

WHITE PAPER

Augmentative Outsourcing: The new manufacturing normal



- Mahesh Sawant

The need to tap external expertise in non-core business processes has been the key driver for outsourcing. Many manufacturing organizations have realized significant commercial savings on their functions like finance and accounting, sourcing and procurement, customer service, and order management, by centralizing or divesting them. At the same time, these organizations have been able to enhance their competitive advantage by increasing their focus on core business functions.

As the industry evolves, the distinction between core and non-core is increasingly getting blurred. Today, having realized the benefits of outsourcing non-core processes, many manufacturing organizations are willing to explore traditionally core areas for outsourcing. While the benefits from offshoring and global delivery are table stakes, the key drivers here are the need to leverage external specialized support to optimize processes, efficient resource management, strengthen core capabilities, and realize benefits from technology solutions. Augmentative BPO as we call it, is the next logical step for the outsourcing world to move on to.

Role of BPO in manufacturing

One of the key questions that many BPO providers today encounter from organizations are, "How can you help me do my core processes better?" While organizations would still want to control the strategic aspects of their value chain to drive competitive advantage, they have started to farm out significant portions of their core processes to their outsourcing partners. The need to leverage specialized talent to optimize manufacturing business processes is a key driver.

With the spread of globalization and the expanding footprint across many markets, several global manufacturing organizations face the need to ensure a standardized global interface and make sure that the best practices from one location are replicated across other locations.

In response to this need, many organizations have implemented global enterprise solutions in areas of supply chain management, product data management, and performance management to manage the complexity of these business processes. However

to sustain these solutions, the need for expertise in both processes and technology is critical. Moreover, with implementation of many of these solutions the administrative burden on the supply chain, engineering and the manufacturing teams has increased – thereby giving them less time to focus on key domain tasks.

The inability to retain resources with the appropriate expertise results in delay in realizing return on investment on these implemented solutions.

Discrete, industrial equipment and automotive manufacturers have outsourced parts of their manufacturing supply chain to third party logistic players (3PLs) and contract manufacturers to derive greater value and focus on their core operations. At the same time, there are multiple aspects of the manufacturing process that can be optimized by centralizing and leveraging internal and external service providers to generate savings and enhance flexibility to meet demand. Our analysis of the manufacturing value chain has indicated significant

opportunities for cost optimization through a combination of centralization, harmonization, transformation and outsourcing. The augmentative BPO journey within manufacturing has made steady progress. Areas that have seen a lot of traction are manufacturing performance management, analytics, should costing, engineering change management, etc. Since many of these processes are expertise-driven, it is imperative that the service provider should have the ability to staff appropriate resources who deliver the process operationally. Moreover, the capability of the provider to understand multiple aspects like related technology, external interfaces, and business issues to be able to drive transformation is extremely critical.

Nevertheless for organizations that are willing to make the journey, the payoffs are lucrative. The benefits typically exceed the conventional SG&A benefits that have been the key driver of outsourcing, and there is an enhanced focus on impacting the cost and revenue side of the business.



New opportunities in manufacturing BPO

While there are multiple aspects of the manufacturing value chain, which can be looked at from an outsourcing perspective, for purposes of discussion we have provided a view on the possibilities that can be explored in a few areas.



Analytics and performance management

Large multi-locational manufacturing organizations have diverse reporting requirements across different levels in the organizational hierarchy. Plant managers need reports on the current inventory status and the material that needs to be issued to the line to meet the days or shifts plan, equipment downtime for the previous day, etc. There are additional reports and analysis of manufacturing performance that need to be generated to understand reasons of non-performance and take corrective action.

