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Cutting through the Fog: Finding a Future with Fintech

> *Then comes a strange moment, the sort of thing that happens often at Microsoft, which seemingly within moments turns disaster into salvation. Talk has turned to broader trends in banking. Where's it going, what's in it for us? Banks are dinosaurs, says Gates. We can "bypass" them. The Raptor is unhappy with an alliance involving a big bank-card company. "Too slow." Instead he proposes a deal with a small—and more easily controllable—check-clearing outfit. "Why don't we buy them?" Gates asks, thinking bigger. It occurs to him that people banking from home will cut checks using Microsoft's software. Microsoft can then push all those transactions through its new affiliate, taking a fee on every one. Abruptly, Gates sheds his disappointment with Money. He's caught up in a vision of Microsoft at the center of the "transformation of the world financial system." It's a "pot of gold," he declares, pounding the conference table with his fists, triumphant and hungry and wired. "Get me into that and goddamn, we'll make so much money!"*[1]

Carolina Costa was a consultant at Florida Optimum Group (FOG), which, funnily enough, aimed to "help our clients cut through the fog." She was working on engagement, advising a large global bank.

The weather had turned and after leaving the client's office at 7:00 p.m., Costa was able to enjoy a walk to both clear her head and synthesize her thoughts. To many, fintech was still a buzzword with foggy definitions and an unclear path forward. Luckily, Costa had caught the itch to learn more about fintech during the second year of her MBA at a major business school. She had been asked to lead a team to advise Alex Linger-Turpin, a senior managing director, on the strategic path that the bank should take in the wake of fintech growth.

A few choices were becoming clear, though she wanted to make sure she analyzed the various options. She also wanted to make sure she had the right context to share with her client—Linger-Turpin and his colleagues knew *something* was bubbling beneath the surface, but they could not quite figure it out. Costa was ready to help them put their finger on fintech.

[1] Newsweek staff, "Culture Club," *Newsweek*, July 10, 1994, http://www.newsweek.com/culture-club-189982 (accessed Oct. 27, 2016).

This public-sourced case was prepared by Kayla Cartwright (MBA '16); and Yiorgos Allayannis, Professor of Business Administration and Associate Dean for Global MBA for Executives. The assistance of Daniel Gavino is greatly appreciated. It was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation.

The Fintech Landscape

In the aforementioned *Newsweek* quote, Bill Gates forecasted the convergence of technology and the financial-services industry in 1994.[2] Over 20 years later, fintech had become an industry segment of its own, garnering global funding of more than $11.2 billion for fintech start-ups in the first three quarters of 2015.[3] Despite becoming a more common term, the definition of fintech was still nebulous. A few sources, however, began to paint a more vivid picture:

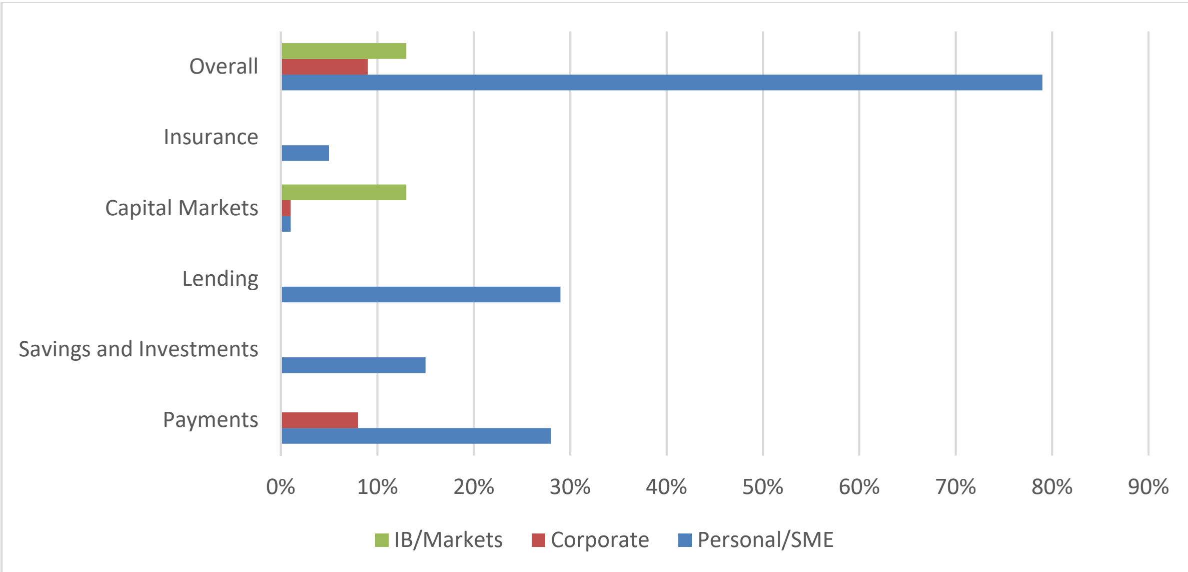
- "As a definition, Fintech is usually applied to the segment of the technology start-up scene that is disrupting sectors such as mobile payments, money transfers, loans, fundraising and even asset management."[4]
- "The answer seems obvious at first: technology that relates to conducting financial services activities, with the end client/user being a financial institution. But after many, many meetings, I've realized that the currently held definition of fintech is not only stale, but also unrepresentative of the opportunity in this industry."[5]
- "It's time for a new definition of fintech: technology that serves the clients of financial institutions, covering not only the back and middle offices but also the coveted front office that for so long has been human-driven."[6]
- "Use of technology in finance is not new, nor are many of the products and services that are offered by new entrants to the sector. Rather, it is the novel application of technology and its speed of evolution that make the current wave of innovation unlike any we have seen before in financial services."[7]
- "Fintechs have two unique selling points: better use of data and frictionless customer experience."[8]

This amalgam of definitions showed that the horizon of fintech was indeed foggy, though it tended to be much easier to say what fintech was than what fintech was not.

Take the breadth of organizations that occupied the fintech space. **Figure 1** shows the wide distribution of fintech companies across markets and service offerings. In addition, **Exhibit 1**, a sample list of fintech companies, could span tens of pages if all-encompassing given the rise of new start-ups.

[2] http://www.newsweek.com/culture-club-189982.
[3] Steve Davies, Manoj Kashyap, and Joerg Ruetschi, "Meeting the Fintech Challenge," *strategy + business*, April 18, 2016, http://www.strategy-business.com/article/Meeting-the-Fintech-Challenge?gko=bd900 (accessed Oct. 27, 2016).
[4] Jens Munch, "What is Fintech and Why Does it Matter to All Entrepreneurs," Hot Topics: Tech Stories, https://www.hottopics.ht/stories/finance/what-is-fintech-and-why-it-matters/ (accessed Oct. 27, 2016).
[5] Karl Antle, "The New Definition of Fintech," ValueStream, September 30, 2013, http://www.valuestreamlabs.com/blog/2013/the-new-definition-of-fintech (accessed Oct. 27, 2016).
[6] http://www.valuestreamlabs.com/blog/2013/the-new-definition-of-fintech.
[7] World Economic Forum, prepared in collaboration with Oliver Wyman, "The Role of Financial Services in Society," April 2016, http://www3.weforum.org/docs/WEF_FS_RoleFinancialServicesSociety_Stability_Tech_Recommendations_2016.pdf (accessed Oct. 27, 2016).
[8] Maria Aspan, "Why Fintech is One of the Most Promising Industries of 2015," *Inc.*, September 2015, http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html (accessed Oct. 27, 2016).

Figure 1. Percent of fintech companies by product and customer segments.



Data source: Citi Global Perspectives Solutions, "Digital Disruption," Citi, March 2016, https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D (accessed Nov. 1, 2016).

A December 2015 *Forbes* article spoke to the abundance of companies in the fintech domain:

> The number of fintech start-ups is difficult to pinpoint, but data sources and industry watchers estimate that Asia has approximately 2,500 fintech start-ups while the U.K. and the U.S. have a combined total of 4,000. Even these estimates are best guesses and underestimate the true count, since fintech start-ups that haven't received funding are likely not to be documented in any database.[9]

The Evolution of Fintech

It was not quite known when exactly fintech started. Some analysts said that the first fintech start-ups began in 2005,[10] however, the *New York Times* reminded the public that PayPal, the first major fintech company, was founded in 1998, paving the way for others to disrupt the financial-services industry.[11] Records from Mountain View, California, technology incubator Y Combinator indicated that the first significant wave of fintech innovation began in 2005, with the creation of the incubator's first fintech company, TextPayMe, a service that enabled payments through SMS. TextPayMe was quickly acquired by Amazon in 2006, and the acquisition served as an early indicator of how the industry might evolve over time.[12]

Since 2005, with the exponential growth of mobile technology and the 2008 crash of the financial markets, the environment ripened for the emergence of fintech. One indicator illustrated the growth: between 2013 and

[9] Falguni Desai, "The Fintech Boom and Bank Innovation," *Forbes*, December 14, 2015, http://www.forbes.com/sites/falgunidesai/2015/12/14/the-fintech-revolution/#1fb09ef336da (accessed Oct. 27, 2016).
[10] Ryne Landers, "How FinTech is Changing Business (and Bank Accounts)," Business.com, January 7, 2016, http://www.business.com/finance/how-fintech-is-changing-business-and-bank-accounts/ (accessed Oct. 27, 2016).
[11] "Ranking the Top Fintech Companies," *New York Times*, April 6, 2016, http://www.nytimes.com/interactive/2016/04/07/business/dealbook/The-Fintech-Power-Grab.html?_r=0 (accessed Oct. 27, 2016).
[12] "Amazon/TextPayMe," crunchbase.com, October 1, 2006, https://www.crunchbase.com/acquisition/6a387c3d81a66c7f7590f28ec3034fe6 (accessed Oct. 27, 2016).

