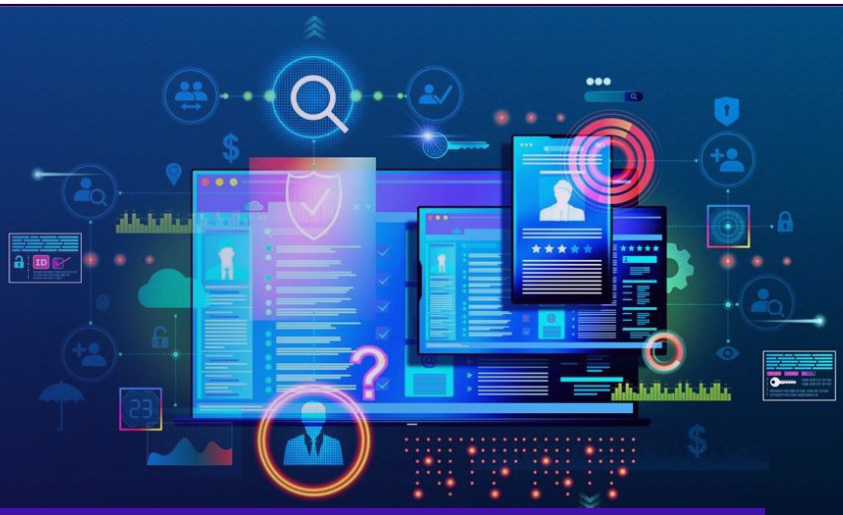


The Role of Technology in the Changing Landscape of Risk Management

Technology is essential and involved in every aspect of our lives. In the business realm, the picture is no different.

Earlier risks were less complex and manageable. However, today, they can cause substantial damage to business operations and reputation or, in some cases, lead to the closure of business.

In this ever-evolving landscape of risk management, there are a lot of uncertainties and challenges. This is why technology becomes important, as it plays a crucial role in risk management by providing various tools and resources that enhance the effectiveness and efficiency of risk management professionals. From the precision of Data Analytics to the adaptive expertise of Artificial Intelligence (AI), it narrates how technology has become an enabler and a force multiplier for risk management.

Implementing the latest technologies, such as Big Data Analytics, Artificial Intelligence (AI), Machine learning (ML), Risk Modeling Simulation tools, and more, has yielded positive outcomes. Moreover, it has accelerated risk addressing and management significantly.

Practically, risks are inevitable while doing business. However, identifying and mitigating its impact on a timely basis is possible regardless of the business size and circumstances.

Emerging Tools and Technologies Used in Risk Management

Technological developments are happening at a record-breaking pace. Likewise, the landscape of risk is also evolving at the same speed. To help businesses stay risk-cognizant and risk-resilient, the implementation rate of the following robust technologies has risen significantly over the past years. To apprise, below are some robust technologies and how their integration benefits businesses to achieve positive outcomes.

Big Data Analytics

Today, data is at the center of every decision-making process and is considered the most valuable asset of a business. Hence, the implementation of Big Data Analytics today is critical. It helps businesses and risk professionals to analyze vast volumes of data and helps companies **discover patterns, correlations, and forecast trends to ensure better risk identification and mitigation**. Moreover, enhancing the operational processes and systems are the core objectives behind its implementation.

Likewise, embracing a **Risk Enabled Performance Management (REPM)**, approach and harnessing the power of advanced data analytics and technology can provide companies with the much-needed competitive edge and ensure the long-term sustainability of the organization. The risk management approach must embed these technologies across the entire risk management process, from identification to assessment to mitigation to monitoring. Each step of the process presents an excellent opportunity for leveraging the power of analytics.

Big Data Analytics has proven useful in many industries including but not limited to banking and financial services, manufacturing, logistics, healthcare, insurance, aviation and aerospace.

Big Data Analytics is useful for doing an **enhanced credit risk assessment** in financial services where it can process and analyze diverse data sources, including transaction history, social media activities, and external economic indicators, thereby developing a more nuanced credit scoring model and significantly improving the accuracy of credit risk assessments.

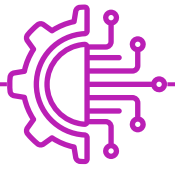
For the manufacturing industry, Big Data analysis can help in analyzing a vast array of data sources, including weather patterns, geopolitical events, supplier financial health, and historical supply chain performance thereby helping the organizations in the early identification of potential disruptions and allowing for a **proactive approach to supply chain risk management**.

