



Banking on Digital: How Financial Firms Can Be Future-Ready

As financial institutions pivot to digital, they require a business-process-centric assurance strategy that connects technology and regulatory compliance – while delivering desired operational benefits.

Executive Summary

Digital has opened the door to new financial services products, customer touchpoints and improved operational efficiency. Yet, digital thinking and technology, such as advancements powered by blockchain's distributed ledger, threaten the industry's stronghold of all things financial. (See our white paper [“Financial Services: Building Blockchain One Block at a Time”](#) for deeper insights.)

Moreover, fintech entities such as Amazon Payments, with a near monopoly on customer data, exert more influence on market dynamics than most established banks. Digitally-empowered customers have compelled firms to sanction loans within minutes. Goldman Sachs' lending arm, Marcus, even allows customers to dictate loan terms.¹ As regulators respond to digital advancements, firms have to comply with in-flight regulations.

As financial services firms embrace digital, they need business assurance strategies that extend conventional quality assurance methods to address the nuances of emerging technologies

such as blockchain and advanced artificial intelligence (AI). Moreover, they need assurance that their strategies can accommodate changes in the ever-shifting regulatory landscape wrought by the acceleration of digital within the core of their businesses.

Last but not least, firms need to validate user journeys across the stakeholder ecosystem including bank employees, insurers, regulators and third-party agents, not limited to customers.

This will ensure that they deliver a consistent user experience across touchpoints and technologically preempt gaffes that could potentially undermine their financial and/or reputational integrity.

This white paper explores how financial firms can excel in digital by holistically addressing the quality of business processes built on disruptive technologies while assuring compliance to regulations.



BETTING ON BLOCKCHAIN

For a financial firm, one of the major roadblocks to modernizing systems, business processes and technology is the value placed on trust, accountability and security. Traditionally, firms operated on legacy systems that followed monolithic rules that have stood the test of time, delivering services in a trustworthy, accountable and secure way. Any deviation from these set rules is seen as a potential threat. However, digital requires a departure from traditional operating models in order to develop hyper-personalized financial products and services. This movement calls for leveraging new technologies to create more frictionless ways of interacting and transacting.

Facilitating faster transactions, reducing costs and creating a more operationally nimble financial ecosystem, blockchain allows for secure tracking and recording of online transactions without a central trust authority. Blockchain builds in transparency and immutability of data, thereby digitizing trust and hence solving one of the most vexing challenges of the financial industry.

Blockchain's successful implementation is therefore contingent on three key components: a functional layer, a domain layer and a regulatory layer specific to geographies (see Figure 1).

Three Layers for Blockchain Assurance

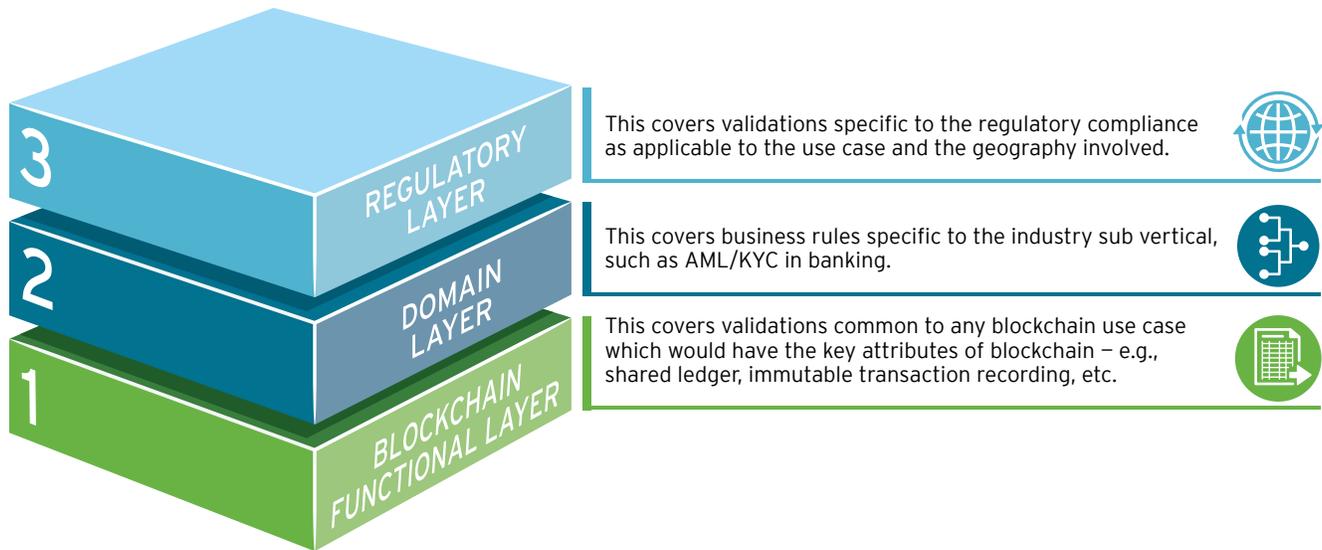


Figure 1

Firms need to leverage domain knowledge to establish necessary controls and access points, and to account for fraud and other business exceptions, in order to sync blockchain with business flows. Furthermore, financial experts should evaluate the implementation to ensure business processes remain compliant with the evolving regulatory landscape.

