WHITE PAPER

Supplier Insights Discovery – Data and Analytics Approach

Introduction

An efficient and evolved supply process helps companies in several ways:

- Reduces procurement and excess inventory costs.
- Supports a customer-focused business that delivers product and service optimization.
- Delivers quality in desired time frame.
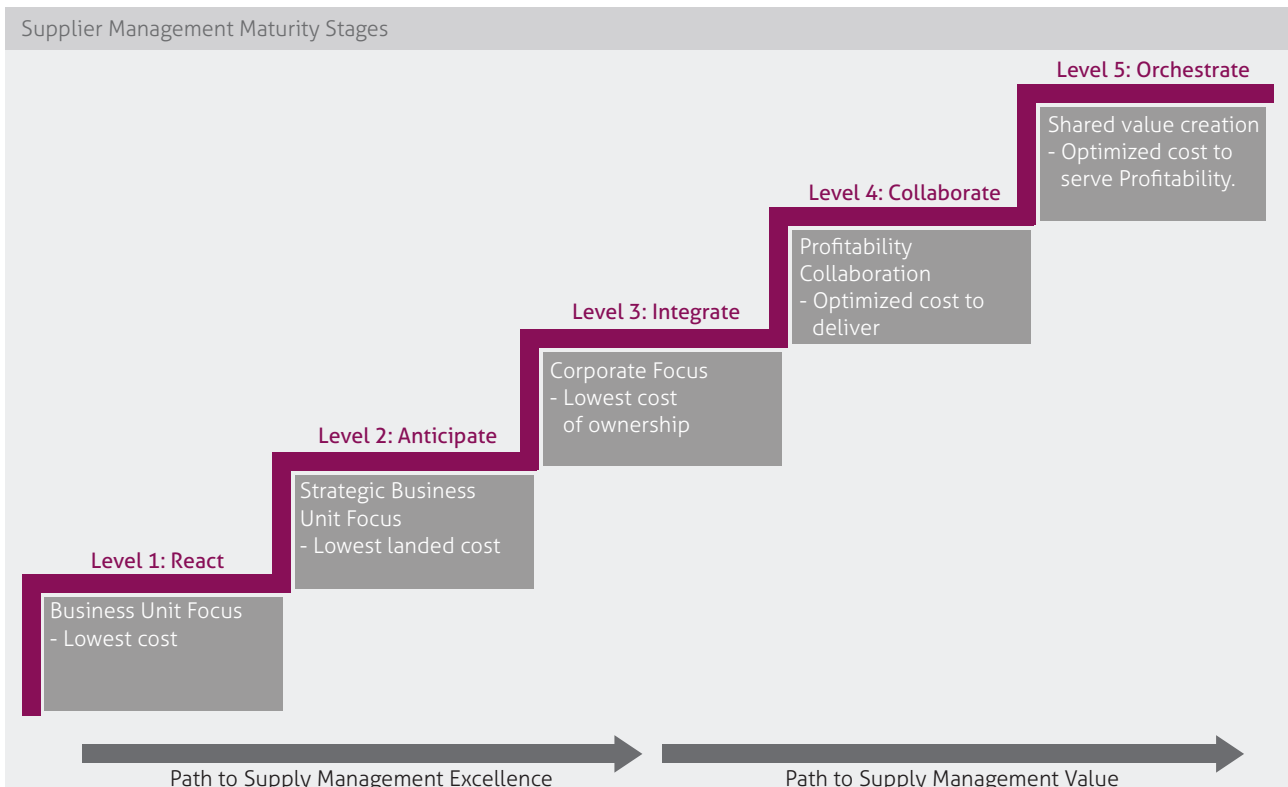- Improves supply process.

Supply management includes sourcing, procurement and elements of the upstream supplier. Organizations engage the pool of suppliers for best practices and high-quality goods and services, while enhancing economic opportunities.

Supplier maturity assessments are carried out from a strategic perspective of enhancing the competitiveness of the organization. The maturity journey of supply management leaders involves dealing with people, processes and technology capabilities. This paper focuses on the technological needs of a maturing enterprise with respect to business intelligence and analytics.

Supplier management maturity stages

Supplier management can be categorized into five phases: supply chain maturity based on ease of business adoption, complexity of data analysis and tactical vs. strategic recommendation ability. Our clients are guided to reach stage three, which results in functional excellence and further helps them to achieve stage four and five which maximizes the value. Supply management maturity deals with managing and controlling spend and also leverage on savings appealing to different stakeholders.

Supplier Management Maturity Stages

Level 5: Orchestrate
Shared value creation
- Optimized cost to serve Profitability.

