OPTIMIZING PROCUREMENT COSTS: STRATEGIES FOR SUCCESS IN THE SUPPLY CHAIN LANDSCAPE

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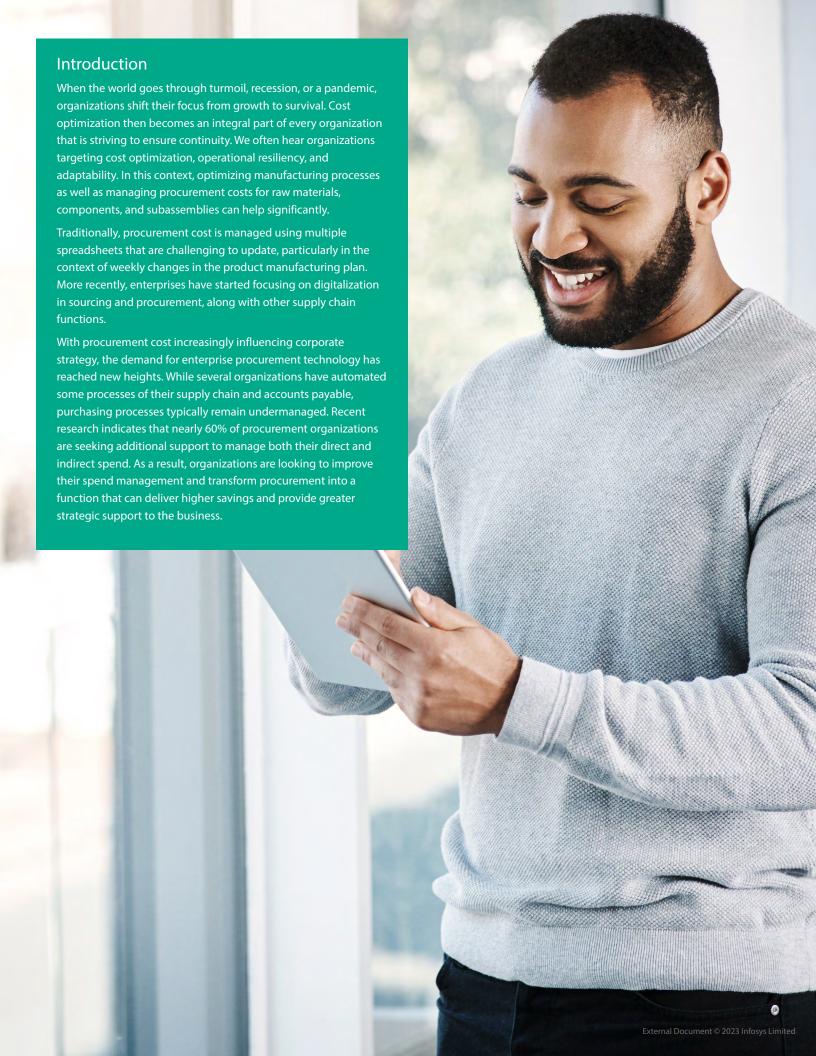Navigate your next

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Abstract

Cost is a critical factor in determining the growth, stability, and resilience of an organization. In a high-volume production environment, it is not only the cost of manufacturing but also of material procurement that contributes to the overall product cost. Supply chain organizations often focus on improving processes to reduce manufacturing costs, but tend to overlook procurement costs.

Several organizations manufacture similar products across multiple geographic locations, with each site purchasing raw materials separately through independent negotiations. As a result, the procurement costs for the same product varies from site to site, impacting the profitability of the product line. Additionally, inconsistent procurement costs over time arising from fluctuating manufacturing volume demand also present challenges. These further result in fluctuations in planned purchase volume and cost.

A global sourcing model can address these issues and manage the cost of raw materials against set standards. Organizations must monitor purchase price trends of raw materials over time and understand how these prices change with market fluctuations and geopolitical tensions, among other factors. In order to harmonize and automate their procurement cost determination process, organizations need to establish steps that align and report procurement costs across multiple product lines to middle and executive management. This paper outlines how harmonized procurement costs can be managed, aligned, and reported to ensure effective cost management and improve the overall profitability of the organization.