The first layer (functional) is industry-agnostic and caters to the basic functions of blockchain – e.g., a shared ledger and consensus-based transaction recording. However, for firms, the domain and regulatory layers are significant – since they approach blockchain implementation from an industry standpoint. Firms need to leverage domain knowledge to establish necessary controls and access points, and to account for fraud and other business exceptions, in order to sync blockchain with business flows. Furthermore, financial experts should evaluate the implementation to ensure business processes remain compliant with the evolving regulatory landscape.

ADVANCING ARTIFICIAL INTELLIGENCE

Advanced AI in the form of machine learning is helping financial firms embrace process automation and adopt a customer-first approach to ensure high-quality financial services are delivered at speed and in ways that anticipate customer needs, wants and desires. Facilitating faster processing cycles, infallible investment advice and customizable services, AI's intelligent algorithms are quickly digitizing the entirety of the financial industry. Years of judgement-based human advisory, for instance, are now codified into rule-governed algorithms for data analysis and market-trend prediction.

For instance, Goldman Sachs uses an algorithm that not only monitors stock filings of a company, but also forages through customer comments on the internet to analyze investor sentiment.²

Leading firms are deploying AI to drive the following key outputs:

- **Recommendations/advice:** The algorithm combs through a user's recent searches to recommend the best-suited products and services. For instance, a user browsing through upcoming real-estate launches will see an advertisement for home loans.
- **Alerts:** Algorithms track historical payment patterns on a user's credit cards and chart spending behaviors. In the event of a big-ticket purchase made with the card, the algorithm will trigger an alert to verify the transaction, thereby preventing potential theft or misuse.
- **Prediction:** For e-commerce portals, algorithms study past browsing/purchasing behavior of customers in order to anticipate the required inventory for sale season.
- **Proactive action:** Algorithms can read communications/transactions among humans to identify threat patterns, and preempt and avert potential fraud and crimes.

However, the AI algorithm needs to be validated to ensure it functions as it should. A word of caution comes from the Knight Capital debacle of

2012, where an algorithmic glitch continued to execute bad trades leading to a loss of more than \$460 million.³

Traditional code testing cannot adequately assure autonomous systems. Firms need a business-process-aligned assurance model that ensures the algorithm remains true to key business outcomes, achieves continuous improvement, addresses the needs of a wide audience, reduces false positives and always generates business-relevant outcomes. More important, firms need to formulate a digital ethics policy to rein in questionable behaviors, such as unintentional spying or discrimination by an algorithm gone rogue.

ENABLING REGULATORY COMPLIANCE

The advent of digital thinking across the front, middle and back office has spurred financial firms into a frenzied adoption of new technologies. However, these initiatives must protect investor and customer interests. The Dodd-Frank Act enacted in the U.S. requires firms to monitor and document every trade transaction.⁴ This bolsters trade surveillance, helping authorities preempt trading malpractices.

Similarly, the European Union's Market in Financial Instruments Directory (MiFID) and BASEL III regulate firms that provide services to clients linked to financial instruments and the venues where those instruments are traded.⁵

Beyond these, regulators also issue compliance norms for digital technologies such as blockchain. The recently-issued know your customer (KYC), anti-money-laundering (AML) norms and the industry-agnostic General Data Protection Regulation (GDPR) focus on mitigating data and cybersecurity risks.

The challenge for financial firms is to balance the adoption of digital with an in-flight regulatory environment. Nonetheless, firms need to ensure there are no slippages in compliance.

Assurance for regulatory compliance exists on three levels: geography-specific, industry-specific and business process. An assurance model for regulatory compliance should validate executable parameters associated with a business process, improving the effectiveness and accuracy of external reporting.

Firms should participate in community-driven consortia, front-ended by domain experts, to scientifically map new regulations with existing business processes. They also need to validate that their IT infrastructure advances new digital business processes to ensure data integrity. An effective assurance strategy will help firms adapt to a dynamic regulatory environment and apply better controls and risk management to their businesses.

MAPPING WITH CONSUMER JOURNEYS

In the digital era, firms have wrongly assumed that a myopic focus on the customer is all they need to succeed. To effectively deliver services digitally, several functional areas must tightly coordinate how they work internally, independently and with customers. Ignoring the stakeholders creates a variation in what is promised to the customer, and what is eventually delivered.

