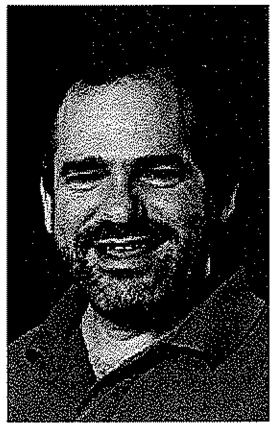

Slouching Toward a Dystopian Internet

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Despite the long-term success of the commercial Internet, or perhaps because of its success, there is a vigorous and ongoing discussion about avoiding a dystopian future.

Two things about this discussion strike me. First, this topic makes paranoia look rather rational: Malware and viruses could run mad; excessive spam might clog traffic lanes; lack of IP addresses could bring growth to a sudden halt; identity theft and hacked credit card numbers might turn electronic commerce into no-man's-land; and government censorship could deter new media from blossoming.

Second, none of the common disaster scenarios have economic roots.

This issue's column will try to fill that gap. First, I will dismiss a few unfounded but commonly held fears. After that I will get to the interesting modern problems.

Implausible disasters

We can learn from prior mistakes. Some seemingly plausible economic disasters turned out to be unworthy of fear.

When the Internet first commercialized, there were concerns that the Internet would not operate well if too many firms were on a shoestring budget. Thanks to the boom in the latter half of the 1990s, this fear was short-lived.

The dot-com bust brought back this fear in a different form. In the last downturn, prominent firms such as PSINet and JDS Uniphase declared bankruptcy. A financial squeeze at WorldCom seems to have induced the chief financial officer to pull some accounting tricks. Far more than WorldCom's business collapsed between 2000 and 2003, however. The events of that period resulted in job losses for hundreds of thousands of highly skilled and exceptionally hardworking people.

Although that was bad, the worse disaster did not come to pass. WorldCom was the largest Internet backbone in the United States before the accounting problems surfaced. The bankruptcy meant cash had to be raised, and assets changed hands. Yet, switches and lines still carried traffic. In short, the Internet still worked, even when the external auditors did not. The commercial Internet had sufficient redundancy to survive a severe economic downturn.

A second prior mistake was focusing too much on the erosion of the end-to-end model. End-to-end was an attractive feature of the precommercial Internet. It was an agreement among administrators to implement applications at the point where users interact with the network, making them functionally independent of transit.

Today the common deployment of firewalls across business enterprises makes end-to-end difficult to achieve on any new application other than e-mail and the Web. That gives many network administrators reasons to deploy incompatible applications behind their firewalls, which produces a bit of incompatibility between networks, and more incompatibility over time.

I wonder if this is really so bad. Can you blame most companies for protecting their own data, filtering incoming messages, and deploying internal systems they trust? A bit of incompatibility seems like a small price for security.

More to the point, the factors that brought an end to end-to-end won't necessarily bring the next step to dystopia. Indeed, I think disaster might arrive sooner, by a rather different path.

One-sided negotiations

One-sided negotiations between carriers, device makers, and content providers could produce a disaster.

Negotiation is just a part of every firm's life. It is easy to see why: Suppliers complain about growing costs; workers complain about wages; and stockholders demand higher profits. Buyers complain about tight budgets and threaten to choose another option. Managers caught between such buyers and suppliers must negotiate constantly to satisfy the complaints.

Think of the phenomenon broadly. There is no better way to discipline a firm than having it sit between vigorous suppliers and vigorous buyers who negotiate well.

What happens when negotiations become one-sided, however? There is one big problem: A firm's managers can find leeway to justify actions that make their own lives better, even at the expense of others'.

One-sided bargaining is especially problematic when firms experience sustained and protected prosperity. Then their management can lose the ability to benchmark against market-based costs and prices. With no visible signal of a problem, such as a fall in market share, distorted decisions can continue for a long time.

Don't get me wrong. It can be a pleasure to work at such a firm—up to a point. For example, IBM in the 1970s had a great market position. Working there paid better than anything else in computing, even though every veteran of that era also talks about how internal politics consumed the organization.

