CoBANK

OUTLOOK Economic Data and Commentary

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Dealing With Disruption

Every business manager faces a host of daunting challenges. Serving existing customers, generating new business, recruiting talent, raising capital, developing new products and services - all are critical to companies that want to remain competitive for the long term.

But even getting all those things right might not be enough. An increasingly common threat in business is so-called "disruptive innovation" - new technologies or ways of doing business that come out of nowhere, quickly become pervasive and often prove crippling for incumbent companies.

Best-selling business author Larry Downes has just published a new book on this phenomenon, entitled "Big Bank Disruption: Strategy In The Age of Devastating Innovation." Downes spoke with *OUTLOOK* about the book and the lessons it holds for corporate leaders.

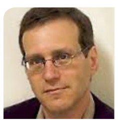
OUTLOOK: Summarize the concept of "disruptive innovation."

Larry Downes: Two decades ago, conventional wisdom told business executives that new markets were created from the top down. The most expensive cars, for instance, would have the most expensive features – all the bells and whistles. Over time, those innovations moved down market as economies of scale made them more affordable.

Then, in the 1990s, Harvard professor Clayton Christensen warned executives that innovative disruptors could also come in from the bottom. They started as inferior – but cheaper – alternatives, and once they got a foothold you would have this big crisis. A great example is personal computers. When they first hit the market, they posed no threat to traditional mainframes and appealed to hobbyists willing to accept an inferior product. Over time, technology improved exponentially as did price and performance, and personal computers evolved rapidly. It was driven by the economies of scale of a consumer market. Computer manufacturers had plenty of time to adapt to the disruptors, but many of them, including Unisys, Bull and Nixdorf, still failed to do it.

"CEOs should see failed experiments as a sign that the troops are amassing at the border and trying to get in. Once they get in, it's too late to respond.

About this article



Larry Downes is co-author, with Paul F. Nunes, of "Big Bang Distruption: Strategy in the Age of Devastating Innovation." He is also a research fellow with the Accenture Institute for High Performance.

He wrote the *Business Week* and *New York Times* business bestseller, "Unleashing the Killer App: Digital Strategies for Market Dominance." It was named by *The Wall Street Journal* as one of the five most important books ever published on business and technology. His new book argues that the nature of disruptive innovation has changed. It presents 12 new rules for companies to take advantage of the new opportunities of better and cheaper technologies.

Downes has written for a variety of publications, including *Forbes, The Wall Street Journal, USA Today, Harvard Business Review, Inc., Wired,* and the *Harvard Journal of Law and Technology*. Mr. Downes has held faculty appointments at The University of Chicago Graduate School of Business, Northwestern University School of Law and the University of California-Berkeley's Haas School of Business. From 2006-2011, he was a fellow with the Stanford Law School Center for Internet & Society.

More recently, the authors of "Blue Oceans Strategy" circulated the idea that disruption comes sideways, as well. A good example is Cirque du Soleil. They took elements of the circus industry, repackaged it and targeted a different market – one that might never go to a traditional circus.

So today innovation comes from the top, side and bottom – and it happens all at once. You can credit the rise of cloud computing, the information revolution and "exponential technologies," the hardware, software, sensors and components that get faster, better and cheaper at an exponential rate. CEOs need look at new technologies earlier and take them seriously.

OUTLOOK: What are some other examples of this trend?

LD: Look at electronic book readers. We saw a decade of failed market experiments. If you were a traditional publisher, you might have said, "Nothing to see here, nothing to worry about. We might as well keep waiting before we look at what impact they would have on our business."

Then one day, Amazon gets the right combination of display technology, hardware, software, and storage and the whole thing comes together with the Kindle. When they launch it, that's it.

CEOs should see failed experiments as a sign that the troops are amassing at the border and trying to get in. Once they get in, it's too late to respond.

OUTLOOK: What kinds of industries are most at risk of disruptive innovation?

LD: We found it in every industry we reviewed. Not surprisingly, the ones that are fastest to change are historically the ones that are ruthlessly competitive such as computing, electronics and entertainment. But the potential for this kind of disruption runs across all industries.

My co-author, Paul Nunes, and I began seeing early signs of an entirely new kind of disruption happening across industries – even in regulated industries – about three years ago. This new innovation requires a fundamental shift in strategy for how companies plan for, respond to, invest in and watch for innovation.

“Asset-intensive industries may be more protected from “big bang disruption” but they are not immune.

I even see disruptive technologies on the horizon in industries like agriculture and energy. CEOs of those industries cannot pay lip service to technologies like genetic engineering, battery technology, hydrogen fuel cells or fracking. And they must consider how their core technologies combined with information technology will quickly change everything.

