Proactively Managing Product Cost with Agile PCM

CIMdata Commentary

Key takeaways:

- *Shorter product lifecycles require getting product design and cost management right the first time to ensure that each product achieves both its target cost, planned margin and exposes supply risk while there is still time to fix it*

- *Product Cost modeling using separate solutions in Excel, ERP, SRM or even siloed within PLM lack traceability and support of key integrated sourcing processes and often reduce model accuracy resulting in untapped product cost savings*

- *The most effective product cost management lies at the intersection of PLM, SRM, and ERP and leverages data and processes from each of these enterprise systems*

Introduction

Controlling product cost early in a product lifecycle is a critical aspect of business success. If products lack an appropriate profit margin, the products will ultimately fail and the company could suffer in business and financial performance. In addition, speed is of the essence—companies have to get their products released and launched to market at a faster pace to beat the competition and capture market share. This rapid turnover forces products to be developed, sold, and retired in ever-shorter cycles. As an example, the lifespan of a product like a cell phone is now measured in months—if a company is late to market they risk losing customers and having an unprofitable product.

In today's world, it is rare to introduce a new product category. Most products fit into an existing market driven slot that has well defined segments based on many attributes including features, quality, delivery, and of course, cost. Complete product cost is not simple, it consists of price and supply risk details such as delivery, and quality and more often than not requires input from external sources of supply or manufacture. When costing is done well, market share can be captured while margin and return on investment targets are met. In order to control this process successfully, accurate volume and time based cost models which expose and minimize supply risks are required. The supply chain needs to be selected so there are no shortages or supply chain surprises at launch. With increasingly narrow windows of opportunity there is no longer time to "fix it" after launch.

Cost Management Issues

Historically companies were vertically integrated to control cost and efficiently manage communication and logistics. Over the last few decades, improvements in technology have enabled companies to decentralize. Decentralization of manufacturing including sourcing responsibilities and even in some cases design, has allowed companies to be more flexible and to focus on their core competencies which range from component production through sub assembly creation such as printed circuit boards or to finished products like cell phones. This flexibility allows capital costs to be spread over the supply chain, making development and

production scaling easier, and improving product quality because component and sub-assembly manufacturers are also focused on optimizing what they do best. Also today's market provides access to both local and global suppliers—facilitating competition, which results in lower total product costs. The end product producer reduces overhead and complexity by selecting the best suppliers and managing them via contract rather than investing in a large, deep, inflexible organization. The downside of this structure is that it is complex to manage, is communication intensive, and requires robust sourcing, collaborative product costing and analytics to ensure products achieve both product cost and margin objectives.

Currently there are a limited number of tools that support the complexity of managing both the product design and collaborative product costing across a supply chain. Product Lifecycle Management (PLM) manages the product definition, but out of the box, most PLM solutions support only simple cost rollups or span only a subset of complex cost analysis models. Through ERP integration, PLM can obtain current cost information, but the question is "which cost?" How current is the cost? Which cost is used as the basis of the product cost estimation? Sample pricing, engineer estimated pricing, low volume pricing, production volume pricing, geography dependent pricing? All scenarios can be valid but it is increasingly difficult to roll up product costs and analyze the details depending on what question is being asked. ERP has cost information and future estimations for existing production items, but, in the case of an outsourced assembly, the price is often captured only at the assembly level, and component cost detail may not be available or current. Supplier Relationship Management (SRM) has similar issues to ERP in that data is based on historical purchases (accounts payable data) or a limited window of current production volumes,

Within today's fast paced environment, global manufacturing, sourcing, cost and supply risk management need to be locked down before the product is released for production. This is challenging when the product design or portions of the product design are new with no data to base the cost on and when there are multiple sourcing options available. Typically engineers use Excel to define and manage a product's cost. A baseline BOM, usually in Excel, from an existing product may be used, or a new one created from scratch. Costs are downloaded from ERP for existing components and cost estimates for new items are manually input. The disadvantages of this work strategy include data sharing difficulties and ensuring that the spreadsheet is up to date with all part costs and current to the 'latest' revision of the product design. More than likely, the BOM is changing rapidly, and items as well as their quantities can vary dramatically across revisions, further impacting the product cost. As the BOM evolves, it is easy for it to get out of synch between engineering, procurement, suppliers, and manufacturing partners. This results in wasted time, cycles and confusion impacting cost and possibly affecting the launch and delivery of products.

