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The Future of Fintech

Anne-Laure Mention

Fintech is fast becoming a global phenomenon, led by innovators and followed closely by academics, and now drawing the attention of regulators. Broadly, fintech is an umbrella term for innovative technology-enabled financial services and the business models that accompany those services. In simpler terms, fintech can be used to describe any innovation that relates to how businesses seek to improve the process, delivery, and use of financial services. While its impact to date has primarily been felt in developing economies like China and India (Ernst & Young 2017), it promises to force legacy financial institutions in developed economies to clarify their strategies, develop new capabilities, and transform their cultures.

Driven by what Gobble (2018) defines as digitalization and digitization, fintech is increasingly embedded in everyday economic transactions. Ernst

In this space, we offer a series of summaries on key topics, with pointers to important resources, to keep you informed of new developments and help you expand your repertoire of tools and ideas. We welcome your contributions, in the form of suggestions for topics and of column submissions.

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& Young's (2017) fintech adoption index showed that nearly one-third of the consumers in the 20 markets surveyed use at least two fintech services, and 84 percent of those surveyed were aware of fintech services. The innovation world has already recognized the potential of financial innovation, and the number, variety, and reach of fintech startups has risen in the last decade (KPMG 2018). Investment is growing too: Five years ago, the fintech industry attracted \$12.2 billion in investment (Accenture 2016); in 2018, the top 250 fintech firms collectively raised more than \$31.85 billion (CBInsights 2018). KPMG's (2018) Fintech Pulse report stated that global fintech investment increased from \$50.8 billion in 2017 to \$111.8 billion in 2018, more than doubling, with an unprecedented number of deals through multiple channels.

Not surprisingly, academic interest in fintech has followed a similar trajectory (Gomber, Koch, and Siering 2017). Several journals have hosted special issues on the topic, including Journal of Management Information Systems's "Financial Information Systems and the FinTech Revolution" (Gomber et al. 2018), International Journal of Entrepreneurship and Management's "Innovation for Financial Services" (Mention, Torkkeli, and Huizingh 2012), and *Philosophy and* Technology's "Towards a Philosophy of Financial Technologies" (Coeckelbergh, DuPont, and Reijers 2018). Some scholars have focused on categorizing fintech across dimensions (for instance, the degree of innovation, innovation object, and innovation scope), while others are attempting to develop a consensual definition for fintech. Moreover, whether fintech should be considered a product, a business model, or a

mechanism to disrupt the industry and create competition remains an ongoing academic debate.

Whatever it is, fintech is here to stay, supported by emerging technologies such as artificial intelligence, blockchain, smart contracts, and machine learning, to name a few. However, the jury is still out on what the future of fintech will look like. The growing momentum is delivering double-edged consequences modernizing financial architectures and catalyzing consumer and market behavior change while disrupting incumbent employers, service models, and regulatory structures (Nicoletti 2017).

Expanding technological affordances have changed the game. Fintech has previously grown on its promise to expand access to the financial system by providing services to traditionally unserved or underserved populations. But increasingly, the faster/cheaper/ better service models offered by fintech startups are disrupting the incumbent banking system. Financial products that traditionally have been the exclusive domain of traditionally licensed credit institutions-payment services and loans, among others-are now offered by fintech firms (EBA 2017). These smaller, more agile companies support a greater diversity of products and providers; they promise greater portability of financial products that are now digitized, built on hybrid and cross-industry business models that allow them to access markets often closed to traditional banks and credit offerors. They also offer greater transparency and improved risk management, at least partly enabled by their ability to get instant customer feedback and use it to power real-time adjustments in the services they offer.

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Entrenched financial institutions have been paying close attention to the fintech growth story. And they're ready to move. The big banks have already poured money into the sector. Goldman Sachs, Citi, and JP Morgan Chase all hold significant investments in fintech offerings (CBInsights 2018). Increasingly, these investments have been strategic rather than focused on returns. Many are now seeking to adopt and internalize a startup mentality to access the energy of fintech for themselves. Embracing fintech intrapreneurship, firms like Goldman Sachs and JPMorgan Chase are organizing teams and individuals to develop and drive new initiatives through open innovation (Brunswicker and Chesbrough 2018) and exchanging knowledge with fintech startups and other stakeholders. For instance, JPMorgan adopted an Agile approach, first investing in payments startup LevelUp and then integrating the companies' technologies to improve its existing Chase Pay system.

