

Four Ways APIs Are Changing Banking

How Financial Services Firms Are Exploiting The API Economy

by Jacob Morgan

Why Read This Report

Application programming interfaces (APIs) are a critical technology and are reframing the business opportunity within financial services. Digital business strategy executives are ideally placed to bridge the technology divide and articulate how an API strategy can realize their business vision as well as deliver regulatory change like PSD2. This report enables digital business executives to look beyond the technical jargon, understand how to influence business transformation using APIs, and learn how to collaborate with their business technology peers to deliver that transformation.

Key Takeaways

APIs Are Transforming Banking

APIs are top of the financial services agenda — with good reason. Ideally suited to the digital business model, in terms of both meeting rapidly evolving customer expectations and opening up digital ecosystems, APIs have a role to play internally, collaboratively, and in delivering the new climate of openness within banking.

Four Different API Use Cases Fuel Digital Financial Services

Building an API strategy can be confusing and fraught with technical jargon. To cut through the complexity, digital business executives should focus on how four common API use cases power their digital business: internal APIs, B2B APIs, open web APIs, and product APIs.

Collaborate Closely With Business Technology Colleagues To Drive API Strategy

Digital business executives are perfectly positioned to understand customer impact, spot collaborative opportunities within and outside their organization, and help technologists see APIs from a business perspective; together, they can realize their business strategy using APIs.

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with [Martin Gill](#), [Randy Heffner](#), Alexander Causey, and Rachel Birrell

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Forrester interviewed Adyen, Capital One, iwoca, Open Bank Project, Streamdata.io, and Xignite.

Related Research Documents

[APIs Underpin A Digital Business Platform](#)

[The Digital Business Imperative](#)

[How APIs Reframe Business Strategy](#)

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Digital Professionals Must Understand How APIs Unlock The Future

Application programming interfaces (APIs) are extremely powerful tools that underpin digital business design, so it is a mistake to view them as purely technological creatures. Born out of the need to connect systems and data together in an increasingly complex, online world, the API owes its success to many of today's most accessible and social technology companies, such as Amazon, Facebook, Google, and Twitter.¹ Just as APIs enabled technology to drive a social revolution, so too do they enable businesses to communicate, collaborate, and extend their value proposition via digital ecosystems.² They open new opportunities and shift business strategy for banks, as they have done for Denmark's Saxo Bank.³ APIs are also being deployed to meet regulatory demands for greater openness in banking, notably Phase 2 of the Payment Services Directive in Europe.

Leading Financial Institutions Are Deploying APIs In Common Ways To Gain Advantage

The power of APIs is the way they package business assets and data, making them accessible within and outside an organization. By allowing business activity to flow within and between organizations in real time, APIs can transform how you design and deliver change, unlock new revenue streams as a business development tool, and extend your value proposition by enabling you to consume services from, and supply services to, partner organizations. But this is an obtuse and technically complex field. "API" is just one of many acronyms that add impenetrability to the myth, like SOA, REST, SOAP, and many others.⁴ Most digital business strategy executives don't need to understand the deeper technical subtleties — what they need to focus on is the opportunity that APIs bring to their business. Leading banks and financial institutions are using APIs to:

- › **Insulate rapidly changing customer-facing services from back-end inertia.** APIs decouple your mobile, web, wearable, and other customer experiences from legacy banking systems to foster customer-centric agility. They allow you to expose information within your organization more effectively, which means you can make changes to customer-facing systems, like your apps and mobile banking platforms, independently of the pace of change of back-end systems.

PayPal decoupled its systems of record behind internal "capability" APIs, giving developers a consistent set of reusable services from which to build. These APIs are atomic and are the building blocks of the business. PayPal developers then use these internal APIs to assemble a layer of "engagement" APIs that feed PayPal's customer apps, partners, and collaborators.⁵ Developers are able to code rapidly using APIs from across the organization — which helps break down silos and has reduced "concept to delivery" from 74 days to one.⁶ Having this consistent set of APIs also enables PayPal to integrate acquisitions rapidly.

- › **Connect to the wider world to grow their influence and addressable market.** APIs underpin digital ecosystems and allow you to connect to new customers, partners, and suppliers. They allow you to expose what were previously internal services to select partners — or even openly to a wider community of individual developers — while allowing you to dynamically source and consume data and services to enhance your own products.

