeit sometimes it's confusing. Today we take for granted email, instant messaging, IP-enabled videoconferencing, picture sharing, amateur-video sharing, mapping, and

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a host of other utilities that no nontechnical individual can understand. At some point, entrepreneurial actions started to deploy these innovations. This is also why some entrepreneurial, but otherwise puzzling, actions by large and solid firms have a silver lining. For example, Nokia continues to struggle to find new initiatives, whether it involves buying Navteq or starting a new music service. I salute them. This company provides half the cell phones in the world, but it isn't standing still. As another example, Cisco's attempt to get into videoconferencing by purchasing Webex seems

strategically incongruent with its other actions. Yet, it also seems gutsy. I'm interested to see what they make of their entrepreneurial action.

Poorly chosen policies can kill entrepreneurship. Entrepreneurship is especially easy to kill because lobbyists don't necessarily represent future entrepreneurs' interests when regulators consider rules that protect incumbent firms from innovative entry. Thus, those experienced with computing must explain their intuition about how competition works to their cousins in communications. They also need to explain to regulators.

### **Living with monopoly**

We started with a simple question, but the answer is far from simple. Market dominance doesn't have to lead to lack of innovativeness, but it raises the likelihood of such dangers. The presence of economic experiments, standards competition, and entrepreneurial initiatives are symptoms that monopoly-induced distortions have not yet infested every corner of behavior.

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