RISING INFLUENCE OF TECHNOLOGY IN MANAGING RISK IN PROCUREMENT

Traditional risk management becoming outdated will have a massive impact on the supply chain, creating a vacuum and eventually leading to supply disruption possibilities at different stages. Businesses today have realized that in order to have an edge over competition, they will have to shift to a more comprehensive and predictive approach for risk management.

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Key shifts in the approach to Risk Management:

Traditional Approach

- Primarily focused on financial and operational risk
- Risk is treated as an outcome
- Assesses only immediate (tier 1) suppliers
- Considered as a short term remedy
- Focus on immediate supply

Contemporary Approach

- Focus on enterprise level risk
- Risk is treated as an opportunity
- Assesses suppliers up to feedstock level
- Foreseen as a long term strategy
- Moving towards consolidated category risk

Technology - the differentiator:

Technology plays a key role in restructuring the way global players manage risk. It assists in enhanced data capturing, secured data management, better retrieval time and also in providing advanced tools for data analysis. Overall, technology now plays a massive role in integrating a firm's Enterprise Resource Planning (ERP) with its Enterprise Risk Management (ERM), which triggers forward-thinking, leading to informed decision-making.

Here are some key areas where tools and technologies are enhancing risk management:

- **Risk Detection:** Smart sensors, with advanced computing capabilities, play a major role in proactively detecting events that could potentially turn out to be risky. Such advancements help businesses to have better control in their manufacturing or service lines.

Example: Recent advancements in vision-based sensors have benefited the industrial manufacturing sector in conditional monitoring and high speed motion-tracking. These sensors can deal with a very high temperature of production components which would be difficult to measure with other techniques.

- **Cognitive Intelligence:** Advancements in Analytics and AI are allowing vast volumes of data to be processed and retrieved in nanoseconds. Based on this, behavioral patterns can be detected, and mitigation plans can be put in place to prevent risk in real & quick time.

Example: Machine learning with its advanced algorithms can be used in preliminary drug discovery processes, especially in the screening of drug components where its success rate is predicted based on its biological factors. *(Source 1)*

- **Visibility across the Value Chain:** Technology allows category managers to have visibility across the value chain, especially if the category involves sourcing on a global scale. It helps in capturing key data-points, which may or may not have a direct impact on the supply.

Example: IBM, with its Total Risk Analysis (TRA) tool for global sourcing, collects multi-dimensional data from over 50 countries. This tools rigorously tracks and monitors critical information based on numerous combinations involving high risk suppliers, products and components. Based on this, a red flag is raised on any issue that can potentially impact the supply *(Source 2)*

- **Advanced Risk Analytics:** Quantum of data involved in sourcing and procurement is massive, and businesses today are investing heavily on data scientists and analytics consultants to predict hidden risk and arrive at real-time risk-intelligence. Some key areas where advanced risk analytics can make a difference is in predictive modelling, loss-forecasting, fraud-analytics and diagnostic-analytics.