These stakeholders facilitate a business flow from initiation to fruition. The customer is the last stakeholder in the trajectory of any business process. For instance, for business processes regarding a home loan, the essential stakeholders are the loan provider, regulator, builder, insurer and the end customer. In processing the loan, the customer occupies merely one-fifth of the

An assurance framework that considers bottlenecks and critical journeys can help to properly facilitate end-to-end consumer journeys.

bandwidth, while the four internal stakeholders carry out a major share of the business process. To effectively undertake the digital challenge, firms need to focus on enabling all stakeholders – called consumers – to deliver what is promised to the end customer.

To achieve this, firms need to visualize individual consumer journeys. They should start by establishing stakeholders for a particular business process, outline roles and responsibilities, and set expected deliverables and outcomes. Then, they must take into account necessary approvals, access, information and controls that each stakeholder requires to complete their journey. Firms should also ensure information and sub-processes are seamlessly relayed from one stakeholder to another to bring the business process to a logical conclusion.

An assurance framework that considers bottlenecks and critical journeys can help to properly facilitate end-to-end consumer journeys. For instance, consumer journeys for high-net-worth individuals and mass affluent would be different – in terms of business processes, volume and credit accessibility. The framework should map the journeys separately for each class of customers, addressing discrete bottlenecks and critical areas.

THE WAY FORWARD

Digital is reshaping the financial services landscape, mandating firms to shift from an overreliance on legacy IT systems and traditional business models toward nimble, customer-centric processes. This pivot not only requires an exten-

sive IT overhaul but, more important, a mindset shift in application development and operating models. Among all this transformation, quality assurance becomes integral to success, via the following:

- **Enable an end-to-end view of processes.** For a smooth transition to emerging technologies and trends discussed in this white paper, firms must broaden their perspective from assuring the functionality of their mobile applications to include the entire spectrum of business processes leading to the digital consumer touchpoints.
- **Embrace a collaborative, community-driven mindset.** Legacy systems are often incapable of supporting faster transactions. This means embracing a community-driven approach toward validating data and ensuring security. Technologies such as blockchain are representative of the consensus-driven business model of the future.
- **Move toward proactive archiving of regulatory activity.** By fostering active communities, firms can also contribute toward a common repository of new regulations for financial services and remain compliant.
- **Ratchet up advisory capabilities.** As faster transactions become the central tenet for success, firms need to define and prioritize critical areas for validation. An advisory capability will help integrate domain knowledge with quality assurance initiatives, enabling firms to test what is instrumental to drive a particular business process to fruition.

FOOTNOTES

- ¹ www.goldmansachs.com/what-we-do/investing-and-lending/banking/marcus-by-goldman-sachs/
- ² www.stitcher.com/podcast/goldman-sachs/exchanges-at-goldman-sachs/e/44898724
- ³ www.ft.com/content/928a1528-1859-11e2-80e9-00144feabdc0
- ⁴ The Dodd-Frank Wall Street Reform and Consumer Protection Act brings comprehensive reform to the regulation of swaps. These products, which have not previously been regulated in the U.S., were at the center of the 2008 financial crisis. For more, read: www.sec.gov/about/laws/wallstreetreform-cpa.pdf.
- ⁵ MiFID is the markets in financial instruments directive. In force since November 2007, it is a cornerstone of the EU's regulation of financial markets. It governs provision of investment services in financial instruments by banks and investment firms and operation of traditional stock exchanges and alternative trading venues. Read [here](#) for more.

