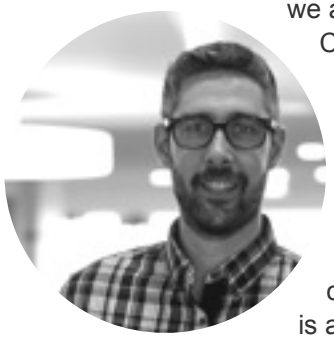
Finance 2025

Creating Digital Financial Platforms

by MJ Petroni

About MJ Petroni

Cyborg Anthropologist and Innovation Facilitator



I work with several organizations, chief among them my own Causeit, Inc., an innovation consultancy based on the West Coast of the US, and NTT Innovation Institute, Inc., which we affectionately call NTTi3, in the heart of California's Silicon Valley. There, I serve as the Cyborg Anthropologist in Residence, working to translate the near-science-fiction world as we might know it in one hundred years for businesses focused on designs for the next 2-3 years.

As a firm, we focus on the emerging needs of digital business. Key among those needs is a broad view of the future and a keen eye for innovation opportunities—especially the opportunity to create platform-based businesses. At NTTi3, we can work with visiting executives to conceive of new business strategies, and then actually construct the critical technological platforms needed to make them possible.

About NTT Innovation Institute

Building Platforms for Digital Businesses

NTT Innovation Institute Inc. (NTT I³, pronounced NTT I Cube) is the new research and development arm of the NTT Group, a global leader in information and communications technology.

NTT I³ was established in April 2013 as a wholly owned subsidiary of the NTT Group.

NTT I³ builds on NTT's renowned R&D heritage in the telecoms industry. This means that although we're a brave new start-up, we're also backed up by a substantial balance sheet, a global presence and world leading R&D.

At NTT Innovation Institute, our main aim is to pursue the commercialization of advanced technologies, and to leverage NTT's expertise in multimedia communications and telecommunications services. Overall, we aim to set a new global standard of agility, quality, and value creation for open service innovation.

Because we're based in the heart of Silicon Valley, we're able to access an extensive talent pool to drive cutting edge research. The end result will be to improve business productivity, drive innovation and increase the return on IT and telecoms investment through the pragmatic use of cutting edge technologies.

This is an exciting time in the tech industry. With our substantial R&D legacy and global backing, we're looking forward to challenging the status quo and establishing a brand new frontier of innovation.

Money isn't what it used to be.

While society has changed markedly through globalization, emergence of 'digital natives' and the nearly-unpredictable breakthroughs brought about by the information age, our financial systems are still largely rooted in the paradigms (and toolsets) of the late industrial age. Whether because of regulation or complexity, financial institutions have not yet been able to tap into the transformative potential of digital platforms. Here's why.

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Creating Digital Financial Platforms

Digital Financial Platforms and Full-Spectrum Innovation

As technological and cultural changes shift the way business is done on a global scale, companies can no longer thrive simply by being the best at one thing. Digitization of the world means that no one approach to innovation is competitive for long, and stable industries are being disrupted by companies like Google and Apple who have begun to master the art of integrating their digital skillsets with those of established partners to create nearly impossible-to-beat offerings. Organizations who are effective at tapping the entire spectrum of innovation are those who have been able to leverage their own 'native genius' while collaborating with other firms, tapping into major cultural trends or getting into deeper relationships with their customers.

Full-Spectrum Innovation is the idea of creating value in every possible place—from culture & society down to end users of a product, service or platform.

Most traditional concepts of innovation are remarkably narrow in view. At first glance, smartphones seemed to be about the hardware, but the genius is that Apple and Google accessed nearly every element available to them—strategic partnerships with music companies, new distribution channels for their products, new business models for tech devices, and highly-integrated customer service systems. By innovating across the spectrum, they not only changed their product but effectively jumpstarted a new industry—and left their competitors trying to catch up.

It's not just tech companies who are tapping into this full spectrum of value to create next-generation digital businesses. Airlines, manufacturing, basic consumer products, apparel companies and even governments are letting go of long-held assumptions about what they can and cannot do to ensure they survive rising costs and increasingly-high customer expectations of quality and engagement.