Level 4: Collaborate
Profitability Collaboration
- Optimized cost to deliver

Level 3: Integrate
Corporate Focus
- Lowest cost of ownership

Level 2: Anticipate
Strategic Business Unit Focus
- Lowest landed cost

Level 1: React
Business Unit Focus
- Lowest cost

Path to Supply Management Excellence → Path to Supply Management Value →

Integrated supply management framework - moving from anticipate stage to integrate stage

Suppliers are critical partners in the value chain. Over the years, organizations have been encouraging their suppliers to implement systems management approach to environment, health, safety, labor rights, energy and water management, security and human rights. In the integration stage, the main objective of the enterprise would be to leverage spend and minimize leakage and maverick spend. Organizations aim at maximizing spend under management, which results in cost benefits.
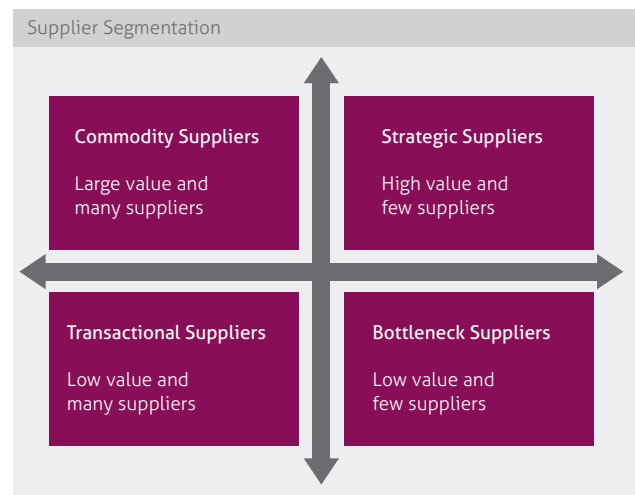

The following framework will help companies to measure and optimize their supplier performance. To reach the integration stage, organizations need to have the following capabilities to maximize spend under management:

- Manage a supplier database.
- Segment suppliers based on spend and criticality.
- Manage the segmented suppliers based on criticality.
- Assess suppliers with scorecards / dashboards.
- Evaluate the suppliers with respect to value at risk through analytics.
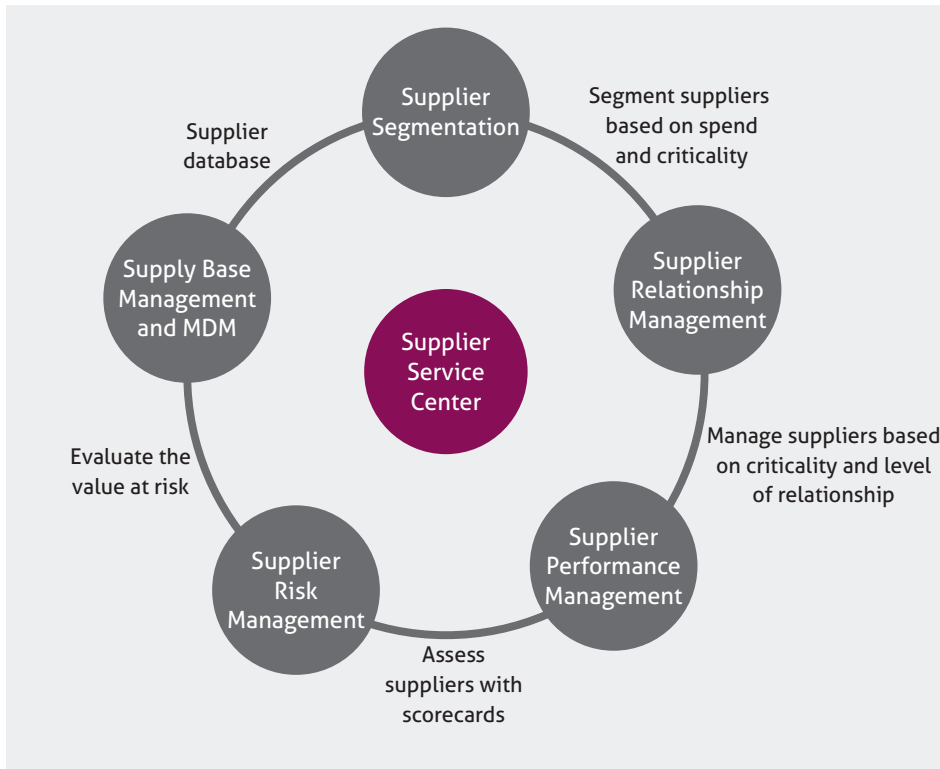
Supplier segmentation

Supplier segmentation enhances action-ability by bringing out supplier discrimination based on purchase value, sourcing risk and complexity. It provides a holistic view of the supplier and enhances business relevance. The segmentation exercise can be started by understanding the business, exploring data, identifying key variables and profiling and finalizing the segmentation. This helps us understand our suppliers better.