From an Environmental, Social, and Governance (ESG) perspective, Big Data Analytics tools are important as they help companies identify and analyze information from ever growing data pools by detecting risk patterns and factors, thus ensuring enhanced risk management and ESG reporting.

Machine Learning and Artificial Intelligence

In the changing risk management landscape, Machine Learning (ML) and Artificial Intelligence (AI) tools are leading the race to induce efficiency in process and data-driven operations. With their adept ability to analyze extensive datasets, they are helping organizations to identify patterns, and make predictions. They can be employed for predictive analytics, fraud detection, and anomaly detection. Risk functions across many organizations today are widely seen employing these tools to enhance risk modeling, automate risk assessment processes, detect emerging risks, improve the identification of emerging risks through continuous learning algorithms and accordingly make data-driven decisions for risk mitigation.

Banks have been using machine learning methodologies for credit card portfolios for years. Credit card transactions present banks with a rich source of data, which is then used to process and train unsupervised learning algorithms. These algorithms have historically been highly accurate in **predicting credit card fraud** due to the models' availability to develop, train and validate huge volumes of data. Credit card payment systems are embedded with workflow engines that monitor card transactions to assess the likelihood of fraud. The rich transaction history available for credit card portfolios presents banks with the ability to **distinguish between specific markers detectable in fraudulent and non-fraudulent transactions**.



AI and ML tools are also seen in the Non-Banking Financial Company (NBFC) sector, wherein these solutions are being used to **analyze and detect Non-Performing Assets (NPAs) at an early stage.** Implementing AI and ML tools help identify the root causes of NPAs, such as missed or late payments, poor credit history, high high-debt-to-income ratio, mismanagement, volatile market conditions, etc. This helps NBFCs make more informed investment decisions and business strategy.

E-commerce giants have started implementing an AI and ML-powered fraud detection system that can analyze a huge array of transaction data including user behavior, device fingerprints and historical transaction patterns. The system continuously learns from new data to adapt its algorithms and identify emerging fraud patterns.

Risk Modeling and Simulation Tools

Risk Modeling and Simulation tools are robust risk management tools that help organizations assess and quantify potential risks in a structured and analytical manner. Various tools use mathematical models and simulations to estimate the likelihood and impact of risk scenarios. Risk modeling tools like **Monte Carlo Simulation** are widely used for financial risk modeling and project risk analysis. **Decision Tree Analysis** tool is used to make decisions under uncertain circumstances by visually representing decisions and potential outcomes. Similarly **Operational Risk Modeling** tools model potential risks such as process failures, human errors, or system breakdowns related to day-to-day operations.

Risk models are used by companies to understand threats to the supply chain, evaluate geopolitical risks of entering an emerging market, review climate transition risks to the company, etc. Once risk models are developed, they are used to evaluate not only how a system behaves under normal operating conditions but also under hypothetical 'what if' scenarios. This helps organizations determine their level of risk tolerance and evaluate how to build resiliency into systems to be able to withstand various impacts.

RegTech (Regulatory Technology)

Implementing robust compliance management software is critical for organizations operating in highly regulated industries such as finance and healthcare. The repercussions of not adhering to the compliance framework can incite large amounts of fines and penalties. Moreover, it can affect the company's revenue stream and hamper its reputation. Hence, adhering to and complying with the specific regulations and set standards cannot be neglected at any cost. Automated systems can track and ensure adherence to compliance requirements, reducing the risk of legal and regulatory issues.

Nowadays, **companies opt for compliance management tools that trigger legal and regulatory compliance** for the respective teams to act upon.

These compliance tools further **highlight due dates, risk of non-compliance (penalty exposure), and regulatory changes across jurisdictions.** These tools also update the companies with legal amendments and their applicability to the company.

These tools can be used by risk professionals to understand the applicability of various legislations to the organization as well as notify them in case of any amendments or updates.

Navigating Potential Challenges while Implementing Risk Management Tools and Technology

While technology has largely facilitated business, it has also introduced several risks in multiple forms. Hence, onboarding a new technology will always be incomplete without the presence of challenges. To highlight below are some of the challenges that risk management professionals and business leaders need to be mindful of:

Data Quality & Effective Integration

For risk management professionals, quality data and ensuring its effective integration into the technology they use for their processes can be a complex and challenging ride since data is stored and available in different formats, languages, and sources in the system. Poor data quality or incomplete data sets can compromise the accuracy of risk assessments and decision-making.