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TransferWise released an API to enable other banks to integrate its cross-border money transfer capability within their banking apps, rapidly extending its customer base.⁷ BBVA Compass uses Dwolla's API to enable customers to move money using the Dwolla network; the two companies collaborate via APIs to manage secure authentication and payment initiation.⁸ Fidor Bank both designed services to be implemented behind APIs, allowing developers to white-label the bank's operations and enable rapid expansion, and also used third-party APIs to facilitate services the bank had no desire to provide directly.⁹

- › **Deliver innovation and speed up product development.** Shielding systems of record behind APIs removes resource bottlenecks and streamlines internal development. APIs ensure consistency across touchpoints and accelerate development via reusable blocks of capability — for example, supporting rapidly changing mobile and online banking platforms across multiple customer device types. APIs also permit fast-paced collaboration with partners and external developers to achieve business goals.

Small business finance provider iwoca uses the APIs of Amazon, eBay, PayPal, Sage Pay, and other payment providers to access online business trading history and customer reviews to enable instant lending to online SMEs, plugging a lending gap that traditional banks were unwilling to fill. In Germany, solarisBank promotes itself as “a tech company with a banking license” and has developed a modular API-based “banking as a platform” service that digital businesses can use to underpin their own payment, authentication, and account services.¹⁰

- › **Declare their digital credentials and recruit talent.** Sharing APIs and providing them for open innovation events, such as hackathons, is a great way for banks to declare their commitment to digital innovation and to put roots down into the developer community. Bank Leumi, Barclays, and Citi are among many banks that have made selected data and capabilities available via APIs to hackathons. Not just a source of inspiration, hackathons are also an opportunity to recruit talent.¹¹

ICICI Bank curated an “Appathon” in February 2016, providing more than 50 APIs — not only from ICICI Bank but also from selected partners such as IBM, the National Payments Corporation of India, and Visa.¹² Some of the new wave of digital-only banks released their APIs to promote innovation even before their public debut; Mondo in the UK is one example.

- › **Address “open” banking and regulatory initiatives.** Openness is entering mainstream banking in two forms: collaborative initiatives between financial institutions and access and transparency for consumers. Open APIs promote these new ecosystems and sharing business models. The Open Bank Project provides an open source developer-friendly API for banks, allowing them to curate a community of developers to foster innovation; BBVA, Capital One, ING, and Sutor Bank have gone one step further and launched their own developer platforms to encourage wider collaboration via open APIs.

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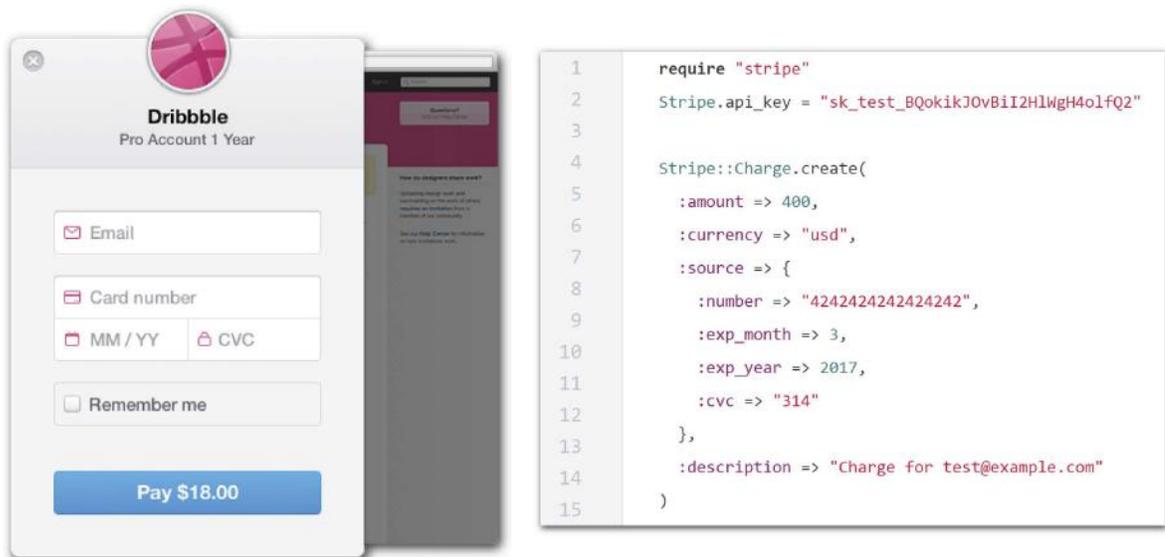
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Secco, a challenger bank in the UK, has a mission to provide all customers with their own API for data access — as it views the data as belonging to the customer, not the bank. Increasingly, regulatory bodies are aligning behind openness — whether to rebuild trust in banks or to facilitate innovation. In Europe, the second phase of the Payment Services Directive (PSD2) will require open access to account data and enable third-party payment initiation. The UK Government Open Banking Working Group (OBWG) is determining an API framework that extends beyond the requirements of PSD2 to underpin this new openness.

