


The Long View

Investment Insights

April 2015



**No Status Quo:
The Difference
Disruption Makes**



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No Status Quo: The Difference Disruption Makes

“Disruptive technology is having a huge impact on the world and it is only getting bigger.”

Mark Denning, Portfolio Manager

Out with the old, in with the new. People of nearly every era have probably surveyed the world around them and marveled at how quickly things can change. But these days, change seems to be setting a new speed record.

Seemingly overnight, products that were once part of everyday life become relics of a time gone by. Indeed, entire industries are being disrupted by innovation or new business models.

For both companies and investors, rapid change can be unsettling, but it can also present opportunity and potential reward, says portfolio manager Mark Denning.

“Disruptive technology is having a huge impact on the world and it is only getting bigger,” says Mark. “Name an industry and it is being disrupted – just look at retail with the impact of e-commerce and mobile payments systems. As investors, we have to make sure we are on top of all the change that is taking place, which is why having the proper resources in place to cover these industries is crucial.”

Mark and other investment professionals point out that, despite the excitement that innovation and change can inspire, investments are made in only the companies in which portfolio managers and investment analysts have the strongest conviction.

“It’s important that we approach them with great diligence and make sure they’re not just companies we like, but that we

also know how fast they need to grow sales and improve profits to be fruitful investments,” portfolio manager Carl Kawaja says.

Change can be most apparent in the technology sector, where the status quo almost seems to be a thing of the past. But it’s not the only area where there’s upheaval.

“We are in the middle of a massive health care renaissance,” says investment analyst Rich Wolf. “You’re hearing almost every day about new biotech drugs. And we are in the very early stages of the biotech era.

“There are going to be many secondary effects, not only just for drugs and growth in the biotech industry, but also for the resources and equipment that are required to do that kind of research. There are many companies that supply that industry,” Rich says.

Singapore-based portfolio manager Sung Lee says some changes may be incremental, but it’s important to identify winners and invest early.

“Our advantage is that we can take a long-term view of these companies and see these changes through over many years.

That perspective is what gives us the edge in terms of identifying them,” Sung says.

“Certain companies recognize these changes as well, but are too protective of their current business model; once momentum builds, they get left behind. We want to be invested in those companies that think strategically about the long-term shifts in an industry.”

Key Takeaways

We live in a transformational time

- Emerging technologies and innovation are creating new products and business models that are disrupting the old ways.
- From cloud computing to a new era of breakthrough drugs, we are on the cusp of a dramatically different world.
- Companies that are poised to take advantage of these changes have the potential to reap new profits, and provide investors with opportunities that few could have imagined a decade ago.

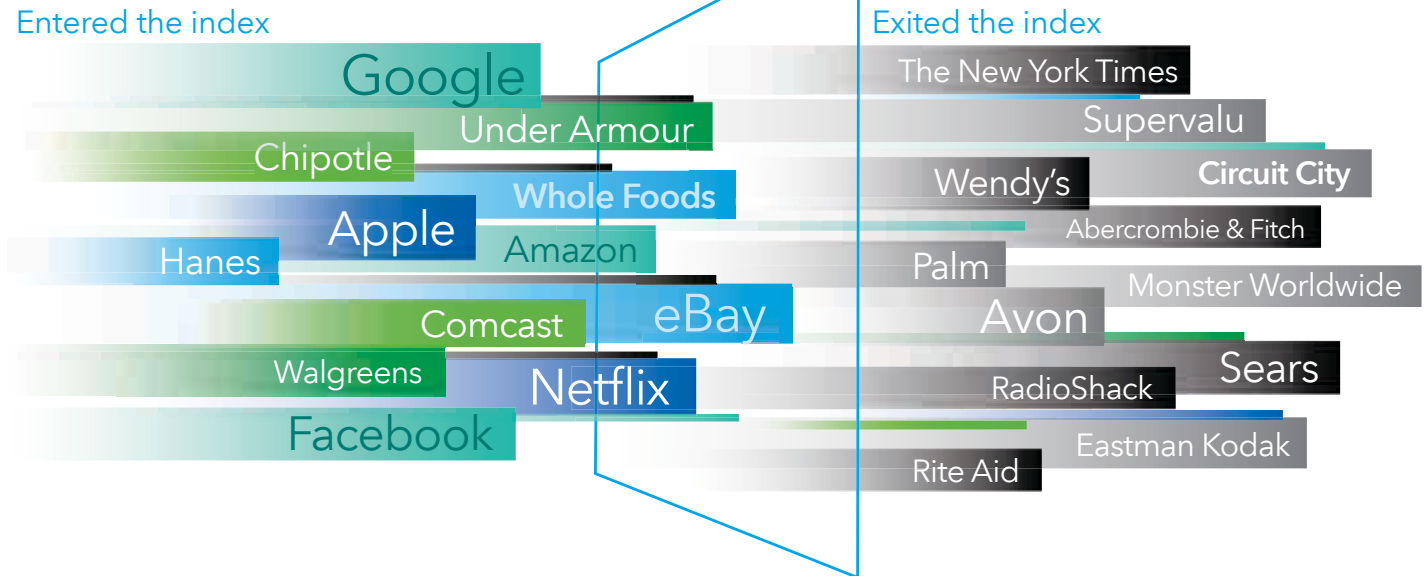
Warp Speed: The Churn Rate for the S&P 500 Is Accelerating