Despite the promises of the technology, fintech firms face some hard realities. Primarily, they struggle to present a clear value proposition for their service-based offerings and to understand users and product-market fit. Scaling up fintech relies on funding largely from venture capitalists, who demand unique, differentiated offerings that demonstrate a strong potential for scaling.

Complicating the value picture is the fact that financial services are one of the most regulated industries in the world and regulatory concerns have increased as technological integration has become more complex and more pervasive. Furthermore, because it serves new markets and offers financial tools to new populations, fintech often operates in spaces where regulatory guidance is limited. As a result, fintech companies have run afoul of regulators, sometimes spectacularly so. For instance, US startup Zenefits, which offered insurance solutions and at one stage was valued at \$1 billion, was found by the Securities and Exchange Commission (SEC) to be using unlicensed brokers and underwriters to sell its products. Conversely, there have been instances where bitcoin innovators have been



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able to bypass SEC regulations and processes simply due to regulators' lack of understanding of the emerging technology underlying their products and services. That challenge is accentuated by regulatory regimes that multiply across countries, states, and even regions.

It is not only regulators who often do not understand how fintech offerings work; fintech firms must battle broad misconceptions about the security and reliability of the data their products are built on. They must build relational and behavioral trust with consumers and partners and construct innovative intervention mechanisms to nurture desired behaviors (Bofondi and Gobbi 2017). Policymakers and researchers need to steer attention toward responsible innovations that consider the elements of embedded trust-demographic diversity, knowledge sharing, ambidextrous thinking, and collaborative culture.

Collaboration is a critical building block for the future of fintech. Without strategic collaboration, as much as 95 percent of fintech firms fail at the scale-up phase (Capgemini 2018). Primarily this is because fintech firms often fail to integrate and deploy solutions beyond regional and national regulatory boundaries and fail to target customers at key inflection points (Strange and Rampell 2016). Often fintech startups struggle to secure operating leverage, especially the significant upfront investment required to build intellectual property (Lee and Shin 2018). Acquiring early-stage funding for proof-of-concept development is an onerous barrier for many innovators. It's exacerbated for fintechs because they often can't showcase a proven business model and sometimes struggle to find the right market and determine the customer/user demographics that can deliver value.

Here, too, regulation can be a barrier. In developing their technological platforms, fintech startups need to test, configure, and design applications that integrate different and usually heterogeneous technologies. Testing through live simulations and realistic operating conditions is a vital part of the development process, but those tasks require strategic collaborations and a favorable regulatory environment (Zetzsche et al. 2017). This kind of testing has typically not been looked on favorably by regulators; traditionally, it would require a full licensing regime, which can kill a new fintech firm before it gets out of the starting box.

However, attitudes are shifting. Regulatory sandbox initiatives have emerged in a number of jurisdictions to provide a safe environment for early-stage fintech startups to conduct realworld market-reach and market-reaction testing without obtaining a full license (Dostov, Shoust, and Ryabkova 2017). In the last three years, since the United Kingdom's regulatory sandbox opened its doors in 2016, more than 50 such initiatives have emerged globally. These tools help early-stage fintech ventures build the long-term experimentation capabilities that are essential to innovation and allow for validated learning through brief, looped iterations.

Regulatory sandboxes can play another critical role in the development of fintech. As more of these tools emerge, they can be designed to help create a cross-sectoral, startup-friendly, global fintech ecosystem. Ultimately, they can help to break down the current regionalism of the sector. Many, if not most, of the fintech references we relied on are regionalized, and no clear framework for comparative analysis has yet been developed.

The promise of fintech far outweighs the risks, at least in the medium to long term. Fintech innovations will only become more pervasive in everyday transactions as their adoption increases and more inclusive and open regulatory frameworks allow them to grow. Incumbent financial institutions have no choice now but to reconsider their strategic choices and markets, creating opportunities for strategic collaborations with fintech start-ups. A coherent and pragmatically grounded discussion between businesses, fintech entrepreneurs, and regulators in this direction should aim to discuss the evolution of fintech trends, analyze the changes in supply and value chains created by fintech offerings, and assess the impact of national regulatory processes on cross-border investment and innovation performance across markets.