Build An API Strategy Today To Drive Business Agility

APIs belong within the business, not just the technical community; indeed many disruptors in financial services base their business entirely on APIs. Stripe's business is an API — it abstracts the complexity of the payment stack behind its API, meaning that anyone capable of coding can now accept online payments (see Figure 1). Xignite bases its business model on providing an API catalog to enable ready access to financial market data, powering fintech ecosystems as well as established firms like BlackRock and Charles Schwab.¹³ APIs bring transformative opportunity to banking and financial services; instead of asking whether your organization should become an API provider, you should be asking how to become one.

FIGURE 1 A Simple Checkout Form And API Code To Make An Online Payment Using Stripe



Source: Stripe

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APIs Drive Business Agility In Four Key Ways

Aside from the organizational efficiency and interoperability that APIs deliver, regulators have seized upon APIs as a mechanism to drive openness and transparency into banking. Digital business strategy executives should leverage this pressure as a catalyst to deliver a step change in API strategy.¹⁴ Forrester identifies four major categories of APIs, each of which targets a broad category of business opportunities (see Figure 2). Each of the four has different primary design goals and governance requirements, but they also have overlapping design considerations — a given API may fit into more than one category.

- › **Internal (“private”) APIs improve organizational agility, efficiency, and effectiveness.** To deal with complex webs of legacy systems that took years to build and that now curtail business change, organizations use internal APIs to increase agility by insulating customer experiences and business processes from underlying technology constraints. BBVA created a suite of internal APIs during a multiyear replatform program, subsequently releasing variations of some of them to the wider community as open APIs.

The challenge is ensuring that APIs package up true business capabilities, not just wrap old-style application functionality. Digital business executives must implement strong API governance to ensure that the project-level design follows guidelines and contributes to the evolution of a coherent business portfolio of APIs ready for reuse across any touchpoint.¹⁵

- › **B2B (“partner”) APIs optimize processes and relationships outside the bank.** Business-to-business (B2B) APIs enable highly customized integration with selected business partners, customers, and other stakeholders, typically within the context of specific business processes and relationships, like taking payments or providing data. Turkey’s Garanti Bank used APIs to rapidly develop its new mobile wallet solution from multiple third-party services. Some disruptors, like international money transfer provider Currency Cloud, deliver their services exclusively through B2B APIs.

When designing B2B APIs, digital business professionals must clearly understand the processes and business outcomes that the APIs improve in order to provide rock-solid, efficient business operations through cross-enterprise, real-time flows of transactions, data, and insight. BBVA created its API_Market to enable businesses to build financial products, providing services including customer authentication, card integration, account details, and payment statistics; German bank Number26 uses the TransferWise API to facilitate cross-border money transfer services.

- › **Open web (“public”) APIs expand market reach through openness and innovation.** Through this type of API, a bank opens data, product catalogs, business processes, or other business assets to developers across the internet. By doing so, it can expand its market presence, increase sales, generate new revenue streams, or foster an open-ended stream of innovation around its business.

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The main design challenge that digital business executives face with open web scenarios is understanding the synergies between their business and a broad community — and then creating APIs that make it easy for others to participate in creative ecosystem innovation. PayPal was one of the pioneers of open APIs in 2004; developers rapidly propagated PayPal's online payment capability around the web.¹⁶ When Apple Pay launched, it integrated with Braintree and Stripe, two API-based payment disruptors providing online and in-app payment capabilities, instantly broadening its available market.

