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Are You Reading the Right Signals?

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Are You Reading the Right Signals?

When it comes to *Seeing What's Next*, certain clues suggest transformation—even in the most volatile situations. Just look at the telecommunications industry.

BY CLAYTON M. CHRISTENSEN AND SCOTT D. ANTHONY

ALL OF US MAKE COUNTLESS DECISIONS every day based on what we think the future will hold. Some decisions are more fraught with risk than others. Investors purchase stock in companies that seem poised to take off; analysts generate reports predicting industry trends; consultants issue make-or-break recommendations to their clients.

The challenge, naturally, is that the future rarely turns out as expected. Promising companies suddenly fizzle out; an analyst's predictions turn out to be 100% wrong; consultants unintentionally point their clients in the wrong directions. Predicting the future is a frustrating endeavor. This is especially true for volatile industries, such as the U.S. telecommunications industry.

Consider the pattern that innovation in the telecommunications industry has followed over the past decade. Deregulation in 1996 created a huge wave of excitement and hype, but most of the companies and technologies introduced in the late 1990s drove little real change. Then, just as hype dissipated, technologies and companies capable of driving real industry change quietly began to appear.

This pattern demonstrates one of the most pressing challenges facing people trying to predict future trends: determining whether a hyped innovation truly has the potential to transform an industry. Take, for example, three recent industry developments:

1. The emergence of Skype Technologies, a provider of free Internet-based telephony services by the duo that created Kazaa (the file-swapping software that allows people to share music over the Internet).
2. Industry legend Craig McCaw's announcement in June that his latest venture, Clearwire, would offer high-speed "fixed wireless" broadband solutions.
3. Little-discussed efforts by America Online and other instant messaging (IM) providers to make it easier for people to use the simple technology to hold audio conferences and videoconferences.

Which of these developments are transformational, and which will end up being more hype than reality? In this article, we discuss how the analytical approach laid out in our recent book, *Seeing What's Next: Using the Theories of Innovation to Predict Industry Change* (2004, Harvard Business School Publishing), coauthored with Erik A. Roth, can help answer that question. (See the sidebar "How to See What's Next" for a short synopsis.) The fact that each of these developments either occurred or came into sharper focus after the book was written demonstrates the industry's dynamic nature.

Our analysis suggests that these developments provide further evidence that the telecommunications industry is on the brink of substantial transformation. Critical yet-to-be-made choices will still determine who ends up on top when the dust settles, but it is clear the future will be substantially different from the present.

Skype: VoIP from the fringe

One of the most often discussed technologies in telecommunications is VoIP (Voice over Internet Protocol), which involves using the Internet to transmit voice calls over a data network. The quality of a VoIP call is slightly lower than that of a traditional phone call. VoIP offerings lack other key features such as "line powering," which allows a traditional phone to work even if the electrical power goes out. VoIP uses networks extremely efficiently, however, allowing providers to charge lower prices per call. And the technology is both flexible and customizable.

We believe that although the emergence of new VoIP providers such as Vonage seems to signal impending low-end disruption, incumbents are likely to "co-opt" that technology and offer it to their core customers.

Why? VoIP providers are targeting the core business of the leading local telephony incumbents (in the United States, these include Verizon, SBC Communications, Bell-South, and Qwest). Because telecommunications is a high fixed-cost business in which providers historically have

focused on “universal service,” incumbents are motivated to fight for each and every customer. Therefore, it is predictable that every leading North American telecommunications provider has announced a VoIP strategy.

Skype Technologies, founded by Niklas Zennström and Janus Friis, is taking a different approach to VoIP. The company introduced a trial version of its peer-to-peer software in August 2003. Customers using the program can send and receive calls from their personal computer to other Skype users around the world. The application is free and simple to download and install, and the calls are free and of high quality.

Skype’s emergence clearly signals industry change. The company’s product is competing against nonconsumption by bringing voice communication into completely new contexts. As of July 2004, more than 17 million copies of its software had been downloaded. In April 2004, Skype introduced a version of its software that allows users to place and receive free Skype calls on mobile devices connected to high-speed Wi-Fi, or Wireless Fidelity, networks.

Skype is taking advantage of powerful asymmetries that might prove to be real assets once competitive battles break out. Skype is focusing on a new market application. Its business model further limits the chance of incumbent response. Instead of charging for phone calls, Skype plans to make money by selling services (such as voicemail) and advertisements. To mimic Skype’s model, incumbents would have to give away their core product. Finally, while Skype is hiding behind this shield of asymmetric motivation, the skills it is developing related to software development and managing data applications will further limit the ability of competitors to respond.