Introduction

When the world goes through turmoil, recession, or a pandemic, organizations shift their focus from growth to survival. Cost optimization then becomes an integral part of every organization that is striving to ensure continuity. We often hear organizations targeting cost optimization, operational resiliency, and adaptability. In this context, optimizing manufacturing processes as well as managing procurement costs for raw materials, components, and subassemblies can help significantly.

Traditionally, procurement cost is managed using multiple spreadsheets that are challenging to update, particularly in the context of weekly changes in the product manufacturing plan. More recently, enterprises have started focusing on digitalization in sourcing and procurement, along with other supply chain functions.

With procurement cost increasingly influencing corporate strategy, the demand for enterprise procurement technology has reached new heights. While several organizations have automated some processes of their supply chain and accounts payable, purchasing processes typically remain undermanaged. Recent research indicates that nearly 60% of procurement organizations are seeking additional support to manage both their direct and indirect spend. As a result, organizations are looking to improve their spend management and transform procurement into a function that can deliver higher savings and provide greater strategic support to the business.

Business Challenges

Procurement is a critical business function for any organization. However, what we have observed is a lack of common processes in managing material procurement prices. This results in a significant amount of manual work, leading to inefficiencies. Moreover, the lack of a single source of truth to review supplier spend and savings, year-on-year (YoY) commodity cost change index, and overall procurement cost reduction trend, leads to data loss and compromises data integrity during consolidation. This results in real-time insights that are inaccurate, thereby limiting timely and effective decision-making.

Further, procurement data is scattered across multiple enterprise resource planning (ERP) applications, which limits operational resilience in rapidly evolving scenarios. Excel reports as well as data on procurement cost, volume, bill of materials (BOM), and item data lie in various silos, which delays operational decision-making. Figure 1 illustrates the problem areas resulting from these factors as faced by the semiconductor industry.

To address these challenges, organizations must embark on a digital transformation journey and harness additional levers for an effective digital supply chain. This could involve implementing an application that can analyze procurement costs for various product lines across multiple suppliers and compare them with suggested costs and industry standards.
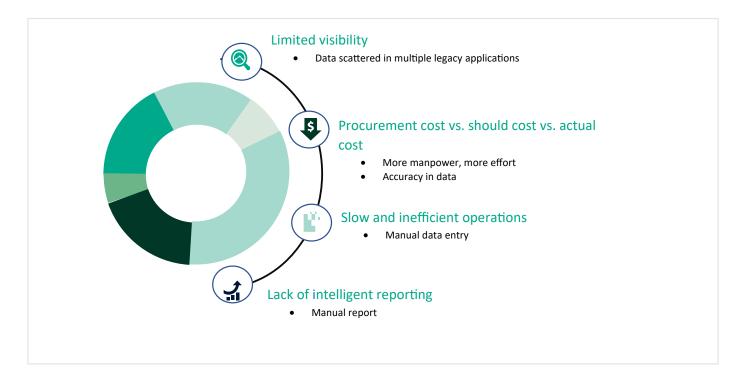

Limited visibility
- Data scattered in multiple legacy applications

Procurement cost vs. should cost vs. actual cost
- More manpower, more effort
- Accuracy in data

Slow and inefficient operations
- Manual data entry

Lack of intelligent reporting
- Manual report

Figure 1: Procurement issues faced by the semiconductor industry

What Exactly Does the Industry Need?

For years, the semiconductor industry has relied on traditional techniques for managing procurement costs, including metrics such as quarter-on-quarter (QoQ) savings, YoY, should cost or the maximum cost limit, supplier spend, and supplier savings, among others, to maintain operational efficiency. These techniques involve a reactive approach to address key challenges as they arise, with professionals relying on time-tested, rule-based processes to manage operations. However, identifying potential problems in sourcing materials can be very challenging, with extensive internal and external collaboration required to effectively tackle such issues.

