How Banking as a Service Will Keep Banks Digitally Relevant and Growing

To contend with insurgent competitors, regulatory mandates and demanding consumer requirements, banks must embrace open APIs that enable them to plug-and-play in the digital business ecosystem and reinforce their value proposition amid escalating share-of-wallet challenges.
Executive Summary

Although banks have traditionally been considered pioneers of process automation, they now find themselves in the background of today’s consumer-led, digitized financial services landscape. Insurgent financial technology competitors (fintechs) are disrupting traditional banking strongholds worldwide, bringing to market a wide assortment of innovative plug-and-play, multi-channel banking solutions. Such offerings – including digital wallets and peer-to-peer (P2P) lending and payment offerings – are increasingly finding favor among today’s device-obsessed consumers.

To retain wallet share, banks need to rethink the future of service delivery. Their competitive response, in our view, must transcend new-age technology adoption. Banks need to think progressively, and embrace a strategic and executional approach that enables them to innovate and consistently deliver hyper-personalized services across channels. By doing so, banks will show customers they know them, hear them and understand their needs and can deliver on them within the constraints of an ever-demanding regulatory landscape.

Banking as a service (BaaS) offers banks a way to level the playing field by radically shifting from being builders of financial solutions to assemblers of consumer-driven financial management tools and related offerings. By doing so, banks can accelerate their entry into new markets and quickly size up and meet the needs of digital consumers – or fail fast and move onto other more profitable services and consumer-relevant offerings.

However, the move to BaaS is not for the faint of heart. Banks must be willing to unlock their data and application services to partners (i.e., fintechs, third-party developers, retailers, etc.) through standardized and open application programming interfaces (APIs). They must also be willing to plug-and-play with new and emerging industry platforms in which they act as participants, not owners, of the customer experience and relationship.

Such an all-encompassing transformation must be considered over a continuum of time and is predicated on the bank’s appetite for risk and digital business maturity. It starts as an exploratory venture, moves to open API platform selection and expansion, shifts into core process transformation, and ultimately evolves into a comprehensive BaaS model. The full journey pivots around the following:

- Identifying a suitable API strategy.
- Building an API-led digital ecosystem.
• Forging beneficial partnerships with fintech firms and independent software developers to support and monetize APIs.
• Designing a change management strategy to implement and advance BaaS to ensure strategic alignment with business objectives.

With a successful implementation, banks can evolve from being a peripheral entity in the digital revolution to an important power broker that ignites benefits for consumers and partners across the digital value chain. Partners, in particular, stand to benefit from an expanded customer base, enhanced innovation, new sources of revenue and accelerated time to value.

This white paper introduces the BaaS model, offers an in-depth assessment of its challenges and benefits, and identifies critical success factors that can spur business success. We also detail our BaaS experience and know-how in devising a best-in-class BaaS strategy and roadmap that banks can adapt to jumpstart the journey. Finally, we look ahead at how the BaaS model will evolve via increased inter-bank and fintech collaboration.
BaaS: Harnessing Digital’s Remedial Powers

Traditionally, retail banks have owned end-to-end service delivery by tightly integrating experience, processes and products. However, this approach is under attack from all sides. Consumer-centric, born-digital fintech firms are competing directly for customers by providing superior user experiences, enabled by accessing application services and data across financial services providers. Traditional banks are forced to rethink their value proposition to stay relevant in this high-stakes battlefield.

As banks respond to this secular shift, BaaS has emerged as an effective weapon in their competitive toolkit. Key facets of this model include:

- **A command of open banking APIs.** BaaS helps banks open up traditional capabilities and assets to deliver more innovative customer-centric solutions. APIs offer the foundational backbone for provisioning BaaS, aiding and abetting traditional players to make the leap into digitization. Through APIs, banks can share data with internal developers, partners and third-parties such as fintechs, which then manipulate this data to construct valuable service offerings, including mobile payment applications, peer-to-peer lending solutions, analytical dashboards, etc.

- **A shift to solutions assembly.** The focus of an effective BaaS strategy is componentized capabilities that facilitate plug-and-play operations. As a result, BaaS allows banks to reinvent themselves as assemblers of financial management solutions, tailored to meet customer needs. Componentization also promotes reuse, standardization and cost reduction.