Many companies have turned disruption into opportunity

“It’s obvious to me that we live in a transformational time, where emerging technologies are creating new business models and destroying old ones.”

Nick Grace, Portfolio Manager

Sampling of companies that have entered and exited the S&P 500 Index, 1979-2015



Sources: S&P Capital IQ; *Standard & Poor's Analysts Handbook*, 1980, and *Stocks in the Standard & Poor's 500*, 1982, Standard & Poor's Corporation; Dow Jones Newswires, 1987, Dow Jones; and Reuters.com, 2015, Thomson Reuters. Standard & Poor's 500 Composite IndexSM and S&P 500[®] are service/trademarks owned by the McGraw-Hill Companies, Inc.

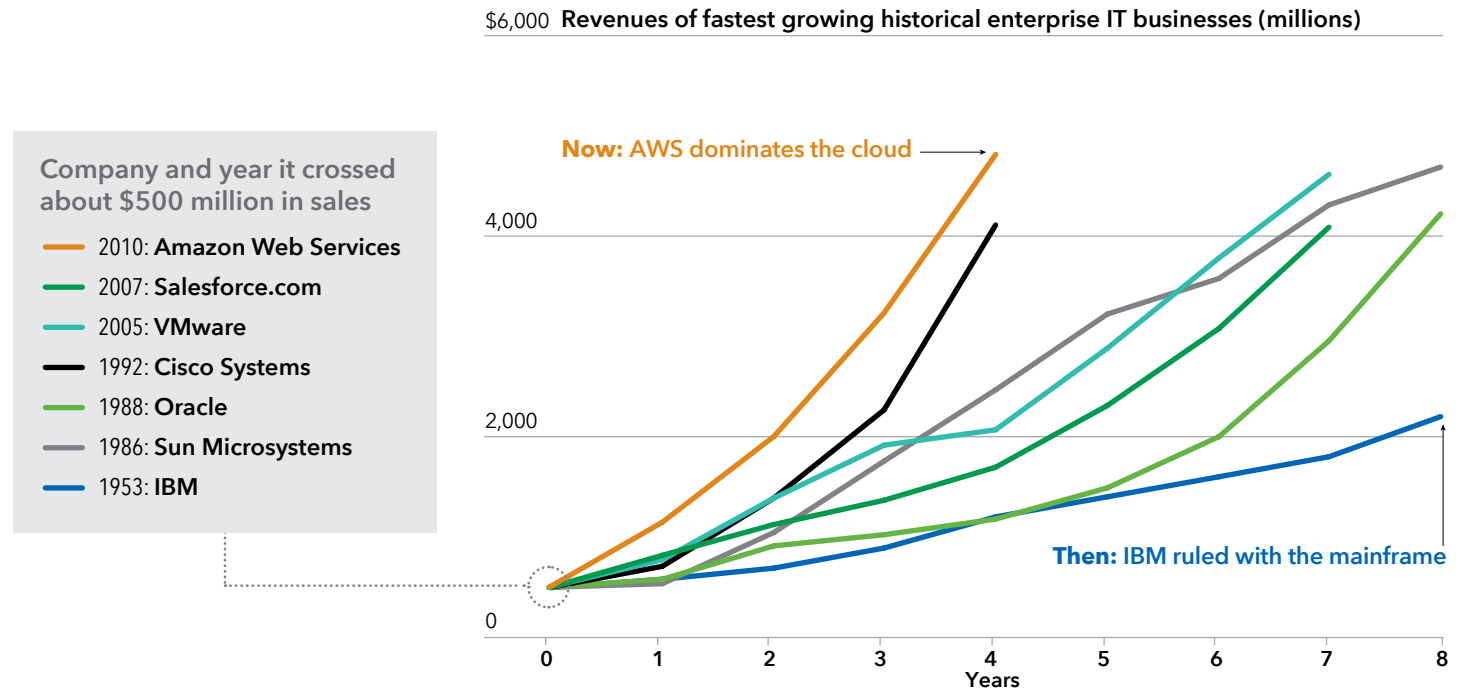
- Yale professor Richard N. Foster, co-author of *Creative Destruction*, has a warning for executives whose companies are now listed in Standard & Poor's 500 Composite Index: Your days may be numbered. At the current churn rate, 75% of the S&P 500 will be replaced by 2027. Indeed, since 2002, such household names as Sears, The New York Times and Eastman Kodak have exited the index, while Amazon, Netflix and Chipotle have joined the list of U.S. companies with the largest market capitalization.
- Companies in the S&P 500 are replaced for a variety of reasons, including decline in market value (for example, RadioShack) or acquisition by another company. But many of the changes are due to “creative destruction,” in which companies that once dominated industries have seen their profits fall and their dominance vanish as rivals employed new technologies that disrupted the old way of doing business. One example: The Internet’s impact on circulation and ad revenue in the newspaper industry.
- The information technology sector in the S&P 500 is perhaps the most dramatic example of disruption. Among those that disrupted the status quo and changed behavior include Google, Facebook and Apple, all now household names. But things change. According to Foster, corporations in the S&P 500 in 1958 lasted in the index for 61 years, on average. Today, it stands at just 18 years based on seven-year rolling averages. During the decade ended 2011, about half of the companies in S&P 500 were replaced.