2015, the number of fintech start-ups emerging from Y Combinator doubled, and fintech became the trendiest idea in Silicon Valley.[13] Maria Aspan, senior editor at *Inc.*, set out to describe the conditions that allowed fintech to be the darling of the start-up world in 2015:

> Long seen as a highly technical, highly regulated industry dominated by giant banks that resist disruption—other than the occasional global meltdown—finance is now riding an entrepreneurial wave. Demand for upstarts' services is strong, piqued by widespread frustration with big banks; supply is growing, fueled in part by financial types itching to do something other than toil inside those same megacorporations…And low interest rates have made capital, the raw material for many money-related startups, cheap and plentiful.[14]

In that same September issue of *Inc.*, Pat Grady, a partner at Sequoia Capital, described the broader conditions that allowed fintech to flourish:

> The world is far more connected today than it was 15 or 20 years ago. The tools that are available—cheap storage, cheap computing, and wonderful analytics—have changed, the regulatory environment has changed, and people are way more comfortable managing their money and business online.[15]

The history made sense, and naturally the next question was "Where were we in this cycle?" Rob Frohwein, of the online lending platform Kabbage, stated, "We're just at the beginning of this renaissance in alternative lending—and I look forward to the day it's not called alternative."[16] On the other hand, Ryne Landers, of digital marketing agency Reap Marketing, suggested that fintech was beyond its infancy and that companies would come to maturity in 2020.[17] Given the actual growth rate of the market for fintech, the aforementioned suggestion of maturity seemed to be a more pessimistic outlook than many analysts suggested. An article by analysts from PricewaterhouseCoopers (PwC) stated that "global funding of fintech start-ups in the first three quarters of 2015 reached $11.2 billion, nearly double the funding of the full year before, according to CB Insights."[18] Goldman Sachs also offered an optimistic view of market cap growth: "Goldman Sachs estimates that upstarts could steal up to $4.7 trillion in annual revenue, and $470 billion in profit, from established financial services companies."[19] The room for growth was there, as noted in *Inc.*'s coverage of the changing world of fintech:

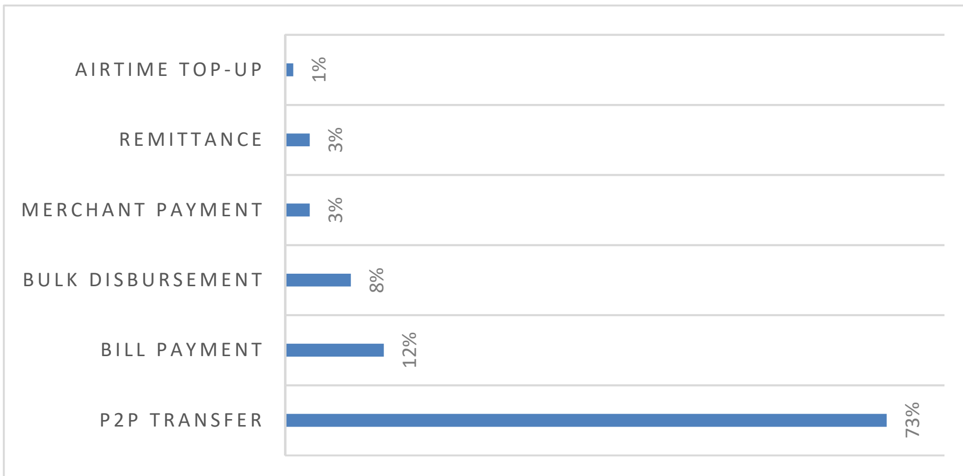
- Even a fraction of a point of market share represents significant business, so investors are eager to back new entrants. Or to get in themselves: Goldman has embraced fintech and is launching its own online lending operation.
- Venture capitalists invested $23.5 billion globally in fintech in the past two years, according to estimates by Santander, Oliver Wyman, and Anthemis Group.
- The financial-services "industry is currently the second-biggest target for disruption, after health care, according to a survey of this year's *Inc.* 500 CEOs"[20]

Citigroup, Inc., (Citi) also put itself at the optimistic forefront of fintech, and believed that the industry was still in its infancy. Its March 2016 Global Perspective & Solutions report on Digital Disruption showed that, when

[13] Jim Bruene, "The 85 Fintech Graduates of Y Combinator (YC): 2005 to 2016," *Finovate* (blog), April 18, 2016, http://finovate.com/51295-2/ (accessed Oct. 27, 2016).
[14] http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html.
[15] http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html.
[16] http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html.
[17] http://www.business.com/finance/how-fintech-is-changing-business-and-bank-accounts/.
[18] http://www.strategy-business.com/article/Meeting-the-Fintech-Challenge?gko=bd900.
[19] http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html.
[20] http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html.

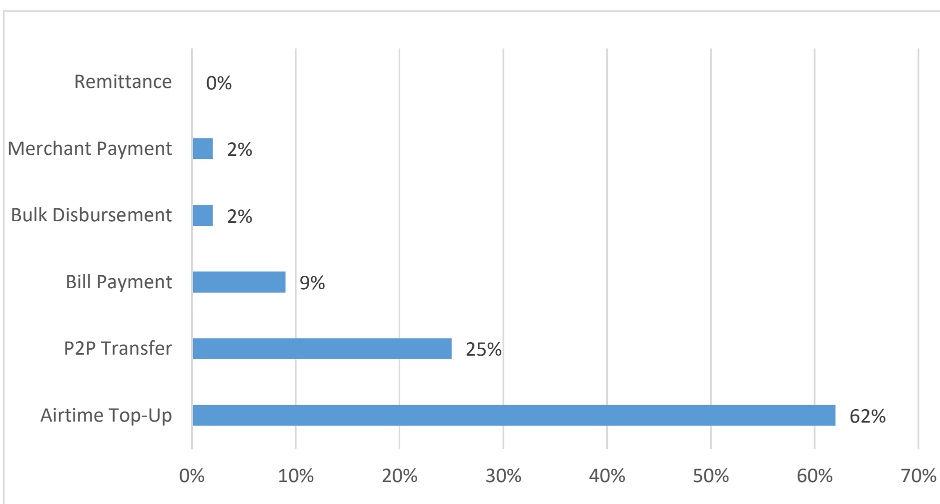
measured by transaction value, P2P transfers (i.e., transferring money from one person to another) dominate mobile money usage and that when measured by volume, airtime top-up (i.e., purchasing prepaid mobile phone airtime) dominates mobile money usage (**Figures 2** and **3**). These were relatively basic transactions, suggesting that mobile money's potential had yet to be fully tapped.[21]

Figure 2. Global mobile money product mix by value, 2014.



Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Figure 3. Global mobile money product mix by volume, 2014.

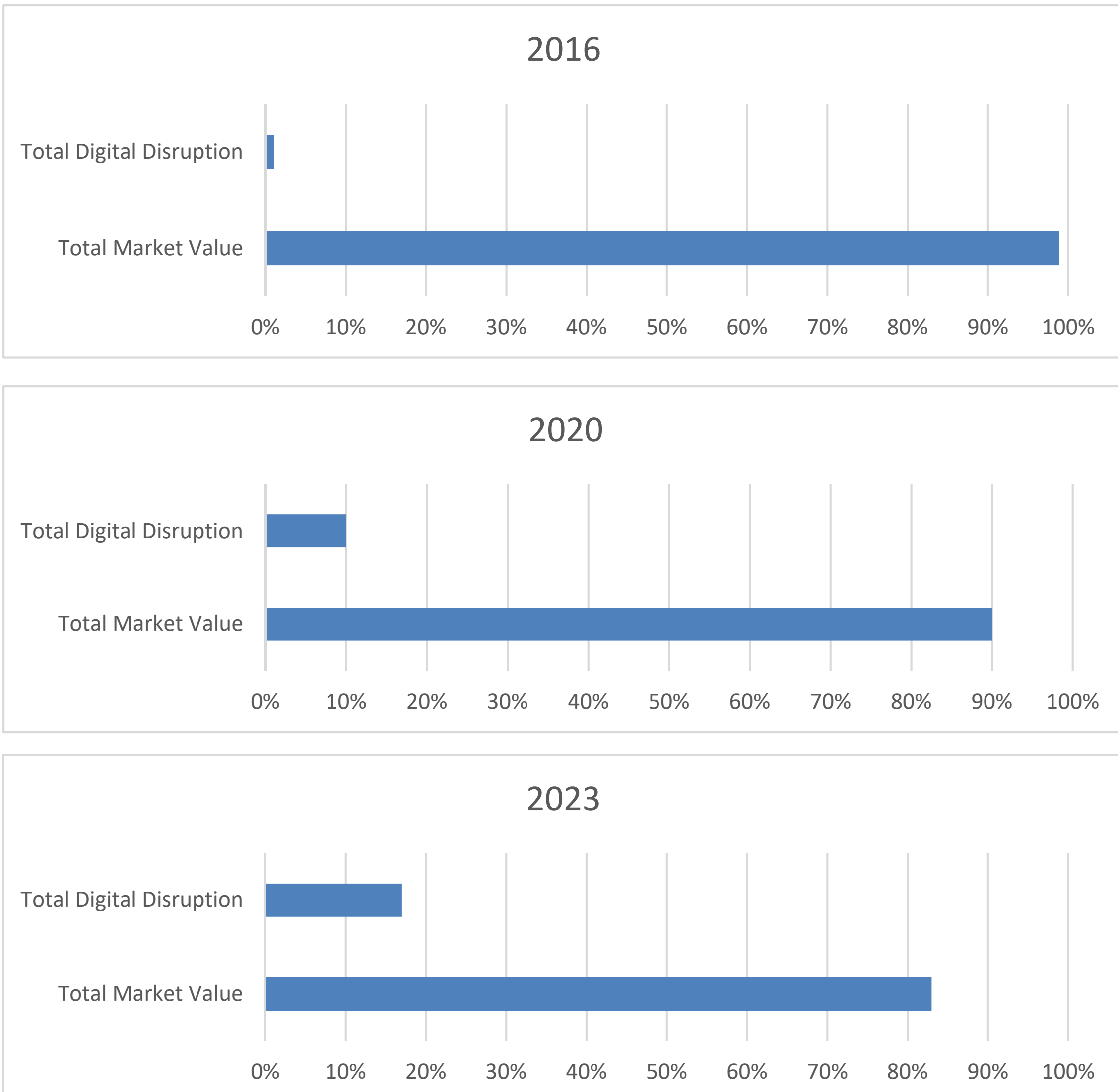


Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Citi, like Goldman Sachs, also believed that the current wave of fintech was just the tip of the iceberg, and that by 2023, 17% of U.S. consumer bank revenues could be based on fintech and digital business models.[22] **Figure 4** shows the breakdown over time.