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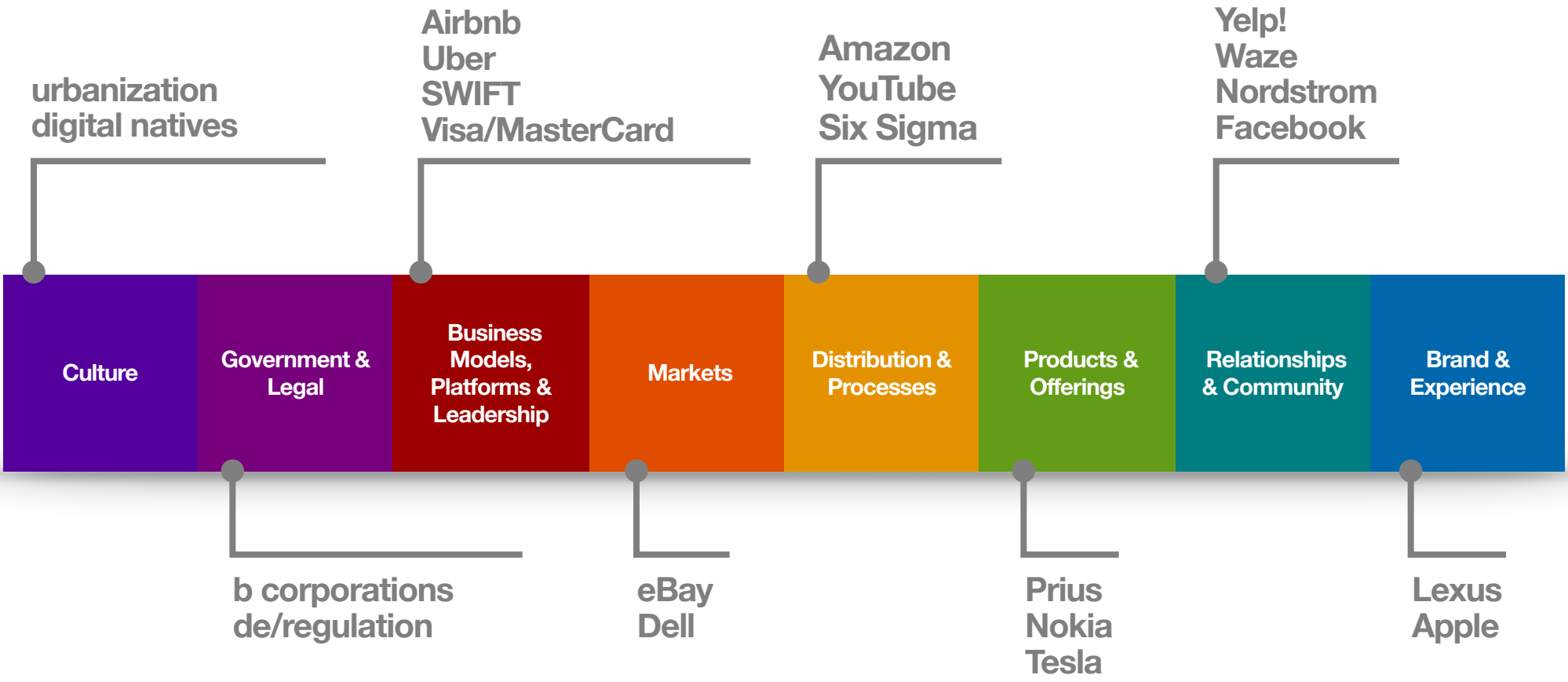


Innovation, both in recent history and the future, can largely be mapped to the a spectrum of innovation up and down the value chain—and most companies are only strong at a few parts of the spectrum. True digital business innovation requires tapping partnerships for the parts of the spectrum outside a particular firm's 'native genius.' For a more thorough survey of full-spectrum innovation and the companies that have succeeded beyond their initial product or market, see *Full-Spectrum Innovation: a Broader View of Value* (Causeit, Inc. 2014)

"EVERY COMPANY IS NOW A SOFTWARE COMPANY."

—David Kirkpatrick, Forbes

IT AS UTILITY

One change which the future will require is in the way we think about technology in relationship to business and organizational models. Traditional information technology skills and infrastructure such as networking, database management and internet access are more important than ever. However, organizations must shift their focus from IT as a utility—basically confined to a single department in a business—to informatics as a capability.

INFORMATICS AS CAPABILITY

Informatics as a capability is the strategic ability of a company to consider the impact of business decisions on their technology needs, as well as the impact of technology decisions on the entire chain of value from concept to production and maintenance. This means that each person in the company must have at least a conversational ability—if not fluency—in top technologies which impact their business. For example, in many companies marketing and branding departments were the first business units to begin to bringing their own technology savvy to bear on their work, sometimes in accidental or intentional conflict with existing IT policy. Whether through third party vendors like agencies, or because they choose to hire their own technologists, marketing and branding departments have shown us that IT cannot be limited to a 'come and fix it' utility within the business.

For platform-centric businesses to be successful, every person involved must be fluent in the technology decision-making process on a strategic level.

Taking Risks with Innovation: the Castle and the Sandbox

Renowned technologist and financial services innovator Kosta Peric (former head of innovation at SWIFT, now at the Gates Foundation) summed up the challenge of innovation in conservative companies quite well in his book *The Castle and the Sandbox*. He suggests that regulation and stability bias institutions towards safety. As innovation is, almost by definition, a risk-taking activity, he posits that organizations should relate to their core business, which must not stray from its commitment to reliability, as a castle—a fortress which is to be protected and which can be depended on. But in the sandbox, the younger, newer ideas play and grow up into something which could, in the end, contribute to the larger whole of the castle.