Untangling the tension between regulatory requirements and consumer acceptance calls for a stronger focus on business model innovation (Arner, Barberis, and Buckley 2017). Practitioners and analysts operating at the intersection of technology, policy, and financial services have a particularly significant role to play. More effort is needed to develop compliance toolkits that will enable fintech startups to meet complex, cross-jurisdictional regulatory requirements. Opportunities abound for innovation managers to engage in dialogue with regulators and raise awareness of rapidly emerging technologies and the consequences they may have for market integrity, stability, and sustainability.

Fintechs also have something to offer regulators. As many are focused on developing more consumer-centric approaches, they are in many ways more in touch with the banking public and its needs. Knowledge sharing between regulators and fintech companies can enhance regulator awareness of consumer habits, behaviors, and desires. This awareness can then contribute to the construction of regulatory systems that help build consumer trust in fintech platforms. On the other hand, innovation managers can help regulators achieve their goals by integrating a behavioral insights approach in fintech innovations, maximizing their potential to create desired behavioral changes (Lockton, Harrison, and Stanton 2010).

Purposeful effort will be required from both entrepreneurs and regulators to shape the future of fintech and push it in a productive direction. Only through collaborative and open practices, cumulatively built on global fintech intelligence, can meaningful customization of tools and processes enable growth and scaling-up of fintech products, services, and approaches.

Reviews

Unsafe Thinking: How to be Nimble *∂* **Bold When You Need It Most** Jonah Sachs (Boston, NY: Da Capo Lifelong Books, 2018)

Unsafe Thinking is about doing things differently; taking risks, breaking traditions, jumping into uncomfortable situations, and ultimately succeeding when others following a more cautious path fail. It captures the pitfalls of the traditional ways of "safe" thinking, which supports conventional ways of leading and doing business, ways that often lead to mediocracy and sometimes lead to the demise of businesses. Written by Johan Sachs, a successful entrepreneur, author, and speaker, it presents concepts and practices that elaborate on the concept of unsafe thinking in terms of courage, motivation, learning, flexibility, morality, and leadership. Each discussion closes with a summary of key takeaways and guidance for putting the concepts into practice.

The book taps into a wealth of psychological research, some of it also considered "unsafe" and hence challenged and disputed before it produced breakthroughs. The storytelling approach makes the book enjoyable to read and allows the powerful examples to deliver their impact to the reader more effectively. Sachs describes specific challenges faced by companies and individuals, who defeated those challenges through unsafe thinking; the examples he offers include the difficult times facing Whole Foods, the early life challenges overcome by Mahatma Ghandi, the tragic death of an otherwise healthy patient that led to widespread changes in medical practices, and the strategic decision by CVS to amplify its focus on health by removing highly profitable tobacco products from its shelves. Sachs also includes his own personal experiences and journey as the founder of an innovative marketing firm that faced its own slow transition to the status quo and subsequent market challenges.

Several of the book's main concepts will be very familiar to R&D leaders, including the benefit of breaking free of the focus on safe, incremental progress generally adopted to avoid programmatic risk. Others may come as a surprise. The book presents excellent evidence to prove that the "experts" (those with extensive experience and esteemed reputations) are frequently wrong. The 2016 election is cited as just one of several examples. This concept is particularly relevant given the common practice of using senior staff as an expert panel to which organizations turn for support in making key decisions. The reason for this counterintuitive result is surprisingly simple—those with the most experience tend to base their advice on the past and carry a high degree of confidence consistent with their stature. In the current, fast-changing world, the subtle cues that are most relevant are either never seen or are dismissed as irrelevant by the experts, who simply do not have the perspective to perceive them.

Another concept that will be key to R&D and innovation leaders is the importance of team critique and review. In facing complex problems and challenges, Sachs argues that solutions will be found through a balance of critical feedback (which, he acknowledges, can lead some to try to avoid criticism by conforming to the masses and may reduce morale) and questioning of basic assumptions. That challenging, in the form of both feedback and hard questions, must be undertaken from a perspective that is open-minded and considerate of others.

Unsafe Thinking is about changing the conformist behaviors and habits that most readers will have been taught their entire lives. Following its precepts means losing the role models that leave leaders in the same place as everyone else, and instead seeking to develop a habit of turning fear of failure into opportunity. It will require carefully testing and honing intuition, seeking information from nontraditional places, and ultimately following through on a flexible vision. Although not all R&D and innovation leaders will have the opportunity to make big, bold, changes in their organizations, the benefits of Unsafe Thinking can be applied at many scales-and it can help you make big, bold changes in your own personal performance, satisfaction, and leadership.

