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ACCELERATING THE PACE OF INNOVATION

Tapping into Technology that Goes Beyond Compliance

How banks can unlock the potential of AI for risk solutions

The compliance imperative

In recent years, the banking sector has been buffeted by financial and other penalties in relation to money laundering, fraud, mistreatment of customers, and market misconduct. Managing the tsunami of new regulatory challenges unleashed since the 2008 crisis requires a fresh approach above and beyond legacy solutions. Enter AI-driven RegTech, the emerging technology with the powerful potential to both address regulatory challenges and stimulate innovative digital transformation.

Those banks that are bold enough to embrace it alongside technology's full capabilities for risk management will reap benefits that go far beyond the goal of compliance. Lower costs, greater efficiency, improved accuracy, sustainability, and competitive edge will be their rewards.

The risks of non-compliance for banks and financial institutions are exponential:

Consumer harm	**Damage to reputation**	**Negative press**
Social media attacks	**Enforcement actions**	**Colossal fines**

"While compliance certainly looks very expensive, non-compliance blows even a bigger hole in the budget of any company. In fact, financial institutions in the US alone have been reported to have paid over $160 billion in fines for non-compliance."

Source: Application of AI in RegTech, MEDICI (2017)

Total fines, penalties, and settlements for the 18 largest U.S. and European banks from 2009 to March 2018.
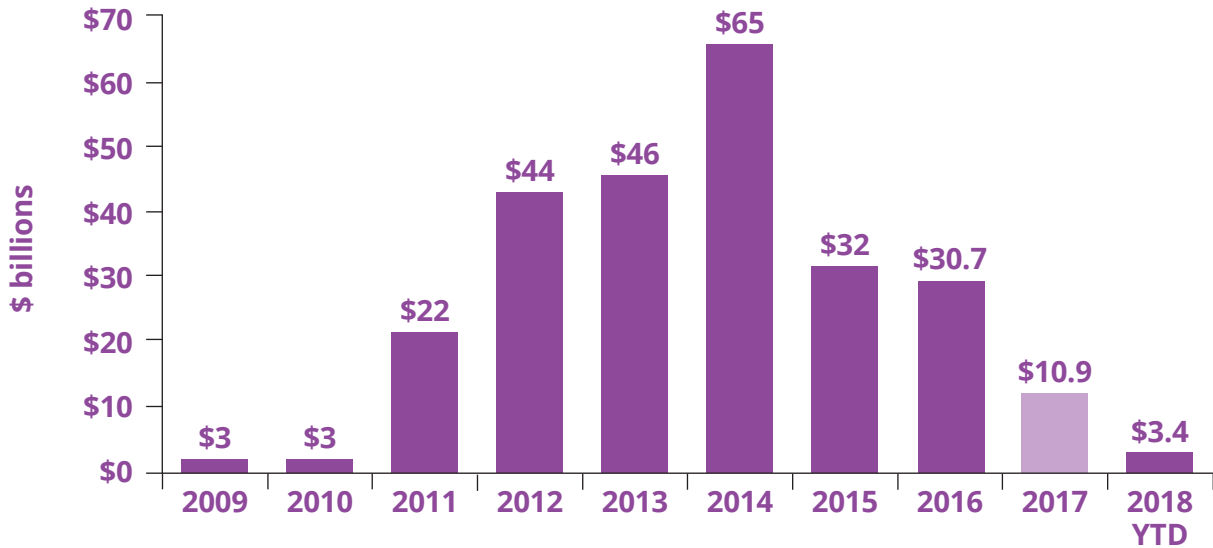
Source: BCG for years 2009 to 2014. CPG analysis for the year 2015, 2016, 2017, and 2018 (March). Peer group of the 18 largest U.S. and European banks includes the following 6 U.S. banks: Bank of America, JPMorgan Chase, Citigroup, Morgan Stanley, Wells Fargo, and Goldman Sachs, and the following 12 European banks: BNP Paribas, Credit Suisse, Deutsche Bank, UBS, HSBC, Barclays, The Royal Bank of Scotland, Rabobank, Lloyds Bank, Standard Chartered, ING, and Banco Santander. Data only includes fines, penalties, and settlements of $50 million or greater.

"Globally, ~$80 billion is spent on governance, risk, and compliance, and the market is only expected to grow, reaching $120 billion in the next five years."

Source: Application of AI in RegTech, MEDICI (2017)

The incentives to harness AI-powered RegTech are many. Some large global banks currently spend well over $1 billion a year each on regulatory compliance and controls. A leading European bank recently estimated that on average financial institutions are now dedicating up to 15% of their staff to managing compliance.