[21] https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.
[22] https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Figure 4. North American consumer bank case study on potential market disruption as percentage of the total market value.



Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Data suggested a positive outlook for the growth of fintech. This opened the door to another question—who would capture this growth? Fintech start-ups, evolving technology companies, or adaptive incumbent financial institutions?

Who Will Win the Battle?

Though there was much room for growth, one wondered who would emerge as the winner and take the biggest piece of the pie—fintech start-ups that remained autonomous, massive technology companies that acquired or built their own fintech services (as suggested by Bill Gates in 1994), or large financial institutions that overhauled their IT infrastructure and created or acquired fintech products and companies. Given the rapid growth since 2014, fear seemed to be rising, though panic from at least the big U.S. banks was probably not as justified as one would think, given a miniscule 0.7% penetration rate of fintech in the U.S. financial-services market.[23] However, there were three areas that banks might begin to feel fintech's impact: loss of data from payment transactions, loss of customer depth, and fee revenue reductions.[24]

One of the key ways banks developed new products and services was by using data generated from payments and other primary transactions. The proliferation of payment-based fintech companies (see **Exhibit 1**), resulted in data loss that made an immediate impact on banking operations. Reuters cited Richard Eldridge, CEO of Lenddo, a fintech company "which provides credit scores using non-traditional data in the developing world." Eldridge described, "a few years ago big banks were 'stand-offish' about fintech. Now they are embracing it to serve more people and the industry is experiencing 'exciting times.'"[25]

Would banks be put out of business, or would they evolve into fintech companies? For example, would robo-advising (automated computer algorithm–based investing advising), which grew significantly over the last decade, overtake the investment-management space? Citi argued that robo-advisors would not replace personal relationship–based advisors for private wealth clients; robo-advisers would be better employed for new or smaller-asset investors who wanted diversification and nearly automatic rebalancing of portfolios.[26] PwC identified three trends of responses from traditional institutions:

> The first group has adopted a wait-and-see approach, conserving resources until clear technology winners emerge. These firms risk being caught unprepared when the threat to their business becomes more imminent. The second group has acquired fintech firms to gain access to new technologies. But they have often had trouble with integration. The third group includes companies investing significant time and money in fixing their own existing IT landscape, which is typically fragmented and complicated by legacy systems that are hard to maintain, upgrade, and improve.[27]

Incumbent banks had three advantages as they pursued the second and third options—they knew the space deeply, had access to large amounts of data, and possessed sizeable capital. PwC described how several financial institutions were creating internal innovation teams to create new products and services in response to consumer trends. However, it also mentioned that "these internal teams are saddled with decades-old infrastructure, regulatory burdens, and entrenched interests."[28]

Rather than pursuing a significant restructuring of their IT, should big banks instead pursue fintech acquisitions? With hundreds of start-ups, there was certainly supply. *Inc.* reported: "Still, the fintech world is signposted with start-ups that were swallowed by bigger fish (Mint, Venmo, Braintree) or sank."[29] To further illustrate the size of the pool of fish to be swallowed, Grady of Sequoia Capital said, "If you want to dream a little, the entire financial system could be remade with these companies."[30]

[23] https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.
[24] https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.
[25] Lisa Lambert and Bill Trott, "Political, Business Leaders Size Up Stability Risks from Fintech Growth," *Reuters*, April 19, 2016, http://www.reuters.com/article/banking-fintech-idUSL2N17M01X (accessed Oct. 27, 2016).
[26] Julie Verhage, "Citi: Robo-Advisers Will Never Take the Place of Traditional Investment Managers," *Bloomberg*, March 31, 2016, http://www.bloomberg.com/news/articles/2016-03-31/citi-robo-advisers-will-never-take-the-place-of-traditional-investment-managers (accessed Oct. 27, 2016).
[27] http://www.strategy-business.com/article/Meeting-the-Fintech-Challenge?gko=bd900.
[28] http://www.strategy-business.com/article/Meeting-the-Fintech-Challenge?gko=bd900.
[29] http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html.
[30] http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html.

Regulation

Given a pattern of bubbles, including the dot-com bubble in 2000, and the fall of the financial system in 2008, one wondered, would there be a fintech bubble/ crisis? U.S. senators described the ingredients that could lead to a crisis once again: "As we saw during the crisis, gaps in understanding and regulation of emerging financial products may result in predatory lending, consumer abuse, or systemic issues."[31]

After flying under the radar for some time, fintech caught the eyes of government officials. On April 18, 2016, political leaders and members of the private sector convened at the World Economic Forum in Davos, Switzerland. They issued a position paper arguing "that there is an 'urgent need' to do more to ensure the rapid growth of fintech does not become a risk to 'systemic stability,'" especially prompted by fear that "traditional finance companies will take excessive chances as they race to keep up with newcomers."[32] Three overall desires emerged from the report: "[There needs to be a] new forum for the public and private sector to prioritize the most promising fintech areas…A debate on the ethical use of financial data [for commercial purposes]…and a set of industry standards for fintech."[33] Would standards, regulations, and a watchdog mentality hamper the agility and growth of fintech?

As an example of a laissez-faire approach, government support and less regulation had made a significant impact on fintech growth in China, Kenya, and the United Kingdom.[34] Pro-regulation constituents raised concerns about the risk of data abuse and lack of transparency, citing "how fast and obscurely money can move."[35] Additionally, they described that "lending is always likely to carry the danger that borrowers won't be able to pay...Insufficient regulatory oversight could allow mountains of bad debts to pile up. The risk could be compounded given that the vast majority of these startups launched during a period of historically low default rates."[36] These risks, along with those listed in **Figure 5**, could cause investors to think twice before investing in fintech. To assuage such concerns, the World Economic Forum encouraged self-regulation by fintechs, since they had the best insight into the direction of the technology and user needs.

Figure 5. Additional concerns raised at the World Economic Forum.

- Alternative sources of finance could shift risk to the consumer and have damaging ripple effects
- Market electronification/appropriate use of trading algorithms
- Security of data
- Industry conduct ("For example, the line between enhanced risk analysis and use of data to deny service to a particular customer must be defined.")
- Payments effectiveness (typical clearinghouse payment system versus blockchain)
- Regulatory arbitrage (since regulations are not consistent across countries)

Adapted by author from: http://www3.weforum.org/docs/WEF_FS_RoleFinancialServicesSociety_Stability_Tech_Recommendations_2016.pdf.

Given the benefits for the consumer, the evolution of the financial service industry, and the potential market size, banks would need to make decisions about their operating model going forward. Which model should they embrace? This was most certainly a question without an easy answer.

[31] http://www.reuters.com/article/banking-fintech-idUSL2N17M01X.
[32] http://www3.weforum.org/docs/WEF_FS_RoleFinancialServicesSociety_Stability_Tech_Recommendations_2016.pdf.
[33] http://www.ft.com/intl/cms/s/0/0e992e84-056d-11e6-a70d-4e39ac32c284.html.
[34] https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.
[35] http://www.reuters.com/article/banking-fintech-idUSL2N17M01X.
[36] Dominic Elliott, "Fintechnicalities," BreakingViews.com, April 19, 2016, http://www.breakingviews.com/finance-wakes-up-to-fintechs-systemic-dangers/21243895.article (accessed Oct. 27, 2016).

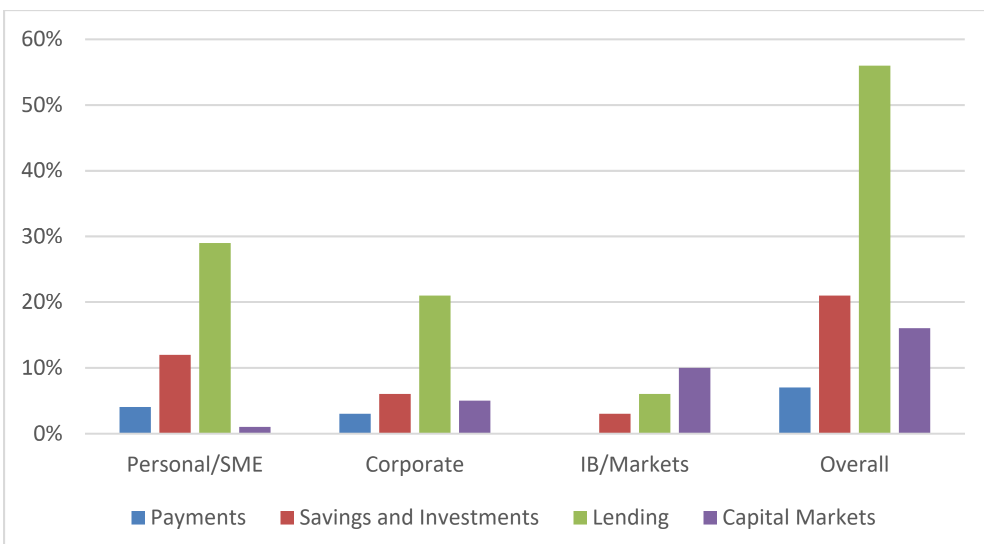
The Menu of Choices

The changing landscape had left legacy banks, including Costa's client, with choices to make. After enjoying her evening recharge time, she realized that there were many options that she could present to her client. She began to compile insights to guide the decision making. From her perspective, there were four choices she could advise her client around: do nothing, acquire fintech firms, overhaul the bank's current IT and strategy to become a fintech company, or partner with fintech companies to create an ecosystem for customers.

Option 1: Do nothing

Costa knew that the simplest option to advise would be for her client, the large global bank, to do nothing—to continue with its current business model. History pointed to the need for adaptation, but Costa wanted to be thorough before ruling out this option. She sought out perspectives from big banks and was happy to find a bit of disconfirming evidence: Citi described that branches were a key presence and necessity for attracting new clients and also wanted to keep branches open but make them more advisory focused and lounge-like.[37] She found this surprising, given an article from Reuters that included this point; "Citigroup Inc. in China is looking to expand its digital platform after data showed 95% of its clients' transactions are not made through a branch."[38] Beyond the decision of whether branches should stay open or close, Costa wanted to compare the profitability structures of banks to see if there was overlap with where fintechs were most likely to disrupt legacy banks. **Figure 6** shows analyst estimates for profit breakdown across segments of big banks.