An analysis of industry trends and current business challenges, reveals that leading procurement organizations acknowledge the crucial role of technology and automation in improving all aspects of the procurement operating model. Such an acknowledgement ultimately drives efficiency and effectiveness in procurement operations. Figure 2 lists the features that are essential in a platform that analyzes procurement cost for efficient supply chain management.
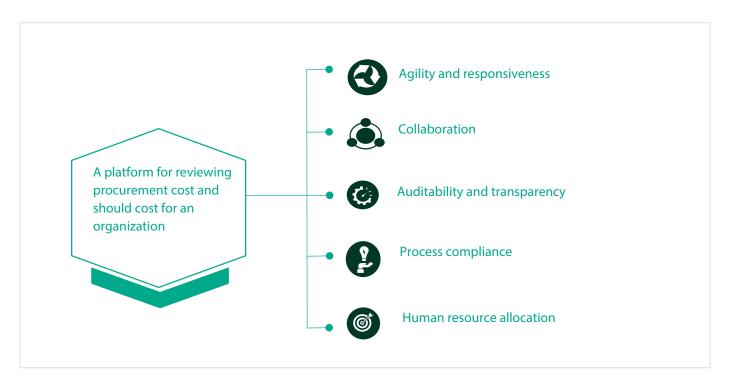

Figure 2: Essential supply chain features

The industry needs a solution that will:

- Harmonize and automate the procurement cost determination process to improve efficiency.

- Provide better control over cost actualization, supplier spends, and savings, as well as takedown percentage by commodity code or item number

- Enable faster audit through a single source of truth for cost data

- Provide faster and more accurate predictive analytics to drive 'what if' simulations

- Accelerate cycle time for analysis with granular levels of reporting

- Replace all reports currently managed in Excel with a common database

- Update the standard cost of each part item to finance on a quarterly basis

- Link with the finance system to provide an accurate cost outlook of procurement operations

The Role of Technology

Organizations often have multiple ERPs and external systems, particularly following mergers or acquisitions. They view technology as a stage-by-stage journey on their digital transformation path and beyond. They transverse from Level 1 to Level 4 or 5 in a phased manner, as represented in Figure 3. All organizations may not necessarily go through every level, but this is the common approach in their digital journey.

1		2		3		4		5
Foundation	→	Edge Applications on Cloud	→	Co-existence of Legacy	→	Complete Adoption of cloud	→	Digital Expansion

Figure 3: The levels in an organization's digital transformation journey

When organizations enter Level 4, which is characterized by the complete adoption of cloud technologies, all processes are synchronized and aligned, after the completion of the consolidation into a single ERP. At this stage, organizations have all their data available in a single environment, allowing them to explore options for improvement and move into the stage of digital expansion.

After cloud adoption in procurement, leaders focus on digitizing processes to run autonomously, while they can spend more time building stronger supplier relationships and maintaining a broad base of suppliers to meet sudden demand spikes. This reduces risks associated with procurement cost and should cost. It also fuels innovation by working closely with businesses and delivering new operating models.

To achieve this, organizations need a platform that reviews procurement cost, should cost, and supplier spend. Such a platform can help determine top-level product profitability, identify the need to retire products, replace components, or switch suppliers. In several companies, the process is highly dependent on people, which could result in long cycle time and potential errors.

Deploying the latest technology platforms and digital solutions can lead to significant procurement-driven wins and time-savings on operational activities. However, the main challenge in the initial deployment of cost management automation tools is integrating the necessary data feeds for automated end-to-end execution of procurement cost and should cost. Nevertheless, the return on investment is high and the time to achieve a positive cash flow status is short. The targeted headcount reductions make for a simple, yet compelling, business case.

Cost management automation

Stage 1
- Limited visibility
- Corrupt data (commodity code assignment)
- Excel for data gathering and reporting
- Unstructured flow of data from legacy applications

Stage 2
- Single source of truth to integrate required data
- Custom screens for procurement cost and should cost
- Network visibility

3.0 / Stage 3
- Data security using role-based access control
- Alerts and exceptions management
- Simplified cost submission
- End-to-end visibility