- **A tight focus on innovation and user experience.** Provisioning consumable capabilities and data to external partners and third-parties can facilitate innovative customer-oriented offerings, such as a virtual intelligent banking assistant. These offerings could spur a multiplier effect for growing the customer base and revenue, while simultaneously reducing costs.

Pioneers such as Fidor Bank in Germany recently launched an API-driven open banking platform with a community of third-party developers. (For more on this topic, read the Cognizanti article, “Making Dollars & Sense of the Platform Economy.”) This interactive platform accelerates customer onboarding and helps the bank acquire and/or partner with specialized fintech service providers. This initiative has also allowed seamless integration with a variety of new-age solutions in areas such as financial exchange trading, global money transfer and virtual currency innovations.

BaaS allows banks to reinvent themselves as assemblers of financial management solutions, tailored to meet customer needs.
BaaS Trends and Market Shifts

Most global banks see BaaS as essential to propelling growth and addressing the demands of an ever-expanding digital business ecosystem. We see six industry trends redefining the banking industry and mandating a shift toward BaaS (see Figure 1 and below):

- **The pervasive digitization of all elements of the banking business via a more clearly defined and precise service orientation of product offerings.** Device-led digital proliferation is becoming the rule among younger and more technologically-affluent customers. In response, banks have shifted their strategies to focus on the customer journey and deliver persona-driven experiences informed by data insights and foresights, as well as just-in-time business/service models. By improving their service orientation and modularizing product offerings, banks can catalyze their efforts to transform the customer experience.

  For example, to take advantage of the burgeoning digital wallet market space, MasterCard launched its Partner Wallet API, which enables external digital wallet solutions to plug into the MasterPass Acceptance Network to leverage value-added services such as check-out, fraud detection and authentication.²

- **Competing, cooperating with fintechs to drive innovation.** The digital age has enabled fintechs to increase their consumer relevance through innovative service offerings (e.g., peer-to-peer lending, crowdfunding, etc.). To compete as an agile orchestrator of the digital economy, banks are partnering with or acquiring fintechs to provide end-to-end services and drive innovation.
For example, American Express recently partnered with research lab Ideas42 to crowdsource innovative financial software solutions, in an effort to cultivate and deliver new offerings to existing customers and attract new ones.3

• Participating in the open banking platforms revolution via service-oriented architectures. The open banking revolution is gaining momentum through the Open Bank Project, a leading initiative to provide a standardized structure for sharing banking data. Most importantly, this initiative promises to securely expose data through an API in a simple and consistent manner by abstracting the peculiarities of each banking system and enabling developers to write an application once, which can then be used across multiple banks. The UK has embraced the open banking platform concept and plans to implement a mandatory UK open banking API standard. This would mandate a nationwide standardization of an API that will enable third-party providers to securely access data from any UK bank.

Spanish bank BBVA is already striving to gain competitive advantage from the European Union’s Payment Services Directive (PSDII) by building an open API platform that helps developers enhance their solutions in areas such as P2P, personal finance management and biometrics.5

• Acceding to the demands of small to medium-size business players for more intuitive banking options. The prospect of enhanced convenience is pushing smaller business players to convert to easier to use banking options. For example, small businesses are setting up online payment services with new cloud entrants, such as FreshBooks, and even seasoned players like PayPal. To stymie the outflow of customers, banks must either partner with these new cloud entrants or offer relevant services to make banking for smaller companies more user-friendly.

• Partaking in the industry shift to componentized business systems architectures. To infuse flexibility into the digital ecosystem, new-age IT architectures are arising to support functional modularization. Architectural componentization is driven by the internationalization of APIs across the banking industry, allowing financial institutions to seamlessly layer their technology offerings like building blocks rather than monolithic systems. This plug-and-play structure makes it easier and quicker for banks to develop new services and business channels.

Deutsche Bank is developing plug-and-play modularized solutions in the international transaction services area for companies and their clients that wish to configure faster, more efficient and simpler transaction routines.7

• Contending with an ever-changing regulatory context and accelerating industrialization. The banking industry is no stranger to regulatory change, but compliance demands have accelerated in recent years, requiring high levels of technology investment. By componentizing their IT architectures through microservices, banks can respond to new regulations more quickly and with minimal disruption, opening the doors to full-fledged BaaS models. Banks are also being compelled to implement BaaS by governments and their regulatory bod-
ies, many of which are focused on increasing consumer protection, encouraging open competition and breaking down traditional barriers to industry entry.