Figure 6. Global banks' profit breakdown by product and customer segments.



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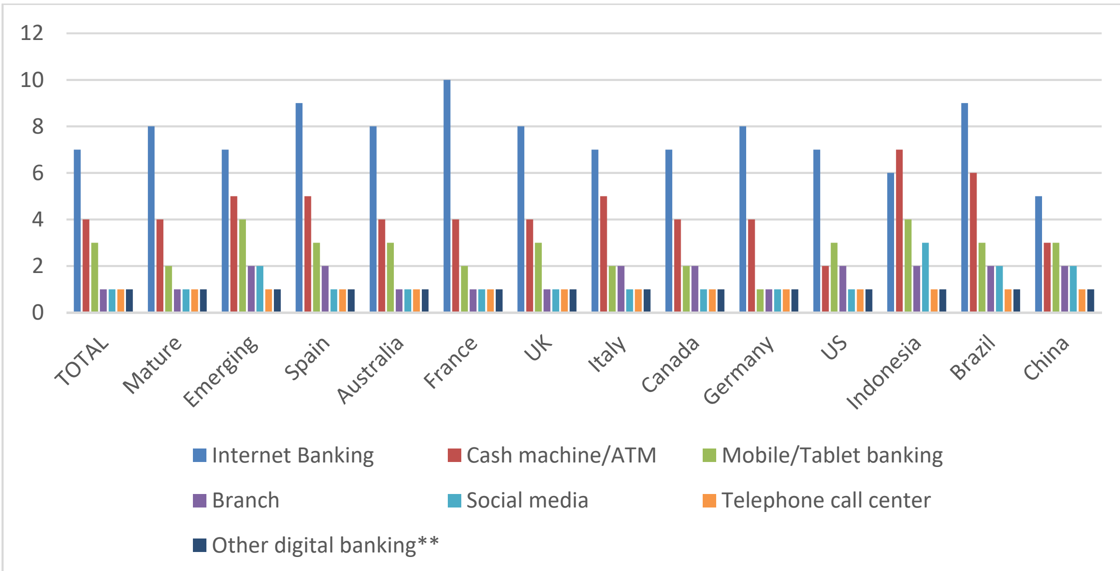
In her research, Costa continued to find data suggesting a downturn in the number of employees, even in cases in which banks did not say outright that they would become more digital. An article in *Fortune* described, "Antony Jenkins, the former CEO of Barclays, said in a recent speech in London; 'I predict that the number of branches and people employed in the financial services sector may decline by as much as 50% over the next

[37] https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.
[38] http://www.reuters.com/article/banking-fintech-idUSL2N17M01X.

10 years, and even in a less harsh scenario I expect a decline of at least 20%.'"[39] She wanted to compare this type of forecast and other data she had collected with information about how the consumers of today interacted with their bank. **Figure 7** shows the spread and quantity of interactions clients have with their bank.

Figure 7. Number of interactions with main bank every month by channels.

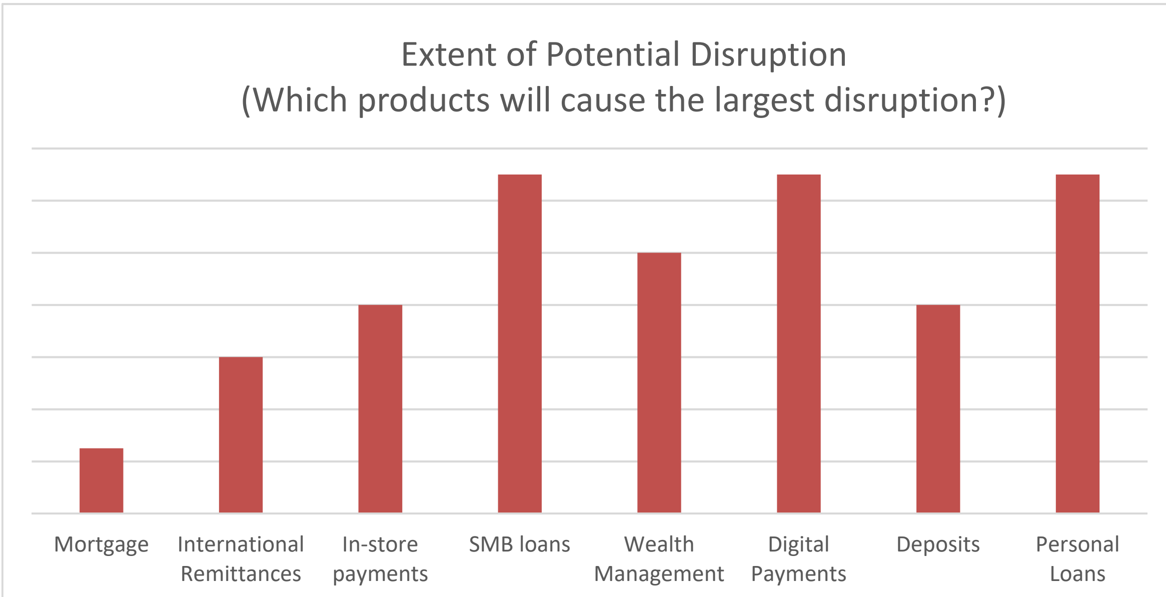


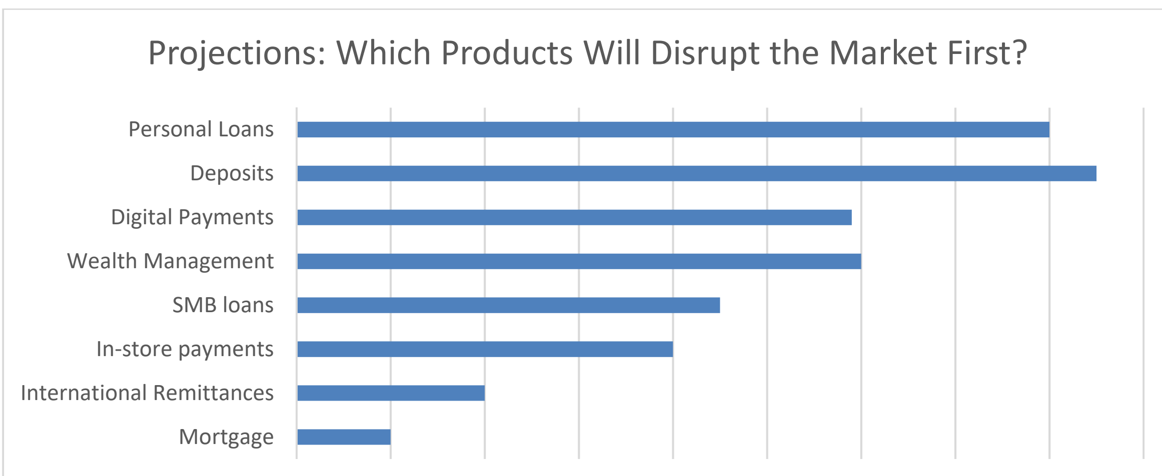
Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Finally, Costa wanted to combine this data with data she discovered comparing banks' various business lines against their potential and likelihood of disruption (**Figure 8**). She hoped all of this information would help her form an opinion on this first option of "doing nothing."

[39] Ian Mount, "Your Neighborhood Bank is About to Have Its 'Uber Moment,'" *Fortune*, March 31, 2016, http://fortune.com/2016/03/31/citi-bank-staffing-uber-moment/ (accessed Oct. 27, 2016).

Figure 8. Next big disruption: impact of digital disruption by business line.





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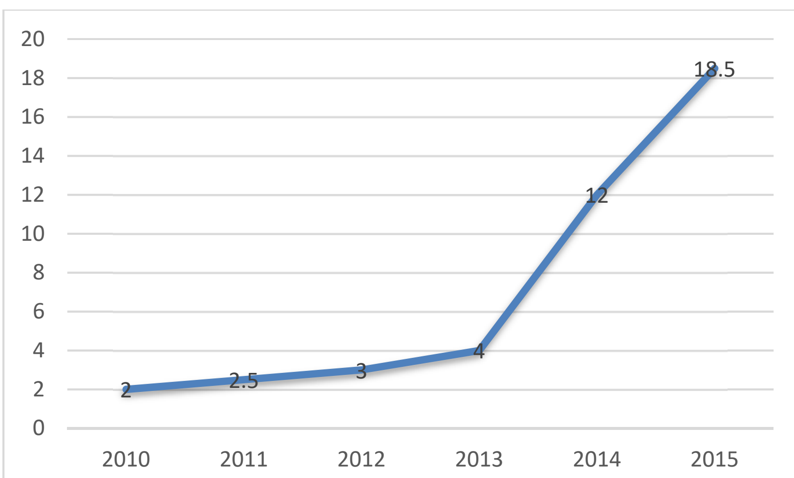
Option 2: Acquire fintech firms

Although doing nothing would be the easiest for her client, Costa's research had revealed that banking as a consumer experience was evolving and that banks were going to need to become more technology driven. The next option would be for her client to acquire fintech companies to better serve customers. Banks could choose to acquire companies with either technology or financial roots.

There were indeed technology companies that were developing products and services in fintech. The human capital that technology companies had to offer could be a great incentive for banks to acquire technology-based fintechs. What Costa quickly discovered was that many pure technology companies—as in those that did not set out to be fintechs, but instead set out to serve customers in other ways—were also the largest companies and were likely too big to be bought even by the world's largest banks. According to PwC, five of the largest tech companies—Google, Apple, Facebook, Amazon, and Samsung—had all begun making plays in the fintech space.[40] Not only could banks not acquire pure technology companies due to costs and regulations, they also needed to watch out, as the big four (Google, Amazon, Apple, and Facebook) could be in banks' blind spot as competitors in the fintech evolution. *Business Insider* described the context best, saying, "But it's not just banks that are trying to conquer the fintech space. Amazon is about to try its hand in this market, as the e-commerce giant's head of payments, Patrick Gauthier, recently announced that the company is considering making some fintech acquisitions as valuations in the space start to decline and fintech becomes a more affordable investment."[41] Globally, big technology firms, such as e-commerce giant Alibaba Group (Alibaba) in China, were developing their own bank-like subsidiaries. Alibaba had created Ant Financial Services, which, according to *Fortune*, was now valued around $60 billion, and had recently closed a $4.5 billion funding round, making that fundraising the largest ever for a private technology company.[42] Clearly, there was evidence that technology companies could make the leap and capture market share from traditional financial institutions. Given this, banks needed to be conscious of their blind spots and mindful of the acquisitions they sought to make.