Stage 4
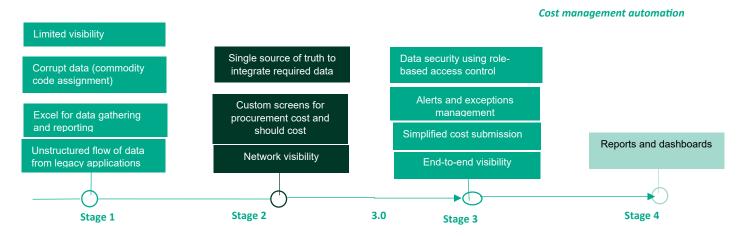- Reports and dashboards

Figure 4: Maturity stages of a cost management automation tool

Figure 4 depicts the maturity stages of a cost management automation tool. The tool goes through multiple stages to achieve the desired outcome. In the first stage, we correct or rectify various data elements to introduce synergy between product lines and supplier types. In the second stage, we consolidate all data requirements into a single source and determine the expected costs and should cost for the item or commodity. In the third

stage, we optimize the data with data security across various roles and responsibilities, trigger alerts or exceptions, and get a clear idea of the overall cost submission and actualization cycles. In the final stage, we focus on reporting to identify various trends or anomalies for better negotiation and decision-making towards a sunset strategy.

Essential Components of the Solution

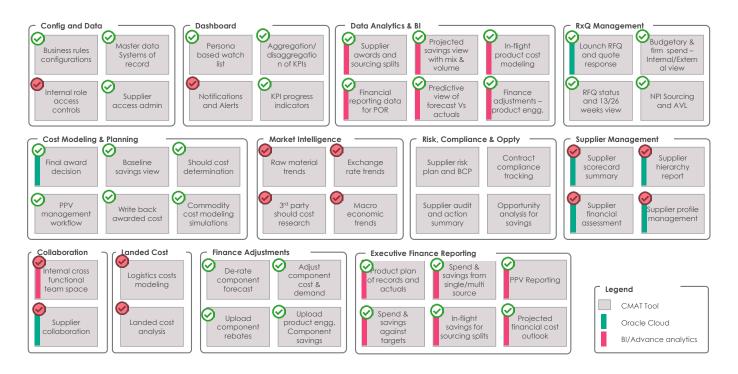Figure 5 presents the industry best practices framework for cost optimization.

Figure 5: Industry best practices mapping for cost optimization

The four key areas of the cost management automation tool are as follows:

a. Security and access control: Various access levels are set up for commodity, supply chain, and finance personnel based on the screens, reports, and dashboards they are authorized to access. Controls on override of data and access provisioning are also enabled.

b. Master data management: Master data validations are performed to ensure correct item mappings to the relevant commodity managers, and cost rollups according to the defined BOMs for items, BOMs, and procurement categories

c. Data inputs: Multiple data inputs are part of the process, including cost submission by commodity managers who define the possibility of further discounting. Should cost management is done by supply chain personnel Finance personnel manage additional costs incurred as part of the procurement process through credit and debit memos

d. Reporting and Dashboards: The tool provides purchasing performance reporting, such as submitted to actual cost comparison, comparison with should cost, supplier spend, and savings analysis, among others
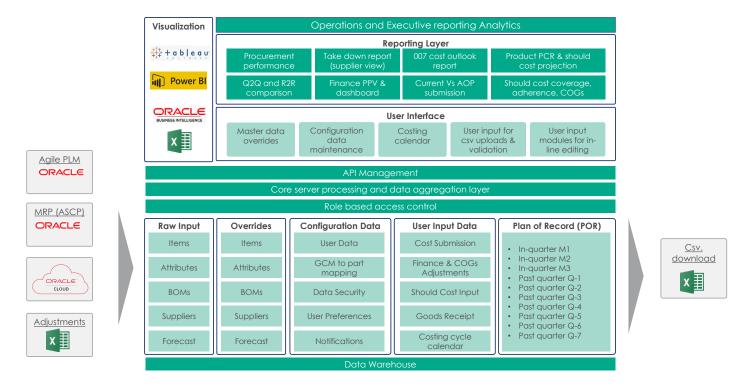
Figure 6: Cost management automation tool architecture

Figure 6 represents the tool architecture. The tool is built on the Amazon Web Services (AWS) platform using open-source technologies, such as React JS with Oracle Database. The master data, including items, commodity codes, BOMs, suppliers, and supplier sites, were converted and daily integrations built to manage changes in the source system. Purchasing data, including quantities, dates, and prices, were loaded for several previous quarters to identify trends in the purchase prices over multiple cycles. Additionally, forecast integrations were built for current and future quarters to analyze the cost impact with volumes.