More recently, Microsoft and Intel have been awash in billions, which enabled their employees to attempt some rather ambitious projects. These were fun, albeit more fun for those managers who won the internal debates than those who lost.

Google is another recent example. The management has used its wealth to invest somewhat recklessly in a range of applications that were fun to develop, even though few (none?) of them visibly make any money. Just recently, excesses in Google's daycare services made news, too. It must be nice to work there.

Those observations point the way toward the potential disaster: Just imagine what would happen if these little excesses grew, happened at more than a few firms, and applied to something customers cared about.

More to the point, in a world with many devices for accessing the Internet, there are many ways for carriers and device makers and content providers to bargain with each other and bring about such a disaster.

A big disaster?

What would this disaster be like?

Many of us have tasted a piece of this nightmare, albeit in markets other than the Internet. For example, IBM's loyal customers experienced it during the collapse of IBM's PC business in the late 1980s, when that firm could not make a sensible decision for several years. Users who had tied themselves to IBM suffered.

Many developers also had a taste of this nightmare during the browser wars. Redmond had many Internet developers over a barrel, and used that leverage to gain advantages against Netscape, protecting an already insanely profitable position. Customers could not do much about it.

In the Internet itself, Comcast's recent management of BitTorrent traffic was another taste. Even though Comcast's justification for managing traffic had technical merit due to the shared architectures of home cable systems, Comcast's management made matters worse by not being transparent. More amazing still, the company's public relations experts could have put their customers' welfare front and center, but did not. They got muddled by other issues, such as the legalisms in service agreements.

Just imagine how bad things could get if dozens of firms emulated Comcast's behavior, each selfishly trying to impose conditions on others through nontransparent actions. Nokia would do this if it could, and so would Apple. So would Verizon, and so would Intel. So would Google if they thought it would work, notwithstanding their slogan about doing no evil.

There appear to be lots of other candidates. Oracle, SAP, Cisco, IBM, Akamai, Verizon, AT&T, Comcast, Time-Warner, Disney, Qualcomm, RIM, Yahoo!, and, yes, Intel and Microsoft, all have the ability to selectively take advantage of a certain set of customers and business partners.

Let me qualify that last statement. I am not saying the management of any of these firms does—or has any plans to—take advantage of its position or bargain hard with business partners. I am just saying that in a paranoid's economic disaster scenario, these firms would attempt to make life convenient for themselves at the expense of others. Even if some of these strategies were sensible in isolation, they could add up to a collective disaster.

Why a disaster? Because innovation for the commercial Internet would slow if many firms simultaneously told customers and business partners to do things their way, everybody raising the costs on each other. It would put up negotiating roadblocks against innovation and foster a state of uncoordinated commercial discord and mistrust.

Stopping a disaster?

What stops one-sided negotiations from emerging too often? The discussion hints so far at the many things that keep it from arising. First, if users have substitutes, it pinches a firm's actions. Second, a viable threat of entry keeps incumbent firms focused on not taking actions that invite such entry.

Other cures can deter the disaster, but they can also make the disease worse. One is a downturn that jolts managers into refocusing on serving customers. That is fine in small measure, but too much is destructive. Another is regulatory statute. That can work too, but it can work badly if negotiating over regulations becomes extraordinarily cumbersome, entangling every transaction.

Ironically, another check is vigorous multilateral bargaining. If every firm fears losing a bargain to every other firm, each will invest in preventing that from happening, which can lead to loads of countervailing power. That is one way to keep everyone disciplined.

There are two big problems with relying on multilateral bargaining to discipline firms, however. First, it can become an expensive arms race. In many areas of electronics, for example, firms now feel the need to hold patents as countervailing forces against each other.

Second, the structure of multilateral bargaining does not always work out just right. Sometimes one firm gets too powerful, or another prominent bargainer loses its way. That means it is just too easy for things to fall apart. Then the center cannot hold.

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