Supplier Segmentation

Commodity Suppliers

Large value and many suppliers

Strategic Suppliers

High value and few suppliers

Transactional Suppliers

Low value and many suppliers

Bottleneck Suppliers

Low value and few suppliers

Supplier relationship management

Supplier relationship management system is used to manage supplier activities based on the criticality of the sourced product and sourcing complexity. Some of the key barriers of collaboration are misaligned metrics and incentives causing gaming, internally focused culture, disparate systems with poor data quality and integration hurdles. Based on the sourcing complexity and value, organizations must follow different levels of relationship with suppliers.
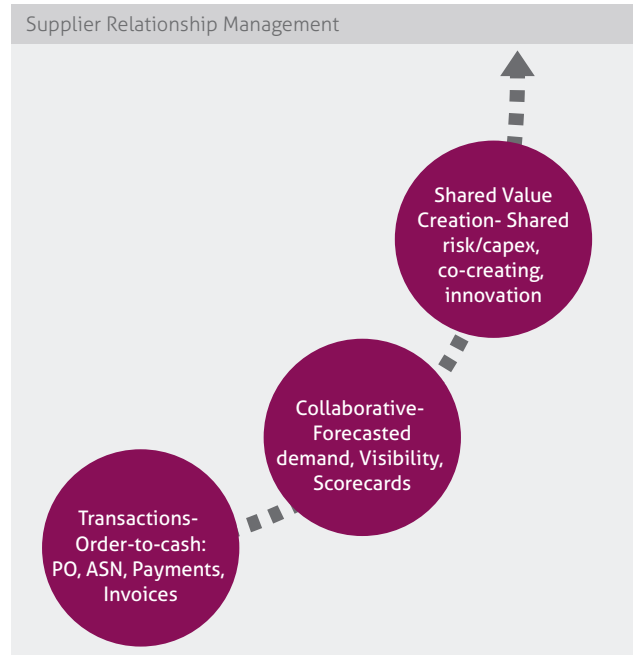
Supplier performance management

Suppliers must be analyzed from a performance perspective, based on various factors including price, quality, delivery, service and management systems. We must define appropriate KPIs to prioritize and target the right suppliers. Based on the analysis of the supplier processes, an improvement model can be arrived at.
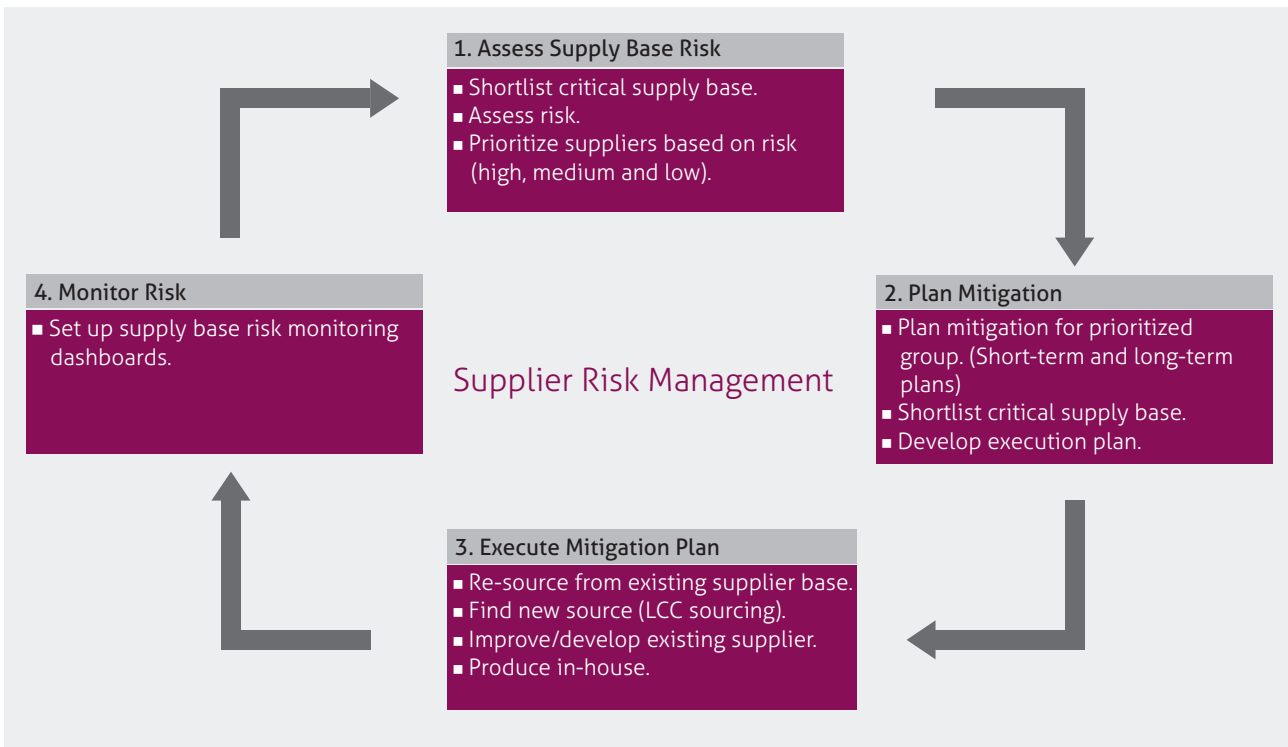
Supplier risk management