ABOUT THE AUTHORS

Nanda Kishore Divakarla

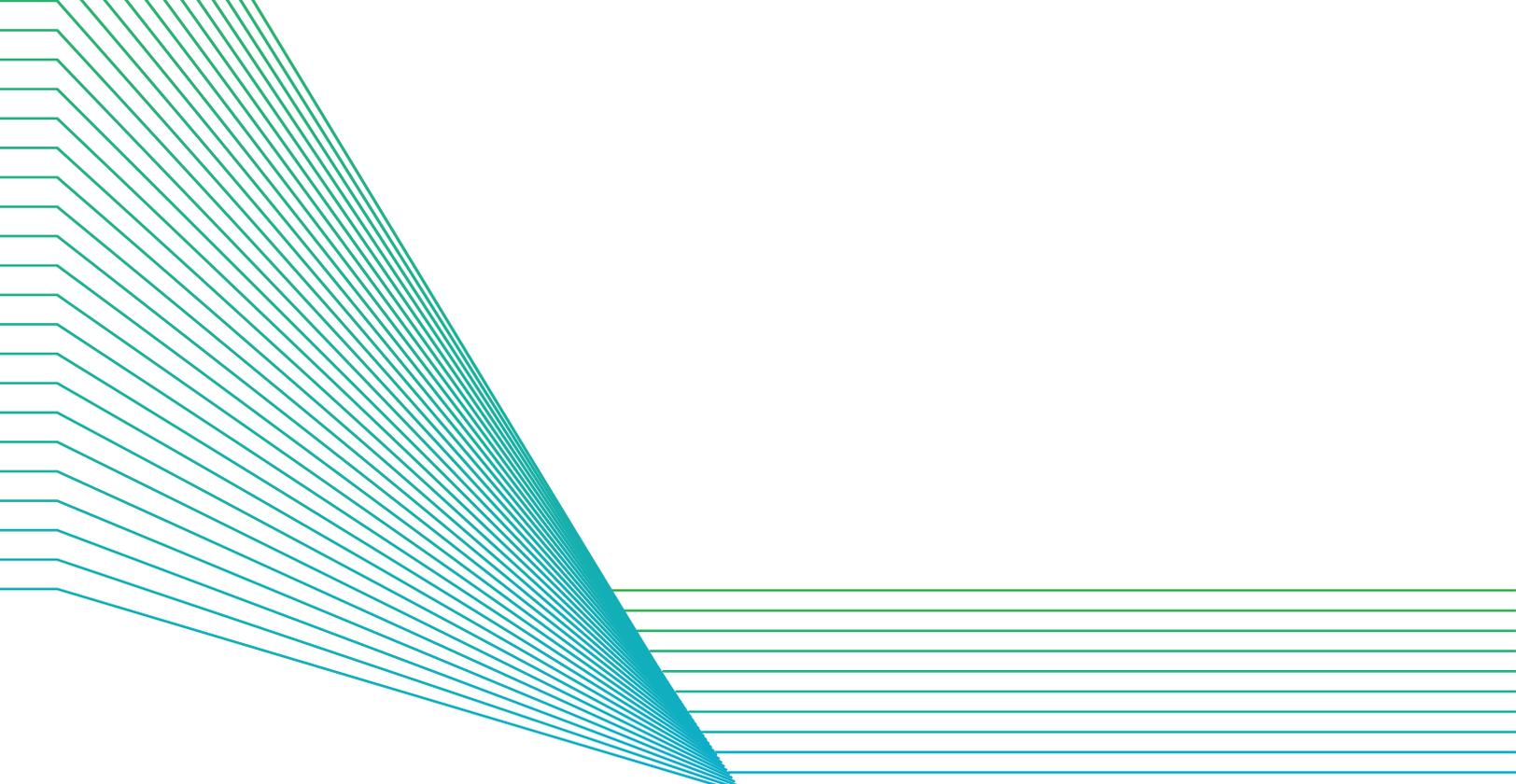
Senior Director, Cognizant Quality Engineering and Assurance Practice

Nanda Kishore Divakarla (Nand) is a Senior Director within Cognizant's Quality Engineering and Assurance Practice within its Digital Technology and Systems business unit. He has over 20 years of experience across the globe focusing on pioneering technologies and practices, and executing domain-based testing and business process assurance engagements for regulated industries. Nand is currently spearheading the establishment and implementation of business process assurance (BPA) services for Cognizant's Quality Engineering and Assurance Practice. He has an engineering degree from Andhra University and is a management graduate from National Institute of Technology. Nand can be reached at Nandakishore.Divakarla@cognizant.com.

Muthukumar Jayaraman

Senior Manager, Cognizant Quality Engineering and Assurance Practice

Muthukumar Jayaraman is a Senior Manager within Cognizant's Quality Engineering and Assurance Practice within its Digital Technology and Systems business unit. He has over three decades of experience in banking and financial services and IT consulting in corporate, retail, wealth management, digital assurances, AML risk management and transfer pricing, regulatory compliances, cards and blockchain designs along with governing larger transformation programs. Muthukumar holds a master's degree in commerce from University of Madras, Chennai, and is a Certified Associate of IIB, India. He can be reached at Muthukumar.j@cognizant.com.



ABOUT COGNIZANT

Cognizant (NASDAQ-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 205 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.



Cognizant

World Headquarters

500 Frank W. Burr Blvd.
Teaneck, NJ 07666 USA
Phone: +1 201 801 0233
Fax: +1 201 801 0243
Toll Free: +1 888 937 3277

European Headquarters

1 Kingdom Street
Paddington Central
London W2 6BD England
Phone: +44 (0) 20 7297 7600
Fax: +44 (0) 20 7121 0102

India Operations Headquarters

#5/535 Old Mahabalipuram Road
Okkiyam Pettai, Thoraipakkam
Chennai, 600 096 India
Phone: +91 (0) 44 4209 6000
Fax: +91 (0) 44 4209 6060

© Copyright 2017, Cognizant. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the express written permission from Cognizant. The information contained herein is subject to change without notice. All other trademarks mentioned herein are the property of their respective owners.