For instance, as components being built in massive scale for smartphones, such as accelerometers, gyroscopes, cameras, displays, wireless antennae and chips, get even cheaper, we can put them in agricultural seeds, farm equipment and vehicles, and start collecting incredibly granular information about the performance of farming. Unmanned drones with cameras and sensors will also change how we collect information. It’s going to change the nature of farming – everything from how we price and distribute food to how and where we grow it.

OUTLOOK: Many of the industries that CoBank serves, such as agribusinesses and rural infrastructure providers, are capital intensive, and infrastructure intensive. Are these industries more at risk? Or less at risk?

LD: Asset-intensive industries may be more protected from “big bang disruption” but they are not immune. In many cases, the economics of these industries leave them vulnerable to disruptive change because the incentives for incumbents to do the innovating are nearly non-existent.

That’s especially so with energy and water utilities, where regulators must approve investments in new core technologies. But in each of these industries, pressure is building up from both entrepreneurs and consumers for innovation. Whether it’s smart grids, bioengineered agriculture or smart seeds that will communicate with the rest of the agricultural ecosystem, these industries can expect a prolonged period of better and cheaper improvements in the foreseeable future. That creates both opportunities and risks for incumbents because when the walls crumble, they will crumble hard. And new competitors from outside the industry – perhaps large technology companies – will change the rules of the game.

OUTLOOK: What about regulated industries?

LD: Regulated industries will be the slowest to be affected by big bang disruption. For example, if you had a better automotive technology you couldn't just start selling it. You have to go through government testing, approval, file for patents. It's the same story with pharmaceuticals; you must go through government approvals. Those industries have low incentives to innovate and they're not used to being better and cheaper. So when the innovators break the barriers to entry, the shift is going to be that much more dramatic.

A fight is now playing out in the taxicab industry, which has specialized regulation, as new upstarts such as Uber, Sidecar and Lyft come onto the scene using smartphones and other technologies to vastly improve

THE END OF CONVENTIONAL WISDOM

The fallout from big-bang disruption includes radiically new ways of thinking about about strategy, marketing and innovation.

AREA	CONVENTIONAL WISDOM	NEW APPROACH
Strategic Discipline	Focus on only one strategic "disipline" or "generic strategy"– low cost, production innovation or customer intimacy.	Compete in all three disciplines at once.
New-product marketing	First target a small group of early adpoters and later enter the mainstream market.	Market to all segments of users immediately. Be ready to scale up – and exit – swiftly.
Innovation method	Seek innovation in lower-cost, feature-poor technologies that meet the needs of underserved customer segments.	Seek innovation through rapid-fire, low-cost experimentation on popular platforms.

Source: Accenture Analysis/"Big Bang Distruption"

"Too many CEOs take a hands-off approach when it comes to technology and delegate research and development and new business to a CIO or chief innovation officer. We don't think that is a safe idea anymore.

operational efficiencies. Consumers have raised a huge fuss, demanding better and cheaper and arguing that social rating systems can address any safety concerns better than a taxi and limousine commission. Those taxi regulations were initially designed for human safety and health reasons, but now they just impose a barrier to entry for new innovation.

OUTLOOK: What should CEOs of incumbent companies do to ensure they are prepared?

LD: Too many CEOs take a hands-off approach when it comes to technology and delegate research and development and new business to a CIO or chief innovation officer. We don't think that is a safe idea anymore. Disruption is coming whether they like it or not, regardless of the industry.

Next, start looking in different places for potential disruptors. The advent of cloud computing and crowdfunding sites, such as Kickstarter, have dropped the barriers to entry for new innovators. It's much easier to get an idea off the ground these days. Instead of doing R&D in a secret way inside your company, learn to rely on a new generation of innovators. Partner with them, invest in them, collaborate with them, and if nothing else, know they exist.

Some companies use "corporate venture capital" to invest in startups with promising ideas. AT&T hosts "hackathons," 48-hour computer coding competitions with free food and prizes for those who can solve new problems. If a person comes up with idea that AT&T hadn't thought of, the company will co-develop the idea with them.

OUTLOOK: You talk about listening to the "truth tellers". What does that mean?

LD: There are people with a sharp insight into how your industry is evolving and they have an ability to identify persistent problems and new technologies on the horizon. Sometimes those are people in middle management, sometimes they are industry analysts, sometimes they're science fiction writers, sometimes they're customers. In every industry, we find people who just seem to get it sooner and more precisely than anybody else. It's very important for CEOs to find them.

The hardest thing will be learning how to listen to them because they often talk in metaphors. When Steve Jobs would talk about the future, he didn't say, "Okay it's going to be about the iPhone." He was much more visionary, saying it's "all about connecting people."