Analytics help organizations in identifying supplier risks based on the following factors:

- Early/late shipments or delivery to wrong location.
- Non-conforming/wrong product or quantity.

Supplier Relationship Management

Shared Value Creation- Shared risk/capex, co-creating, innovation

Collaborative- Forecasted demand, Visibility, Scorecards

Transactions- Order-to-cash: PO, ASN, Payments, Invoices

- Supplier processes.
- Supplier country political stability and undesirable events (storm, flood, earthquake, etc.).
- Contract, legal and regulatory non-conformance.
- Information system failure and compromises.

1. Assess Supply Base Risk

- Shortlist critical supply base.
- Assess risk.
- Prioritize suppliers based on risk (high, medium and low).

4. Monitor Risk

- Set up supply base risk monitoring dashboards.

Supplier Risk Management

2. Plan Mitigation

- Plan mitigation for prioritized group. (Short-term and long-term plans)
- Shortlist critical supply base.
- Develop execution plan.

3. Execute Mitigation Plan

- Re-source from existing supplier base.
- Find new source (LCC sourcing).
- Improve/develop existing supplier.
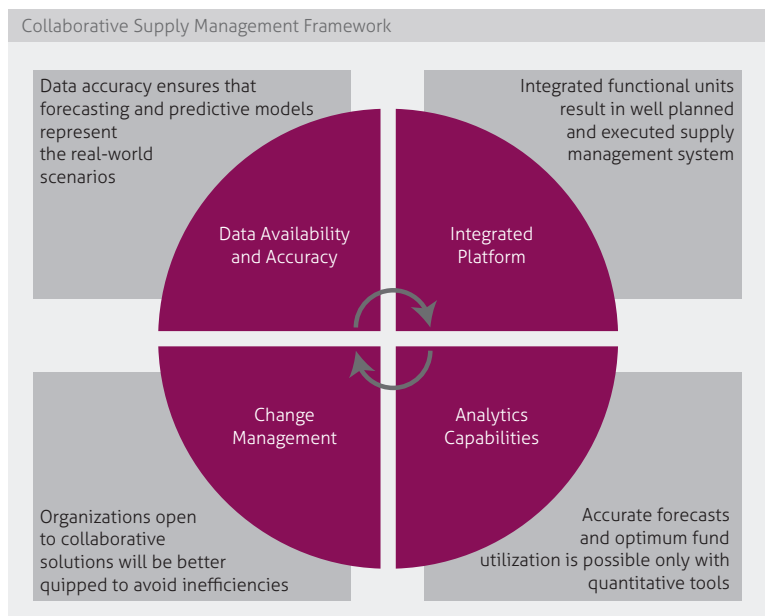- Produce in-house.

Collaborative supply management framework - moving from integrate stage to collaborate stage

Though enterprises would have achieved cost benefits in stage 3, they would not have achieved value yet. We see a change in mindset of leaders from inside-out to outside-in. In stage 4, enterprises are looking for customer value proposition and about supply management needs. This leads to trade-off with other functions to optimize value for the customer. Enterprises will achieve governance and maturity to manage spends in stage 3, and in stage 4 they learn to manage the trade-off by collaborating with their supply partners. In order to collaborate with supply partners and optimize delivery