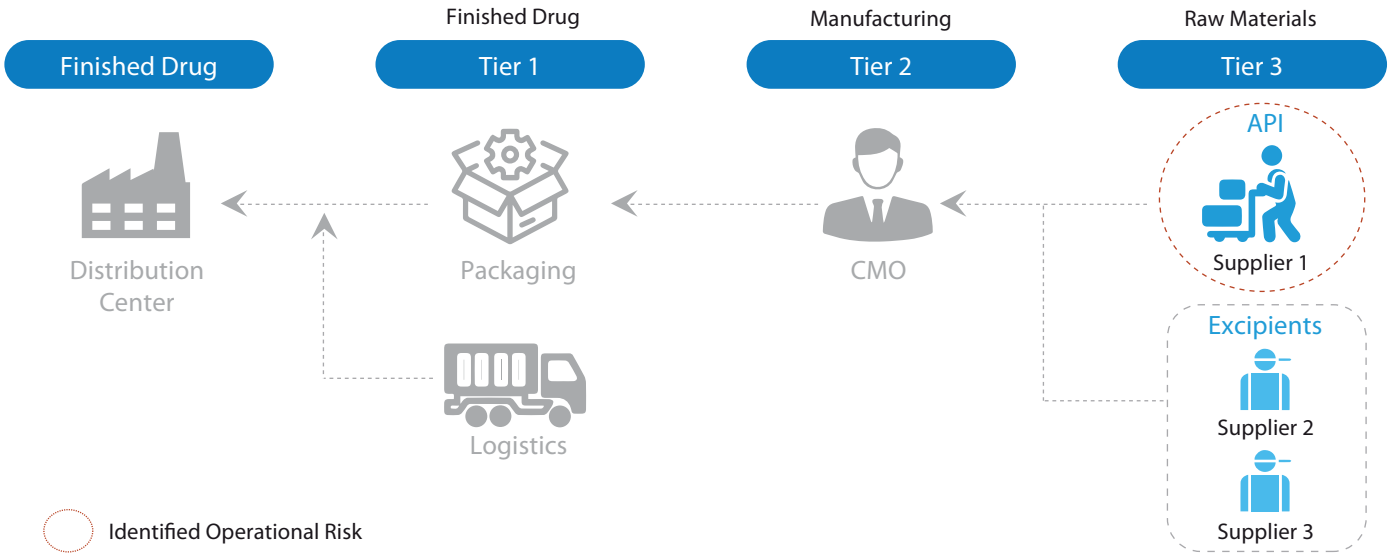
Example: Cummins uses prescriptive analysis to assess its Total Cost of Risk (TCOR), where the synergy between complex business requirements and advanced mathematical computations are assisting in making predictions and strategic decisions based on facts *(Source 3)*

- **Blockchain:** In spite of being in its nascent stage, blockchain is already a disruptive technology. For risk management, blockchain provides synchronized digital data which is extremely transparent, reduces cost as it removes all intermediaries and assists in reducing fraud with its permanent, unchangeable records and higher degree of resilience.

How Can Technology help in Multi-tier Risk Analysis?

According to a survey by *Global Supply Chain Institute*, only 25% of the companies know their end-to-end supply chain and assess it for risk. In most cases, risk analysis has been traditionally performed only at the tier 1 level (diagram below). With the right technology, category managers and risk managers will have visibility throughout the value chain.

Let us consider the value chain of a pharmaceutical drug (as shown in the representation). Supplier 1 is identified to have some operational issues owing to a system failure, and this significantly impacts the production of the drug as there is a delay.



In such a scenario, these are ways in which technology can enable category managers:

- Proactive notification to category managers about the system failure, which is based on the idle system time captured by sensors. By doing a sensitivity analysis, the uptime of the system will be calculated and this helps in looking for alternatives, if required
- Automated computation of required volume of Active Pharmaceutical Ingredient (API) for production and linking it with the Contract Manufacturing Organization's (CMO) stock-in-hand and supplier's inventory levels. In case of shortage, a red flag is raised to the sourcing team
- Based on the Market Intelligence (MI) insights, alternate suppliers who have the capability in handling volume and specifications required for the API are identified. The system performs due diligence on new suppliers, on the basis of financial, functional and operational capabilities
- Since the new supplier is out of contract, spot price of the API can be pulled up automatically from the indices available with the category manager, and this gives insights on any potential price risk
- Alternatively, any changes in the regulations of the particular API can also be tracked, and the impacts on a short term basis can be evaluated
- If there is a prolonged delay, automated notification can be proactively sent to other parties in the value chain like packaging and logistics
- The system automatically activates incident reporting, where details about the failure are recorded. Such information will be used by the category manager during supplier performance monitoring, contract renewals, etc.

Outlook:

Global business today is moving towards collective risk management, bringing all stakeholders to a single point. This is providing organizations an opportunity to better calibrate their risk mitigation instruments allowing them to be proactive and stay ahead of the competition.

With growing focus and investment in risk management, blockchain technology has emerged as a potent solution which could strengthen the weak links in the supply chain.

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