The Cloud Isn't Really Up in the Air, but the Potential Is Sky-High

So high, so fast: Amazon Web Services is the fastest growing business in the history of enterprise IT

“There is a fabulous stream of new companies, disruptive companies, that come along and take the world by storm.”

Jonathan Knowles, Portfolio Manager



Sources: Capital Group and SEC (U.S. Securities and Exchange Commission) reported company financial filings. Data are estimates.

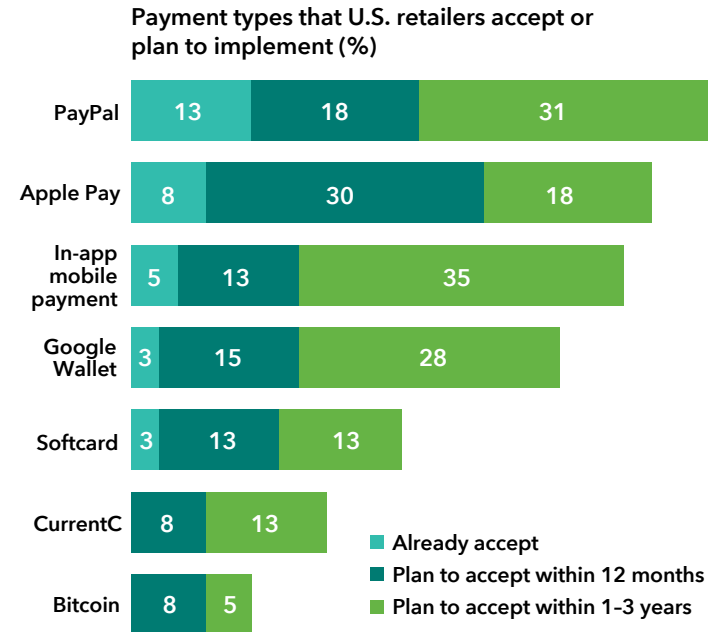
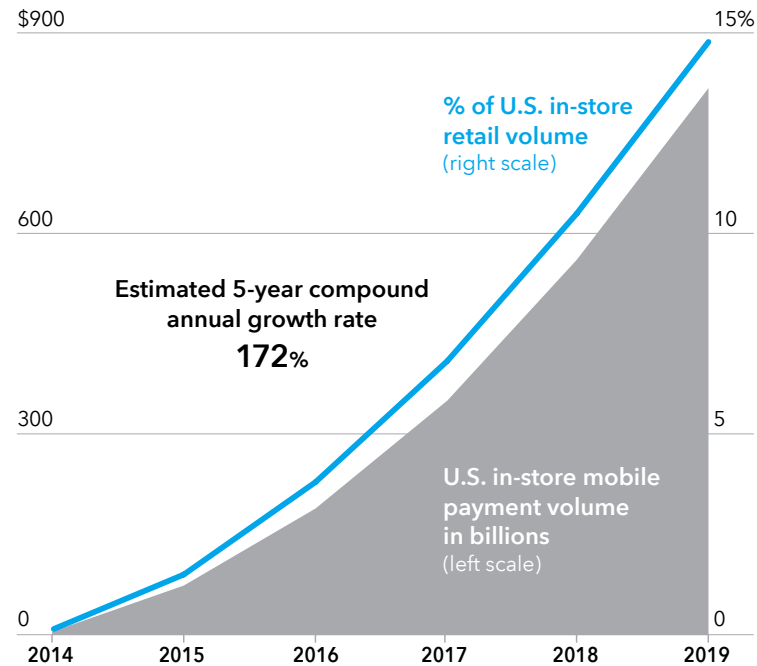
- First off, all of your music and pictures aren't really up in the air. The cloud is a cool name, but the reality of data storage and computing is more akin to a farm than the sky. In fact, Amazon, Google, Apple, Microsoft, Facebook and others run massive facilities around the world filled with servers that handle billions of transactions (one of Facebook's facilities has 950 miles of cable). The cloud, very simply put, refers to software and services that run on the Internet instead of your computer.
- Although its origins date back to the 1960s, cloud computing has become a hugely disruptive force in roughly the past decade, driving innovation and leading to numerous new business models. Because companies can now rent services they use via the cloud, companies that sell computer hardware are among the disrupted.
- The security of the cloud remains an issue for some, but a tipping point occurred in 2013 when one of the world's most private organizations – the Central Intelligence Agency – decided to trust the cloud. The CIA selected Amazon Web Services (AWS) to build its private cloud, a \$600 million job that *Wired* magazine called “a seismic shift in cloud computing.”
- AWS now dominates the cloud, with Google and Microsoft playing catch-up. The chart shows how quickly the cloud generated revenue for AWS, going from \$500 million to nearly \$5 billion in about four years. By 2017, enterprise spending on cloud computing will amount to a projected \$235 billion, triple the \$78 billion spent in 2011, according to researchers at IHS Technology.