Usually, reports need to be generated at a fixed time to ensure that the data is current and relevant for decision making. Centralizing these reporting requirements has the potential of realizing significant savings to the manufacturing organization. The ability to leverage the ERP system also increases exponentially, since it is possible to deploy experienced resources with in-depth knowledge of the system. This also

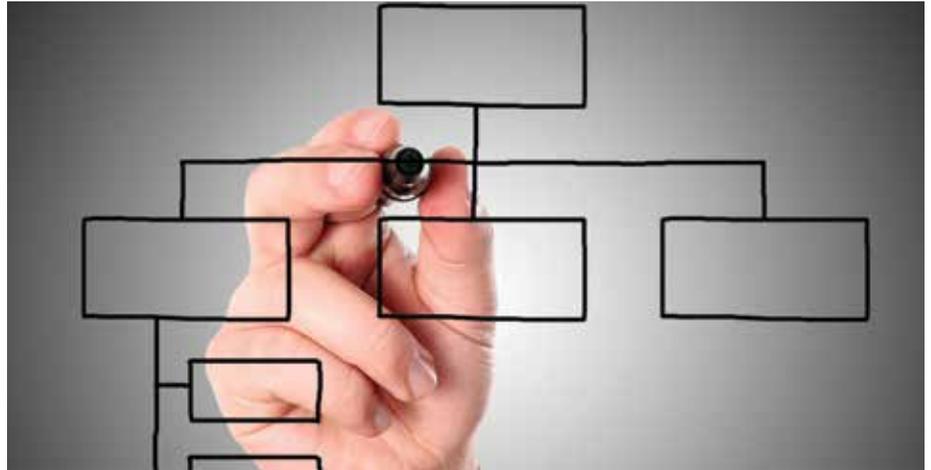
makes it easier to justify modifications and customizations in the ERP system. Moreover, the organization also realizes savings due to automation and other small technology interventions. These can now be applicable across the organization instead of being limited to one location. While there are one-time offshoring benefits associated

with this, there are productivity- and technology-linked savings that can also be realized through implementation. The opportunity to leverage common standards and ensuring proliferation of reports is minimized. Improvements in turnaround time is another crucial benefit that can be attained.



Planning and control support

As supply chains have evolved and become increasingly complex, most global organizations have implemented planning applications to manage them. Managing complex supply chain operations and applications requires a repertoire of skills. These include supply chain skills with the knowledge of complex technology applications like ERP, SCM, SRM, etc. Sustaining a team that possesses these skillsets, while controlling costs, is one of the main challenges facing businesses today. Because it takes a large, skilled manpower to support supply chain management applications, enterprise and legacy systems, and the related human processes that interface with them, management costs are a big concern for many organizations. Moreover, the ability of the organization to realize returns on investment on the technology solutions is dependent on having skilled personnel to operate these solutions. The complex workflows and the need for data integration consume management attention, reducing the focus on continuous improvement and



exception management. Likewise, to meet future requirements requires deep solution expertise, often lacking in existing support teams.

Multiple outsourced models could be a possibility here, starting from a basic application support model or a combination of application support and planning run outsourcing. The service provider team manages master data, develops the plans, analyzes the output, and provides it for decision making, and at the highest level, working on optimization of the application in functional areas.

Besides, critical functions like MRP controllers can be effectively managed by leveraging external service providers with expertise in these areas.

A typical planning function involves management of multiple interfaces in the supply chain with suppliers, logistics players, plants, quality functions, stores, receiving teams, etc. Leveraging external service providers with expertise in the ERP and extended solutions and the planning processes can help effectively manage these planner roles.

Quality management

The ability of organizations to maintain quality is critical for success in the marketplace. At the same time, systematic quality management requires the organization to focus on their data collection and management systems, institutionalize process audits and drive quality assurance in the process. Many a time, these aspects of quality management

are time consuming, leaving the quality departments little time to focus on analysis and resolving quality issues.

It is here that leveraging external support to augment quality management support can be relevant. Some of the areas that can be operated through a third-party support model include – managing

data related to supplier quality, liaising with suppliers and other stakeholders to ensure compliance, supplier process maturity assessment, advanced product quality planning (APQP) facilitation and production part approval process (PPAP) submission review, conducting quality audits in plant and supplier, etc. By eliminating the tactical burden of routine quality activities, organizations can focus on strategic aspects of improving supplier and manufacturing quality. Typically the service delivery in this case would be a combination of global offshore delivery, on-site at manufacturing plants, and on-demand services at supplier locations.

Outsourcing quality management can lead to significant benefits in terms of reduction in supply management overheads and travel expenses, and also results in improvement in quality parameters.



