



Two Faces of CHANGE



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New financial technologies hold both promise and pitfalls

THE technology and financial sectors have a long symbiotic history. In almost any finance textbook, technology, together with deregulation, is deemed to be the main driver of the exponential growth in finance in the past 50 years. Finance is the biggest focus of technology firms, and technology (particularly information and communication) is a big budget item for banks and other financial sector firms. This is not surprising because finance is ultimately the business of collecting, storing, processing, and trading in information, unbounded by geography.

When the textbooks are revised in the next decade, they will still mention the key role of technology in finance—but with one difference. They likely will highlight how a new breed of hybrid financial technology firms—the so-called fintechs—transformed the financial sector when they went from supplying technology to financial firms to competing against them.

New applications of technology in finance have no doubt made consumers' lives easier in myriad ways—automated teller machines (ATMs), debit and credit cards, and Internet banking, to name a few.

Broad impact

But financial technology affects more than just consumers. Financial firms' entire operations are built around their increased ability to capture and process data thanks to quantum leaps in computing power. These advances have also spawned innovations such as complex options and multilayered securitization—which, for example, package loans into securities that transfer risk from the lender to the securities buyer.

But the most important dividend of the interplay between technology and finance may well be the rise in the number of people around the world who have access to, and use, financial services (often called financial inclusion). The application of existing and widely available technologies such as mobile phones in developing economies has helped them leapfrog market development and bring millions of people into the formal financial system for the first time.

The future promises more change, driven by fintech, a label that is variously used to describe products, product developers, and operators of alternative systems. These fintechs, some owned by tech companies and e-commerce players, have already rolled out applications that propel new ways of making financial transactions. They often come with quirky names—Stripe and Square for payments, Lending Tree and Kabbage for loans, Knip and Zhong An for insurance, and

Betterment and Robinhood for investing are just a few examples of the many fintechs gaining ground.

And there are more in the offing. Many experts have concluded that we are on the verge of a technological revolution in finance that will change the financial landscape and how customers interact with it. That change is being called both disruptive and transformative. Others are skeptical, noting that despite similar fears, earlier major advances in technology were easily absorbed by banks and other financial firms.

But there is a rising consensus that fintech changes are different. First, there's a lot of money flowing into fintech firms, and thousands of companies worldwide are reaching for a slice of the financial sector pie. A recent report by Citigroup suggests that total fintech investment quadrupled between 2010 and 2015 to about \$19 billion annually. Most of that investment went toward developing payment and lending products.

Of course technology firms are merely responding to demand. Consumers were once satisfied with ATMs. Now they carry in their pockets powerful computers, smartphones they use to interact with the world. They are far more trusting of (and dependent on) digital technologies and relationships, which has influenced their expectations of the speed and ease of commerce and finance.

Financial inclusion

At the same time, global efforts toward large-scale financial inclusion have motivated policymakers to encourage fintechs to develop technology that taps into these new market segments, and countries are competing to get fintech start-ups to join their innovation hubs.

Moreover, just as deregulation cleared a path for technology-driven financial innovation in the 1970s, stronger regulation following the global financial crisis may have driven the new wave of fintechs. Regulators have set higher standards for banks to manage their risk, paving the way for nonbanks and fintechs, which are not regulated as banks are, to offer bank-like services. The most visible developments are in the way payments between parties are conducted, recorded, and settled. Banks—the linchpin of the payment system—still have a role in these transactions, albeit reduced. But new technologies (such as bitcoin's underlying blockchain) could soon spawn applications that permit direct transfers between market participants rather than through a third-party central ledger, currently the role of banks and central banks (see “The Internet of Trust,” in the June 2016 *F&D*).

Another growing application is lending—long the preserve of banks, which channel deposit funds to borrowers. Peer-to-peer platforms allow those depositors to lend directly to borrowers. And projects seeking capital can use crowdsourcing platforms that allow investors to pick up equity directly, sidestepping the usual chain of intermediaries, such as investment firms.

