

BALANCING RISK AND EFFICIENCY OF INTERACTION IN AN INTERNAL SUPPLY CHAIN OF OIL SERVICES COMPANY

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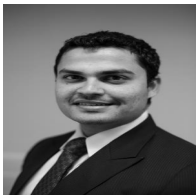
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Summary: This research explores the impacts of creation of shared services centers in an Oil field services company. In this research we have substantiated the impacts of risks and efficiencies emerging from the interaction of materials management and procurement and sourcing shared services centers for the Oil field services company through past researches, discussion with managers and with data from company. We also measured the level of collaboration amongst these functions. We have made then recommendations for the oil services company to mitigate the identified risks while keeping the same efficiency levels.

About the Authors:



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KEY INSIGHTS

1. We established whether having independent materials management and procurement and sourcing services was a reasonable decision for the Oil field services company or not
2. We identified and substantiated creating shared services centers for materials management and procurement and sourcing functions led to performance improvements in these functions.
3. We established the creation of shared services center reduces the level of collaboration amongst functions,
4. Lastly we recommended ways as how these functions can mitigate the risk of lack of collaboration while maintaining efficiency.

Introduction:

Last few years a number of companies have started consolidating the common functions into shared services centers providing services interfacing along multiple verticals. This research is concerned with and investigates the implication of the creation of shared services centers in an Oil field services company. This company is the world's biggest oil field services company. The company in a restructuring few years back created shared services centers for its various functions including materials management and procurement and sourcing functions. In the earlier organization structure the materials management and procurement and sourcing functions used to operate as a single supply chain functions. During the restructuring the Oil field services company split these functions as shared services centers operating as independent pillars. The objective of this research is primarily to explore the efficiencies and risks emerged out of to the creation of independent material management and procurement and sourcing shared services centers for the Oil field services company and then make recommendations for balancing those risks and efficiencies.

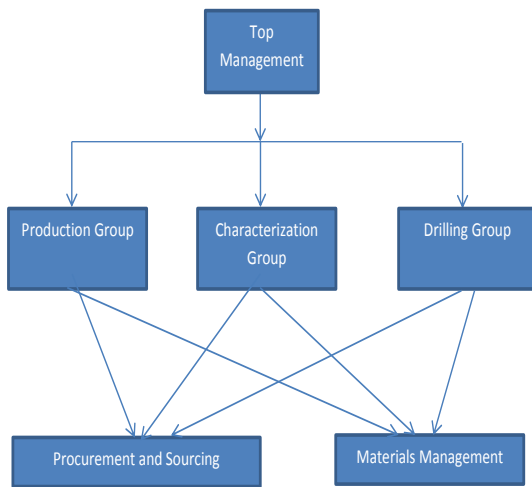


Figure: A simplified representation of the Shared Services Organization structure of the Oil Field services company.

Literature Review:

As our thesis was concerned with the implication of shared services centers for materials management and procurement and sourcing on the Oil field services company, so we looked into various researches from the domain of shared services centers. Strikwerda (2006) in his paper discussed that shared service centers really are, what its consequences are for the internal governance, change management and strategy. The concept of shared services center is closely related to the concept of modularity in an organization. Therefore we also looked into the studies related to modularity in an organization as this would have helped us in understanding if the decision to establish independent shared services centers for materials management and procurement and sourcing was just or not. Langlois (1999) discussed that cost efficiency and differentiation of services across division could be combined effectively through the concept of modularity.

Further, we wanted to understand the interaction of the materials management and procurement and sourcing functions with each other after segregation as independent shared services center therefore we cited various studies related to supply chain coordination and integration. Primary amongst them where Lee (2000) who in his study described a collaborative supply chain as one whose systems are designed to support enhanced information sharing and collaborative planning among partners in an

effort to reduce the information asymmetries in the supply chain and Cao, Vonderembse, Zhang and Ragu Nathan (2009) who conceptualized supply chain collaboration as seven interconnecting elements: Information sharing, goal congruence, decision synchronization, incentive alignment, resource sharing, collaborative communication, and joint knowledge creation and used it as a valid tool to measure supply chain collaboration through a survey questionnaire.

Methodology:

Langlois (1999) in his research has said that for organizational modules –shared services centers - should be chosen such that interdependency amongst them is minimum. We therefore mapped various process flows and compared the KPI’s of the materials management and procurement and sourcing functions in order to establish the interdependency amongst these functions. This helped us in understanding if the decision to create independent shared services centers was just or not.