For example, the EU’s PSDII initiative is aimed at reducing barriers to entry for nonbank card and internet payment providers. The directive, which is scheduled to become law in 2018, would oblige banks to reveal pertinent financial data to third-parties through APIs.

These trends will proliferate, as digital technology has only scraped the surface of its full potential in the banking industry. Banks should welcome these trends, as digital transformation can introduce unprecedented growth and benefits.

Digital Ecosystem Advantages of Using BaaS

The benefits of creating an API ecosystem are plentiful, as banks can tap into external innovation through data and logic exposed through open APIs (see Figure 2). They can then utilize these capabilities to develop and drive new service solutions and enhance the customer experience, customer loyalty and their wallet share. By doing so, banks will find new sources of revenue and attract new customers, particularly digital natives seeking more convenient and innovative offerings.
Not only does the BaaS model expedite a bank’s ability to respond to market conditions and shifting customer demands, but its componentized nature also allows for the rapid industrialization and implementation of newly developed service solutions. BaaS also exposes banks to risk, including loss of control over customer engagements, consumer base fragmentation and the erosion of bank-led product innovation. Banks need to manage such outcomes to achieve their business objectives.

For example, BBVA is embracing an open platform business model, with a focus on building an API-driven marketplace. The creation of this marketplace has allowed BBVA to widen its reach, grow customers and build market recognition. Since 2006, BBVA has undertaken a continual improvement journey toward digitization that includes creating a dedicated digital banking division; starting a fintech-focused capital firm to tap innovations and proactively engage digital disruptors; acquiring startups such as Holvi and Madiva; and investing in digital banks, such as Atom Bank (currently undergoing due process).

Connecting the BaaS Dots

Proactive banks have recognized the multitude of benefits offered through BaaS and are now embarking on the journey of gradual BaaS adoption (see Figure 3).

The first step of the journey focuses on discovery and experimentation. Banks typically start by building a tactical API gateway and layering it on top of their existing technology stack to expose services. This involves utilizing the capabilities of multiple API management vendors and developing customer-facing mobile apps with limited connectivity into core systems.

The BaaS Adoption Continuum

Figure 3
As adoption evolves beyond the testing phase, an API management platform and a basic API portal are established. Business-prioritized systems and use cases are then exposed, which mandate moderate integration of core systems and a medium level of investment.

The next stage involves the transformation of the bank’s legacy systems to accommodate and link with the newly developed API strategy. An API ecosystem with metering and monetization is established, creating an API-based scalable service model. The high level of integration now makes it possible for partners and developers to engage through a collaborative community management portal, producing an elastic back-end architecture.

The final stages of integration and adoption necessitate a highly dynamic and personalized architecture. The channel is now run as a product and establishes a comprehensive ecosystem of symbiotic partners and third-party providers. Loosely-coupled components enable organic services and a flexible architecture, leaving the bank with a fully functional API marketplace that is regarded as a new banking channel.

**Moving Forward with BaaS**

When adopting the BaaS model, banks must take a personalized, in-depth look at their organization’s strategy and future initiatives, through a multi-dimensional lens. Figure 4 illustrates six crucial considerations that can facilitate successful BaaS adoption.

**BaaS Success Factors**

1. Identify Business Capabilities to Offer as a Service

To identify optimal business capabilities, banks must first define their specific goal for providing BaaS, whether it’s enhancing customer service, monetization and revenue growth or gaining first-mover advantage. Depending on the response, the company can then develop a fitting strategy.

For example, if first-mover advantage is important, banks must provision commoditized service capabilities to facilitate rapid industrialization and ease of implementation (for example, access and user authentication or account summary listings). A large private bank in India is partnering with the fintech MatchMove, a Singapore-based company that offers virtual card and remittance services to tap into the e-commerce and payments market.

