



Innovation at the edges

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..... Thomas Watson Sr., the first charismatic CEO of IBM, encouraged social conformity in his firm because he thought it made his sales force more effective. Salesmen had to wear blue suits, for example.

But Watson came to a different understanding with his technical talent. He gave these employees a label, *wild ducks*, and he gave them permission to be different. Wild ducks did not fly in formation—that is, they did not wear blue suits—so long as they invented, which was useful for the firm.

Watson found a solution to a problem that has grown more vexing as computing has become a larger part of the economy: What arrangements should the profit-oriented parts of society make with its innovative wild ducks—and vice versa—so both are effective?

Today's column uses Watson's framing to examine modern arrangements outside of large firms. As it turns out, innovation happens at the edges of marketwide structures and at the edges of conventional society.

The edge is unpredictable

Long after Watson's tenure ended, employees at IBM still referred to wild ducks. For example, employees at the entry-level division for IBM, based in Boca Raton, Florida, called themselves wild ducks in 1980 to gain license to break with convention. In that case, the

proposed unconventional act involved inviting business partners from outside IBM.

To make a long story short, the actions at Boca Raton eventually catalyzed the growth of a new hierarchy in computing, built around the IBM PC. This new structure consisted of one firm in a central position "at its core"—IBM—and a periphery that contained many firms and, um, wild ducks.

In time, this new structure evolved in several surprising ways. It replaced the traditional business model, under which one firm provided every piece of computing equipment. Eventually two former peripheral firms, Microsoft and Intel, assumed the role of the core firm.

Moreover, core-periphery structures spread to other parts of the electronics and software industries. Other examples are the early Palm, Sony's PS2, and the community that grew around AOL, Yahoo!, and Cisco in the late 1990s. Most recently, analysts have focused on the innovative community living around Google and Facebook.

When this arrangement works effectively, the core and periphery collectively coordinate the commercialization of innovation across many components. This arrangement does not work effectively all the time, however. Said simply, some core firms could support the periphery but do not, and some wild ducks could work with the core but prefer to flee.

As it turns out, both forces tend to move innovation to the edges.

Toward no periphery

Core firms can support the periphery in a variety of ways. For example, core firms provide information about road maps, make tools to enable new applications, and support a range of interoperable activities.

Core firms can also fetter the periphery. For example, the core firm can withhold information, saddle periphery firms with burdensome contractual obligations, or support interoperability only for applications that fit approved directions.

Savvy observers of the PC market in the 1990s noticed fettering policies at Microsoft and Intel. Contemporaries labeled these policies controlling and selfish, but those labels mischaracterized the economic incentives.

Specifically, while innovation created value for everyone, including Microsoft and Intel, fettering the periphery fostered more commoditization, which meant a higher fraction of value flowed to the core. Fettering also reduced rebellion, a nontrivial issue if the emergence of another platform could undercut margins at the core.

The browser wars sharpened awareness of these incentives. Indeed, it would lead some wild ducks to flee to the coreless software markets.

Before describing coreless markets, however, I want to return to the main thread. Microsoft and Intel were behaving in ways consistent with being core firms in a mature platform. I am not excusing such behavior, but I can explain the economic motive, which suggests it is quite rational.

That observation raises questions about core firms in digital technologies other than PCs. What policies do we see outside of PCs? As it turns out, we see some fettering there too.

For example, net neutrality alarmists like to argue that Ed Whitacre, the vocal outgoing CEO of AT&T, made no secret of his distaste for open platforms in broadband. Though less vocal, the other local telephone firms or cable companies could as easily be poster boys too.

For my purpose today, however, I have a sharper illustration: the US cell-phone network.

Specifically, the wireless carriers do not allow users to attach any device—that is, they require users to select from a preapproved menu of devices. There is no technical necessity for this requirement today, if ever there was one in the past. Rather, carriers do this as part of a broad strategy to restrict users from easily switching between networks.

Do these restrictions reduce innovativeness? There are two sides to this question.

First, in spite of such restrictions, a cell phone today is much better than the typical cell phone a decade ago. After all, carriers have made many experimental designs available in the last decade, such as Blackberries, N-Gages, and iPhones. In other words, the carriers have never stood still. It is easy to forget that advance, but the carriers deserve some credit for it.