Banks might be interested in pursuing smaller companies that were leveraging technology as they tried to address other customer needs (rather than pure Internet services). PwC described an example: "One fintech innovator has engineered a new method for capturing and sifting data to spot fraud and monitor trading activity—a formula it had originally designed for medical cancer screening."[43] **Figure 9** shows data on private investment in global fintech companies; **Figures 10** and **11** show the various types of fintech companies that had received capital injections. Of course, in the acquisition scenario, a very important consideration would be the prevailing valuation multiples of fintech companies (**Exhibit 2**); for historical data on fintech acquisitions, see **Exhibit 3**. In her research, Costa found a variety of perspectives on both the successes of fintech acquisition (**Figure 12**), and the challenges that banks had when integrating fintech start-ups (**Figure 13**).

Figure 9. Private investment in global fintech companies (in billions of dollars).



Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

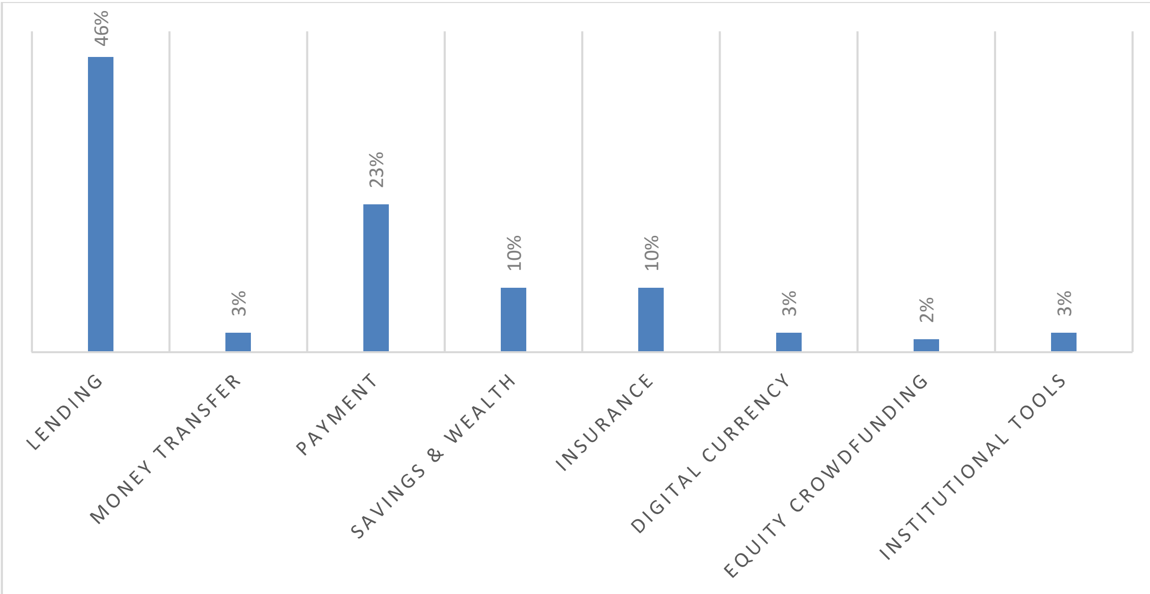
[40] http://www.strategy-business.com/article/Meeting-the-Fintech-Challenge?gko=bd900.

[41] BI Intelligence, "Understand Fintech - Amazon's Next Possible Frontier - with this Report," *Business Insider*, July 11, 2016, http://www.businessinsider.com/amazon-thinking-about-fintech-acquisitions-2016-4 (accessed Oct. 27, 2016).

[42] http://www.reuters.com/article/banking-fintech-idUSL2N17M01X.

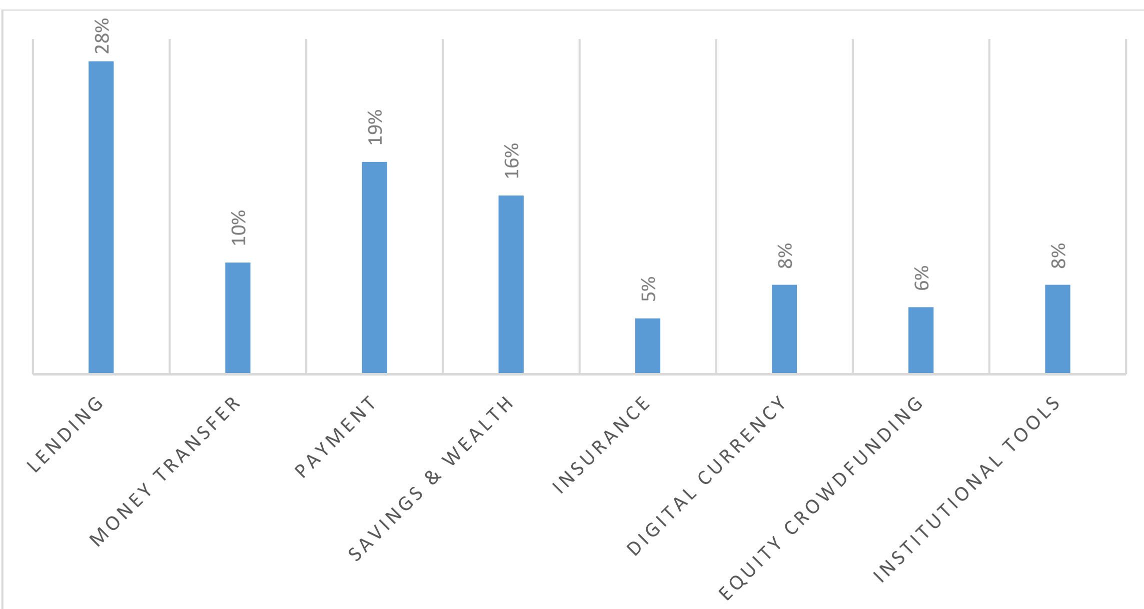
[43] http://www.strategy-business.com/article/Meeting-the-Fintech-Challenge?gko=bd900.

Figure 10. Target of capital deployed in private fintech companies.



Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Figure 11. Percent of private fintech companies by business area.



Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Figure 12. Examples of successful approaches to acquisitions and partnerships.

"Capital One has snatched up a handful of money management start-ups, including spending tracker Bundle in late 2012, BankOns, and more recently, it bought San Francisco–based design and user experience consultancy, Adaptive Path.

"Asked how Capital One plans to monetize its new investment, it didn't reply with a direct answer, only saying that Level Money is 'one of many steps that Capital One is making to deliver a next-generation banking experience.'"[44]

———

"In recent weeks, Santander invested in mobile operating system Cyanogen. BBVA bought a user-experience and design firm. And Capital One, which grooms start-ups in its innovation lab, is testing an app that recommends deals to its customers.

"For its latest batch of partners, Wells Fargo sought start-up tech firms that were built for purposes other than banking but whose products had potential to help improve digital banking nonetheless.

"'If we look at the vendors we already know, we are really limiting ourselves,' said Braden More, head of enterprise payment strategy for Wells Fargo. 'There are a lot of great ideas out there in the marketplace.'"[45]

———

"On one side we find traditional financial entities buying fintech (Simple acquired by BBVA; FutureAdvisors acquired by Blackrock) and integrating them into their global strategy. They provide them the resources needed to expand their activity, and try to assimilate their culture and way of doing things in order to feed their own core business.

"On the other hand, some banks are supporting fintech development by putting in place VC structures specialized in fintech like Santander and/or fintech incubators like Barclays or Visa."[46]

Source: created by author.

[44] Sarah Perez, "Capital One Acquires Budgeting App Level Money," TechCrunch.com, January 12, 2015, http://techcrunch.com/2015/01/12/capital-one-acquires-budgeting-app-level-money/ (accessed Oct. 27, 2016).

[45] Mary Wisniewski and Bailey Reutzell, "Wells Fargo Adopts Three Tech Startups from Outside Finance," AmericanBanker.com, April 22, 2015, http://www.americanbanker.com/news/bank-technology/wells-fargo-adopts-three-tech-startups-from-outside-finance-1073945-1.html.

[46] Alexandre Lima, "Are Banks the Future of Fintech?," Untapt.com, September 14, 2015, https://www.untapt.com/blog/2015/09/14/are-banks-future-of-fintech/ (accessed Oct. 27, 2016).

Figure 13. Examples of challenges from integration of targets.

"Banking startup Simple has been acquired, the company announced today. The acquiring company, BBVA, is a 150-year old financial services corporation that operates in a number of markets, and a leading player in the Spanish market, as well as one of the top 15 banks in the U.S. and a strategic investor in banks in Turkey and China.

"Simple will continue to operate as it has done to date, and promises that nothing will change for customers who are already on the platform…

"Customer accounts will remain at Bancorp for now, which is Simple's current FDIC-insured partner, but the implication is that eventually customer accounts will be migrated over to BBVA so that Simple can have total control over the entire banking experience, another perk of the acquisition."[47]

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"Of course, the most important acquisition in the network space is Visa's proposed acquisition of Visa Europe. Banga addressed this, too. There will be ramifications for pricing and yield, he said, but hearkened back to MasterCard's acquisition experience to discuss possible challenges:

"'We've done the Europay acquisition quite some years ago, and integrating that into MasterCard did pose some amount of challenges in terms of the cultures of the two companies. You've also got the technology to be brought together. Remember that simple things like V.me and Visa Checkout are two different things, and that goes into their credit and debit technologies, and there's going to be a lot of stuff to be done.'"[48]

Source: created by author.

Given the evidence, it was clear to Costa that acquiring a fintech company or two could be a feasible and useful option; however, she still wanted to understand the other options available—conversion to a technology or fintech company or creating networks of partnerships (rather than pure acquisitions) with fintech companies.