On the other hand, if maximizing economic returns is a priority, the bank must provision services that provide enhanced customer returns, which requires awareness of the regulatory/compliance context. Fidor opened its banking services...
and partnered with Currency Cloud to integrate the company’s international payment engine capabilities into its own banking system through APIs. In doing so, it became the first bank to offer a regulated e-wallet that allows customers to buy currency, make payments and view balances in a wide array of currencies.¹¹

APIs are driving industry innovation and enhancing services in the following areas:

- **Fund transfer and digital payment.** These APIs enable seamless money transfers across banks and applications, and are the most prevalent APIs utilized in the industry.
- **Cross-border transactions.** These APIs enhance the security of cross-border money transfers, including AML/KYC APIs (anti-money laundering/know your customer). This helps banks and organizations verify customer identities and prevent money laundering.
- **Loyalty and rewards management and CRM.** These APIs allow merchants and banks to partner on offering perks and reward packages.
- **Portfolio dashboards.** These APIs consolidate all customer accounts and financial products into one visual dashboard, allowing for a comprehensive snapshot view of customers’ current financial situation.

Figure 5 illustrates the economic benefits and implementation effort required for a variety of business capabilities that are currently being provisioned as a service in the banking industry. This reveals four categories of initiatives that a bank may seek to accomplish when adopting the BaaS model.
2. Form Beneficial Partnerships and an Interactive Ecosystem

Despite the many BaaS benefits, adoption is still in its infancy, as many banks are unwilling to lose control of the customer. The inherent risk of banks transforming into a back-office service provider and allowing fintechs to control customer interactions is very real. Banks face a conundrum: If they don’t embrace BaaS, they lose out to competition from new technology entrants, and if they do adopt BaaS, they risk losing customer engagement. The answer lies in effectively developing beneficial partnerships, which can be accomplished by considering the following:

- Ensure the third-party partnership does not result in a fragmented customer experience or impede the bank’s ability to pursue innovative operating models.
- Structure the partnership so that APIs equally benefit the bank and the fintech provider. For example, APIs provide fintechs with a broader market in which to sell their services, and banks benefit from the ability to cross-sell related products and services hosted elsewhere on the platforms in which they participate.
- Adopt co-branded partnerships (i.e., partnerships in which the fintech develops services to deliver bank-branded services).

When building BaaS capabilities, organizations must also consider how to create an effective ecosystem of internal developers, partners and third-party providers. This can be accomplished by establishing a comprehensive developer portal that optimizes internal partner and third-party developer effectiveness and productivity.

The BaaS Digital Ecosystem and Partnerships

- **Internal APIs**: API proxies can be leveraged to quickly and securely expose and enable internal teams/partners to consume core data and services.
- **Partner APIs**: APIs are specifically designed for partners to access business functions, depending on the business relationship of the partnership.
- **External APIs**: APIs are tuned and designed per the needs of external partners and third-party developers.

**Examples**:
- **Internal enterprise-level integration**: Provide quicker onboarding and seamless integration, leading to standardization of APIs.
- **Enhancement of the partner experience through omnichannel**: Enable consumption through personalized API product experiences for B2B adoption.
- **Promotion of new business models**: Create new revenue streams, business models and, in rare cases, direct consumer integration.

- **Citi’s platforms and channels can be consolidated through internal APIs, thereby reducing cost and complexity and introducing agility.**
- **Dwolla-FiSync has partnered with BBVA Compass API to access real-time bank transactions.**
- **Fidor is leveraging its API that allows developers to create add-on services in a marketplace format.**
It is also important to institute a dedicated function to manage developer, partner and third-party relationships. For example, Barclays promotes an investor-driven program called Barclays Accelerator to team up with third-party developers and new fintechs for business collaboration.13

Figure 6, previous page, provides an illustrative example of how banks can leverage these partnerships and commercialize their data based on different relationships.

3. Consider New Pricing Models to Extract Greater Business Value

More so than any other for-profit institution, banks recognize that all business endeavors must have an eventual payout. Banks will typically make APIs available to partners and developers to create solutions for end-user consumption. Best-in-class monetization practices indicate a hybrid model, in which APIs and services are individually tagged to the highest ROI method: End-users can pay transaction fees to use the solution; partners and/or developers can pay for service/data usage; and partners and banks can enter into a revenue-sharing agreement, such as pay-per-click advertising.

Figure 7
For instance, Nationwide in the UK has partnered with Apple Pay to launch a digital wallet solution. The solution is built on a hybrid revenue-sharing agreement. The solution allows users to store card information for the bank’s credit and debit cards, making contactless purchases with a single sign-on that is secure across various storefront channels. It is built on APIs that make such services seamless across platforms.14

Figure 7 (previous page) illustrates leading monetization models that have been implemented by early adopters.