One way that large companies can do this is by keeping their eye on innovative startups and acquiring them "as-is" once they're stable. BBVA, Spain's second-largest bank, recently acquired US online banking startup Simple. This merger allows for Simple to continue to operate independently, preserving the unique culture and customer-friendly offerings which made it a success, while giving Simple access to the regulatory expertise and resources for international expansion which have been a hurdle for the smaller company. BBVA, in return, benefits from the innovations that Simple has pioneered in user experience and little-data-informed iteration—innovations which are difficult if not impossible for big banks like BBVA to attempt or even identify at their scale of operations.

Data diplomacy is another way in which big, established companies can participate in sandbox innovation—making data available to startups for testing concepts or driving innovation which they would not have access to at scale. These information-sharing partnerships can result in future acquisition or collaboration as smaller companies bring their innovations to market.

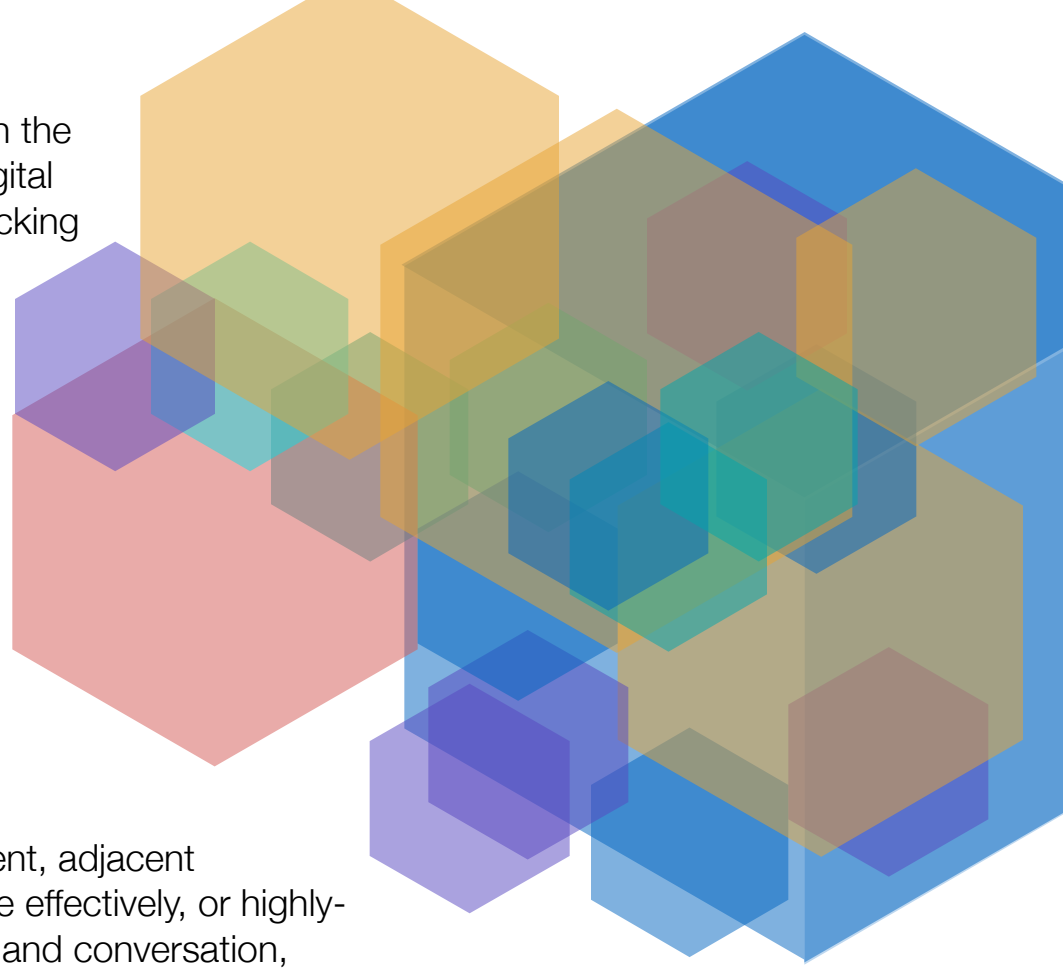
The Difference Between IT Enablement and Digital Financial Platforms

IT-enabled financial services are often comprised of a few key groups: financial institutions and their users, both of whom generate and use data. This set of interactions predated digital technologies. When IT was first implemented, it was to support existing business needs by use of computerized tools like networks and databases.

As those systems grew, supported by their IT infrastructure, the complexity level increased exponentially.

Such systems, having not had the luxury of being designed from scratch, reflected analog business paradigms and were shaped by the presence of multiple incompatible legacy systems. Because of their vulnerabilities and how difficult they were to understand, these systems were closed to each other, proprietary and difficult for end users to access and manipulate. These limitations meant that IT was applied to accelerate analog business offerings, but did not create opportunities for new, digital-enabled value.