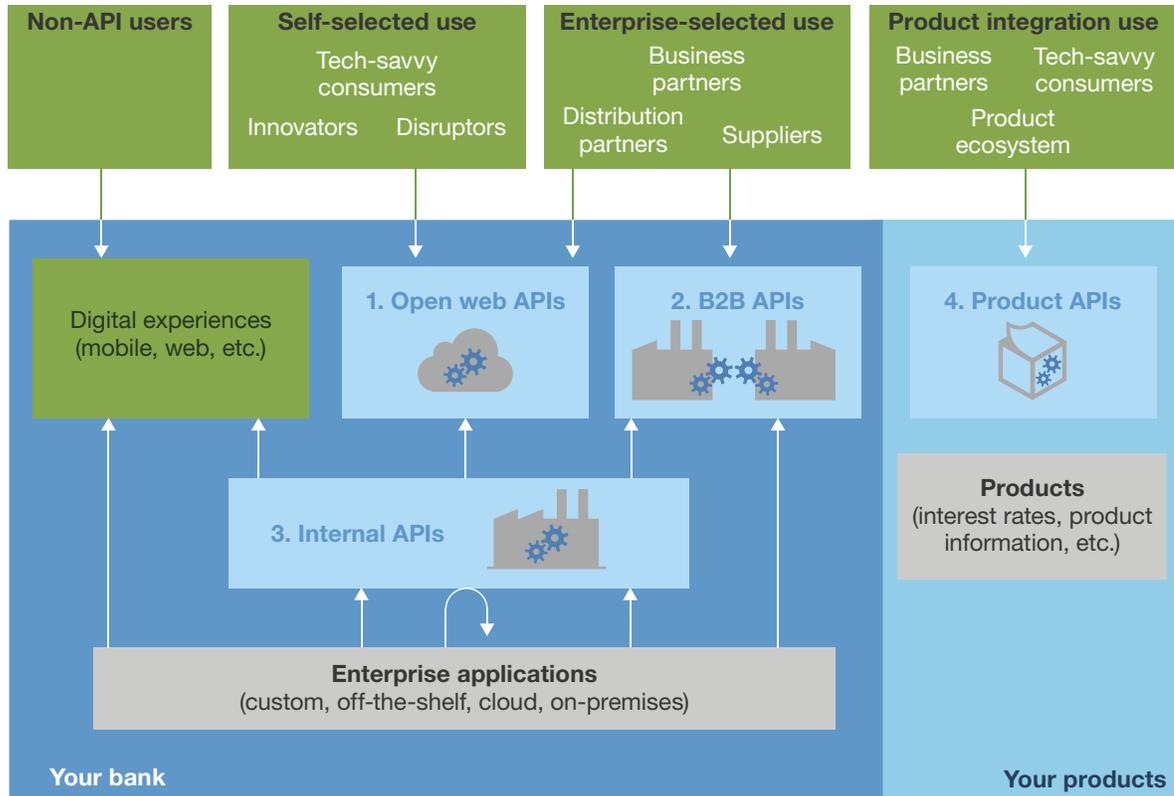
- › **Product APIs increase product value by connecting to and expanding the ecosystem.** With APIs, products gain value as part of an integrated ecosystem. For example, Visa released a product API to allow issuers to offer “card control” features to customers, allowing them to set spending controls, receive alerts, and turn their accounts on and off.¹⁷ Product APIs may look much like the other types of APIs, whether the product is a payment method, a service, or something physical like a mobile wallet. The key difference is that, because they enable direct control of and integration with a product or service, product APIs are primarily of interest to those who buy and use the product and to the ecosystem players that add value to the product.

The key design challenge of a product API is understanding the context in which a product is used and building support for useful flows of data and control between the product and its ecosystem. PayPal's 2013 acquisition, Braintree, released “Braintree Auth,” which enables eCommerce platforms and merchant service providers to connect with other Braintree merchants and take authorized actions on their behalf. This permits them to use cards stored by fellow Braintree merchants, avoiding the need for customers to re-enter their details at their own checkout.¹⁸

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FIGURE 2 How The Four Types Of API Work For A Bank