costs, relevant data has to be shared with vpartners. Key impediments for effective collaboration are data availability and accuracy, integrated platforms with right technology, analytical capabilities, organization readiness and process complexities. Mutual trust is the foundation for effective collaboration. This collaborative framework will help optimize the total cost to deliver.
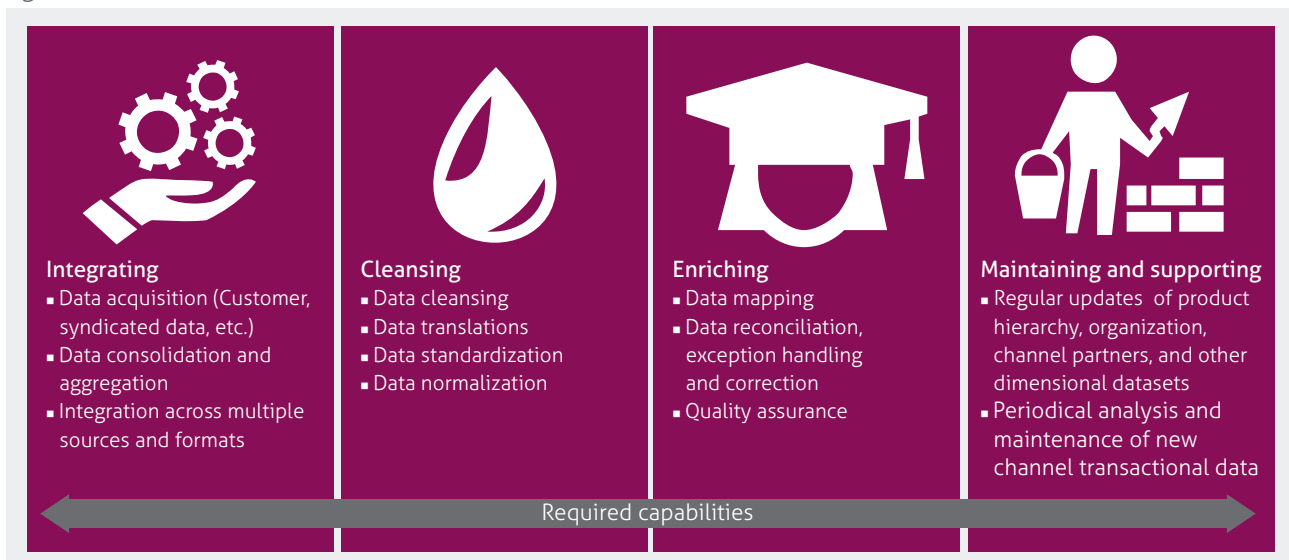
In this stage organizations need to have the following capabilities to optimize the total cost to deliver:
- Data accuracy and availability
- Integrated platform
- Analytic capabilities
- Change management

Collaborative Supply Management Framework

Data accuracy ensures that forecasting and predictive models represent the real-world scenarios

Data Availability and Accuracy

Integrated functional units result in well planned and executed supply management system

Integrated Platform

Change Management

Organizations open to collaborative solutions will be better quipped to avoid inefficiencies

Analytics Capabilities

Accurate forecasts and optimum fund utilization is possible only with quantitative tools
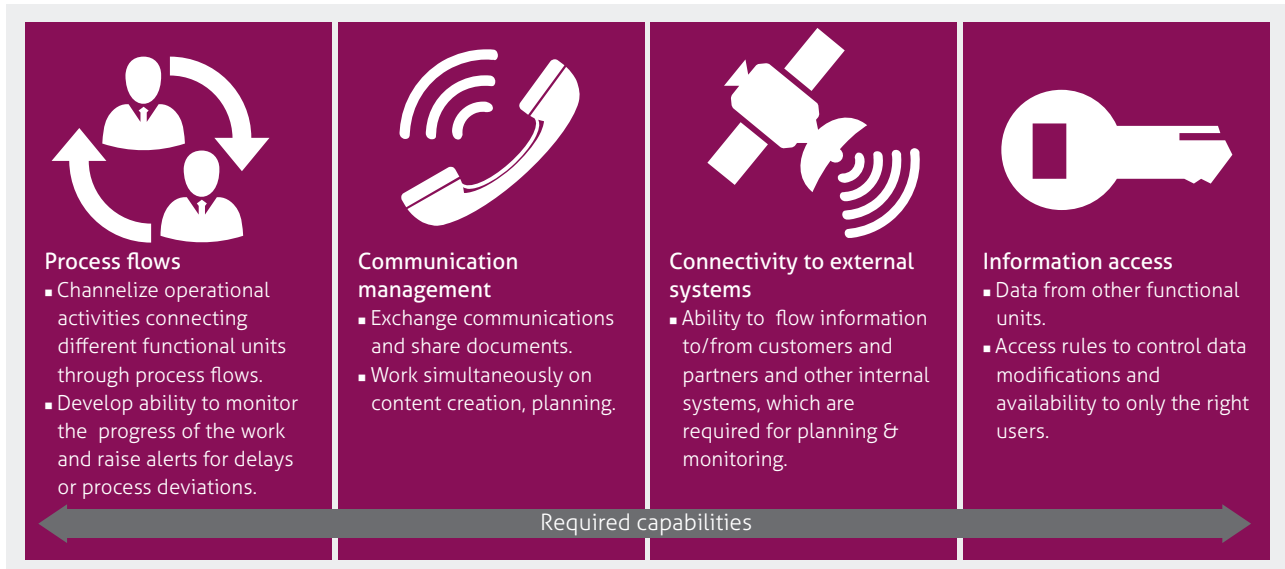
Data availability and accuracy

Organizations should have integrated supply management system in order to reach the next level of maturity and collaborate with partners. Data sharing is one of the key steps to create a common master data foundation and governance mechanism. Key impacted roles and resources have to be identified and team has to be equipped with the right skills.