The major opportunity for technology to create new value in the financial services industry lies in creating and expanding digital platforms. Digital financial platforms enable multiple, interlocking systems to connect with each other. In their overlap and interconnection we can see entirely new opportunities to create value—along with new implications for technology tools and business decision makers.



In the financial world, players might include end users, reselling agents, banks, regulators, reputation data, APIs (application program interfaces), open source software and hardware, app developers and even smart currencies.

New digital financial platforms allow organizations to quickly provide or tap into crowdfunding, credit scoring, payment systems, individual data profiles (or little data), big data (the collection of all that little data), risk management, adjacent opportunities (like cross-selling related products much more effectively, or highly-automated investment of cash float), social media listening and conversation, social identity schemas and reputation management. Each could be its own piece of content, but it's important to see how so many of them stem from—and then drive—digital business.

This combining and splitting allows new parties to take advantage of their strongest innovation capabilities, be that branding, or gathering new users through community-building, or process and data optimization—letting other parties take on the other important parts of value creation, like stable, scalable back-end systems and legal or regulatory evolution.

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Multi-Sided Platforms: The Fidor Example

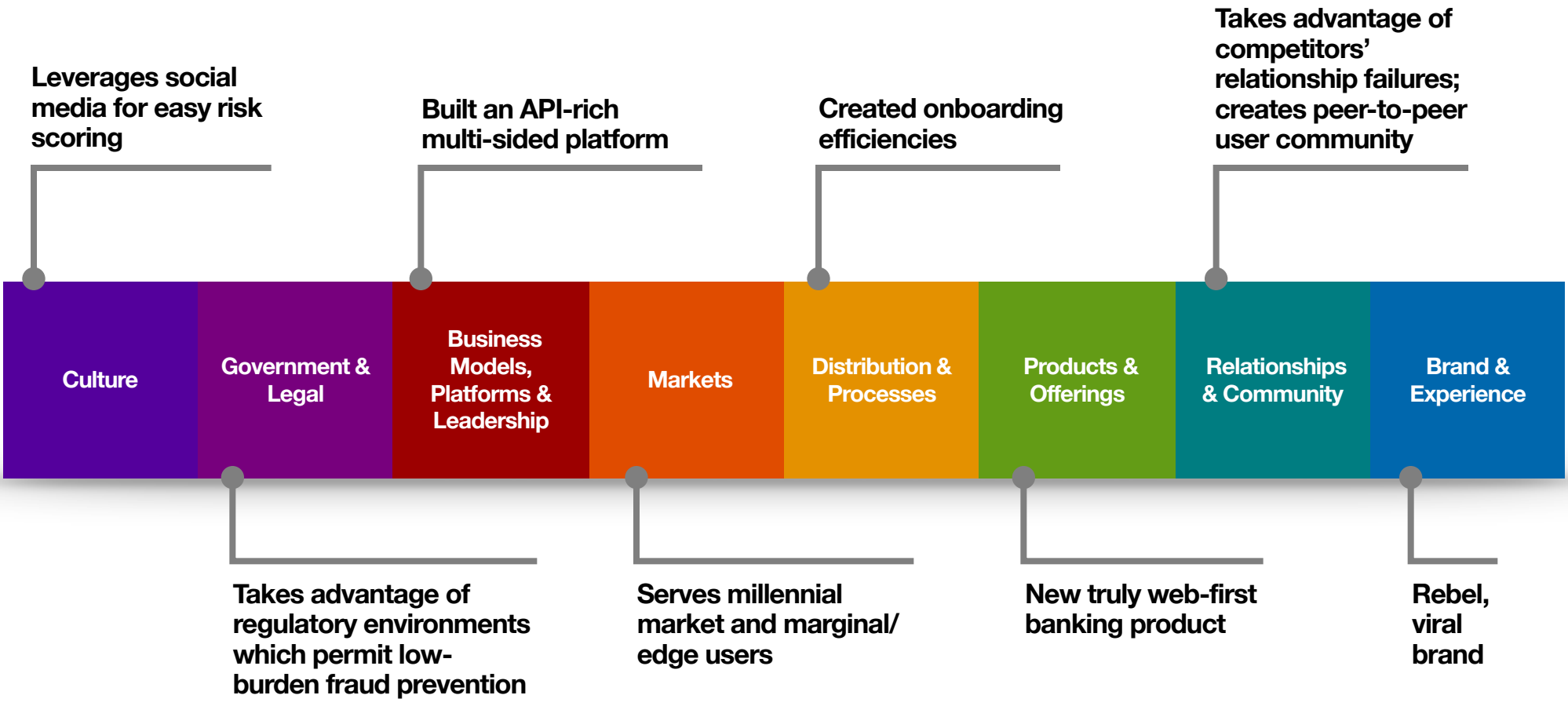
Transactions used to be restricted by their dependence on proprietary technical infrastructure. Now, aggregation and APIs have made regulation the biggest barrier to platforms.