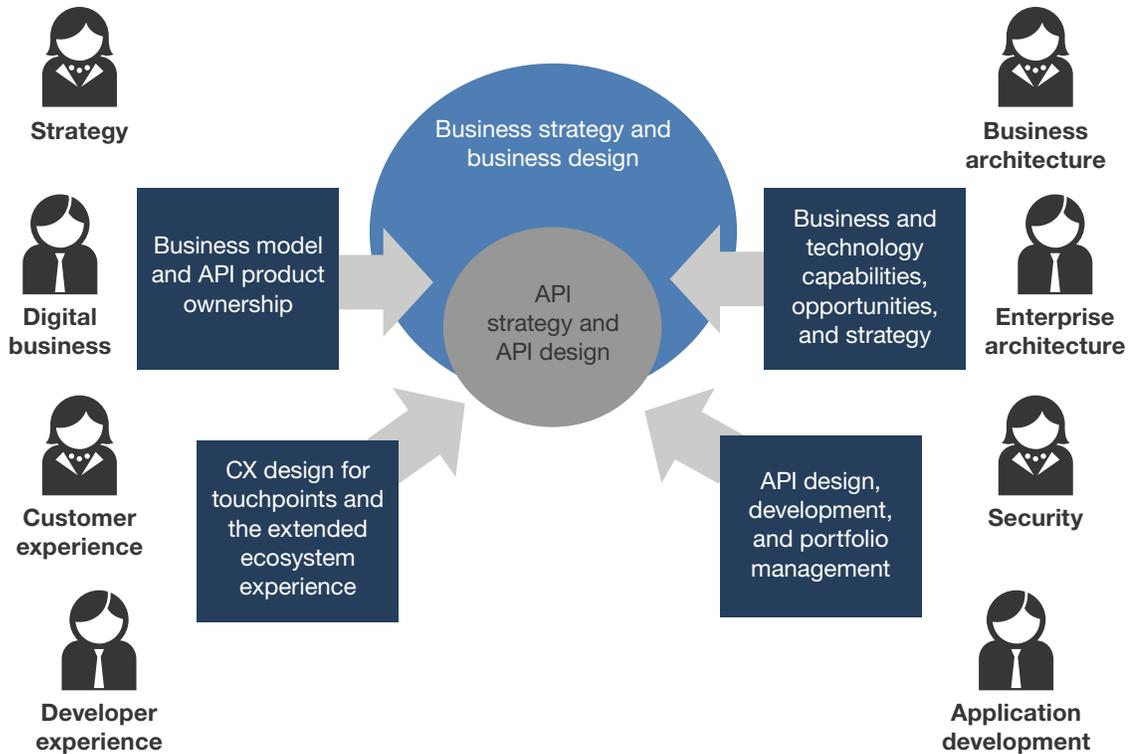
A Successful API Strategy Demands Close Collaboration With Business Technology

APIs truly embody the notion of digital business and are a fundamental part of customer value creation, rather than just a cost center or a commodity platform. An API strategy is first and foremost a continually evolving *business* strategy, not a technical product selection. There is very close coupling between a proposed business model and the technology decisions that realize it. Building an API strategy is a very different proposition from selecting a software commercial platform like an eCommerce platform; instead, the business model, customer experience, and technology design must happen in parallel, not one after another (see Figure 3). It's vital that you engage both customer experience professionals and your technologists in business strategy discussions, as the capabilities and limits of the underlying technology now define not only what business models are possible but also how quickly you'll be able to evolve with changes in the competitive landscape.

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FIGURE 3 Collaborate With Business Technology Teams To Create An API Strategy



Recommendations

Drive A Digital Business Agenda With An API Strategy

Business success is the responsibility of everyone in an organization, so don't see an API strategy as a purely technical play. Digital business strategy executives are perfectly positioned alongside their technical counterparts to harness the power of APIs and must share the responsibility of defining and realizing the business opportunity through an API strategy. Digital business executives must understand customer impact, identify completely new business possibilities, spot collaborative opportunities within and outside the organization, and help technologists see APIs from a business perspective. To succeed at this, digital business executives should:

- › **View APIs as tools to build a digital business platform.** Start thinking of your organization as a platform, one which uses APIs to expose information in and outside your organization.¹⁹ View APIs as rapidly reconfigurable business assets that enable you to meet ever-changing customer and regulatory demands — and start to describe them as such. Consider your organization through this lens and look to APIs to reframe your business opportunity — determining which assets are

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of value, can deliver agility, expose capabilities as new products, open innovation, or allow you to profit from others' resources. Capitalize on regulatory pressures like PSD2 as drivers for change. Think of APIs as a catalyst to reimagine the way your business builds new products and services and interacts with its customers and suppliers.

