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# Building a smart risk enterprise in financial institutions: Toward competitive advantage and growth



## Abstract

Effective allocation of capital to growth portfolios and achieving customer-centric outcomes have been critical differentiators for driving growth and competitive advantage for financial institutions. This requires rapid digitalization and adoption of advanced analytics for near real-time risk management and risk-based performance management, facilitating enterprise risk assurance along with controls and accelerators to drive balanced growth.

Financial institutions, therefore, need to adopt forward-looking digital transformation agendas and demonstrate business agility, customer centricity, enterprise assurance, and operational resilience – factors crucial for growth and retaining an edge. The way forward for financial institutions lies in building a smart risk enterprise with digital at the core, in turn developing futuristic risk management capabilities. This white paper discusses how financial institutions can build smarter risk capabilities and presents an architecture for a smart risk enterprise as well as a roadmap for the transition.

## The future of risk management: Evolving priorities

Risk management has traditionally focused on enterprise assurance, risk reporting, and regulatory compliance. However, the prevailing pandemic has changed the equation. As financial institutions reset their agenda to manage COVID-19 impacts, changing customer behavior, business model disruptions, and technological advances, the risk function, too, needs to transform and keep pace. Purpose-driven and customer-centric risk management is becoming key to improving reputation and wallet share, driving financial inclusion, and delivering positive customer outcomes. Establishing a robust risk and compliance framework that builds resilience to support changing market and business model disruptions and infuses business agility to enhance stakeholder value is emerging as a critical imperative. At the same time, the risk function must ensure a balance between managing risk and supporting growth by not letting risk aversion take the upper hand — risk teams must optimally leverage capital to support risky activities and create new business opportunities.

The risk management function will need to become an elastic enterprise by integrating digital technologies and strategies with business functions and incorporating controls and accelerators to enable flexibility and deliver enterprise assurance and growth levers. To achieve this, financial institutions will need to build multi-disciplinary risk skillsets, identify and estimate cross-risk correlations, use advanced analytics to enable real-time risk management, and create ecosystems for intelligent interventions and transformation solutions. According to a World

Economic Forum report, environmental concerns remain at the top across both likelihood and impact over the next decade.<sup>1</sup> Effective management of emerging risks such as climate risk and supply chain risk, which can disrupt business for banks and their clients, has thus assumed importance. To deliver on all these asks, the risk function of banks will need to become smarter by building a smart risk enterprise equipped with cutting-edge digital capabilities.

# Smart risk enterprise: Capability blocks

Building a smart risk enterprise will require critical capabilities (see Figure 1) to navigate a complex landscape characterized by abundant data, interconnected supply chains, multi-channel customer engagement, hidden risks and relationships, emerging risks, and unexpected domino impacts, to deliver the desired outcomes.



Figure 1: Smart Risk Enterprise Capability Framework

### **Cognitive automation**

Optimizing manual activities is crucial to infuse agility into the risk management function in financial institutions. Cognitive designs offer promising capabilities to reduce manual proliferations. Some processes suitable for cognitive automation include credit risk and exposure monitoring, risk and control self-assessment (RCSA), as well as risk aggregations, key risk indicators (KRIs), and event monitoring. By reducing manual processes, financial institutions can ensure timely interventions to minimize risk as well as its materiality.

### Early warning signals and insights

Identifying anomalies early in the value chain will help banks to take appropriate action to prevent the risk from materializing, in turn minimizing loss and adverse reputational impact. By leveraging advances in data science, banks can analyze the abundant data, spanning internal, external, and alternative, and flag risks early in the life cycle. Table 1 depicts areas where banks can analyze different types of data and enable early warnings to infuse agility and resilience into the risk function.

<sup>[1]</sup> World Economic Forum, The World Needs to Wake Up to Long-Term Risks, Jan 2021, Accessed March 2021, https://www.weforum.org/press/2021/01/the-world-needs-to-wake-up-to-long-term-risks/

Data sources	Data use and associated risk insights
Alternative data	<ul> <li>To assess credit risk from unbanked customers based on analytics of client and/or counterparty business profiles, sectoral data, sentiment data, business plans</li> </ul>
Geospatial data	<ul> <li>To assess credit risk from commercial borrowers based on geospatial and IoT data</li> </ul>
Supply chain data	<ul> <li>To predict service disruptions and asset quality deterioration by leveraging information segments such as concentration risk in supply chain, climate resilience on supply chain, and so on</li> </ul>

Table 1: Use of Alternative Data for Risk Insights

### Advanced analytics and visualization

Risk analytics frameworks must be modernized to ensure timely response to market dynamics, macro-economic factors, and customer behavior shifts as well as enable boards and business lines to recalibrate market strategies. Table 2 highlights the risk and compliance touchpoints and associated analytics and computing designs to transform capabilities.