One of the critical strategic choices Skype faces is whether it wants to expand beyond its freestanding value network, which requires both the person making the call and the person receiving the call to use Skype’s software. Generally, companies seeking to create disruptive growth have a better chance of success if they minimize points of interaction with competitors’ value networks because this allows the entrants to sharpen their disruptive edge while limiting a competitor’s ability to keep a close eye on the solution.

One potentially troubling sign is that Skype has attracted investment from top-shelf venture capitalists such as Bessemer Venture Partners (Larchmont, N.Y.) and Draper Fisher Jurvetson (Menlo Park, Calif.). Implicit in

such investment is the hope that Skype can grow rapidly; yet the need to grow quickly might force Skype to move its business model in a direction similar to that of Vonage and other VoIP providers, which are targeting large, existing markets instead of trying to create new markets.

To do this, Skype might have to leave its freestanding value network and enter into an overlapping network, dulling its disruptive edge. Indeed, in June, Skype quietly introduced a beta version of an application called SkypeOut, which allows users to purchase prepaid minutes to reach people on conventional phones outside of Skype’s network.

Skype could continue to evolve and drive industry change, however, if Skype’s investors encourage the company to be patient for growth—but impatient for profits—until it finds a viable business model.

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Clearwire: A legend returns

Clearwire’s CEO Craig McCaw has a history of shaking up the telecommunications industry. McCaw Cellular, which he founded in 1981, became the first truly nationwide mobile telephony provider before being acquired by AT&T for \$11.5 billion in 1994. McCaw then went on to develop Nextel, whose popular “push-to-talk” service drove that company to a multibillion-dollar market capitalization.

McCaw’s track record is not a string of unbroken successes, however. XO Communications, which attempted to crack into the local telephony market, went bankrupt in 2002. Teledesic, which hoped to provide satellite-delivered Internet service, never launched a satellite.

McCaw hopes to add Clearwire to his string of successes. Using a small device they can install themselves, customers will be able to receive high-speed, wireless access to the Internet. The device has to be stationary to work, hence the name “fixed wireless.” Clearwire obviates the need to obtain a high-speed connection from the cable or phone company.

Clearwire’s business model has several key elements that enhance its ability to reach customers. First, it can charge low prices because its solution does not require building expensive networks. Second, Clearwire owns an equipment company called NextNet Wireless. End-to-end control over the service and the equipment it offers customers should give Clearwire the flexibility to iron out significant bugs and make its solution more usable. For example, the company claims that users will be able to install its device in 15 minutes—without expert assistance.

Clearwire's most important strategic option relates to the customer group it chooses to target. There are three paths Clearwire could follow. The first would be to compete against consumption at the high end of the market, trying to bring a premium service to performance-demanding customers. Clearwire does not appear to be following this approach, and that's good. Given the unpredictable nature of new technologies, Clearwire's first product would likely have limitations that would disappoint these customers.

Clearwire's second option would be to compete against nonconsumption. Clearwire could try to go to areas in lesser-developed countries that lack the infrastructure to receive any kind of broadband service. Although this path would be difficult, it would have real potential to drive disruptive growth.

The final path, and the one Clearwire appears to be following, is a hybrid, low-end/new-market strategy. The low-end portion would target customers that purchase existing solutions but find them too expensive and too complicated. The new-market portion would seek to increase the market by reaching customers previously locked out of it.

The closer Clearwire adheres to a disruptive path, marketing to nonconsumers or overshot customers, the greater its chances of success. One structural factor that works in its favor is that broadband penetration in the United States is about 20%, which means that incumbents have significant headroom to march up market.

How can you assess whether Clearwire is likely to stick to the disruptive path? In our book, we suggest looking at a company's preparation regimen: its management team, strategy-making process, and investors.

HOW TO SEE WHAT'S NEXT

In our book, *Seeing What's Next*, we suggest following a three-part process for using innovation theories to predict industry change.

First, look for *signals of change*, signs of companies emerging to meet the needs of three different customer groups: undershot customers, for whom existing solutions aren't good enough; overshot customers, for whom existing solutions are too good; and nonconsuming customers—those who lack the skills, wealth, or ability to benefit from existing solutions.

Signs of undershot customers include consumers eagerly snatching up new products, steady or increasing prices, and the struggles of companies offering products with basic features. Undershot customers look for sustaining innovations that close the gap between what is available and what they're looking to accomplish.

Overshot customers consider existing solutions to be too good. Indications that overshot customers exist include customer reluctance to purchase new versions of products, declining prices, and the emergence of companies offering products with basic features. Overshot customers welcome low-end disruptive innovations that offer sufficient technological performance at low prices.

Signs of nonconsumption include customers who have to turn to someone with greater skills or training for service; a market limited to those with great wealth; and the need to go to centralized, inconvenient locations to consume. Nonconsumers welcome new-market disruptive innovations that make it simpler and more convenient for them to solve problems themselves.