- › **Seek to understand, then to educate — then drive strategy with technology colleagues.** Find the API technology evangelists within your organization and harness their enthusiasm. Get to know their perspective and the key technological requirements of an API strategy, then reciprocate with the business value; together, frame your API vision in the context of the organizational strategy and objectives. Nurture the API ecosystem, which demands new skills and ways of working. Senior executives don't need the detail, but they do need to understand the business opportunities that APIs bring. Developers, product owners, and UX designers all need to understand how this new approach changes their roles, so training is critical.
- › **Manage APIs as a product, with all the inherent backing that requires.** In much the same way that loans or mobile banking platforms are “products,” so too are APIs. Like any product, APIs are a business endeavor and require adequate funding and a planned order of development. Start iteratively, using the four types to help define your API catalog; establish a cross-functional governance team and prioritize development according to business value. Consider an “API tax” on project teams so that, as they change and develop applications, they also deliver associated APIs. You'll see the benefits down the line as change begins to speed up and new revenue streams emerge.
- › **Design with the outside in mind from the start — whether you plan to be open or not.** Back in 2002, an internal policy compelled Amazon developers to use APIs for all software — and they had to design those APIs with the outside world in mind. If you design with an external use case in mind from the outset, you will save considerable effort should you wish to make those APIs open in the future. However, to drive maximum value from APIs, you must support developers, whether internal or external. A developer portal that provides comprehensive documentation, monitoring services, as well as a sandbox for testing and that also promotes the ready discovery of APIs is the bare minimum — this is, after all, a shop window for your latest products.

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Supplemental Material

Companies Interviewed For This Report

We would like to thank the individuals from the following companies and others who generously gave their time during the original or subsequent research for this report.

Adyen

Open Bank Project

Capital One

Streamdata.io

iwoca

Xignite

Endnotes

¹ Kin Lane was at one point clean-shaven and worked at the White House with a Presidential Innovation Fellowship. Now suitably hirsute, he is behind the “API Evangelist” website, where among many resources, he maintains a blog containing a personal history of APIs. Source: “History of APIs,” API Evangelist, December 20, 2012 (<http://apievangelist.com/2012/12/20/history-of-apis/>).

² Business leaders don’t think of digital as central to their business because in the past, it hasn’t been. But now your customers, your products, your business operations, and your competitors are fundamentally digital. To win in this new world, eBusiness leaders must reinvent their businesses as fundamentally digital. Do this, and you can become a

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digital predator; fail, and your business will become digital prey. This report sets out the vision of digital as a catalyst for your business transformation to win, serve, and retain customers in the age of the customer. The future of business is digital. See the “[The Digital Business Imperative](#)” Forrester report.

- ³ The CEO at Denmark-based Saxo Bank can’t stop talking about APIs. APIs allow the bank to take the things it is good at (its core business assets and capabilities), connect them with its partner ecosystem, and create new types of customers and new streams of revenue. See the “[How APIs Reframe Business Strategy](#)” Forrester report.
- ⁴ When designed well, APIs for the open web create a wide range of business opportunities. The problem that application development and delivery professionals must solve — what “well-designed” means — applies not only to open web APIs but also to B2B APIs, internal APIs, and product APIs. The answer starts with clear consideration of each API’s business context and intent, then moves on to the API’s functionality, technology, and future agility. As a foundation for well-designed APIs, the following report provides structured guidance on how to use business model, purpose, and architectural context as key pillars of an API design strategy. See the “[Establish Your API Design Strategy](#)” Forrester report.
- ⁵ Layering APIs in this way allows an organization to establish a strong set of core building blocks of business transactions and data, and then adapt the building blocks as necessary for customer experience, B2B, and other uses. See the “[How To Design APIs For Mobile](#)” Forrester report.
- ⁶ Dan Schulman, the CEO of PayPal, told investors at the Morgan Stanley Technology Media & Telecom Conference: “The payments stack underneath is a very complicated thing. If you can separate out your capabilities on top of that, have separate API calls on each of those, what you can do is you can rapidly iterate on the capabilities and just have those connected into sort of the messy payments stack below, not have them tightly coupled together . . . It used to take us, on average, 74 days to go from code concept to live to site. In many cases now, that takes us one day to do.” Source: “eBay, Inc.,” Morgan Stanley Technology Media & Telecom Conference, March 4, 2015 (http://files.shareholder.com/downloads/ebay/0x0x814035/68CADDDA-9E7E-46AF-9D86-BD4C0055AFE3/eBay_MorganStanleyTranscript_3.4.15.pdf).
- ⁷ For example, the TransferWise money transfer service is now available within Estonian bank LHV’s mobile app and website. Source: “TransferWise joins forces with LHV,” TransferWise Blog, February 1, 2016 (<https://transferwise.com/blog/2016-02/transferwise-lhv/>).
- ⁸ Source: “BBVA Compass,” Dwolla (<https://www.dwolla.com/fisync/bbvacompass>).
- ⁹ The Fidor operating system is API-based and accesses “FidorOS,” a middleware layer that sits between the country-based core banking platform instances and localized third-party services that it uses to provide additional services. The modular design enables Fidor to rapidly expand, enter new countries, and readily integrate new third-party developments to expand its customer proposition. Source: Fidor (<https://www.fidor.com/products/api-banking>).
- ¹⁰ solarisBank is the latest of several “banking as a platform” services to hail from Germany. Fidor, Figo, and the Open Bank Project also provide APIs to deliver banking services to developers, allowing them to build them into their own front-end applications and web pages.
- ¹¹ Citibank ran its first US hackathon, #CitiMobileChallenge, in 2014. The API it used was a prototype, shared in advance of its public API release. The hackathon was in part a proof of concept but as much a declaration of Citi’s ambitions in the technology arena: “Citi had a message to send about its brand, its aspirations and its commitment to fulfill those aspirations. That message was for developers. It was for people like me. It was for the employees. It was for the executive team that needs the validation that if they truly back something that’s big, that’s important and that’s about the reinvention of their company.” Source: David Berlind, “How 200-Year-Old Citibank Totally Nailed Its Hackathon,” ProgrammableWeb, December 15, 2014 (<http://www.programmableweb.com/news/how-200-year-old-citibank-totally-nailed-its-hackathon/analysis/2014/12/15>).
- ¹² Source: ICICI Appathon (<http://www.iciciappathon.com/>).

