



## Cost to Serve Implementation in a Custom Sterile Division

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Our client employs more than 50,000 people on five continents and has an annual revenue of more than \$50 billion. They develop, manufacture, and market products for patient drug-delivery technologies, distribute pharmaceuticals, medical, surgical and laboratory supplies, and offer consulting that improves quality and efficiency in health care. The target of Tefen's efforts was the company's Custom Sterile division.. The products are assembled at four different sites that include McGaw Park IL, Fort Mill NC, Juarez Mexico and Ontario CA.

### Challenge

Leading the industry with a 55% market share, the client has in recent year's experienced strong competition that has targeted their own inefficiencies in delivering cost effective products to market. These inefficiencies are driven by established internal operating practices that have convoluted how costs are addressed and applied.

The Custom Sterile Cost-to-Serve (CTS) Initiative focused on addressing the various operational costs associated with the highly customized sterile kitting operation. Partnered with Tefen, the client undertook a phased and focused initiative to gain a thorough understanding of the costs associated with servicing their customers.

In the initial scoping, Tefen collaborated with client staff to perform a high level review of their McGaw Park Custom Sterile operation to identify major areas of opportunity. The client's Senior Management then chose three areas to focus on: Cost Model, Product Standardization & Simplification, and Engineering Change Notice (ECN) processes.

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With the support and oversight of client staff, this Diagnostic resulted in a detailed report identifying and quantifying the specific opportunities and benefits achievable by the client after the implementation

### Issues Identified during Initial Assessment included:

- Poor communication of vendor changes
  - Late change notification creates chaos within the system
  - 50% of all work-orders delayed due to the need for manual intervention
- The current segmentation process is inadequate for quantifying the impact component variability and kit complexity have on operations.
  - Components are managed based only on how many Bill Of Materials (BOM) they populate
- Limited information for making good business decisions
- Overhead costs (\$45M) are blended at the kit level which masks the complexity and inefficiencies while costs are driven at a component level based on activity
- Limited discipline and accountability
- Current ECN process is lengthy and complex: 67.2 days average cycle time
- Complex ECN process in conjunction with the high number of RWO, Subs, Expedites and service issues creates \$2.8M of Non-Value Add work across the organization

### How Tefen Helped

After the scoping, Tefen identified several opportunities for improvements in Product Change/ECN Process and Component Segmentation and Simplification. Working side by side with the client's senior management, Tefen assisted in the additional analysis necessary in order to implement 3 key findings presented as part of the Diagnostic: Cost Model Development, Component Segmentation Development and the Design and Implementation of a New Component Set-up process:

#### **Component Segmentation**

Component Segmentation introduces a methodology to differentiate components based on their operational impact and costs. This methodology provides a qualitative means of grading components based on a relative scale from "A" to "D" (Low Effort to High Effort). Additionally, depending on a component's grade, subsequent cost burdens ("E") or bonuses ("A+") can be added using the cost model to influence behavior and drive the business towards components which are operationally favorable.

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## New Component Set-up Process

The New Component Setup Process provides a qualitative and quantitative methodology to analyze requests for new components to be added to the existing catalogue. Historically, this process has been inconsistently applied and ineffective in evaluating the business case for adding a new component. In fact, the database frequently has acceptable alternatives that are already available in the component catalogue. This revised process provides a robust and systemic approach to evaluating the need to set up new components. It includes a set of tools and defined roles for analyzing all requests for new component setups.

### **Cost Model**

The cost model modifications made during this project reflect a shift in how overhead costs and inbound freight will be allocated. Historically, the cost model blended all overhead costs and applied it proportionately to each kit based on labor hours. Additionally, inbound freight costs were only captured for pre-paid items and therefore do not reflect all in-bound freight costs.

This portion of the CTS project focused on using Activity Based Costing methodologies to adjust and reallocate overhead based on the level of activities individual components drive within operations and adding missing inbound freight costs.

## Performance Excellence Delivered

### **Segmentation Attributes & Adjustment Factors**

Based on the component catalog and the information available for each component, the following attributes and adjustments were established. All components will be given an initial score) based on the scoring methodology. The attributes and adjustment factors provide a quantitative method for assessing the operational effort associated with the component.

*Attributes:* Supply chain characteristics which reflect operational impact.

- # of BOM's: More BOM's per component allows streamlined operational effort
  - Annual Volume: Greater volume improves economies of scale
  - Lead Time: Shorter lead times allows for less precise inventory management and faster response times to changing demand
  - Expiration Date: Finite expiration times less than 365 days create an additional material management burden because one must ensure usage prior to expiration
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- Supplier Score: Higher supplier scores indicate reduced operational effort
  - Sterile Code: Certain sterile codes allow for greater flexibility and lower cost

*Adjustment Factors:* Adjustment Factors will also be used to develop a component's final classification. These adjustment factors are elements that are not quantifiable numerically as much as they are either a Yes/No or Favorable/Unfavorable factor.

- Self-Manufactured: Encourage usage of self-manufactured components
- Preferred Component: Encourage usage of preferred components
- Expiration Date: Expiring components increase operational effort involved in managing material inventory
- Sterile Code: Sterile components require additional effort during the manufacturing process

### **New Component Set-up Process**

The New Component Setup Process provides a qualitative and quantitative methodology to analyze requests for new components to be added to the existing catalogue. While it is often necessary and important for Custom Sterile to add new components, historically this process has been inconsistently applied and ineffective in evaluating the business case for adding a new component. In fact, the database frequently has acceptable alternatives that are already available in the component catalogue. This revised process provides a robust and systemic approach to evaluating the need to set up new components. It includes a set of tools and defined roles for analyzing all requests for new component setups.

#### **Assumptions & Rules**

- All New components will go through the New Component Setup process
- One person empowered with Final Authority: Gate Keeper
- All New Component Setup Requests Must be Evaluated

*Gatekeeper Roles and Responsibilities:* This role must provide a centralized point of control for the component catalogue. By working closely with Central Purchasing, Marketing, Sales, and Operations, the Gate Keeper will have access to the information required to make decisions about the management of the component catalogue in relation to business and customer needs.

### **Cost Model**

Using a ratio established by the number of components in the product catalog and the number of pics associated to each one the changes to the cost model applied this ratio per Kit according to the product Mix in each particular Kit. Each line item in the Kit would be associated with a ratio according to its segmentation. For each Kit the ratios in the Kit would be averaged to establish a Kit ratio that was then applied to the current practice calculated overhead. The expected results for this change would drive overhead for Kits with A and Bs down and Cs and Ds up. A zero balance based on the projected production output was achieved by adjusting the factors within the simulation.

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In addition, the following metrics were established to track performance and ensure absorption will be in range when implemented

- Migration report: Tracks component migration
- Kits per plant forecast
- Tracks amount of Kits built by each plant
- Use Kit forecast in relation to applicable variable OH factor per Kit to forecast a monthly overhead factor
- Daily – weekly multiplier result
- Tracks the resulting multiplier for the production mix of Kits (track historical and compare to forecasted factor calculated with the Kits per plant approach

## About Tefen

Tefen is an international management consulting firm, committed to improving overall operational effectiveness for Fortune 500 companies around the world. The firm's main areas of focus include operations excellence, manufacturing, quality, customer service, research and development and supply chain management. With its "hands-on" approach philosophy, the company has achieved tremendous success in delivering quantifiable and value-driven results for its clients in a variety of industries, including healthcare, life sciences, general manufacturing, high-tech and financial services. All of Tefen's support programs are ISO 9001 certified. Tefen currently employs over 300 professionals worldwide.

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