Can Smartphones Replace Wads of Cash? Companies Are Banking on It

There's a big payoff for the winner of the race to change the way you pay

"When you think about investing in mobile payments, it basically comes down to a company that can enable security, regardless of which system is being used."

Johnny Chan, Investment Analyst



Sources: BI Intelligence (both charts) and Boston Retail Partners (left chart). Data for mobile payment volume are estimates, and those for payment types are as of 2015.

- Cash or check? How about smartphone. In 2014, customers in U.S. retail stores made an estimated \$5.5 billion in purchases using a mobile device. That's only about 0.1% of the nation's sales. In 2019, however, shoppers are expected to spend an estimated \$819 billion using a mobile device, or about 15% of sales, according to researchers at BI Intelligence. If correct, mobile payments may grow at a five-year compound annual growth rate of 172%, creating intense competition to provide digital wallets.
- While there have been a variety of mobile-payment efforts during the past few years, notably PayPal, the introduction of Apple Pay last year raised the profile of this potential transition in the way people pay for goods and services. Less than 72 hours after its debut, 1 million credit cards had been used on the service. Google recently unveiled a mobile payment system called Android Pay that will compete with Apple and Samsung Pay, and PayPal recently announced the acquisition of a mobile-wallet maker.
- The movement toward mobile payments languished for some time, but there now seems to be growing acceptance among businesses and consumers. Retailers from Wal-Mart to Whole Foods see mobile payments as the future, providing opportunity for numerous companies that facilitate the transactions. The CEO of a Dutch semiconductor company called 2014 "a very good year." Why? Because the company makes chips that help power the mobile payments system in Apple's iPhone 6.