Thus, the strategies and tools risk leaders implement on the ground to source quality data and streamline its process while ensuring its effective integration will be critical to making better-informed decisions while adapting to the newer changes.

Budget Constraints

Implementing new technologies often involves significant costs, including software, hardware, training, and continuous maintenance. Budget constraints may limit the adoption of new technologies, thereby affect the company's ability to stay competitive in risk management practices. Therefore, keeping a close eye on the allocated budget and accounting for expenses in case of adopting new risk technologies is critical.

Aligning People and Processes with Technology

There may be resistance to adopting new technologies by employees and stakeholders due to unfamiliarity or reluctance to change the established workflow. Additionally, new technologies also require specialized skill sets that may not be readily available to the organization. Risk management leaders must know its end-user benefits before integrating new technologies into the risk management operations and functions. The reason for implementing new technologies must be communicated to the associates taking over the reins while explaining the benefits it will provide.

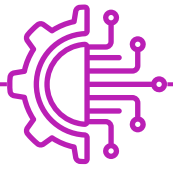
Other questions, such as what kind of disruption would it have on existing business processes, how will it affect the employee's productivity and morale, how much the organization is willing to spend on employee training cost, etc., need to be evaluated and considered while considering adoption of new technologies for the risk management strategies.

Keeping Digital Risks at Bay

It is important to note that while implementing new technologies comes with a lot of benefits, it might also bring along significant security risks and vulnerabilities. Successful implementation of new technologies can benefit the company or organization in multiple ways. Still, on the flip side, inadequate cybersecurity measures can expose the organization to data breaches, financial losses, and reputational damage.

Absence of Supplier Assistance

The success of implementing new technology in a business significantly depends on how well it is implemented. Supplier assistance and presence become more critical since the vendor's knowledge can help you avoid any implementation risks while ensuring a smooth and safe integration process. Hence, it is necessary to collaborate closely with the vendor throughout the process and view the vendor as a resourceful partner even post-implementation.



Conclusion

Businesses today operate in an environment where change is constant yet also challenging. If not managed well, risks can induce cascading effects on multiple business operations and functions, leaving business leaders and employees in disarray. Moreover, significant technological change and changing business ecosystem have made previous risk management strategies and methods appear old-fashioned, expensive, and time-consuming. Hence, from an economical and practical perspective, implementing and incorporating advanced risk management tools and services is vital today.

More importantly, these tools also help organizations forecast, avoid, and mitigate numerous risks in a more comprehensive and competent form and aid organizations in defining their risk appetite and tolerance limits. It provides them a competitive advantage through real-time risk monitoring, increased process-driven efficiency, enhanced compliance and regulatory adherence, better data protection, collaboration, communication, and more. To sum up, the following factors serve as compelling incentives for organizations to seriously consider embracing Risk Management Technologies:

- Improved Compliance and Regulatory Adherence
- Risk Identification, Mitigation and Prevention
- Enhanced Decision-Making
- Significant Competitive Advantage

The ubiquitous use of risk management tools and services will enable businesses to unleash their actual potential growth without any roadblocks. It will also help them address uncertainty or calamity through a systematic and well-defined approach.

About Nexdigm

Nexdigm is an employee-owned, privately held, independent global organization that helps companies across geographies meet the needs of a dynamic business environment. Our focus on problem-solving, supported by our multifunctional expertise enables us to provide customized solutions for our clients.

We provide integrated, digitally driven solutions encompassing Business and Professional Services, that help companies navigate challenges across all stages of their life-cycle. Through our direct operations in the USA, Poland, UAE, and India, we serve a diverse range of clients, spanning multinationals, listed companies, privately-owned companies, and family-owned businesses from over 50 countries.

Our multidisciplinary teams serve a wide range of industries, with a specific focus on healthcare, food processing, and banking and financial services. Over the last decade, we have built and leveraged capabilities across key global markets to provide transnational support to numerous clients.

From inception, our founders have propagated a culture that values professional standards and personalized service. An emphasis on collaboration and ethical conduct drives us to serve our clients with integrity while delivering high quality, innovative results. We act as partners to our clients, and take a proactive stance in understanding their needs and constraints, to provide integrated solutions. Quality at Nexdigm is of utmost importance, and we are ISO/IEC 27001 certified for information security and ISO 9001 certified for quality management.

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