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¹³ Xignite combines data access and cloud scalability with B2B APIs to supply market data to over 1,000 financial companies for their apps and websites, including fintech innovators like Betterment, FutureAdvisor, Motif Investing, Personal Capital, Robinhood, StockTwits, Wealthfront, and Yodlee, as well as blue-chip organizations. Xignite is also one of the founder members of the #FintechRevolution API ecosystem, which aims to connect developers to best-of-breed APIs. Source: “Fintech Innovators Join Forces to Launch the #FintechRevolution API Ecosystem,” Xignite, October 15, 2015 (<http://www.xignite.com/market-data/fintechrevolution.html#ufh-i-152166315-fintech-innovators-join-forces-to-launch-the-fintechrevolution-api-ecosystem>).

¹⁴ As industry disruptions go, new government regulations come with long lead times, but executives still can choose shortsighted responses focused solely on regulatory demands. A better response is to use changing regulations — and other disruptions — as opportunities to advance your API strategy and digital business transformation. This report uses upcoming regulation for European banks (specifically PSD2) as a demonstration of how, with good API strategy, organizations can turn disruption into business opportunity. See the “[APIs Turn Disruptions Into Business Opportunities](#)” Forrester report.

¹⁵ Forrester identifies eight major shared areas of strategy for APIs and service-oriented architecture, and governance is mixed in throughout. See the “[Drive Business Agility And Value By Increasing Your API And SOA Maturity](#)” Forrester report.

However, actually working out governance in practice requires strong collaboration between developers and architects. See the “[Best Practices For Agile-Plus-Architecture](#)” Forrester report.

¹⁶ PayPal was by no means the first financial organization to use APIs on the web; however, it was one of the most successful in extending its reach via APIs. It launched with a developer portal, cleverly using the same architecture and structure for APIs as eBay, its parent, ensuring instant familiarity for developers. Source: Paul Demery, “PayPal announces ‘Web Pay Services’,” Internet Retailer press release, March 3, 2004 (<https://www.internetretailer.com/mobile/2004/05/03/paypal-announces-paypal-web-services>).

¹⁷ Source: “Visa issues API to offer consumer control over card transactions,” Finextra, February 9, 2016 (<https://www.finextra.com/news/fullstory.aspx?newsitemid=28444>).

¹⁸ Source: Mark Tattersall, “Introducing Braintree Auth,” Braintree, March 31, 2016 (<https://www.braintreepayments.com/blog/-introducing-braintree-auth/>).

¹⁹ Digital transformation is a much bigger concept than merely doing better customer experiences. It is a thoroughgoing, yet evolutionary, change in an organization’s preparedness for ongoing disruption. An API-based digital business platform is a critical enabler for this. See the “[APIs Underpin A Digital Business Platform](#)” Forrester report.

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