Stakeholder challenges and technology

Financial Institutions

- Reduction of compliance and regulatory reporting costs
- Anti-money laundering (AML)/know your customer (KYC)
- Supervisory reporting
- Reduction of operational risks
- Mitigation and management of internal risks
- Increased transparency with more security
- Understanding of regulatory requirements
- Requirement to have fair and consistent regulations

Regulators

- Increase consumer demand for financial services
- Prevent malpractice
- Tackle money laundering
- Combat terrorist financing
- Fraud
- Detect market abuse
- Increase transparency
- Set clear regulatory expectations and smart regulations
- Pursue responsible innovation

"Money-laundering activity is estimated to be between 2 and 5% of global gross domestic product (GDP). An increasingly varied and complex set of products and services, globally connected markets, and digitally enabled channels have inadvertently enabled highly organized and sophisticated money-laundering activity to proliferate and diversify. For example, analysis has highlighted the growing threat of high-end money laundering and its links with cybercrime, organized fraud, and professional service providers."

Source: How Banks Can Trust AI to Combat Money Laundering, E&Y, 2018

What exactly is RegTech?

RegTech is the burgeoning industry bringing together next-generation technologies, including blockchain, AI, cloud computing, APIs, biometrics, robo-advisors, and the like to enable financial institutions to operate at a new level of efficiency and release resources for innovation. It's being used for financial crime surveillance (identifying bad actors), consumer compliance, scenario modeling, and enterprise risk management. Regulators, too, see the technology's potential to reduce systemic risk and improve financial stability.

Should banks adopt AI-driven RegTech?

The answer is not *if*, but *when*.

> **"Ultimately, when integrated with the right strategy and with the right focus on building trust, innovating with AI must be seen as a risk worth taking."**
>
> Source: How Banks Can Trust AI to Combat Money Laundering, E&Y, 2018

Regulators themselves are already harnessing AI and RegTech. The US Securities and Exchange Commission (SEC) is leveraging big data to develop text analytics and machine learning (ML) algorithms to detect possible fraud and misconduct. The Federal Conduct Authority (FCA) of the UK was one of the first governmental bodies to promote its use. A report by the UK government Chief Scientific Adviser states, "FinTech has the potential to be applied to regulation and compliance to make financial regulation and reporting more transparent, efficient and effective—creating new mechanisms for regulatory technology, 'RegTech'."

Compliance **before** RegTech	Compliance **after** RegTech
Tactical and reactive	Stategic and proactive
Legacy systems:	**RegTech:**
▸ Inefficient ▸ Cumbersome	▸ Agile ▸ Deeper insight
▸ Time-consuming ▸ Static solutions	▸ Innovative and scalable ▸ Data-driven decisions
▸ Costly ▸ Flawed risk assumptions	▸ Cost-efficient ▸ Greater accuracy

Key advantages of AI-driven RegTech solutions

Capability to serve as regulatory radar to capture the flow of new regulations in a single

Can be designed to be transparent to surface key decisions, assumptions, and known limitations

Able to analyze data to identify patterns and make decisions based on them

Programmable via ML to learn from the data supplied

Programmable to learn as a one-off at the time of their design

Programmable to learn on a continuous basis to refine the way decisions are made over time

Able to analyze unstructured data such as email, spoken word (via NLP), PDFs, and metadata

Delivers increased granularity and frequency of regulatory reporting

The new use of AI to mitigate risk is now one of the most important drivers of transformation for financial institutions today.

61%

61% (increase from 53% in 2017) of financial services firms globally expect an increase in their total compliance budget in 2018.

49%

49% of global systemically important financial institutions (G-SIFIs) reported that their total compliance team budget would increase in 2018.

41%

41% (an increase from 33% in 2017) of financial services firms globally expect to spend more time assessing FinTech and RegTech solutions in 2018.

55%

55% of G-SIFIs expect to spend more time assessing FinTech and RegTech solutions in 2018.