Option 3: Convert current IT and strategy to become a fintech company

Costa observed that the third option on the menu presented a more daunting task: banks could shift their ambitions, overhaul their infrastructures, and become fintech or technology companies. Some financial institutions had already taken this charge to heart; Goldman Sachs CEO Lloyd Blankfein said "we are a tech company."[49] Banks were indeed working to become more nimble. An excerpt from the Citi GPS report gave more insight:

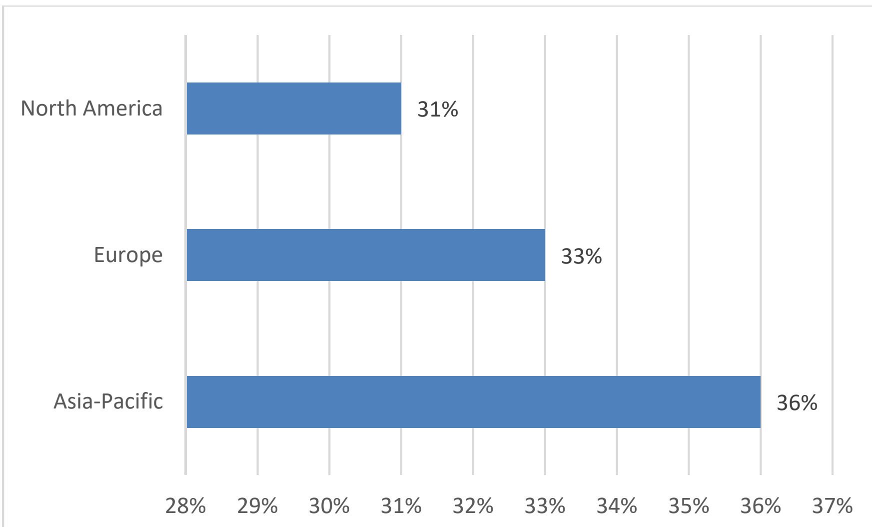
> According to *Business Insider* (April 2015), 9,000 or close to 30% of Goldman's 33,000 employees are engineers and programmers, a level similar to Facebook's total employee base and larger than the entire payroll of Twitter or LinkedIn. Goldman is not alone in this. Banks' executives have long realized the

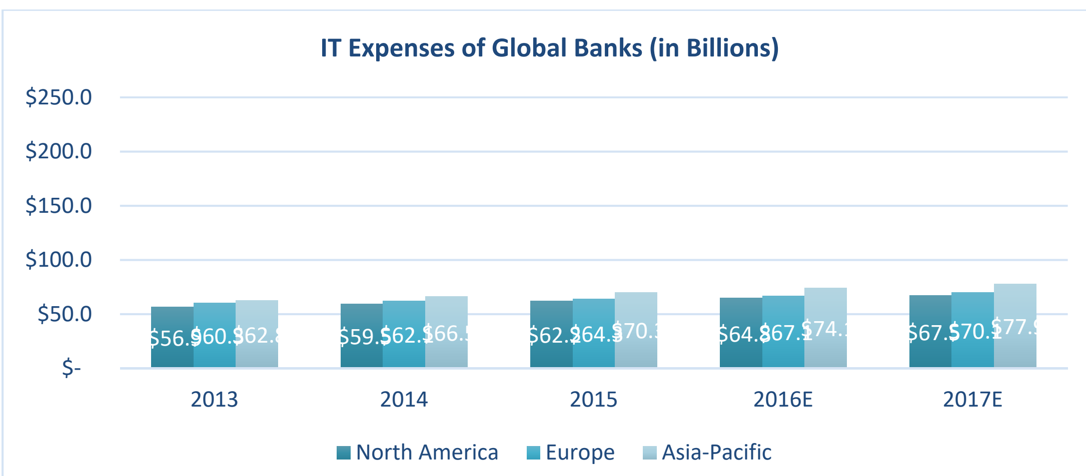
[47] Darrell Etherington, "Banking Startup Simple Acquired For $117M, Will Continue to Operate Separately," Techcrunch.com, February 20, 2014, http://techcrunch.com/2014/02/20/simple-acquired-for-117m-will-continue-to-operate-separately-under-its-own-brand/ (accessed Oct. 27, 2016).
[48] Philip Ryan, "MasterCard Beefs up its Fintech Acquisitions," BankInnovation.net, July 29, 2015, http://bankinnovation.net/2015/07/mastercard-beefs-up-its-fintech-acquisitions/ (accessed Oct. 27, 2016).
[49] https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

importance of technology and have invested heavily in IT. More than a decade ago, the chairman of Swedbank, the largest retail bank in Sweden, told analysts that Swedbank was an IT company.[50]

In her mind, Costa had a hard time comparing Goldman Sachs and Google, but she was curious to glean more insights about this third option. She found data about banks' current and expected future expenditures on technology (**Figure 14**)—she thought that this would reveal the extent to which banks realized the importance of making a shift toward being technology-centered companies. Despite the optimistic outlook presented by the banks described in the Citi report, Costa knew a fair amount about the red tape and bureaucracy that might continue to saddle financial institutions. She sought out more perspectives, and some of them can be found in **Figure 15**.

Figure 14. Estimated bank IT expenses as a percentage of total expenses, 2015 (in billions of dollars), and IT expenses of global banks (in billions of dollars).





Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

[50] https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Figure 15: Select examples—perspectives on bank culture versus start-up culture.

"'Banks aren't really used to [failing] but it's gospel in start-up culture,' says Jacob Jegher, a senior analyst with Celent.

"Likewise, entrepreneurs don't usually want to work under a financial institution brand that conjures images of corporate attire and rigid rules. PerkStreet's founder and Capital One veteran Dan O'Malley admits he had reservations about joining a mainstream bank after running a start-up for five years."[51]

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"In an effort to attract tech-savvy new talent, some of the big Canadian banks are modifying their workplaces to bring them more in line with what one might see in Silicon Valley.

"'When we want to make a change we talk about it in the morning and we're building in the afternoon,' says Darryl Knopp, who took a job with Vancouver-based online lender Grow after more than 20 years in the financial services industry.

"'That's an inspiring environment. It's very difficult to do that at large institutions,' he adds."[52]

——

"The situation is a bit more ambiguous. We are seeing more interdependency than clear opposition. And banks are actually playing an active role in fintech start-up development. Fintech companies are innovative, flexible and are able to make the most of new technologies.

"Certainly most of them have decided to not to engage on the field of play, simply because they can't (too old, too slow…). But at the same time they may very well choose to take on the role of coach or agent, following and shaping the game from the bleachers."[53]

Source: created by author.

Option 4: Partner with fintech companies to serve customers

Given the variety of sizes and types of start-up targets, it would take quite a bit of capital, as well as a finely tuned integration system, to make a series of acquisitions truly meaningful for a bank and its clients. Costa had read a most interesting perspective from PwC, and for the first time, a new solution emerged from the smog of confusion:

> If you are a financial-services executive, you may be wary—and rightfully so—of all these tactics. There is, fortunately, one more strategy you can employ that will borrow certain useful aspects of these approaches while putting your company in a better position to succeed:
>
> - Reorient your firm as the dynamic center of a fintech ecosystem.
> - Instead of managing the entire customer experience through your bank's legacy systems and processes, you should make the most of your position of trust with your customers, your access to customer data, and your knowledge of the regulatory environment.

[51] Mary Wisniewski, "Eastern Bank Turns to Disruptors to 'Transform Culture,'" *American Banker*, April 29, 2014, http://www.americanbanker.com/issues/179_82/eastern-bank-turns-to-disruptors-to-transform-culture-1067196-1.html (accessed Dec. 6, 2016).
[52] Alexandra Posadaki, "Canadian Banks Aim to Emulate Startup Culture to Attract Talent," *Financial Post*, January 11, 2016, http://business.financialpost.com/executive/careers/canadian-banks-aim-to-emulate-startup-culture-to-attract-talent (accessed Oct. 27, 2016).
[53] https://www.untapt.com/blog/2015/09/14/are-banks-future-of-fintech/.

- Explore the financial technologies around you with an eye to finding new products that you can fit together distinctively and make available to your consumers.[54]

Costa was quite intrigued by this idea of creating an ecosystem of fintech for customers, positioning the traditional bank—her client—as the keystone of the ecosystem. She began to search for examples (**Figure 16**) of where this had happened—both in the financial-services industry as well as in other analogous scenarios.

Figure 16. Examples of banks partnering with fintech companies.

"Lending Club, the world's largest online marketplace connecting borrowers and investors, and Citi are launching a pioneering new partnership with Varadero Capital L.P., an alternative management firm focused on specialized credit investments, to facilitate up to $150 million in loans designed to provide more affordable credit to underserved borrowers and communities.

"Renaud Laplanche, founder and CEO of Lending Club, said, 'Many banks across the country are looking for opportunities to enhance their community lending efforts for low- and moderate-income families. We're excited to expand the use of the Lending Club platform to make this process easier for Citi and other banks, and help lower the cost of credit for borrowers.'"[55]

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"Along the way it [Lending Club] has signed deals with regional lenders such as Union Bank of California and BancAlliance, a national consortium of 200 community banks, allowing them to offer co-branded personal loans to their customers through the Lending Club platform.

"While groups such as Lending Club, Prosper and SoFi have since attracted plenty of interest from hedge funds and Wall Street bigwigs—John Mack and Vikram Pandit, the former chiefs of Morgan Stanley and Citi, have backed several ventures—it is only recently that bigger institutions have come on board.

"Last week Prosper, the second-biggest online lender by assets, said it had received a $160m cash injection from investors including Credit Suisse, JPMorgan and BBVA Ventures, the venture arm of the Spanish bank.

"Also on Tuesday, LendKey—a private New York-based company that connects borrowers with local banks and credit unions—said that Apollo Global Management, a private equity firm managing about $160bn in assets, had agreed to buy up to $1bn of student loans refinanced via its platform.

"'When we say we are transforming the banking system we don't mean it in a confrontational way,' he said. 'We believe banks can benefit from the transformation.'"[56]

Source: created by author.