CEOs need to find truth tellers, listen to them and turn what they see into something actionable.

OUTLOOK: Which companies have survived disruption and how do they do it?

LD: One of the elements that separates the successes from failures is cultural. Take Kodak and Fujifilm. Both film companies had the capacity to make the transition to digital photography. In fact, as the No. 1 player, Kodak had more digital photo patents than anybody and had everything it needed to make the transition. But culturally, Kodak couldn't commit to it. Even when the realization was clear that the business was dying, Kodak couldn't just get out of film, since it provided the company's core operating income. Maybe they did not want to cannibalize markets or take assets out of production until the last possible minute. So they wind up getting stuck with unusable assets, excess inventory and debt. The company, one of the most recognized brands in the world for decades, fell into bankruptcy.

Fujifilm, the No. 2 player, had a different story. While they suffered tremendously over the past decade, Fuji was able to look beyond film photography. They began repurposing their film techniques, chemistry and tools to get into the cosmetics business and the display technology business. They started out as very small new markets, but it gave them hope of a jumping into expanding industries.

OUTLOOK: How important is it then to diversify your business to prepare for this kind of disruption?

LD: The word I use is a portfolio, a term that comes from the venture capital world. You're investing in a combination of long-term future options. So even if you get a couple of things that work, you have new ways of doing things in your business.

When the time comes and disruption happens, you have been playing in all the right sandboxes and know the right people and know the technologies. You've got your toe in the water. You don't have to beat everybody; you just have to beat your current competitors who are scrambling to get out of the old market. If you're just a little bit ahead of them, you're far more likely to be a survivor.

Interest Rates and Economic Indicators

The interest rate and economic data on this page were updated as of 2/28/14. They are intended to provide rate or cost indications only and are for notional amounts in excess of $5 million except for forward fixed rates.

KEY ECONOMIC INDICATORS

Gross Domestic Product (GDP) measures the change in total output of the U.S. economy. The Consumer Price Index (CPI) is a measure of consumer inflation. The federal funds rate is the rate charged by banks to one another on overnight funds. The target federal funds rate is set by the Federal Reserve as one of the tools of monetary policy. The interest rate on the 10-year U.S. Treasury Note is considered a reflection of the market's view of longer-term macroeconomic performance; the 2-year projection provides a view of more near-term economic performance.

ECONOMIC AND INTEREST RATE PROJECTIONS

Source: Insight Economics, LLC and Blue Chip Economic Indicators

				US Treasury Securities	
2014	**GDP**	**CPI**	**Funds**	**2-year**	**10-year**
Q1	2.20%	1.80%	0.07%	0.38%	2.92%
Q2	2.80%	1.70%	0.08%	0.49%	3.11%
Q3	2.90%	2.10%	0.10%	0.62%	3.24%
Q4	3.00%	2.00%	0.12%	0.78%	3.39%
2015	**GDP**	**CPI**	**Funds**	**2-year**	**10-year**
Q1	3.00%	2.00%	0.18%	0.88%	3.50%

PROJECTIONS OF FUTURE INTEREST RATES

The table below reflects current market expectations about interest rates at given points in the future. Implied forward rates are the most commonly used measure of the outlook for interest rates. The forward rates listed are derived from the current interest rate curve using a mathematical formula to project future interest rate levels.

IMPLIED FORWARD SWAP RATES

Years Forward	3-month LIBOR	1-year Swap	3-year Swap	5-year Swap	7-year Swap	10-year Swap
Today	0.24%	0.27%	0.82%	1.61%	2.21%	2.78%
0.25	0.25%	0.31%	0.98%	1.77%	2.35%	2.88%
0.50	0.27%	0.38%	1.16%	1.94%	2.49%	2.99%
0.75	0.31%	0.49%	1.35%	2.11%	2.63%	3.10%
1.00	0.40%	0.64%	1.55%	2.29%	2.77%	3.21%
1.50	0.70%	1.06%	1.99%	2.64%	3.05%	3.42%
2.00	1.18%	1.56%	2.42%	2.97%	3.28%	3.62%
2.50	1.70%	2.03%	2.78%	3.25%	3.51%	3.78%
3.00	2.21%	2.50%	3.14%	3.52%	3.74%	3.95%
4.00	2.99%	3.24%	3.62%	3.89%	4.05%	4.17%
5.00	3.51%	3.73%	3.98%	4.14%	4.25%	4.32%

HEDGING THE COST OF FUTURE LOANS

A forward fixed rate is a fixed loan rate on a specified balance that can be drawn on or before a predetermined future date. The table below lists the additional cost incurred today to fix a loan at a future date.