Integrating
- Data acquisition (Customer, syndicated data, etc.)
- Data consolidation and aggregation
- Integration across multiple sources and formats

Cleansing
- Data cleansing
- Data translations
- Data standardization
- Data normalization

Enriching
- Data mapping
- Data reconciliation, exception handling and correction
- Quality assurance

Maintaining and supporting
- Regular updates of product hierarchy, organization, channel partners, and other dimensional datasets
- Periodical analysis and maintenance of new channel transactional data
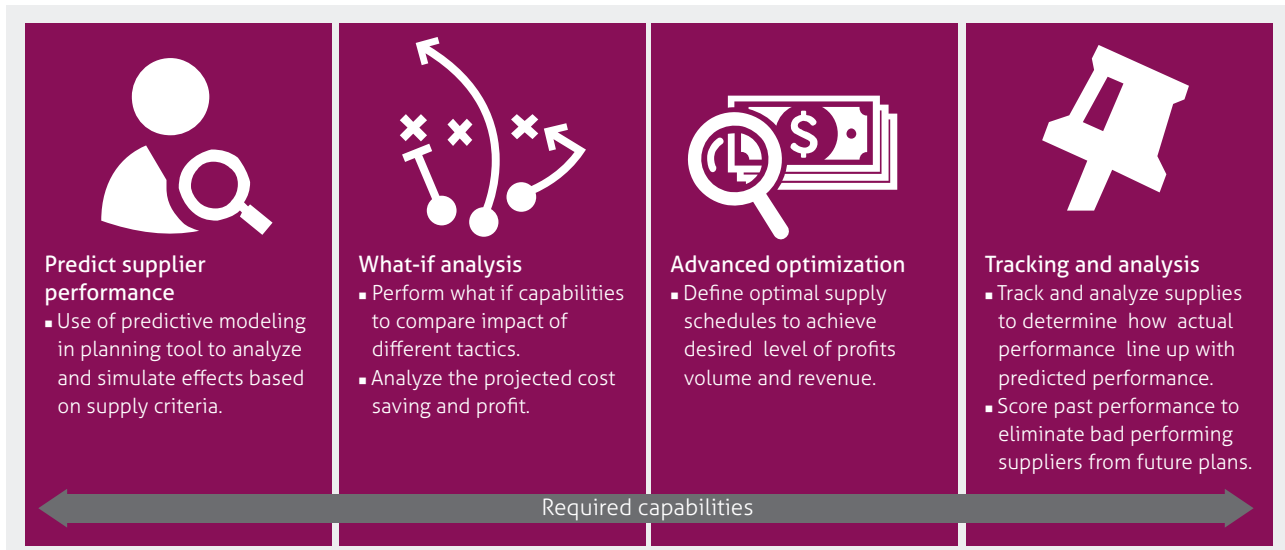
Required capabilities

Integrated platform

Business unit-based tools and silos of custom solutions often miss the complete picture and lack the functionality of utilizing downstream and upstream data. The right technology backbone required for collaboration has to be assessed and implemented. It is also vital to participate actively with standards bodies and align technology investments with emerging standards.

Process flows
- Channelize operational activities connecting different functional units through process flows.
- Develop ability to monitor the progress of the work and raise alerts for delays or process deviations.

Communication management
- Exchange communications and share documents.
- Work simultaneously on content creation, planning.

Connectivity to external systems
- Ability to flow information to/from customers and partners and other internal systems, which are required for planning & monitoring.