Where traditional business strategy focused on creating a solid product, new business strategy is increasingly focusing on creation of platforms—especially an exponentially-valuable form of platform called a multi-sided platform—an extension of the concept of a two-sided market.

The multi-sided platform is perhaps best modeled by Apple's expansion of their shiny, well-designed iPhone (and iPad) to the entire platform which supports it (iTunes, iCloud, the iTunes Music Store) and then, the broader App Store, CarPlay, Apple Pay and developer/accessory ecosystems—among many others—which make the iPhone and iPad what they are today.

Fidor Bank is an online-first banking institution founded in Germany which shows how a multi-sided platform can enable full-spectrum innovation in the financial services industry. Fidor takes advantage of the cultural trend of increasing trust in social media services, utilizing social media data (with user's explicit consent) to manage identity and risk. Because they decided to focus on web-only accounts, Fidor is able to deliver a superior online product in comparison to other companies for whom online banking is seen as an expansion of primary services—an alternative to visiting a branch or ATM—and not a major area of investment or innovation.

How Fidor Wins



Fidor Bank is an online-only banking institution founded in Germany which shows how a multi-sided platform can enable full-spectrum innovation in the financial services industry.

Fidor's specialization in online banking creates a new market and brand experience opportunity for Fidor—as a rebel bank which defies tradition and caters to the growing number of customers who need full-featured online and mobile tools for doing everyday business. Fidor is clear about their business model: use APIs and partnerships to maximize their capabilities and allow them to focus on listening to and serving customers. This has not only enabled Fidor to succeed with a relatively small investment in infrastructure, but has generated a lot of gravity around their brand. Driven by their reputation for innovation and customer-centricity, the Fidor community includes over 250,000 registered members who share advice, feedback and ideas in a forum on their website—that's five times the number of account holders—showing impressive social momentum for a new company with a tiny marketing budget.

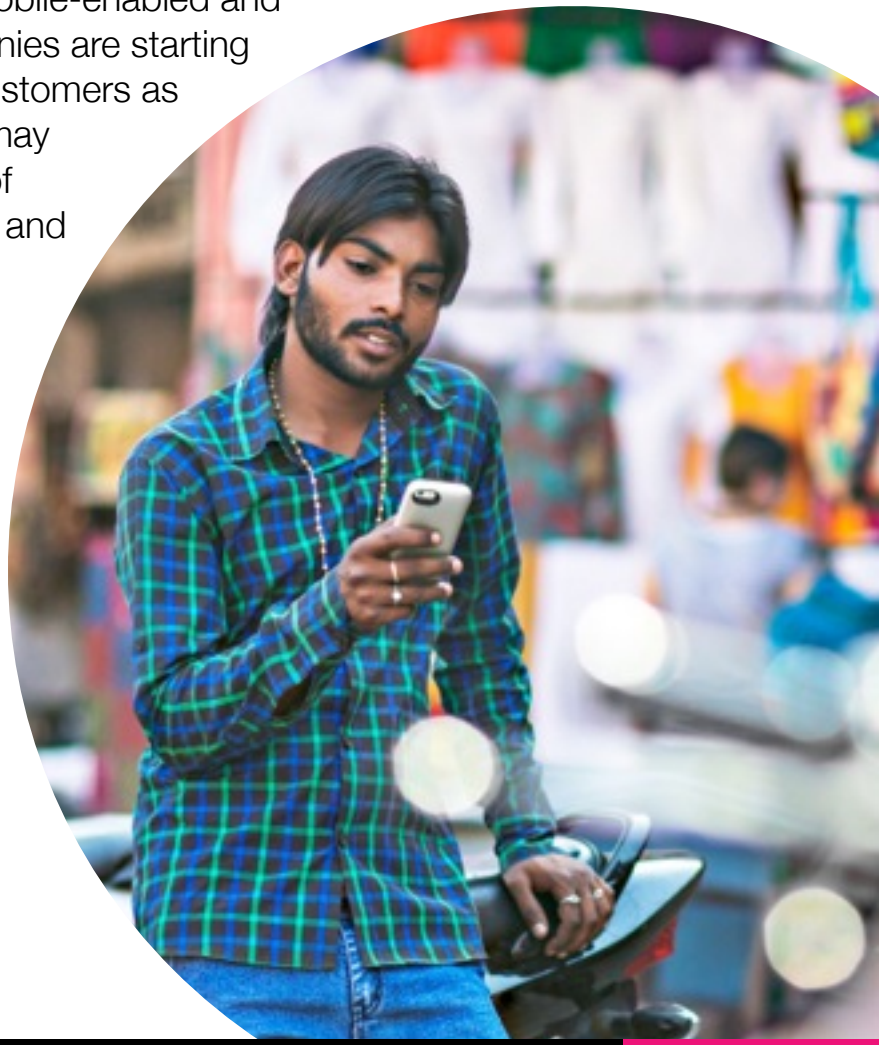
"You must be open to not only in-house innovations—you should be open to the outside world, tactical infrastructure, API infrastructure, whatever way you can do it today within the modern technical environment."