Manufacturers require a costing solution that addresses these issues. They require the ability to assemble available cost details associated to the latest product revision and quickly obtain missing cost data from external sources. As early as possible in the development cycle, users require the ability to analyze different BOM constructs, determine alternate sourcing or pricing strategies, and model different production volume scenarios, all of which can be easily refreshed to adjust for changing market conditions, e.g., a change in material costs.

Oracle's Agile Product Cost Management

Oracle's Agile Product Lifecycle Management suite has included Agile Product Cost Management (PCM) since 1998, and the solution is now in its fourth generation. It can

operate as a standalone solution or be integrated with other Oracle or third party enterprise solutions including PLM and ERP. Agile Product Cost Management is exceptional when compared to SRM as it is based on the product. PCM leverages BOMs managed within PLM to obtain the product structure and then associates cost details to each child item throughout the entire multi-tier product structure. The BOM can be manipulated within PCM allowing faster generation of "what ifs." The data model within the PCM pricing repository allows cost details to be captured and then product costing to be modeled and analyzed over many variables including source specific data (e.g. design estimation, customer, supplier, manufacturing partner), different time and / or volume based scenarios, and various ship to or from locations utilizing different currencies.

When new or updated items are required the Request for Quotation (RFQ) capabilities within PCM enables appropriate suppliers to be contacted to provide new or updated cost quotations. Sourcing teams can track progress of the negotiations, leverage the suppliers' input and responses to analyze and award the best suppliers, and share the updated information internally or externally as required.
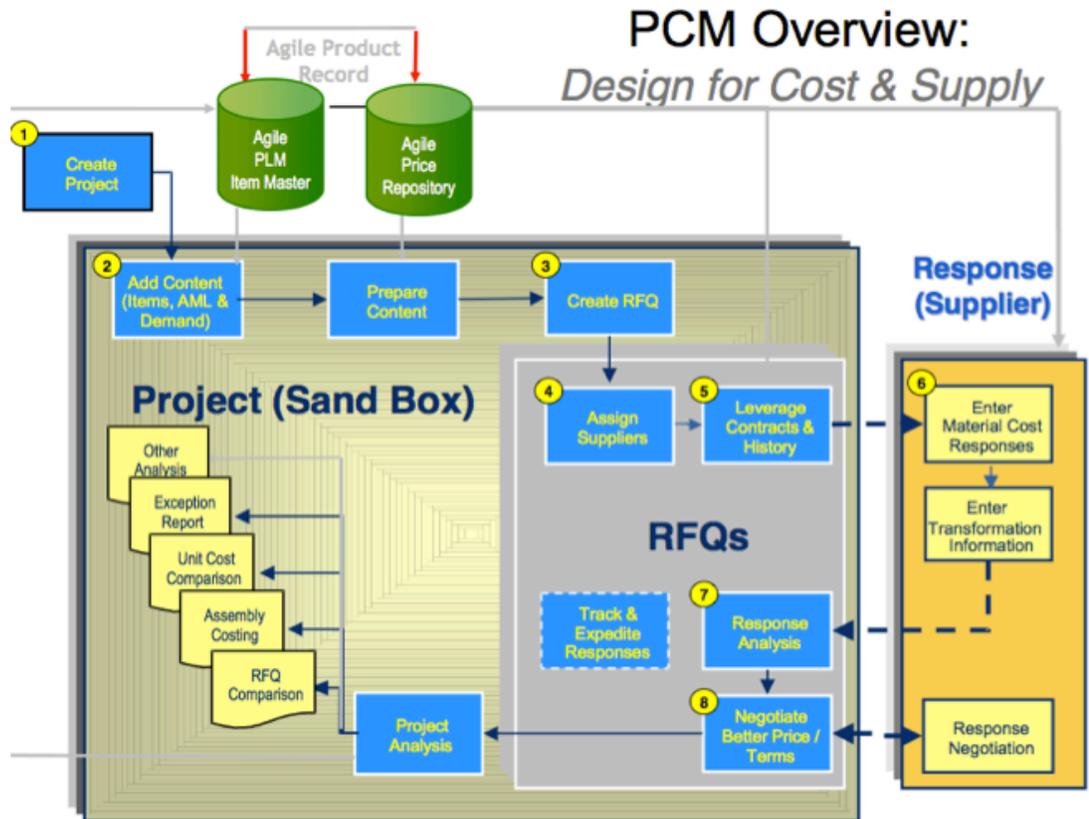