Source: The Cost of Compliance, 2018, Thomson Reuters

Cost savings linked to replacing legacy systems with AI-driven RegTech

Release funds for better use

Automate business processes

Reduce dependency on human operators

Lower time needed to triage alerts

Combine large volumes of complex data

Increase accuracy via elimination of data-intensive error-prone tasks

Diminish potential financial damage through appropriate risk assessment

AI-driven RegTech to keep you compliant

Mapping compliance requirements on business activities is now a round-the-clock imperative for banking institutions because of the increasing volume, velocity, and variety of regulations. RegTech innovation offers them the possibility to define and manage their risk obligations in a more efficient way.
Here are some examples of the regulations that can be addressed with RegTech:

▸ Markets in Financial Instruments Directive (MiFID II)

▸ Undertakings for Collective Investments in Transferrable Securities (UCITS) Directive

▸ Alternative Investment Fund Managers Directive (AIFMD)

▸ KYC

▸ Second Payment Services Directive (PSD2)

▸ General Data Protection Regulation (GDPR)

▸ Packaged Retail and Insurance-based Investment Products (PRIIP)

▸ Fundamental Review of the Trading Book (FRTB)

Drivers of RegTech Growth to 2020

Banks can expect to see greater adoption of RegTech solutions as the pace of the ongoing evolution of startups' business models, increasing numbers of partnerships, regulators' promotion of RegTech, and changing attitudes facilitate its uptake.

▸ Adoption of similar EU regulations by the rest of the world

▸ Data standardization and harmonization, leading to greater acceptance

▸ Banks actively investing and co-investing in RegTech companies

Final word: the differentiator co-efficient

Banks should not view RegTech as a new bolt-on technology for their existing processes. Instead it puts them in the driver's seat to offer all-encompassing control of regulatory compliance. It can also serve as the catalyst to both broader digital transformation and competitive differentiation.

At Virtusa xLabs, we have created a number of AI-powered RegTech solutions to help our clients reinforce their risk and regulatory compliance with innovative technology.

Smart Automation in Risk and Compliance Domain

Central Data Pool and Unstructured Data Analysis	**Trade Surveillance** Detect suspicious trades and make informed decisions with a near real-time activity monitoring	**Risk Visualization** Embed proactive risk management with near real-time monitoring, dynamic risk dashboard and trend analysis	**AML Data Quality and Accuracy** Identify the true content and structure of all data elements with real-time processing tools and data cleansing
Link Analysis and Pattern Recognition	**Suspicious Pattern Recognition** Go beyond traditional pattern-matching approaches and apply AI for unwritten pattern	**Link Analysis** Apply text mining, sentiment analytics, social network analysis, behavioral modeling to detect suspicious activities	**AML-Determination of Ultimate Beneficial Ownership (KYC, EDD)** Automate document extraction using NLP and analysis UBO
Workflow Automation and Setting	**Workflow Automation** Link and standardize processes in a single workflow	**Threshold Optimization** Allow quick identification of fast customer behavior with dynamic threshold	**Prioritizing Alert Investigations** Identify and prioritize the high risk alerts
Modeling Scenario Analysis and Transaction Monitoring	**Scenario Manager** Create new scenarios to enhance capabilities in a single system	**AML Advanced Transaction Monitoring** Apply AI/ML in addition to clustering and segmentation	**CDD Risk Scoring and AML Segmentation** Customer risk score engine and segmentation using supervised machine learning
Client Life Management and On-Boarding	**Robotics in AML Refresh** Automate client list preparation and data capture for name screening against sanctions/ PEP/ negative news	**Document Processing** Digitize KYC documents (structured and unstructured) with OCR and ML	**Data Providers and Utilities** Increase data quality and integrity with various new data providers from APIs, utilities and blockchain consortium

We can also help you transform your data governance, infrastructure and processes to help you comply with data privacy regulations and grow business and trust with your customers. Our AI-powered end-to-end and bespoke Data Privacy solutions can help strengthen your data control and address cybersecurity risk facilitating the compliant processing of data.

About Virtusa xLabs

Virtusa xLabs is the digital innovation hub within Virtusa Corporation, set up to help organizations accelerate their tech innovation and leverage disruptive technologies to deliver the best value for them.

Virtusa xLabs combines design thinking and digital engineering to reduce time and costs associated with identifying, evaluating and exploiting new technologies to create competitive advantage for its clients.

The hub provides a cloud-based environment with a built-in Open API layer and Microservices sandbox, Modular AI components, Blockchain capabilities and a banking model data set enabling to run quick experiments and turn ideas into MVPs.

About Virtusa

Virtusa Corporation (NASDAQ GS: VRTU) is a global provider of Digital Business Transformation, Digital Engineering, and Information Technology (IT) outsourcing services that accelerate our clients' digital transformation journeys.

Virtusa serves Global 2000 companies in Banking, Financial Services, Insurance, Healthcare, Telecommunications, Media, Entertainment, Travel, Manufacturing, and Technology industries.

Founded in 1996 and headquartered in Massachusetts, Virtusa has operations in North America, Europe, and Asia.

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