— Matthias Kröner
CEO, Fidor Bank

Regulation has to adapt with the changing business models of digital firms. For example, the "know your customer" requirement (or KYC) in the United States is a vitally important set of policies—and penalties—designed to ensure that banks are not unwittingly permitting money laundering or other criminal activities within their walls. But KYC requires the same level of scrutiny for an account with a balance of $20 as it does for one with $20,000, making it difficult and costly to serve accounts with low deposit amounts, where the burden of deeply verifying a customer's identity with traditional tools ends up driving the cost of an account far beyond profitable levels. Banks in developing countries are working to find creative solutions to KYC requirements, but such a burden does not support creation of financial services for the underbanked or unbanked members of society, who could greatly benefit from platforms which enable them to make reliable school payments, access basic credit services and more. Regulations The regulatory environment needs to become more dynamic and adaptive to leave room for innovation, which necessitates proactively and responsibly including, learning from and educating regulators in larger innovation ecosystems.

The Unbanked and Underbanked

Historically, financial services companies have focused their efforts on attracting and satisfying customers who have plenty of money. This is an obvious play for businesses which rely on their customers' stored capital to make a profit. With income disparity on the rise and an increasingly global market for financial products, especially mobile-enabled and online ones, smart banking and insurance companies are starting to reconsider the limitations of targeting affluent customers as their main audience. While low-income customers may seem like a risky or undesirable market in the terms of standard underwriting, or may seem to costly to create and manage accounts for, microlending and social-lending pioneers have found that the default rate on loans to traditionally unfinanceable individuals is much lower than the average for conventional borrowers. When merged with the social and economic benefits of improving quality of life and financial literacy for broader range of people, these early experiments in alternative financing represent a compelling area of opportunity for companies who are interested in expanding their market and innovating across a broader spectrum–perhaps drastically lowering new customer onboarding and maintenance costs for previously unprofitable demographics.



Open APIs

Open application program interfaces, or APIs, are a way for financial services companies to access and fetch or send calls to other organizations' systems. For example, Authorize.net's API allows merchants to send a call for a transaction authorization and receive a verification back. Few financial services APIs exist, and even fewer allow interoperability without extensive relationship-building with the host of the data. Interoperability issues related to legacy systems, regulatory concerns and hesitancy to disclose too much data to competitors or disruptors are among the factors that hold companies back from exploring the opportunities that APIs could provide for financial services providers. In other words, unlike the social media industry, mobile industry or other places where innovation is enabled by the availability of robust, well-designed APIs, most of the financial industry has not yet made it possible for third parties to create value on top of their platforms.

Key developments in the open financial API space include:

- Fidor Bank—a German online-first bank with a robust API
- Ripple—a cryptocurrency-based financial infrastructure allowing all manner of payment and transfer-related transactions through an API and their own 'metacurrency,' permitting both end users and developers to create robust financial services products without having to create their own infrastructure
- Digital Financial Services for the Poor—a platform for global poverty alleviation in development by the Bill & Melinda Gates Foundation , which is creating a semi-open API for digital money and digital transactions such as deposit accounts, cash-equivalent payments, basic insurance products and currency exchange with the goal of enfranchising the unbanked and underbanked.

Crowdshared Risk and Reward

Unmet needs in lending and insurance have given rise to many alternative models which rely on shared risk and/or shared reward as a way of supplementing—or even replacing—traditional models for managing and rewarding risk. One example of this is Friendsurance, a peer-to-peer 'social insurance' company based in Germany which invites customers to opt in to a group policy which is shared between friends. Each group policy includes a pool of money, fed by a percentage of each member's premium, which can be used to pay out small claims. If, at the end of the year, there is money left in the pool, everyone gets their share of the remainder back. Part of the premiums still go to regular insurance, but the idea of money back each year underwritten by the desire to do right by your friends is an attractive value add—especially for people who see collaboration, community and "pay only for what you use" as part of their cultural identity. Lending has some examples as well, most notably Lending Club (backed largely by Wells Fargo) and their new competition Karrot. Both lending innovators offer personal loans of up to $35,000 in a campaign-style model that resembles Kickstarter, except with investors getting a return on their money and borrowers paying back what they receive at a lower interest rate than they would for most bank loans or credit cards. These types of market, distribution, product, and community innovations around risk and profit sharing also create a perfect environment for digital platforms to emerge, with an active community of players and value-creators but not too much customized plumbing needed on the backend.

The Social Network of Things

At the apex of the Information Age—and just a few years out from the Internet of Things—is a time when devices and people are connected through pervasive internet access, a rich web of sensors, advances in artificial intelligence, deep APIs and cultural changes. This near future is the Social Network of Things, the complex ecosystem of exchange and collaboration between machines themselves and the beginning of a change in the fundamental ways human beings relate to their bodies as they are augmented with technology.