To succeed, these monetization approaches should provide:

- Comprehensive developer portals with easy access to API documentation, along with forums for developer collaboration.
- Comprehensive security features, such as approvals, authorization, open security standards or OAuth 2.0 for authentication and key management services. More sophisticated API management platforms support multi-tier access control methods that specify which developers can access which APIs. Usage monitoring is also part of this multi-tier access control capability. For example:
  - **Traffic control**: The traffic control feature protects back-end systems from overload by enforcing levels of partner access for data consumption.
  - **Scalability**: API management platforms address scalability issues by supporting open source and customer-modifiable extensions.
  - **Analytics and reporting**: Comprehensive analytics measure traffic, purchases and registrations.

4. Create an IT Roadmap that Supports Innovation, Inside the Bank and across the Ecosystem

In addition to implementing the API management platform, the technology strategy should also focus on:

- **API development lifecycle**: Deploy Agile SDLC lifecycle and other modern approaches, such as DevOps and Test Environment Management Service for API development
- **API design**: Utilize API design pattern standards to support discovery, versioning, URI naming, etc.
- **Internal data management**: Establish a dedicated API data management and governance function, which focuses on data acquisition, data transformation and data quality management.
- **Integration**: Institute a clear API integration strategy with secure, sustainable and scalable integration interfaces (e.g., the use of an enterprise service bus to channel data from multiple core systems within the organization).

5. Identify an Operating Model that Advances Business Objectives

Develop an efficient operating model that supports BaaS by constructing a dedicated channel that is actively managed and structured to align business with IT. This process can be incubated through the creation of an enterprise center of excellence (CoE) that focuses on architecture, engineering, governance and security management. The lines of business will be responsible for deciding on the service catalog and associated requirements to be provisioned using BaaS. This structure ensures standardization and enables effective organizational control for the service design.
6. Rethink Marketing, Instituting Change Management

The change and marketing management for API strategy implementation espouses a more holistic and constructive approach for instituting the digital DNA across the bank. The focus would be to launch the API ecosystem as a startup and scale it to the entire banking function. This process necessitates a clear change strategy, engaged leadership, effective stakeholder management and communication, continual training and education, and operating model alignment to ensure successful adoption.

Decoding the Critical Factors

As banks embrace BaaS, they must also be cognizant of the factors that influence success. A look at early BaaS entrants that have implemented digital initiatives and continue to innovate reveals the following success factors:

- **Ensure sustained senior leadership commitment and engagement.** BaaS is more than IT. Success typically pivots around effective organizational change management that opens senior leaders’ minds (and pocketbooks), to the concept of open APIs and new business models that spawn new revenue generation opportunities. By establishing an internal task force to incubate BaaS, banks can establish a dedicated team focused on market scanning, benchmarking and best practice initiatives.

- **Develop a holistic BaaS strategy and roadmap.** The strategy should extend beyond IT into business process, organizational and attitudinal change. Banks need to nurture a startup mindset and an entrepreneurial culture, and follow agile principles such as “start small, scale fast.”

- **Build an ecosystem of partners.** Industry experts or outside vendors can help with building and scaling the model.

- **Consider the impact of service design to existing business processes/models.** Integration or process reengineering may be required.

- **Actively promote the bank’s API to attract consumers to the ecosystem.** Banks can sponsor campaigns and industry-wide competitions to build momentum and appeal to developers and third parties.

- **Communicate, communicate, communicate.** Education and training can help inspire enthusiasm throughout the organization and among partners.

Getting Started

As a first step toward BaaS enablement, we typically take a structured, three-step approach to define a BaaS best practice strategy and roadmap leveraging APIs (see Figure 8, next page). Based on our industry experiences gleaned from numerous client engagements, we take a holistic view of an organization’s situation and desired capabilities.

To develop a strategy and roadmap for BaaS, it is imperative to comprehensively understand the current IT state and business capabilities, and recognize the organization’s vision and direction moving forward. Following the current state assessment and finalization of the desired direction, the organization can then design the target-state BaaS.

This involves identifying the right set of business capabilities to enable BaaS, development of a business and technology reference architecture, selection of the right API management partner, identification of the crucial technology components and investments for the API ecosystem, and design of a target operating model to enable the API ecosystem across the bank.
An Approach to BaaS Strategy Assessment and Roadmapping

Finally, the organization must develop the roadmap and implementation plan for instituting the BaaS model, and develop a change management strategy to embrace, evangelize and adapt to the new API strategy.