Although most analysis of industry change focuses on the most undershot customers (often termed "lead" customers), watching for the innovations that have the most potential to drive industry change actually requires paying careful attention to the least demanding, most overshot customers and nonconsumers seemingly on the fringe of the market.

The second part of the process requires analyzing *competitive battles* to see which firms are likely to emerge triumphant. There are two components to this analysis. The first is *taking the tale of the tape*, to identify each combatant's strengths, weaknesses, and blind spots. Taking the tale of the tape involves evaluating a company's resources (what it has), processes (the way it does business), and values (the rules that determine how its resources are allocated). Most of the analysis should focus on processes, which determine what a company can and cannot do, and values, which determine what a company will and will not do. The second component requires looking for the company with asymmetries on its side, the one that is doing what its opponent has neither the skills nor the motivation to do.

The third part of the process evaluates *strategic choices* that can help to determine ultimate winners and losers. When assessing entrants, see whether the company is following a preparation regimen that facilitates it finding a disruptive path. Check the management team's schools of experience, verify that the company is encouraging emergent forces, and confirm that the company's investors will allow it to follow a disruptive path.

Next, check to see how entrants are choosing value network participants such as suppliers, distributors, and ancillary partners. Entrants residing in freestanding value networks that do not interact with incumbents have the greatest chance of driving industry change; entrants located within an established value network create the possibility of incumbent co-option.

Finally, look to see whether incumbents have earned their disruptive black belts by developing the capability to capitalize on disruptive trends. Incumbents that have nurtured this capability could respond to a disruptive threat by setting up a separate organization or using an established process to parry the disruptive attacker.

For Clearwire, signs are promising on all fronts. The company seems to be following an emergent strategy emphasizing experimentation and flexibility. It launched in only two markets this summer and plans to expand to 20 markets in 2005. McCaw himself controls Clearwire, meaning Clearwire's investors will not force the company to grow too quickly. Finally, McCaw's experience has taught him the promise and peril of different approaches. Overall, Clearwire seems to have an excellent chance to drive disruptive growth.

IM: Disruption continues to flower

Although VoIP still generates the most hype, an innovation that has potentially as much transformational power quietly chugs along behind it.

Instant messaging first took root as a simple way for teenagers to send short, snappy correspondence to each other. Millions of users have downloaded the free software offered by America Online, Microsoft and Yahoo.

Today, the number of corporations using IM technology is growing; IBM and Microsoft are offering enterprise-grade products to improve the way they meet the more demanding needs of corporate users.

Notice that none of these players are traditional communications providers. These developments are true signals of change. Instant messaging technology brings communication capabilities into entirely new contexts, and users communicate in completely different ways than they do when using the telephone. Providers are using IM technology to broaden their own business models, which were already different from the business models of most communications providers.

In *Seeing What's Next*, we noted that the critical thing to watch is how IM providers move up market by adding new services. In June, AOL announced deals with WebEx Communications and Lightbridge to provide Web meetings and conference calls over instant messaging technologies.

AOL decided to charge for the service, which ultimately could turn out to be a mistake because that doesn't fit with IM's free and simple value proposition. It shows, however, how IM providers are moving closer to becoming true

telecommunications players, further fanning the disruptive flames.

Summary

Overall, the technologies discussed here generally appear to be threats to established market leaders. Entrants that continue to develop distinctive business models that reach nonconsumers or bring consumption to new contexts have a real chance to drive industry change.

Established companies that play their cards right and view these technologies as opportunities, however, have the ability to combine these solutions with their existing assets in distinctive ways that could create new growth businesses. In June, for example, British Telecom launched a service allowing users to make phone calls over Yahoo's IM product.

Generally, incumbents to bet on are those that recognize that they need to do things differently to capitalize on emerging technologies, using new organizational forms and tolerating less-than-perfect solutions that bring new benefits to consumers.

One of the benefits of a theory-based approach is that even if you don't know precisely what will happen in the future, you can focus on the things to watch that will signal important industry changes. When

an IM provider adds a feature that brings it close to the market's core, the scales tip further toward disruption. When an established telecommunications player announces plans to introduce a VoIP solution, the scales tip away from disruption.

Continually looking for signals of change, evaluating competitive battles, and watching for important strategic choices can help make sense of these kinds of developments and increase the ability to see what's next in any industry. ♦

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Clayton M. Christensen is Robert and Jane Cizik Professor of Business Administration at Harvard Business School and author of the best-selling *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Harvard Business School Press, 1997). He is also the coauthor, with Michael E. Raynor, of *The Innovator's Solution: Creating and Sustaining Successful Growth* (Harvard Business School Press, 2003).

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