Big data-based applications allow for increasingly powerful search techniques to support behavioral analytics and collect and manipulate information from many different sources to identify and measure risks, trends, and customer preference more comprehensively than ever.

These are only some examples. Change also permeates the insurance, savings, and investment spheres. Yet the promise of many more efficient and possibly cheaper ways to conduct financial transactions is not without potential pitfalls. That is why banks and other financial firms are looking warily at this wave of innovation and why regulators are debating how they should respond.

Technology risks

Some of the vulnerabilities of any technology application in finance are well known. For consumers, these include breached personal data, potential electronic fraud committed remotely, still evolving consumer protection frameworks, and nonbanks' and unregulated providers' lack of safety nets such as deposit insurance. The failure of several peer-to-peer platforms in Asia hurt many lenders and led to calls for stricter regulation. Technology can also promote inequities even as it promotes inclusion. For example, high-frequency traders use complex programs driven by massive computing power located near stock exchanges to take advantage of millisecond-long price differences, giving them what many believe is an unfair advantage over other investors.

For financial institutions, fintech products pose the usual set of operational risks that arise from the failure of systems and processes and risks posed by dependence on third-party technology and service providers. Cyber risk—as a result of interconnected computer-based systems vulnerabilities that can be exploited by hackers for fun or criminal intent—is the most talked about technology-related risk (see “The Dark Side of Technology,” in this issue of *F&D*). Banks and other financial institutions are increasingly reporting heavy losses from cyber risk incidents that require them to make major investments.

But the fintech-related risk that threatens to be the most disruptive, especially for banks, is new providers' growing ability to eat away at their revenues when bank profitability is already strained. For example, among a sample of the top 300 advanced economy banks, one-sixth needed to revamp their business model to post sustainable profits (IMF, 2016). The right investments in fintech could well make the difference between their survival and demise.

Regulators have a key role. Their job is to design and enforce rules for prudent behavior and market conduct for licensed banks and other financial firms, manage their orderly entry and exit, and minimize the potential for major disruptions in the financial system. Regulators set minimum

standards, provide guidance on managing risk, and define penalties for noncompliance. Depositors and investors in turn gain access to safety nets such as deposit insurance.

Fintechs, on the other hand, may often be in regulatory gray zones. They may perform some activities that banks do, without being subject to similar licensing and regulatory regimes. Regulators, more comfortable dealing with entities than activities, may respond by subjecting them to prudential regulations after the fact, thus affecting the fintech's business model.

Many fintech products are digital and cannot be contained within national borders.

One major issue that worries national authorities is regulatory arbitrage. Many fintech products are digital and cannot be contained within national borders, so international coordination is needed to ensure that these activities don't move to less regulated jurisdictions. For example, countries have taken very different approaches to regulating virtual currencies such as bitcoin. Some have banned them, others allow them for limited purposes, and some have not yet given them a thought.

Regulators understand well the risks of established technologies but struggle to grasp the risks that new entrants and new technologies may pose to the financial system. They don't want to stifle innovation by restricting the use of new technologies, but regulators also do not want such innovations to spread so widely that they can't be easily rolled back in the event of unanticipated risks.

So regulators are looking for new ways to manage the transition to a new landscape. They are promoting the concept of “regulatory sandboxes” or “safe zones.” In the past year, regulatory agencies (for example, in Australia, Singapore, and the United Kingdom) have issued guidelines on sandboxes that will allow selected products of approved fintechs to go live for a defined period. Only if the product succeeds will the full suite of regulatory requirements become applicable.

This sandbox approach should help regulators understand the risks a product might pose if widely used, but in a controlled environment. It will help fintech firms, especially start-ups, test their products without having to bear the full cost of regulation or face enforcement action.

Of course, sandboxes pose risks of their own. Regulators are not experts on promoting products and will be put in the position of selecting winners and losers, something markets do best. Only time will tell how successful sandboxes are, but until then finance and technology will play together to develop useful products under the watchful eye of regulators. ■

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Reference:

International Monetary Fund (IMF), 2016, Global Financial Stability Report (Washington, April).