What would have happened without a restricted menu of choices? Ah, there is the rub. Historians recall that more than four decades ago, US regulators banned any restrictions on land-line phone equipment markets. That ban led to a boom in innovative customer premise equipment. Will unfettered entry of cell-phone equipment induce more

innovation? It seems possible. Giving users a choice will enable free entry by a wider variety of providers.

As of this writing, two recent announcements suggest US cell-phone buyers soon may observe movements toward an unfettered environment. Google has announced plans to produce software for cell phones, an initiative that anticipates an array of add-ons from unfettered third-party firms. One of the firms who did not align itself with Google's initiatives, Verizon, also has announced plans for less fettering in the data-oriented applications of its wireless network.

I do not want to settle this debate today or prognosticate on how these initiatives will play out, only to illustrate the main theme: In many markets, the core firms do not want an unfettered partner, if partners are wanted at all.

Toward no core

Many wild ducks despise fettering from the core, if the core lets them in at all. That raises the question: Can wild ducks thrive without a core? A decade's history with open-source software and nonproprietary standards provides a partial answer. Considered broadly, it appears that there are several models of commercial success for wild ducks in coreless markets.

One model involves software entrepreneurs replicating an already existing application, and adding a twist of differentiation for a server-based service. To be sure, a lot of this has failed. However, some has succeeded too. Just ask users of MySQL, Salesforce.com, or Gmail.

A related entrepreneurial model involves making a living as an operator of a hosting or Web site that pushes the envelope. It is a risky living—just ask many former dial-up ISPs—but it has been common, and continues to be.

A second model involves transforming a popular social trend into an advertising medium. For example, blogs started appearing when wild ducks invented a structured format for their commentary a few years ago. New media

enabled new expression, and that made blogs unconventional and fruitful for experimentation. Then, the unexpected occurred. Many wild ducks showed they were quite willing to make a buck selling advertising.

A related version of this model is more deliberate. There are now many sites—especially in the so-called Web 2.0 movement—where the founders try to create social trends and anticipate commercialization. These have familiar entrepreneurial archetypes under the surface.

YouTube's experience can illustrate. Many commentators interpreted YouTube's popularity as an expression of unfulfilled creativity among online participants. Perhaps it was that, but behind the scenes a few experienced serial entrepreneurs had founded and operated the company. They built a loyal installed base of online teenagers who spent their evenings swapping videos. They sold out when they could.

There is a third model, and it goes like this: Coreless markets permit entrepreneurs to take a risky action that no corporate lawyer would have approved ahead of time. Legitimate corporations watch events, see how the risks play out, and then decide whether they want to act.

YouTube also illustrates this one. It was founded with an inherent legal risk, that YouTube would be sued for illegally helping others share copyrighted video. Indeed, today it still faces lawsuits about whether it acted in ways consistent with a legal safe harbor. Every potential buyer—including Google, who did buy it—got to watch and assess those risks before deciding to buy or not.

Another variation on this model does not involve merger or acquisition. Instead, the risky or illegal activity gets partly imitated in ways consistent with the legitimate economy.

An example comes from the history of Napster. Its founder, Shawn Fanning, pushed forward the diffusion of MP3 music, albeit by deliberately violating copyright law. Although that made Fanning a hero to those disenfranchised by

the corporate-controlled distribution of music, there was also a darker interpretation: Fanning's invention aided and abetted petty theft by tech-savvy Internet music listeners.

Apple turned that illegitimate MP3 rebellion into a lawful business with the iPod and iTunes. They pulled it off because, among other reasons, Steve Jobs had enough credibility to make deals with record distributors and act like a core firm. In addition, his team was savvy about watching other firms and designing something users wanted.

You might note that the pioneering entrepreneur did not make out well in this case. That is usually how it goes when imitation occurs.

Two opinions

Broadly speaking, coreless markets contain a recipe well suited to wasting talent and energy on illegal activity. Interestingly, the same recipe also leads to unconventional, innovative thinking and that can inspire legit business.

Moreover, going back to the big theme, this is a surprisingly good arrangement for society and its wild ducks. It turns out that some wild ducks do not want a core, and—whoa!—do just fine after they fly the coop. Remarkably, so do the firms who learn lessons from watching coreless markets.

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