As machines become increasingly autonomous and connected, they, too, need financial services. Machine-to-machine (M2M) communications often signal M2M *transactions*. As such transactions—maybe a request for server time, or a more tangible outcome like vacuuming an apartment floor—become easier and easier to separate and track in detail, we might find that they are coupled with a need to exchange value. What if you didn't keep all of your own cleaning devices, but your apartment building had devices which went from apartment to apartment on their own. If you had a particularly dirty or particularly clean wood floor, the building's refuse system and water supply system might charge the floor cleaning device accordingly and apportion that charge to your account. Or your electric car might have to manage payments to—and from—its various interactions with power grids, chargers, data bandwidth and traffic or routing information servers.

A more commercial example could come from John Deere—the tractor company. Their increasingly automated farm equipment is part of a larger ecosystem of smart crop management. So what might be possible if there were an easy, extensible payment system for a John Deere tractor to purchase consumable supplies or energy from another brand's devices? How might we manage identity and avoid fraud if no human is directly involved in the transaction, or if the transactions are micro transactions compared to what we are used to as humans? If such a system was not reliable, food production could be affected. Conversely, a successful autonomous supply and payment network could mean that farmers would only have to pay for what they actually use in terms of supplies, potentially lowering costs or increasing yields—especially if such technologies were properly integrated with big data analytics and other tools.

Internet of Things

Smarter Versions of Previous Devices

Limited Increase in Value to End User

Not Interoperable

Still Requires Humans to Interact

Social Network of Things

Entirely New Devices

Paradigm Shift in Value

Highly Interoperable

Decision Made Without Human Direction

Millenials and Asset-Light Lifestyles

Millennials are a hot topic in almost all discussions about identifying new markets and products. When looking the future of financial services and especially digital financial services, understanding the way that millennials use and purchase financial products is key, and much of the research about this demographic leads us to reconsider common assumptions about what these customers want and need. For example, while millennials tend to be more worried about the future as a result of the political, environmental and economic crises of their time, one outcome of that skepticism is that they also seem to be more concerned about the future and more interested in self-directed saving and investment than the generations before them.

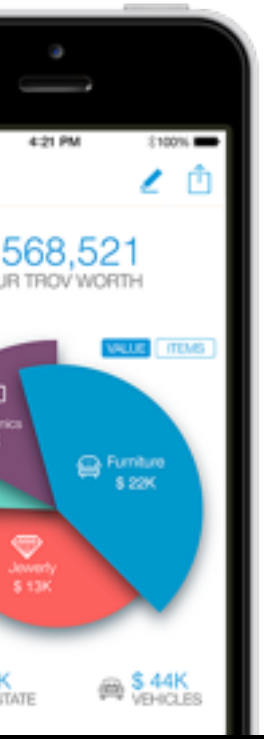
At the same time, there are some major characteristics in the millennial lifestyle that impact their financial service needs. According to Kleiner, Perkins, Caufield and Byers' Mary Meeker, many young professionals and creatives are asset-light, choosing to rent rather than own their homes, using on-demand services for transportation rather than personal vehicles, and spending money on things like travel and wellness which offer an experiential value that is transitory. While their portfolio of insurable or appreciable assets tends to be slim, they are very interested in liquidity and are willing to make investments based on their values and interests. Products which aim to serve millennials will also need to account for the ways in which these empowered customers decide what products are right for them—interactivity, customization, and interoperable features are more likely to attract them than a company's tenure.

Big Data

Big data is having an enormous impact on the financial services industry, especially in fraud prevention. Analysis of customer spending patterns has allowed companies to identify “red flag” transactions and patterns of activity which are likely linked to a stolen card or identity. This is great news for companies who have been losing millions each year to credit card fraud, but it’s also great for customers whose information is stolen. Frost Bank’s two-way text alert option will send users a text when there is a suspicious transaction posting to their account. The speed at which transaction data is processed now allows the bank to alert a customer in real-time and the two-way option means they can authorize or decline the suspicious activity with a text reply. The customer is saved the embarrassment of standing on the phone in front of a merchant with a line of customers or a declined card at their next point-of-sale, while the bank is saved the administrative costs associated with processing travel notifications and making direct calls to the customer for authorization of flagged transactions.

Little Data

While big data is fueling innovations which largely benefit big companies with access to huge pools of information, companies and individuals are also finding value opportunities informed by little data—detailed information about an individual person. Little data includes just about every type of data a person produces: schedule, shopping choices, patterns of travel, temperature preference in home or car, physical health, emotions—if you can measure it through a sensor or interface, data about humans can be collected and analyzed. The key issue is that you have to get permission from someone to collect their data, but with opportunities for innovation at nearly every point of the spectrum related to little data it is increasingly appropriate to start asking what your users want in exchange for theirs.



Asset management startup Trov has formed an appraisal and insurance platform based entirely on the value of little data. Users upload information about their tangible assets, add new purchases through a mobile app, receive updated information about changes in the value of their possessions, share that information with their insurers for accurate real-time adjustments in coverage, and have the option to sell valuables through Trov's connection to "specialized marketplaces" online. Having real-time, detailed information about customers' assets and purchasing behavior is a clear benefit for the insurers who are partnering with Trov, and users are getting more customized service from features and partners in return.