Information access
- Data from other functional units.
- Access rules to control data modifications and availability to only the right users.
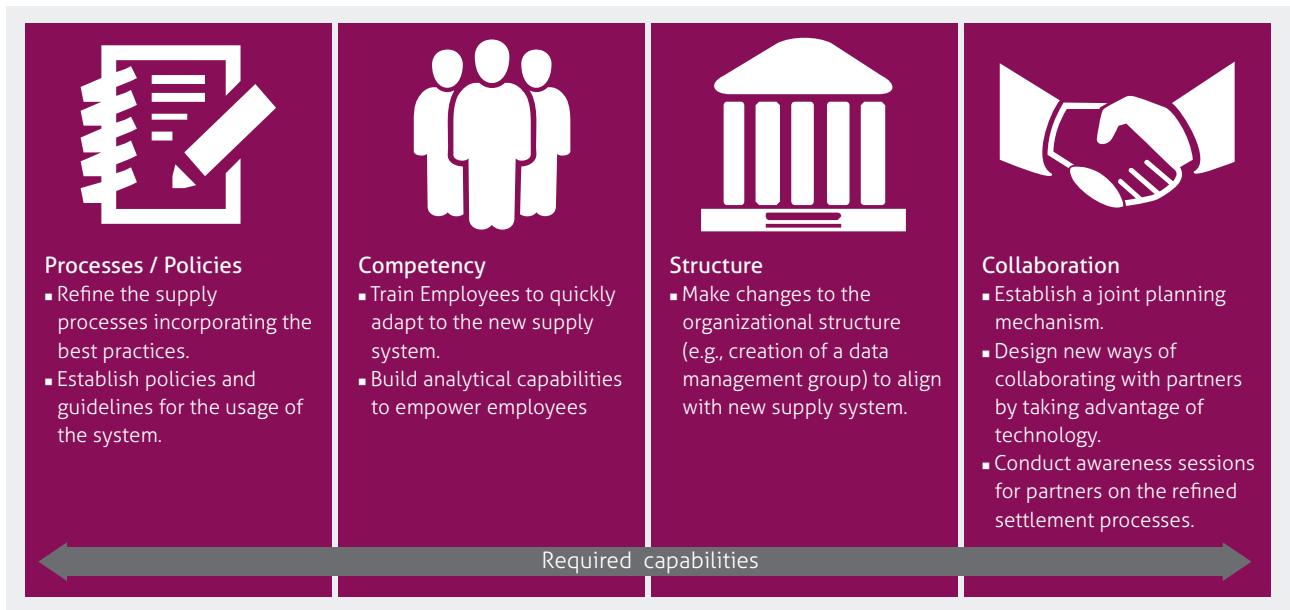
Required capabilities

Analytical capability

Organizations must build a culture of analytics and align teams to complement each other and optimize resources. Different reporting tools for each business partner has to be avoided.

Predict supplier performance
- Use of predictive modeling in planning tool to analyze and simulate effects based on supply criteria.

What-if analysis
- Perform what if capabilities to compare impact of different tactics.
- Analyze the projected cost saving and profit.

Advanced optimization
- Define optimal supply schedules to achieve desired level of profits volume and revenue.

Tracking and analysis
- Track and analyze supplies to determine how actual performance line up with predicted performance.
- Score past performance to eliminate bad performing suppliers from future plans.

Required capabilities

Change management

Organizations must build a culture that nurtures collaboration - stagnation after initial partnering efforts must be avoided. Enterprises must communicate information and objectives across all relevant business groups along with the involvement of senior management.

Processes / Policies
- Refine the supply processes incorporating the best practices.
- Establish policies and guidelines for the usage of the system.

Competency
- Train Employees to quickly adapt to the new supply system.
- Build analytical capabilities to empower employees

Structure
- Make changes to the organizational structure (e.g., creation of a data management group) to align with new supply system.

Collaboration
- Establish a joint planning mechanism.
- Design new ways of collaborating with partners by taking advantage of technology.
- Conduct awareness sessions for partners on the refined settlement processes.

Required capabilities

Orchestrated supply management framework - moving from collaborate stage to orchestrate stage

After achieving maturity in the collaborative model, enterprises must orchestrate or lead their entire supply chain to optimize costs and to serve consumers. Sometimes we may be paying a higher price for an item because of our need for speed or service configurability that satisfies the business proposition. Enterprises must understand the unique requirements of different customers and identify clusters of demand for value chain capability through customer segmentation. With customer segmentation, they must align demand requirements with supply constraints. Differentiated capability for end-to-end supply chain has to be created to deliver on unique demand requirements. With customer and supply segmentation, the cost for business decisions and test trade-offs of customer value attributes and cost of creation must be allocated. Therefore, the profitability of products, customers and routes to market has to be calculated and the total cost to serve must be optimized.

Six steps to achieve orchestration
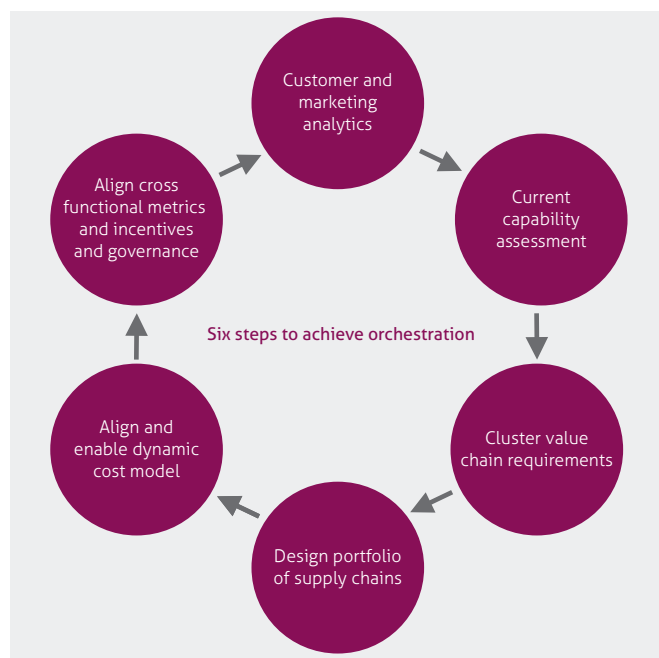
Indicative list of analytic scenarios

Analytical solutions help enhance organizational competitiveness by evaluating, approving and qualifying world-class suppliers who deliver quality, cost, service and continual improvement processes and provide sustainable advantage.