If her client were to put itself at the center of a fintech ecosystem, or to engage in "fintegration,"[57] it would need to know which products and customer segments were currently being served and which were underserved. This knowledge would allow her client to seek the right partnerships—both serving known customers' needs and capitalizing on the functions that customers did not yet know could be fulfilled through fintech. **Figure 17** shows where funding is currently invested, and **Figure 18** shows segments where many partners already exist. The matrix presented in **Figure 19** would help Costa and her client consider the areas where the bank needed to find fintech partners to best serve its customer base.

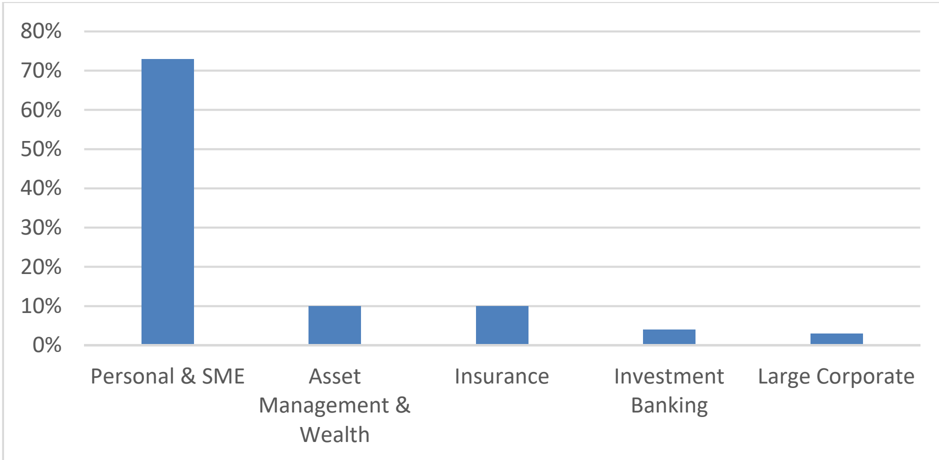
[54] http://www.strategy-business.com/article/Meeting-the-Fintech-Challenge?gko=bd900; quotes formatted in bullets for this case's purposes.

[55] "Lending Club and Citi Team up on Community Lending," PRNewswire.com, April 14, 2016, http://www.prnewswire.com/news-releases/lending-club-and-citi-team-up-on-community-lending-300065289.html (accessed Oct. 27, 2016).

[56] Ben McLannahan, "Lending Club Strikes $150m Deal with Citigroup," *Financial Times*, April 14, 2015, http://www.ft.com/cms/s/0/8602eb62-e29c-11e4-ba33-00144feab7de.html#ixzz4ARRZAdAe (accessed Oct. 27, 2016).

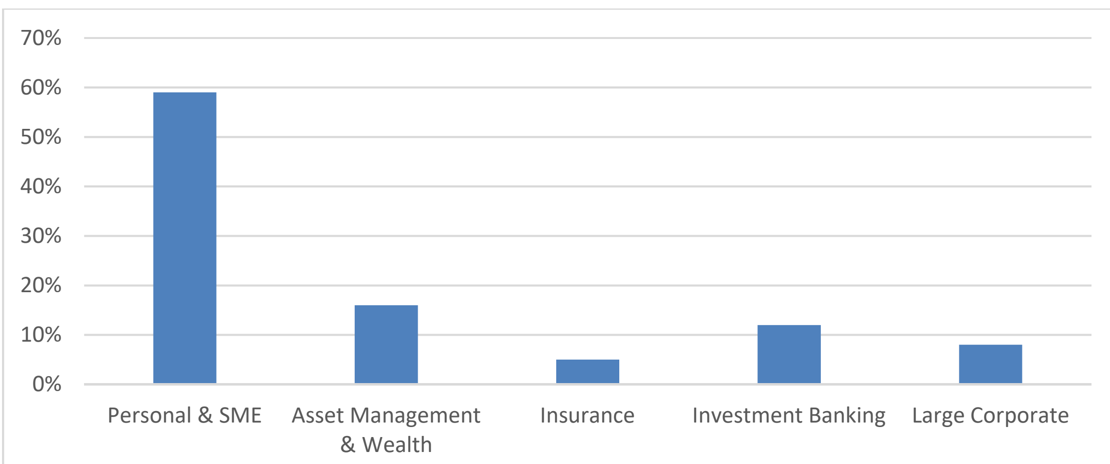
[57] "Banks vs. Fintech: 'Fintegration' is the Smartest Move," Fintechnews.ch, December 10, 2015, http://fintechnews.ch/fintech/banks-vs-fintech-fintegration-smartest-move-says-new-survey/2043/ (accessed Oct. 27, 2016).

Figure 17. Capital deployed in private fintech companies by segment.



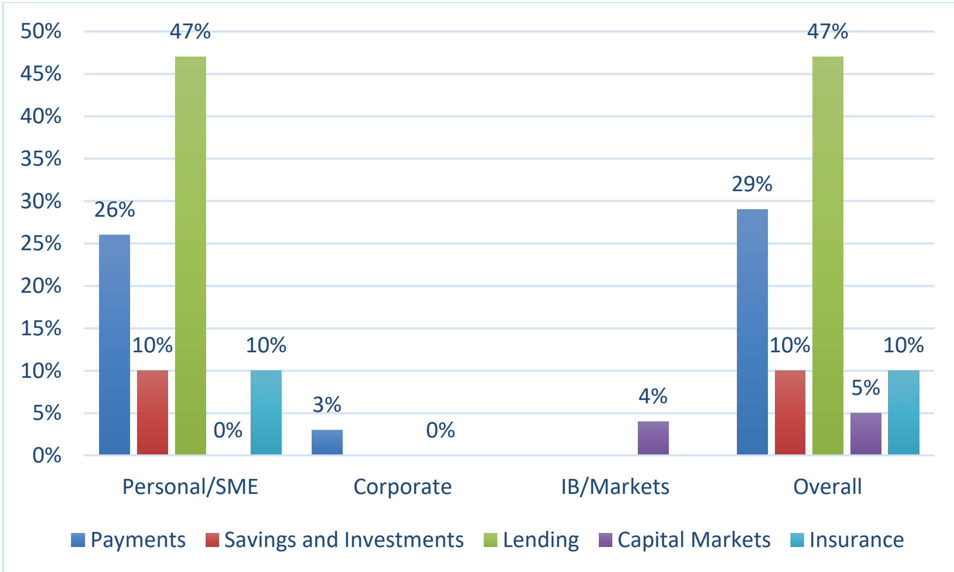
Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Figure 18. Percent of private fintech companies by segment.



Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

Figure 19. Percent invested in private fintech companies by product and customer segments.



Data source: https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D.

If a bank were to become the center of an ecosystem of partnerships, it would be able to best serve customers' needs by focusing on each partner's competitive advantages. A recent partnership between Citi and Lending Club illustrated a strategic approach to fintech partnerships:

> The other answer is a division-of-labor story, in which Lending Club is better at sourcing loans and algorithmically evaluating them, and Varadero is better at choosing which loans to invest in, than Citi is. So it's worth it for Citi to incur the frictional costs of outsourcing that work… The Internet might well be a better place than a Citi branch to find borrowers, particularly lower-income borrowers in neighborhoods that are not full of Citi branches.
>
> In this model, Citi has one job, but it's an important one: It has deposits that can be used to fund loans…You could even tell a story in which Lending Club and Varadero and whoever are better at evaluating and managing risks because they can't rely on subsidized deposits of other people's money. But Citi still has a role to play even in Lending Club lending: That lending requires money, and Citi is a bank, and banks are—still—where the money is.[58]

Partnerships, done strategically, could surely position big banks as customer serving, and, by lessening the amount of capital needed, banks could reap financial benefits. Timing would be critical with this decision, as her client could become the exemplar for positioning itself, as a legacy bank, at the center of a fintech ecosystem for its customers—and it would not want another firm to beat it to this finish (or starting) line.

Costa's Recommendation

Costa had begun to cut through the fog of fintech and had delineated a range of options that her client could choose from to remain a successful global company. There was little doubt that disruption was coming—

[58] Matt Levine, "Citigroup Joins the Lending Club," Bloomberg View, April 14, 2015. https://www.bloomberg.com/view/articles/2015-04-14/citigroup-joins-the-lending-club (accessed Nov. 2, 2016).

albeit in a different form than Uber, the often-cited model of disruption. *Inc.* highlighted a warning signal of sorts: "Now [Max] Levchin [founder of PayPal] is among those betting that this new crop of start-ups, his own included, can reorder the money universe—and make it more transparent and consumer-friendly in the process. His [company] Affirm, launched in 2013, has big ambitions: 'We ultimately see ourselves as a full-service bank,' he says."[59] However banks decide to react to this awakening of fintech, the change was coming, and banks needed to prepare to best serve their customers and other stakeholders. Executive survey results in **Exhibit 4** offer more perspectives on how banks were approaching the need to deal with the growth of fintech, and the survey results made Costa think even more.

After days of research, Costa once again went for a walk around the city park seeking clarity, this time armed with her menu of four options. She had analyzed the data, and could make good points for each case. The next morning she was meeting again with Linger-Turpin and his team. What should she advise them to do? How would her suggestions affect the future of the financial-services industry? If only the decision were as clear as this sunny afternoon; the weather had cleared up after many days of fog.

[59] http://www.inc.com/magazine/201509/maria-aspan/2015-inc5000-fintech-finally-lifts-off.html.