Figure 1—Oracle Agile Product Cost Management Process Architecture

The value of Oracle's Agile Product Cost Management is that it enables better product cost related and part risk aversion decisions to be made faster. The data model is rich enough to support multiple time-based (weeks, months, quarters, years, overlapping) and quantity based scenarios. Sourcing teams can gather complete lifecycle time and volume-based costs for existing and new components simultaneously from both suppliers and manufacturing partners, then quickly analyze the data rolled up through the entire product structure. Live connections to PLM, ERP and other databases ensure that product related information, including the BOM, can be refreshed as often as needed. This enables authorized users to

perform sophisticated analyses to define and assess projected costs for many launch and production scenarios. By doing this early in the development cycle, product designers are able to ensure their designs are in alignment to cost targets, avert potential supply risk, and greatly reduce risk of creating products that will not meet their profit objectives.

A Customer View

An Oracle customer develops and sells secure point of sale electronic payment systems. They are a long time customer using Oracle Manufacturing and Agile PLM including PCM. Their manufacturing is predominantly outsourced creating additional challenges in keeping product costs competitive and part costs in line with market pricing. According to this customer, Agile PCM enables them to be confident that their contract manufacturers are producing products at the lowest possible cost. They estimate that PCM has helped save in excess of $10 million in product costs. Agile PCM takes the sales forecast from Oracle Manufacturing, explodes it across all of their BOMs to aggregate part demand and allows users to share these details across hundreds of suppliers. This allows them to capture, benchmark, and quickly analyze thousands of suppliers' part cost details through the product hierarchy to identify the best suppliers. After pricing is published to the Agile product record, this information is systematically communicated to Oracle Manufacturing and the ERP system to ensure that Purchase Orders are executed using the most current cost information. The company continues to enhance and expand their use of Agile PCM to better manage their supply chain associated costs and meet their product profit margin goals.

Concluding Remarks

Managing product cost is a key function for all companies. When a new product is developed or an existing product changed, developers need to proactively estimate the projected cost of the product (and its development) and then manage cost factors to help ensure product profitability. Companies need to be able to build a cost model associated to the product model that can perform accurate "what ifs" as early as possible in product development and then manage the cost of both internal development and parts and components obtained through their supply chain. Integrating and leveraging existing data from PLM, ERP, SRM and other enterprise systems and keeping it current while performing cost analyses is critical to achieving target profit margins and ROI.

Agile Product Cost Management is a solution that links cost with product BOMs and supports performing extensive cost analyses. Companies that need robust product costing solutions should evaluate Oracle's Agile PCM.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM). CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM. CIMdata also offers research, subscription services, publications, and education through international conferences. To learn more about CIMdata's services, visit our website at http://www.CIMdata.com or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 734.668.9922. Fax: +1 734.668.1957; or at Oogststraat 20, 6004 CV Weert, The Netherlands. Tel: +31 (0) 495.533.666.