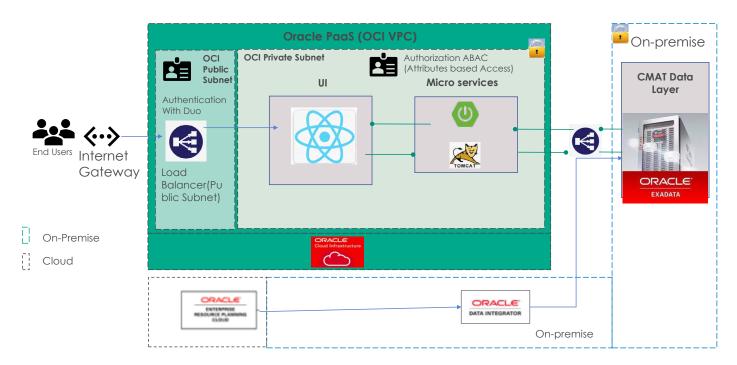Figure 7 shows a sample architecture of the cost management automation tool

Figure 7: Sample architecture of the cost management automation tool

The solution is built on five pillars:

a. Interface: Integration of the tool with the other master data systems

b. User Interface: Screens for viewing, adding, or editing data

c. Upload: Ability to upload data using Excel templates

d. Download: Ability to download data in predefined templates

e. Reports and dashboards: Pictorial or graphical comparison of data

Expected Benefits

The most significant advantage of implementing the cost management automation tool is establishing reliable best practices faster than competitors who rely on manual processes, and therefore fail to achieve the same level of quality in final outcomes.

The other benefits include:

1. Speed and efficiency: The tool can execute tasks faster, track the status of cost submission tasks, and handle larger volumes

2. Agility and responsiveness: The tool provides continuous monitoring, enabling quick response to market changes

3. Process compliance: The tool ensures consistency for automated tasks, thereby enhancing the overall sourcing process

4. Auditability and transparency: Centralizing and providing visibility to procurement and should cost improves transparency and auditability

Future Trends

Organizations that have implemented the cost management automation tool have reported cost reduction of up to 30% while also speeding up delivery times. It is an essential tool for companies that want to remain competitive and achieve success in their industry.

Acknowledgements

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As Principal – Enterprise Applications at Infosys, Arijit manages high-tech clients in North America. With over 20 years of experience in advisory, consulting, program management, and pre-sales, he is an expert in Oracle Cloud as well as supply chain management and procurement applications. Arijit has a track record of successful implementations with global clients in North America, Europe, and Asia in various roles as solution architect, enterprise architect, program manager, and account manager. His consulting expertise ranges from process harmonization and alignment to delivering best-in-class solutions with high client and business satisfaction. He is the product owner and anchor for Infosys' Oracle Cloud's Stratos high-tech industry solution. Arijit is a thought leader and blogger in the Oracle and supply chain space, having published more than 15 white papers in various forums. Known for his problem-solving skills, Arijit is a go-to manager and leader for anyone who has worked with him.

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Ed is the Director of the Strategic Cost Management team, a division within Western Digital's Procurement Organization. With more than 20 years of experience in the supply chain industry, he has worked in various areas, including customer technical support, program management, and procurement. In his procurement roles, Ed has extensive experience in both global commodity management and strategic cost management. As a result, he is able to effectively communicate the complexities of procurement cost management. Ed is a passionate leader who believes in continuous improvement and the power of data. He has recently been focusing on developing skills and knowledge in areas such as Excel Power Query, SQL, Tableau and Oracle DV, for himself as well as his team.

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Nilesh is an industry expert with over 14 years of experience specializing in Oracle applications consulting, implementation, and support in Oracle supply chain consulting engagements. He is a certified cloud professional and has worked extensively on Oracle Order to Cash and Procure to Pay business cycles, leading implementation and upgrade projects for clients in the high-tech and manufacturing domains across multiple geographies, including the US, EMEA, and Asia-Pacific. Nilesh has also worked on multiple supply chain digital transformation engagements for the high-tech industry.

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