Exhibit 1

Cutting through the Fog: Finding a Future with Fintech

Examples of Fintech Companies

Payments, Money Transfers and Remittances, Digital Currency	**Savings, Investment, Wealth Advising, and Asset Management**	**Lending/ Equity Crowdfunding**	**Capital Markets/ Credit Scores**	**Insurance, Institutional Tools, and Other**	**Tech or Financial-Services Incumbents Playing in the Fintech Field**
Square PayPal/Venmo Fiserv Xoom Express Stripe First Data Corp. MobilePay Danske Vipps DNB SWIFT iZettle Bitcoin Klarna Alipay Betalo Adyen One97 Zuora TransferWise Mozido WePay Clinkle Swish Nooch	Nutmeg Wealthfront Betterment Personal Capital SIGFIG Hedgeable BlackRock/Future Advisor Vanguard Schwab Intelligent Portfolios	Lending Club OnDeck SoFi Funding Circle Kabbage Lufax Propser Housing.com Qufenqi Jimubox Upstart Dealstruck Kickstarter Indiegogo Circle Up ZestFinance Swift Capital Avant Affirm SocietyOne Spotcap Jimubox	FICO Lenddo Credit Karma Credit Sesame WeCash Afritrade Robinhood Motif Investing Stockpile eToro	Yodlee Oscar VivaReal Zenefits Oscar Health FinancialForce.com PaySail Meniga BitInstant Coinbase CoverFox Valuraha Chamasoft Knip Prospa FangDD Atom Bank (full digital banking) **Bank-facing institutional companies to watch:** Ripple Trunomi Feedzai Fenergo	Visa Mastercard American Express Google Apple Facebook Amazon Samsung Citigroup Goldman Sachs Chase Capital One Barclays Alibaba Baidu Tencent/WeChat

Source: Created by author.

Exhibit 2

Cutting through the Fog: Finding a Future with Fintech

Valuation Multiples for Fintech Companies

Valuation Multiples

As of December 31, 2014

Segment	Price/LTM EPS	Price 2015 (E) EPS	Price/2016 (E) EPS	Dividend Yield
FinTech-Payments	27.7	23.8	18.5	0
FinTech-Solutions	29.9	25	21.2	0
FinTech-Technology	24.4	28.2	24.6	0

Segment	Ent´p Value/LTM EBITDA	Ent'p Value/FY 15 (E) EBITDA	Ent'p Value/FY16 (E) EBITDA	Ent'p Value/LTM EBIT	Ent'p Value LTM Revenue
FinTech-Payments	13	11.2	10	19.3	2.3
FinTech-Solutions	16.7	11.6	10.2	21.5	3
FinTech-Technology	15.6	11.2	10.2	28.3	4

Data source: SNL Financial.

Consistent with recent historical growth patterns and outlook near-term, fintech companies are generally priced at a premium to the broader markets with the median S&P 500 company priced at 19.6× forward earnings at year-end 2014.

EBITDA Margin			EV/Revenue			EV/EBITDA	
Processors	18%		Processors	2.25		Processors	12.5
Software/Hardware	11%		Software/Hardware	3.4		Software/Hardware	12
Bank	17%		Bank	4		Bank	19.5
Investments	31%		Investments	4.75		Investments	15
Insurance/Health care	6%		Insurance/Health care	3.1		Insurance/Health care	12.5
Outsourced	22%		Outsourced	2.75		Outsourced	13.5
Payroll/Administrative	10%		Payroll/Administrative	2.25		Payroll/Administrative	19.5
Content	22%		Content	3.6		Content	16.5

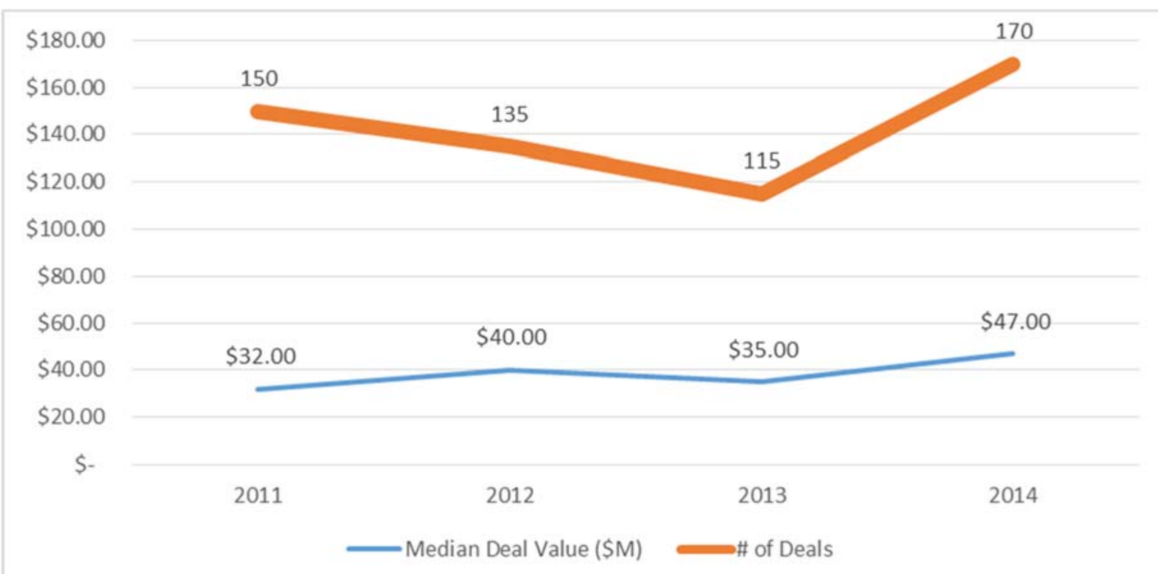
Data source: Mercer Capital, "Value Focus: FinTech Industry," 2015, http://mercercapital.com/assets/Mercer-Capital-2014-Q4.pdf (accessed Nov. 2, 2016).

Exhibit 3

Cutting through the Fog: Finding a Future with Fintech

Historical M&A Transaction Overview

M&A Activity per Subsector			
	2014	2013	% Change
Payment Processors	38	28	
Payroll & Administrative Solutions	4	1	
Payments Total	53	37	43%
Bank	6	10	
Investments	18	17	
Insurance/Health care Solutions	44	23	
Technology Total	68	50	36%
Outsourcing	28	16	
Processing Software & Hardware	15	9	
Financial Media & Content	16	11	
Solutions Total	59	36	64%

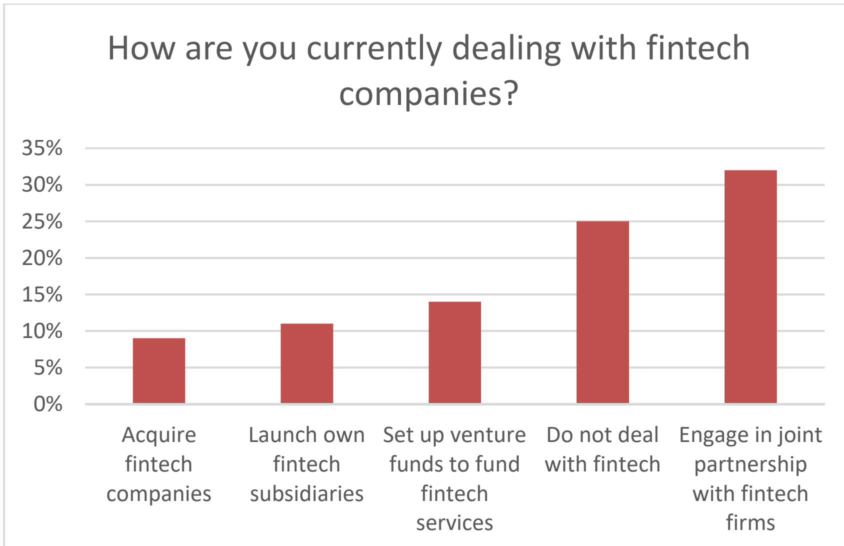


Data source: http://mercercapital.com/assets/Mercer-Capital-2014-Q4.pdf.

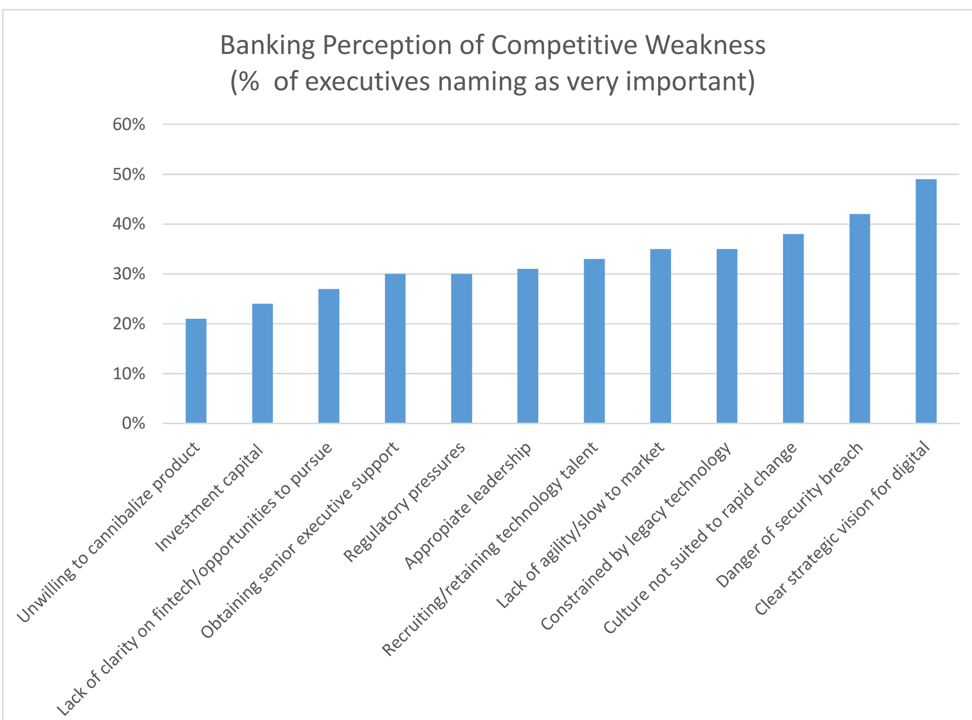
Exhibit 4

Cutting through the Fog: Finding a Future with Fintech

Survey Opinions of Financial-Services Executives



Source: Adapted from BI Intelligence: "How Are You Currently Dealing with Fintech Companies?," Survey of Global Financial Services Executives, 2015, http://www.businessinsider.com/bi-intelligence-debuts-fintech-vertical-covering-financial-technology-news-2016-4 (accessed Nov. 2, 2016).



Source: Adapted from Jim Marous, "Banking and Fintech: An Uncommon Partnership," *The Financial Brand*, November 30, 2015, http://thefinancialbrand.com/55543/partnership-competition-fintech-banking-disruption/ (accessed Nov. 2, 2016).