Documentation support

As supply chain complexity has increased, there is an increasingly global product design and manufacturing process across a network of design centers, manufacturing locations, and suppliers. The need to manage this information in a structured manner is paramount. In response to this, many organizations have implemented process data management (PDM) solutions that can help them manage the part level product delivery process. Typically, this part-delivery process has multiple phases, gates and process steps through which any new component has to go through.

The implementations of PDM systems while they have enhanced information availability also require engineers and designers to spend considerable time on ensuring information is updated. Some of the information that needs to be maintained includes – product data in the PDM systems, engineering change note (ECN) change information, bill of material (BOM) changes in the local plant, etc. Moreover, the integration between the PDM and the ERP system contributes to errors that need to be addressed on a regular basis.

Some organizations have outsourced elements of the part delivery process such as – managing the workflow related to ECN changes in the system, reporting of ECNs, managing errors between PDM and ERP systems and resolving them, etc. Specification management services in an



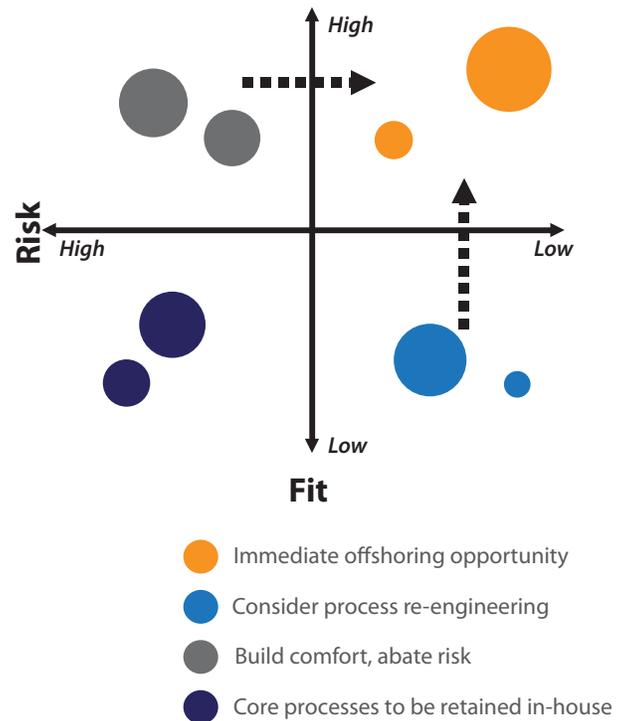
outsourced model can help in allowing engineers to concentrate on core design tasks as the administrative aspects of the product specification management process is managed by the service provider.

Rapid expansion in business from emerging markets has compelled organizations to establish manufacturing facilities in these markets, besides making products that are meant for these markets. The need to ensure standardized manufacturing systems across all manufacturing facilities is one of the key challenges that organizations face as they expand into multiple geographies.

Also, it is critical to ensure product quality and safety standards across multiple locations. At the same time most organizations do not want their best engineering talent to work on these tasks. Since this work can be done in an offshore–onshore model, leveraging low cost engineering talent from BPO service providers can provide significant business benefits to manufacturing organizations. Some of the tasks that have been outsourced include creating operator documentation like method sheets, developing graphical illustrations for operator ease, BOM data maintenance, FMEA documentation, etc.

Recommended approach

Global manufacturing organizations have explored some of these opportunities to drive bottom-line benefits, but there is potential to expand this further by doing a detailed analysis of the sub-processes involved. Below is a recommended structured framework to analyze these processes using a risk fit matrix and charting a roadmap for driving process efficiencies.



What is needed to make this work?

While the potential benefits from outsourcing are significant considering the nature of the processes involved, clients need to choose the appropriate service providers. Some of the key attributes to look at are:

Demonstrated technical expertise in related functions: As against conventional outsourcing areas, many of these services need specialized knowledge about the processes. The service provider needs to have the expertise from past experience of having managed similar processes. Service providers who have invested in

creating a strong domain-focused team in manufacturing are able to deliver value to their clients in these areas.