Supplier analysis	Category analysis	Contract analysis
■ Assessment of suppliers for strategic product category. ■ Assessment of new supplies for existing product category. ■ Supplier attrition risk prediction ■ Fraud detection framework / prediction among suppliers.	■ Forecasting of raw material/supplies requirement for next 3 months/1 year. ■ What-if scenario - Impact on product cost/profitability due to change from supplier A to B.	■ Optimization of supplier compliance e.g. cost, lead time, quantity. ■ Contract management i.e. optimization of duration of contract for single source vs. multi-source contracts.

Payment analysis	Other scenarios
■ Optimization of supplier payments/ credit period.	■ Sensitivity analysis i.e. supplying cost required towards incremental increase in customer base and market serviceability. ■ Optimization of product specific supplier network based on the environmental factors i.e. market demand, production planning, raw material demand.

Maverick spend analysis

In supply chain management parlance, the term 'maverick buying' is often referred to procurement transactions committed outside the standard procurement processes. The objective of this analysis is to analyze the trend in maverick spend at a business unit-supply type level. Maverick spend is analyzed by plotting the trend to find any predictable change or pattern in a time frame that recurs or repeats over a one-year period.

Supplier analysis

Objective is to analyze existing supplier base in terms of spend value and their ratings. Supplier base can be further drilled-down in terms of three key performance parameters:

- On-time (%) - Percentage of instances where good fulfillment has been 100%.
- Acceptance ratio – Ability to cater to demand fluctuations.
- Shipment accuracy – Delivering the right raw materials.

Item analysis

Objective is to analyze raw material spend for individual items. It can be further drilled-down in terms of percentage maverick spend and budgeted Vs. actual spend.

Indicative diagnostic and predictive scenarios detailed

Root cause analysis

Objective is to conceptualize supplier related KPIs For example, order fulfillment compliance, improve market serviceability and trim inventory fat. This analysis helps in:

- Improving procurement performance.
- Reducing supplier management cost.
- Evaluating scenarios to optimize supply chain objectives and make decisions.

Raw material forecasting

Objective is to estimate baseline demand for raw material / supplies required in the next three months to one year and to demand forecast at business unit and product level. This analysis helps:

- Devise product specific strategies across established and emerging vendors.
- Optimize cost for inventory management, resource planning and operations planning.

Supplier switching

Objective is to analyze and quantify impact of supplier switching on profitability and on-time delivery. This analysis helps in:

- Evaluating the risk exposure of the supply network.
- Consolidating suppliers to ensure sourcing optimization.

Conclusions

Growing competition has been driving enterprises to reduce costs for many years now. Supply management assessments should be facilitated through management interviews and can be used to baseline sourcing and analytical capabilities of organizations. During executive interviews, the individual perspectives on priorities emerge and enable a forum on aligning priorities.

These assessments help understand the current maturity level of organizations and ways in which we can help them to reach the desired level of maturity. Enterprises, who reach the desired maturity level will achieve:

Enhanced spend visibility: This would enable single view across all ERP and legacy systems, financial systems. Enterprises would also get visibility into vendor, category, item, business unit and region spends.

Accelerated savings: Granular insights on what has been bought from which vendor helps enterprises save on their sourcing spend.

Vendor consolidation: Accurate and aggregated information on vendor-spend enables enterprises to rationalize the vendors they work with, and optimize deals through better terms and discounts.

Consumer satisfaction: Sourcing the supplies based on consumer needs and expectations will lead to enhanced consumer satisfaction and experience.

About the author

Andrew Stephen is Consultant, Data and Analytics, Mindtree. He has over five years of experience in Analytics, Business Intelligence, Consulting and Solutions. He has worked across the Retail/CPG value chain for leading clients across the globe.

About Mindtree

Mindtree [NSE: MINDTREE] delivers technology services and accelerates growth for Global 1000 companies by solving complex business challenges with breakthrough technical innovations. Mindtree specializes in e-commerce, mobility, cloud enablement, digital transformation, business intelligence, data analytics, testing, infrastructure, EAI and ERP solutions. We are among the fastest growing technology firms globally with more than 200 clients and offices in 14 countries.