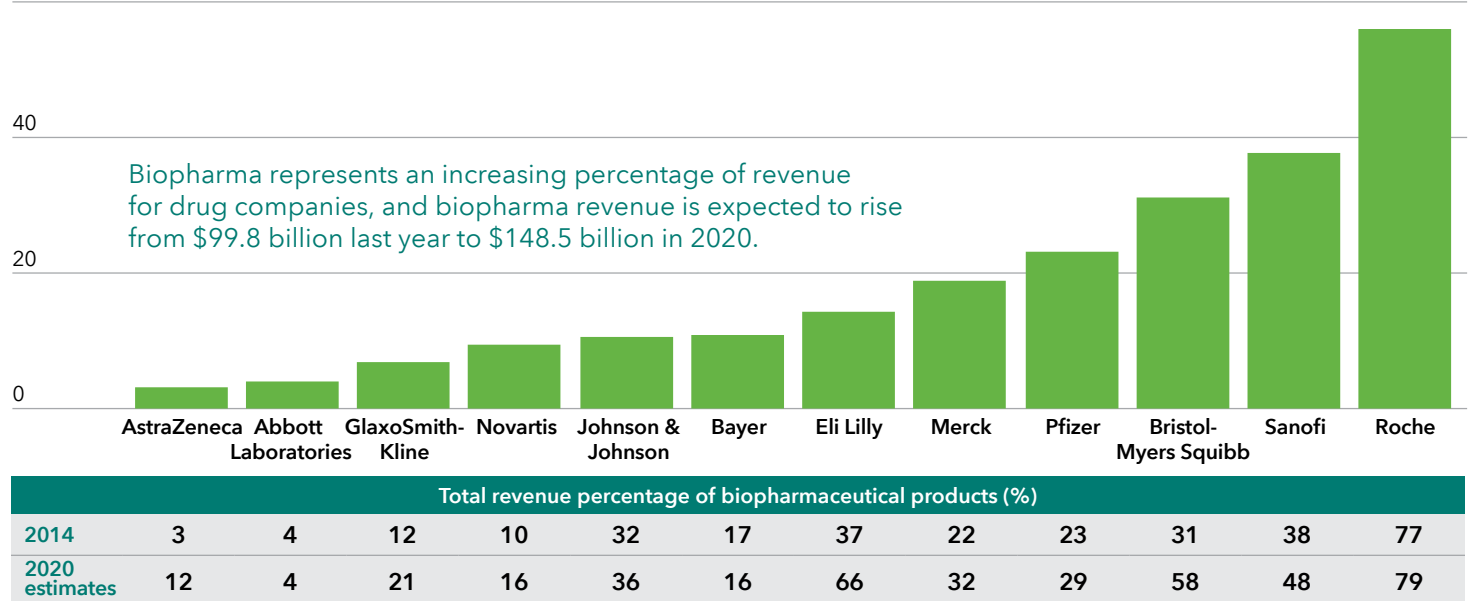
Unleashing the Immune System

Innovation in biopharma has changed the pharmaceutical industry, and the way we treat cancer

“We are in the middle of a massive renaissance in health care, and we are still in the early stages.”

Rich Wolf, Investment Analyst

60% Change in percentage of revenues from biopharmaceutical products, 2000-2014



Source: EvaluatePharma®, March 2014, Evaluate Ltd, www.evaluate.com. Data are based on sales totals that include conventional, biotechnology, other unclassified and over-the-counter sales.