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Data Science for Executives: Leveraging Machine Intelligence to Drive Business ROI

Nir Kaldero (Lioncrest Publishing, 2018)

As we prepared to add data scientists to the R&D staff at HarbisonWalker

International, we looked forward to Data Science for Executives; we were hoping to gain new knowledge about the field and the role it could play in building our capabilities. On the first read, however, we were disappointed with the depth and pace of the book. But on the second read, we better understood the author's jargon. Partly, this was because the case-study examples at the end of the book helped illustrate the points made in the beginning. Consequently, we recommend reading the case studies first and referencing them as you make your way through the first two sections of the book.

The first section of the book lays out the case for transforming your organization into a data-driven enterprise. Kaldero argues convincingly in Chapter 1 that machine intelligence is the Fourth Industrial Revolution and that its transformation of business is accelerating across all sectors. Likening the transformation to be wrought by machine intelligence to the rapid transformation that occurred as people abandoned the horse and carriage for automobiles, Kaldero makes a bold prophecy that any business not harnessing the new opportunities provided by social media, globalization, and the power of artificial intelligence (AI) will not survive in another five years. He also argues that AI will serve as a "brain helper" and job assistant rather than as a replacement for humans. In fact, he points out, even where AI provides data modeling that indicates answers, a human will still need to make the final decision. The book offers Amazon as an example of a company that is fully leveraging the power of AI by perfecting models for supply chain and delivery derived from vast amounts of data.

Two chapters are dedicated to defining what machine intelligence is and how machine intelligence can enable businesses to understand their data and embrace data-driven decision making. Indeed, Kaldero points out, most businesses already have more than enough data to begin the journey. The transformation itself is driven in five steps:

- 1. Create a data strategy that takes advantage of existing business data.
- 2. "Democratize" the data—make it available to all within the business.
- 3. Engage in a conscious process to shift the organization's culture to one that is data driven.
- 4. Bolster the culture change by quickly building examples of insights derived from data and establishing KPIs for data science.
- 5. Establish standards for data governance, security, and privacy.

The second section of the book turns to the application of the outputs from the work of data scientists, including the hard work of change management to get the organization to think first about how to use data to solve business challenges and then to actually apply the output from data modeling. The entirety of Chapter 10 is dedicated to outlining the critical points necessary for this specific change; the discussion serves as a good reminder that change management must be adequately resourced to harvest value from investing in data scientists and tools. A key learning for my own purposes was that it is a good practice to hire more than one data scientist to create an environment that allows for idea exchange.

The workflow of data science is described as proceeding in four phases: Ask, Acquire, Analyze, and Act:

- 1. **Ask** the business question. What problem can be solved or what insight will be gained by data analysis and modeling?
- 2. **Acquire** the data and place it in a structure that can be analyzed.
- 3. **Analyze** the data. The analysis is the heavy work of the data scientists; Chapter 8 details the types of models they may create in this phase and the models are evaluated to arrive at the best fit.
- 4. **Act** on the model that emerges from the data.

The executive, the audience for this book, is heavily involved in Ask and Act but must also be willing to engage in Analyze, at least to critique the results.

The third, and final, section of the book presents four case studies to demonstrate the use of data science in business; this is in some ways the most interesting and useful part of the book. Each study illustrates the improved results achieved by addressing business challenges with data-driven approaches versus those of traditional actions, using the four-phase approach defined earlier in the book. The questions Kaldero poses in the case studies are good food for thought. For instance, the first study focuses on a key question from the banking industry: can we create a model that will predict the creditworthiness of customers more efficiently and effectively than traditional methods? The second case study considers the use of a digital product to drive engagement with customers and new sales growth. The third tackles the problem of traffic congestion in overcrowded cities and considers how data modeling could be used to solve the problem. The fourth study discusses the use of blockchain technology to enable secure democratization of data.

The book finishes by stating that the biggest issue in this emerging Fourth Industrial Revolution is "not data or technology. It's people, culture, and process." The author challenges the executive to lead the change, to "stop asking what you think but instead ask what you know: what does the data tell you." The change to a data-driven culture will not come from the bottom up but must start at the top.

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