We then studied the qualitative and quantitative impacts of the creation of independent shared services centers had on the performance of materials management and procurement and sourcing functions. The qualitative impacts were identified through discussion with the various managers of the Oil field services company; the quantitative impacts were identified through the comparison of results against KPO’s before and after the creation of shared services centers. We reinforced these qualitative and quantitative findings with findings in other similar researches to substantiate the risks and efficiencies that we identified from our study about the shared services centers.

Lastly we gauged the current collaboration between these functions through a survey with the questionnaire taken from study by Cao, Vonderembse, Zhang and Ragu Nathan (2009). This survey helped us in understanding the interaction between the materials management and procurement and sourcing functions in the current organizational structure. While conducting these surveys in semi structured interviews we also asked the various respondents to cite inefficiencies because of independent operations of these functions. As we were addressing the problem on a strategic level and not on operational or a tactical level therefore we believe any quantitative analysis was out of the scope of this research.

Results:

By mapping the process flows and the kpi's of the materials management and procurement and sourcing we established that these functions had very less interdependency therefore it was beneficial for them to exist as separate shared services center as it would have fostered specialization amongst them. Similarly by analyzing the results of KPI's before and after the creation of shared services center and with our discussion with various managers we established that the performance of both the functions improved and became more efficient after getting restructured as independent shared services centers.

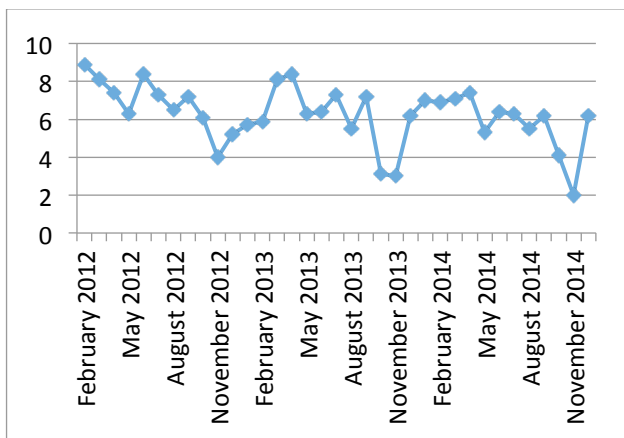


Figure: Inventory as a percentage of revenue trend.

Based upon above mentioned two findings we established that it was beneficial for the oil field services company to have independent shared services centers for procurement and sourcing and materials management functions. With our discussion with the various managers we also found out that segregation of these functions has made their operations uncollaborated. We therefore quantified the level of collaboration between these two functions and found out it to be around average and we also established that this lack of coordination was leading rise to inefficiencies. Lastly we recommended various measures such as implementing a vendor management inventory, the use of integrates Enterprise Resource Planning software, as well as the creation of incentives to collaborative through a joint Key Performance indicators-KPI's, for mitigating the identified inefficiencies and risks emanating out of the independent materials management and procurement and sourcing shared services centers while keeping the same level of efficiency obtained by

creation of the shared services centers.

Conclusions:

In concluding this research, we believe that if these recommendations are implemented, the company would achieve more benefits in terms of operations efficiency and risk reduction. We believe that this research is still an excellent exploratory springboard that explicates what risks and efficiencies the Oil field services company can gain out of creation of shared services centers and how the various parties within an internal supply chain can collaborate with one another in the event of adopting a shared services organization by a company.

We do however cite that our research do have certain limitations as recommendations that we have made are not exhaustive but was based on the inefficiencies that we discovered during the course of this project. The future research over this subject matter should focus on several key areas including the relevance of market forces on supply chain integration, flow of information, money and materials between all external and internal parties within the supply chain as well as the economies of scale among all parties therein.

Another different way the future researchers should look into for studying this problem with a view to create and develop of organization models to understand the impacts of the creation of Shared Services Centers. Existing organizational modelling software's models such as ORGAHEAD or CONSTRUCT-O can used for modelling and comparing the organization structures with shared services centers.

References

- Strikwerda J., The Shared Service Centre: Change, Governance and Strategy. 16-05-2006
- Langlois Richard N.. Modularity in technology and organization. Journal of Economic Behavior & Organization Vol. 49 (2002) 19–37.
- Cao Mei, Mark A. Vonderembse, Qingyu Zhang and T.S. Ragu-Nathan Supply chain collaboration: conceptualisation and instrument development. International Journal of Production Research Vol. 48, No. 22, 15 November 2010.