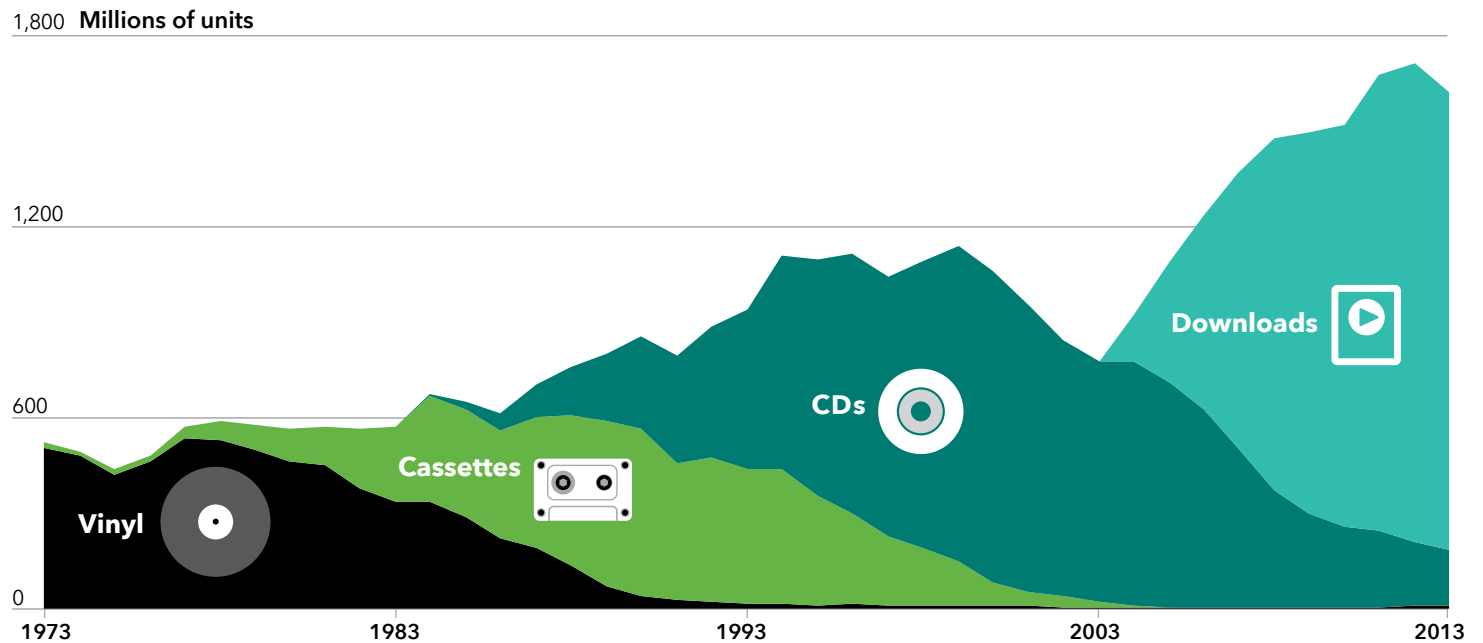
- Cancer has a cloaking mechanism that’s so efficient the immune system can’t see the disease. That cloak of invisibility, however, may soon be pulled away thanks to revolutionary new approaches in immuno-oncology, which harnesses the patient’s own immune system to recognize and fight cancer.
- The key is the so-called programmed cell death-1 (PD-1) and programmed cell death-ligand 1 (PD-L1) inhibitors, which could form the backbone of many future cancer therapies and pave the way for big revenue streams at some pharmaceutical firms. The PD-1 and PD-L1 inhibitors remove cancer’s ability to hide from the immune system.
- Bristol-Myers Squibb and Merck have been among the companies leading the charge in this area. Both have been developing immuno-oncology therapies for a number of different cancers, including skin, lung and breast cancer. These treatments are the ultimate in personalized medicine, finding and attacking abnormal cells regardless of the type of cancer.
- The pharmaceuticals industry is in its most innovative period since the 1990s, thanks in large part to advances in technology and genomics. After a decade of patent expirations and increased regulatory scrutiny, as well as undergoing a wave of consolidation in the 2000s, pharmaceutical companies are now spending more money on research and development focused on curing some of the biggest diseases of our time.

Digital Disruption: Technology Is Transforming the Music Business

iTunes rocked the industry, but streaming may represent another seachange

“There’s a lot of disruption going on, and media is right in the middle of it. Traditional media companies have a lot of competition that didn’t exist five or 10 years ago.”

David Carpenter, Portfolio Manager



Source: Recording Industry Association of America. Data are based on year-end shipment statistics for the recorded music industry in the United States and represent the cumulative total of all four music formats shown in any given year. Units refer to the raw volume of products, which may be physical or digital, in a given category. Vinyl, cassettes, CDs and downloads all include both albums and singles.

- Yes, sales of vinyl records are surging – nearly 10 million old-fashioned platters were sold in 2013, the most since 1997. Who’s buying records? Mostly hipsters into indie-rock, and diehard audiophiles who contend vinyl recordings sound better than digital (among recent best-sellers on vinyl: Jack White’s “Lazaretto” and Beck’s “Morning Phase”). While it’s nice for old times’ sake to see vinyl win a battle, the war over how we listen to music may be over, and if digital hasn’t already won, the others may be down for the count.
- One need not look further than the music business and Apple’s iTunes Music Store for an example of how innovation can transform an industry. After decades of distributing music to consumers in essentially the same fashion, with the launch of iTunes, everything changed in 2003. Since then, music sales have dropped from about \$12 billion to \$7 billion in 2013. But during that same time, people have been buying more music than ever, but in the form of the digital singles popularized by iTunes.
- The low cost and ease of downloading digital singles may have been a blessing for music fans, but it’s caused massive disruption in the music industry.
- Little more than a decade after iTunes revolutionized the music world, the industry is undergoing what may be an even more radical, digital transition – streaming. Many listeners are moving away from CDs and downloads to streaming services like Spotify, Pandora and YouTube. The music industry may be in for yet another seachange.

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