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How to Organize Supply Chain Processes
in Project-Driven companies

In our consulting activities, we are often requested for advice regarding the organization of the Supply Chain processes, the development of associated systems and of the Supply Chain department in project-driven organizations. The proper approach to support projects is always quite different from other industries such as manufacturing organizations. In this White Paper we examine what are the key processes for project-driven organizations, why they are distinct, and how to best segregate supply chain activities.

How project-driven organizations
require distinct Supply Chain processes

Different levels of supply-chain complexity

The main Supply Chain processes in project-driven organizations need to address various levels of complexity.

1. Complexity stemming from material/service procured

Different material/services need to be procured that can be best distinguished along three categories:

- Procurement of standard “off-the-shelf” equipment and material,
- Procurement of specifically engineered equipment and material,
- Contracting or procurement of services (including fabrication services).

2. Complexity coming from Client involvement

- Permanent material/services which will be purchased by the Contractor but delivered and owned by the final Client (which have to follow specific requirements)
- Non-permanent material/services which is required by the Contractor to deliver the project.

Key performance factors in Project Supply Chain

Compared to manufacturing or operational businesses, the specifics in Projects are the unicity of the purchase (one project, one client, one contract or schedule) combined with the significant value of engineered equipment and service contracts. This can create some significant upside in case of good performance and savings due to the significant share of the procurement relative to the turnover, and huge downside on the Project results in case of delay or quality issues with suppliers. In addition, the fact that procurement is not regular or repetitive or that Client impose some geographical local rules or contents leads to specific constraints as to sourcing and contracting.

Supply-Chain in project-driven companies requires a different structuring from manufacturing or operating businesses.

The operational distinction on material/services

The distinction in the three categories of material/services is operational because of the distinct process cycles and the relative importance of Supply Chain sub-processes associated with each category:

	Standard material/ eqpt	Engineered equipment	Services (Contracting)
Vendor sourcing development potential	Significant	Limited (specialist vendors per product)	Limited (specialist vendors per services and regions)
Potential for competition & negotiation	High	Limited	Limited
Potential for Savings through strategic procurement	Limited	High	Medium to High
Customization of contract, commercial model and T&C	None	Medium	Very High
Importance of post-award management (Contract, expediting, QC, control)	Limited	Very high	Very High
% of total value of project	Small	Medium to High	High to Very High
Milestone or progress invoices	No	Yes	Yes
Key indicators	Quantity	Physical Progress	Productivity
Vendor management on site	None	Medium	High
Warranty & maintenance implications	Limited	High	Medium

The limits between each category can vary slightly between organizations and industry, because there can be a different continuum between each category:

- procurement of standard equipment and modified to specification/engineered equipment,
- procurement of engineered equipment and the procurement of associated services.

To complicate further the matter:

- some service contracts can also include elements of standard material procurement, such as fabrication contracts including the provision of bulk material by the yard. However, in that case the service provider

is fully accountable for timely and proper provision of material.

- The end-Client involvement in the procurement process can increase significantly the complexity for the Contractor.

Why many organizations do not recognize the three categories’ process structure

Many organizations do not readily differentiate the processes and systems between the three categories. This is generally due to lack of understanding of the different complexities and sometimes also due to their history.

For example, a common finding in organizations that have been historically involved in construction or installation works is generally an organization with a procurement process and system entirely geared towards the purchase of standard equipment, material or simple services. This process/ system is often quite detailed and rigid because of the sheer number of items that need to be tracked: engineering provides a bill of material; each line item is then tagged and tracked against Purchase Orders to the relevant suppliers until delivery to the construction site or yard. Unfortunately, the same process then tends to be applied to engineered equipment and service contracts, resulting in inadequate contractual terms and the creation of system workarounds to deal with the payment of intermediate milestone and progress-based invoices.

The distinction between standard material, engineering equipment and services is an essential distinction from the process and organization perspective

Another opposite example involves organizations such as Owners that are used to contract most of the work and that for some reason want to take a more direct project implementation role. They then tend to lack the proper systems to bridge between engineering and procurement for standard components (in particular, bulk material) resulting in difficulties to reconcile quantity orders and design evolutions. This generally leads to substantial surplus material and lack of proper control of delivery and receipt (leading to misplaced material and the possibility of fraud).

Why different material types/ services require different organization setups and roles

It is important to recognize the various levels of complexity of procurement as it impact the resource, the system and the process to be implemented across the organization. The table below summarize the main criteria and some major differences which show why management needs to be adapted:

	Standard material/ eqpt	Engineered equipment	Services (Contracting)
Resource profile	Purchaser	Procurement Engineer	Contract / Quantity Surveyor
Type of Vendor Relationship	Approved Vendors	Strategic key suppliers	Strategic partnership
Contract Approach	Purchase Order with standard T&C's	Supply Agreement with main contract Flow down	Service contract back to back to the main contract
Post Award Management focus	Material Tracking	Full Expediting	Contract Administration
Procurement System requirements	Purchasing & Material inventory	Customized for complex Purchase Order & Expediting module	Milestones and Variation Order management

The consequence of not distinguishing properly the three categories

The consequences of improper distinction between those categories include:

- Inadequate resource or follow-up to manage each category
- Loss of control on engineering equipment and service contracts’ forecast cost and schedule at completion,
- Insufficient or inadequate contractual terms and conditions creating substantial direct and indirect risk to the project, including the risk of substantial claims,
- System or tool inadequate to control the cost and manage closely the progress and possible variance.
- Issues related to improper site organization for the mobilization and inclusion of engineered equipment vendor representatives and contractors during construction and commissioning.

Why Contractors’ management is specific

The management and cost control of suppliers of standard items is relatively straightforward. ‘Complex procurement’, i.e. procurement of complicated integrated equipment that are often highly engineered and customized, already require another set of follow-up process, including a very strong quality control and expediting follow-up. However, the general principles and the same processes and systems can still be used.

When it comes to contractors however, a service is being ordered; the logic of the compensation varies with the contract and can also be quite complicated; and evaluating the quality of the service that has been rendered is more difficult, because it needs to be evaluated not only for its intrinsic quality, but also on the way it has supported the delivery of the entire project. Standard procurement processes and systems will typically be overwhelmed.



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Why Service Contracts need to be managed by Supply Chain

Some organizations also do segregate the management of service contracts by putting the contract management department and contracts specialists in charge or to leave this responsibility to the Project Manager. That generally does not work because the Project Manager don't have time to manage closely the contractors and service contract management in a project is not purely a contractual exercise; it needs to be performed close to the actual project operations to ensure that there is a proper fit into the project activities themselves. Business including commercial and technical understanding is thus required to manage a contractor – it can't just be the management of contractual clauses; and in this setup, there is a lack of accountability in the organization.

We thus recommend all three categories to be managed by supply chain, and at the same time to recognize their specific needs and requirements to keep full control of those key project delivery success drivers.

Conclusion

Supply-Chain in project-driven companies requires a different structuring from manufacturing or operating businesses. It is important to recognize the three distinct categories of procurement and have identify distinct processes and organization to address them properly. The systems used by the organization to track these during the supply chain cycle also need to be adapted to each type of procurement.

Too many project-driven organizations do not distinguish properly between the different procurement types. This leads to dramatic consequences. The structure we propose is pragmatic and proven and should be more widely implemented.



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