FORWARD FIXED RATES

Cost of Forward Funds

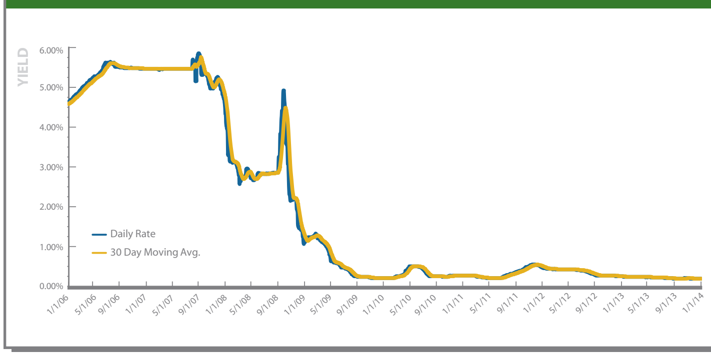
Forward Period (Days)	Average Life of Loan			
	2-yr	3-yr	5-yr	10-yr
30	6	9	8	6
90	14	22	20	15
180	25	41	37	27
365	65	87	77	54

Costs are stated in basis points per year.

SHORT-TERM INTEREST RATES

This graph depicts the recent history of the cost to fund floating rate loans. Three-month LIBOR is the most commonly used index for short-term financing.

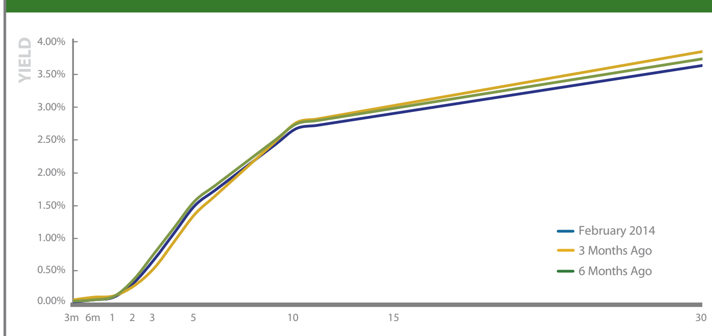
3-MONTH LIBOR



RELATION OF INTEREST RATE TO MATURITY

The yield curve is the relation between the cost of borrowing and the time to maturity of debt for a given borrower in a given currency. Typically, interest rates on long-term securities are higher than rates on short-term securities. Long-term securities generally require a risk premium for inflation uncertainty, for liquidity, and for potential default risk.

TREASURY YIELD CURVE



CoBank Announces Renewal of "Sharing Success" Charitable Contribution Program for 2014

CoBank this month announced that it is renewing its "Sharing Success" charitable contribution program for 2014.

The bank's board of directors has approved a commitment of $3 million for the program, which will be used to match donations by cooperative customers to nonprofit organizations in their communities. The bank will match donations on a dollar-for-dollar basis, from a minimum of $1,000 up to a maximum of $5,000 per customer. Since CoBank first launched the program in 2012 it has generated more than $9 million for non-profits throughout the country, predominantly in rural areas.

Robert B. Engel

"We continue to believe that the best way for CoBank to make a meaningful impact in terms of corporate citizenship is to partner with our customers," said Bob Engel, CoBank's chief executive officer. "Across rural America, cooperatives of all kinds are supporting charitable organizations and working to advance the growth and development of their communities. Sharing Success enables CoBank to leverage that local knowledge and expertise and provide assistance to causes that our customers care deeply about."

CoBank will begin formally accepting applications for funding from customers on May 1. The program will run through November 30, 2014 or the point when the fund is exhausted, whichever comes first. Cooperatives interested in participating should contact their CoBank relationship manager for an application and detailed program requirements.

Engel noted that more than 600 cooperatives that borrow from CoBank took part in the Sharing Success program in 2013. "We hope even more of our customers participate this year and take advantage of this opportunity to increase the power of their local giving," Engel said. "We look forward to joining with our customers through the program and sharing our success with them, in the best cooperative tradition."

Additional information about the "Sharing Success" program, along with an application form, is available at **www.cobank.com/sharingsuccess.**

About CoBank

CoBank is a $98 billion cooperative bank serving vital industries across rural America. The bank provides loans, leases, export financing and other financial services to agribusinesses and rural power, water and communications providers in all 50 states. The bank also provides wholesale loans and other financial services to affiliated Farm Credit associations serving farmers, ranchers and other rural borrowers in 23 states around the country. CoBank is a member of the Farm Credit System, a nationwide network of banks and retail lending associations chartered to support the borrowing needs of U.S. agriculture and the nation's rural economy.

Headquartered outside Denver, Colorado, CoBank serves customers from regional banking centers across the U.S. and also maintains an international representative office in Singapore.

For more information about CoBank, visit the bank's web site at www.cobank.com.