Metromile is a car insurance company which offers customers a deal—they put a sensor in their car which tracks their driving habits and pay an insurance premium which is tailored specifically to their vehicle use. The benefit for both parties is clear: customers pay only for the amount of coverage they actually need, and Metromile gets detailed information which helps them protect themselves from risk. Other car insurance companies have used in-vehicle sensors to offer discounts for safe driving behavior, but Metromile is the first to incorporate little data in an on-demand model of insurance where customers who drive less pay less—by the mile.

Little data also becomes its own product. Insurance companies' fates are decided by how well they balance price and service with the statistical models they use to underwrite customer's risk profiles. If Metromile or companies like them —due to user-granted access to rich, detailed data—can better predict risk, they can offer services at a lower price and/or higher profit margin. But they can also sell access to that actuarial model to other companies, allowing them to focus on what they do best so far: creation of a compelling brand which has users' interest and rapid accumulation of data. Jesse Beyroutey, a venture capitalist specializing in the field, calls this exchange 'data diplomacy'—a new business model defined by data-sharing partnerships between companies. In the coming decade we'll continue to see innovative companies which want to offer customized and easily updated products—but also to inform their own statistical models for the best pricing and profit margins—creating little data agreements with their customers as a way of informing credit offers, insurance premiums, interest rates, and financial management apps.

"If you want to build loyalty, spend less time using data to tell customers about you, and spend more time telling them something about themselves."

—Mark Bonchek, PhD, Founder, ThinkORBIT

Where are the Multi-Sided Platforms for Finance?

Creation of multi-sided platforms requires firms on all sides of a market to examine key technological strategies —like enterprise architecture, machine learning, development operations, legacy system migration and security, among many others. It also requires evolution of innovation cultures, especially in larger firms, where the need for interaction with external partners requires finding ways to open up previously protected and isolated departments.

An opportunity exists for large companies to take on innovation in the financial services industry in a new way, designed to include, rather than resist, small, disruptive players. Certain functions are perhaps best served by large, existing companies—like account management, asset management, and data diplomacy or big data platforms—while new players can partner with existing firms to bring a fresh view on brand, relationship, community and machine learning. This approach, tapping into a broader spectrum of innovation, could be best served by the creation of multi-sided platforms in the financial services industry. Why not create something compatible with other financial players? While many answers come up on both sides of the argument, it's clear that new technologies, new business models and new customer expectations are here to stay.

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About MJ Petroni

Author

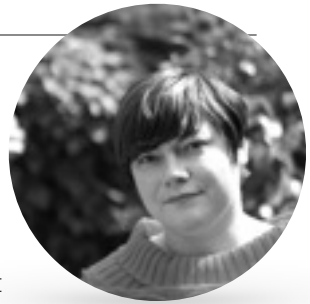
As the Cyborg Anthropologist in Residence for NTT, the world's largest telecom, MJ and his research team focus on the changes our world will experience in the next hundred years through the lens of the relationship between humans and technology. As key business leaders visit NTT's Innovation Institute, he has in-depth conversations with them about the possibilities—and ethics—of technologies like artificial intelligence, the Internet of Things (and its coming successor, the Social Network of Things), Big and Little Data, nanotechnology, and robotics in domains such as financial services, governments, healthcare, education and mobility.

MJ Petroni is a consultant and researcher based in San Francisco, California. He is the owner and founder of Causeit, Inc., a firm which helps companies and individuals discover authentic narratives around which their teams, customers and industry partners can rally—facilitating cultures of innovation, real listening, straight talk and shared success. MJ also serves as a founding advisor of the Bill and Melinda Gates Foundation's Global Digital Financial Services Platform for poverty alleviation.

MJ has presented at SIBOS, the world's largest financial conference, VW Group's Global IT conference and is a co-producer of TEDxBellevue and the people-innovation-focused PurpleBeach gathering in London. He is currently authoring the living book, Field Guide to Creating Cultures of Innovation.

About Jessica Long

Research Partner



Jessica is a content specialist and strategic researcher with Causeit, Inc. Her academic background in Anthropology, Semiotics, and 20th Century American History has paired well with her experience as a child of the 80's and her natural talent with language to position her as an analyst and cultural correspondent in domains where technology and humans interact. Her current areas of focus include cyborgs, platform thinking, gender and post-gender, human development, sociocracy, conscious capitalism, innovation in language, intersectional historiography and the cultural effects of globalization.

About Causeit, Inc.

Research Team

Causeit, Inc. is an innovation consultancy and research firm with a dynamic team spanning the West Coast of the U.S.

Causeit offers team alignment interventions, brand strategy, futurist research, and strategic product creation to innovative firms and individuals—enabling them to create genuinely useful and profitable offerings which the world actually needs.

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