Analytic interventions	Design scenarios
Alternative data strategy and analytics	<ul> <li>Adopt alternative data strategies to assess risk from unorganized client segments and create new growth opportunities.</li> </ul>
Risk model	• Establish a dynamic functional framework to calibrate risk models and respond to market dynamics. Advances in statistical data technologies and service orientation of the models offer great opportunities to introduce dynamic frameworks in model management.
Risk measurements	<ul> <li>Leverage advanced computing technologies for value at risk (VAR) computations of large portfolios to speed up risk measurements and enable better integration with trading desks.</li> </ul>
Compliance risk frameworks	• Embrace knowledge modeling and ontologies for compliance risk frameworks to manage the compliance risk exposure and achieve seamless compliance.
Risk visualization and interventions	<ul> <li>Adopt self-service business intelligence, knowledge graph, and graph analytics-based risk visualization and rationalization to facilitate effective risk decision making.</li> </ul>

Table 2 Risk Touchpoints and Analytical Interventions

### Simulation of production and strategy recommendations

Banks have been hampered by a lack of historical data in preempting uncertainties. This is where digital twin techniques can make a big difference — they create virtual replicas of your institution and the players within. Agent-based modeling is the mechanism through which user personas can interact with one another in the model. Environmental factors can cause shocks to the model, in turn affecting the behavior of personas, allowing insights to emerge from interactions. Digital twins can effectively transform various risk management functions across fraud risk management, credit risk decision strategies, and supply chain risk, and facilitate the transition to a smart risk enterprise. Using digital twin techniques in credit risk decision-making can enable capital optimization and continuous adjustment of the lending strategy based on behavior and performance insights. Other areas where these techniques can be successfully applied include regulatory compliance, behavioral analytics, supply chain analytics, and stress testing.

### Service externalization

The risk function in financial institutions is well-positioned to foster financial prudence and enhance the quality of the assets. Financial institutions will need to build an ecosystem to offer services such as risk rating and stress testing and operational resilience to small and medium enterprises and mid-market clients to enhance the resilience of counterparties. Similarly, financial institutions must consider offering supply chain risk management services to their counterparties facilitating timely interventions to better manage counterparties' exposures, and encouraging financial prudence, in turn positively impacting profitability. All these will go a long way in enhancing the financial resilience of counterparties, improving asset quality for banks, and driving loyalty.

# Operationalizing the smart risk enterprise: From theory to action

The target architecture must include a robust information fabric with ecosystem play to gain 720° visibility of risk exposures, an artificial intelligence (AI) backed digital fabric for data-driven decision-making, and an intervention layer for effective integration with the frontline for business performance management (see Figure 2).



Figure 2: Smart Risk Enterprise - Target Architecture

Figure 3 highlights the journey involved in transitioning to the target smart risk enterprise architecture. This transition will span three phases. Phase one focuses on bolstering risk frameworks with intelligent insights and automation, while phases two and three focus on transforming capabilities through knowledge and decision models. Specific actions across the three phases include:

### Phase 1

- Extend the risk information ecosystem to encompass data-driven methodologies.
- Expand the information ecosystem to product, business metrices, and external ecosystems to enable data-driven interventions across the risk management and RCSA value chains.

### Phase 2

- Upgrade existing risk management frameworks and infrastructure to facilitate real-time risk management.
- Increase automation across the value chain, risk modeling, and analytics infrastructure to process huge volumes of data.
- Build a decision fabric for analytic interventions in risk management for better business outcomes.

### Phase 3

- Introduce new business models via risk service externalization.
- Adopt behavior analytics and digital twin designs (beyond AI) for risk forecasting and interventions.



Figure 3: Smart Risk Enterprise: Three-phase Transition Roadmap

An agile operating model is a prerequisite for an effective and successful transition as the level of digitalization envisaged for a five- to six-year horizon is occurring in six to nine months. It is thus crucial for banks to move to a rapid and continuous service delivery model with a digital core to effectively drive the transformation.

## The bottom line

Given the rapidly changing financial services ecosystem, the opportunities to reimagine the risk function into a smart risk enterprise are huge. Digitalizing the core and developing smarter capabilities will help financial institutions to transition to proactive risk management. Moreover, a smart risk enterprise is a prerequisite to supporting banks in achieving their growth objectives and differentiating themselves from their peers. Needless to say, banks that act quickly to innovate their risk function will gain a competitive advantage and steal a march over their peers.



### About the author

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Vijayaraghavan Venkatraman (Vijay) is global head, Risk Management and Regulatory Compliance at TCS' Banking, Financial Services, and Insurance (BFSI) business unit. He has over 22 years of experience in banking, risk management, and regulatory compliance. Vijay has worked on several global risk and compliance engagements for various banking and financial services clients, cutting across risk transformation, data science-led innovation, and regtech based compliance implementations. In his current role, his key responsibilities include leading solution design and framework development, driving innovation in risk and compliance, facilitating thought leadership initiatives, and enhancing domain competence in line with industry trends and directions. Vijay holds a Master's degree in Business Administration from Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam, India, and a Bachelor's degree in Electrical and Electronics Engineering from the College of Engineering, Guindy, India. He is a GARP certified Financial Risk Manager (FRM), a Project Management Professional (PMP), and holds a CFA charter from ICFAI. Vijay speaks at various risk and compliance industry events and has co-authored several white papers on contemporary risk and compliance themes.

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