Comprehensive end-to-end capabilities spanning technology, consulting, and outsourcing: The ability of service providers to realize savings is dependent on its ability to transform processes leveraging technology. While most organizations would have implemented technology solutions to manage one or more of these processes, the ability of service providers to leverage the internal expertise and utilize it to optimize processes is important. Integrated service providers who have expertise in engineering and manufacturing services besides key

skills in enterprise solutions and process operations are essential to realize targeted benefits.

Innovation: Service providers need to innovate and explore opportunities in adjacent areas, since many a times the clients may not be able to articulate their exact requirements. This requires service providers to adopt a consultative approach and jointly evolve solutions with the client to address specific business needs. It is also essential for the client organization to work collaboratively in this exploratory journey since it has significant benefits for the client.



Case studies

Case study 1: Engineering specification management support for a global manufacturing company

Client context

The client manages new product launch and existing product improvements using integrated setup of product lifecycle management (PLM) and ERP. They were facing a challenge of high cycle time to create and release parts to production because of data errors, integration problems, workflow issues and bandwidth challenges of allocating key design personnel to manage design transactional processes. Low service levels were reported at the dealer end for existing parts due to delayed engineering change implementation.

Solution recommended

Infosys created a global specification management shared services center, which could support multiple global design and manufacturing centers of the organization and deliver processes like – creating engineering bill of materials (EBOM) / manufacturing bill of materials (MBOM), product specifications and master data, engineering change management for new product launches and existing parts, performing workflow tasks to execute activities at different gates of new product development lifecycle.

Benefits to the client

The consolidation and centralization of distributed teams has driven efficiency, reduced turnaround time and has improved productivity through automation and reduced manual intervention.

Case study 2: Operator documentation for manufacturing for a global equipment major

Client context

The client wanted to set up a new manufacturing line in China, and wanted to ensure standardized manufacturing processes (for the new facility) and the best practices from their US facilities are transposed in the new manufacturing location. Availability of these documents is critical to reduce non value-added activities, ensure operators have clear unambiguous instructions to perform the work, control variation in the method of execution of similar assembly tasks among workers, and facilitate better shop floor communication.

Solution recommended

Infosys deployed an onsite–offshore model to develop the operator documentation for this facility. The onsite engineers worked along with the client process engineers and the documentation available from other facilities to develop the operator documentation. Detailed value analysis of the activities was performed along with identification of critical steps as part of the exercise. Appropriate visuals were created to support the documentation. The document was delivered in English and Mandarin as per the client requirement.

Benefits to the client

The client was able to establish the production facility on time due to timely availability of documentation without having to deploy its own engineering workforce for this task. They were able to establish a standardized process framework across its manufacturing facilities.

The way forward

Global manufacturing organizations need to explore outsourcing opportunities in core business process areas, as they search for newer avenues to drive excellence in these processes. Some of these process areas – outlined in this white paper – include manufacturing performance management, planning, quality management, documentation. By leveraging external specialized service providers, manufacturing organizations can optimize their processes by effective resource utilization, leveraging external domain knowledge and realizing savings through technology intervention. Many of these benefits extend beyond conventional SG&A benefits attributable to outsourcing and can impact key business performance indicators.

However, it is imperative to partner with service providers, who combine technical expertise in the related process areas with a consultative approach to problem solving, since many of these solutions would need a lot of innovation compared to conventional BPO offerings, and there is a need to jointly evolve solutions to meet client needs.

Author Profile



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Mahesh leads the manufacturing center of excellence for Infosys BPO. He is responsible for incubating new business process outsourcing solutions for manufacturing clients in the area of engineering process outsourcing, manufacturing operations support, planning, and performance management.

Mahesh has more than 16 years of experience in multiple areas including outsourcing, supply chain, manufacturing, business process re-engineering and enterprise solutions, with the last three years in Infosys BPO. Prior to joining Infosys, he has played leadership roles in manufacturing and supply chain in a large global manufacturing organization and was also responsible for driving several business transformation initiatives related to IT enabling the supply chain function, cellular manufacturing, business process re-engineering, supplier portals, etc.

Mahesh holds a graduate degree in mechanical engineering and a masters degree in management. He is also a certified CPIM from APICS, the Association for Operations Management and a Six Sigma BlackBelt from ASQ, the American Society for Quality.

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