Looking Ahead

Technological advancements are accelerating the trend toward IT consumerization, commoditized banking services and higher consumer expectations for convenience and accessibility. In response, we foresee many banks embracing a service-oriented and componentized architectural approach that will result in a massive reengineering of traditional back-end processes. Furthermore, the advent of open banking standards will further catalyze componentization, resulting in increased inter-bank and fintech collaboration in the near future.

The impact of BaaS will only grow, as banks continue to address shifting consumer needs, expectations and technology-enabled capabilities, and innovate to outmaneuver the competition. To stay digitally relevant, preserve market share and retain an industry presence, most banks will need to fully embrace BaaS.

As the financial services industry evolves, the BaaS movement will emerge as a win-win-win proposition for banks, third-party developers and consumers, alike.
Footnotes


4 Open Bank Project overview, https://openbankproject.com/about/.


13 Barclays Accelerator website, http://www.barclaysaccelerator.com/#/.


References


About the Authors

Philippe Dintrans is the Senior Vice-President and Global Consulting Leader of Cognizant Business Consulting’s Banking and Financial Services Practice. Philippe has led numerous consulting engagements covering business transformation, IT transformation and change management for marquee Cognizant clients. He holds a master’s of science degree in engineering from the Massachusetts Institute of Technology (MIT) and an MBA from INSEAD. He can be reached at Philippe.Dintrans@cognizant.com.

Amit Anand is a Senior Director within Cognizant Business Consulting’s Banking and Financial Services Practice. He has 14-plus years of experience successfully leading and managing large business/IT transformation and operating model initiatives for various clients. Amit holds a bachelor’s degree from the IIT Delhi and an MBA from the Indian School of Business, Hyderabad. He can be reached at Amit.Anand@cognizant.com.

Madhusudan Ponnuveetil is a Senior Consulting Manager with Cognizant Business Consulting’s Banking and Financial Services Practice. He has more than 12 years of experience leading large IT operating model innovations, IT performance improvement and change management initiatives. Madhu holds an MBA from Asian Institute of Management, Philippines, and a bachelor’s degree in engineering from MSRIIT, India. He can be reached at Madhusudan.Ponnuveetil@cognizant.com.

Ardhendu Acharya is a Consulting Manager with Cognizant Business Consulting’s Strategy and Transformation Practice. He has more than eight years of experience managing consulting engagements across target IT operating models, business-driven IT strategy and cost optimization initiatives. Ardhendu holds an MBA from the Rotterdam School of Management, Erasmus University, the Netherlands, and a bachelor’s degree from Anna University, India. He can be reached at Ardhendu.Acharya@cognizant.com.

Adam Chardukian is a Senior Consultant with Cognizant Business Consulting’s Banking and Financial Services Practice. He has more than six years of experience in consulting, financial analysis, Lean/Six Sigma implementation and sales and product management. Adam holds an international MBA and a bachelor’s degree in finance and global supply chain and operations management from the University of South Carolina. He can be reached at Adam.Chardukian@cognizant.com.
About Cognizant Banking and Financial Services

Cognizant's Banking and Financial Services business unit which includes consumer lending, commercial finance, leasing insurance, cards, payments, banking, investment banking, wealth management and transaction processing, is the company’s largest industry segment, serving leading financial institutions in North America, Europe, and Asia-Pacific. These include six out of the top 10 North American financial institutions and nine out of the top 10 European banks. The practice leverages its deep domain and consulting expertise to provide solutions across the entire financial services spectrum, and enables our clients to manage business transformation challenges, drive revenue and cost optimization, create new capabilities, mitigate risks, comply with regulations, capitalize on new business opportunities, and drive efficiency, effectiveness, innovation and virtualization. For more, please visit www.cognizant.com/banking-financial-services.

About Cognizant

Cognizant (NASDAQ: CTSH) is a leading provider of information technology, consulting, and business process services, dedicated to helping the world’s leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, and a global, collaborative workforce that embodies the future of work. With over 100 development and delivery centers worldwide and approximately 233,000 employees as of March 31, 2016, Cognizant is a member of the NASDAQ-100, the S&P 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world. Visit us online at www.cognizant.com or follow us on Twitter: Cognizant.