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## Use of Best Value Model to Achieve Sustainability: A Case Study on a Semiconductor Manufacturer

Rick Corea<sup>a</sup>, Dean Kashiwagi<sup>b</sup>, Dhaval Gajjar<sup>b</sup>, Sylvia Romero<sup>b</sup>

<sup>a</sup> *ON Semiconductor, 5005 E McDowell Rd, Phoenix, AZ 85008, USA*

<sup>b</sup> *Arizona State University, 660 S. College Ave, Tempe, AZ 85287, USA*

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### Abstract

The role of a Facility Manager (FM) has evolved tremendously in the last couple of decades. FM's are not only expected to operate and maintain the facility at the highest quality possible but also emerge as leaders in their organization using sustainable practices. Moreover FM's are expected to achieve more with limited budget. An FM for the local semiconductor manufacturing company in Phoenix, AZ realized to be environmental conscious and that he had to change the traditional way of hiring the vendors. FM partnered with Arizona State University (ASU) to assist the manufacturing company in outsourcing their waste management services. Previous research at ASU has indicated that one of the important factors in achieving a sustainable product / service is by hiring expert vendors based on value rather than low price. An expert vendor is not only able to plan and minimize the risks before they are encountered but also able to deliver a quality end product / service for an FM. This paper focuses on a case study of a best value model implemented by a semiconductor FM in Phoenix, AZ to procure waste management vendor for their recycling, shredding and trash services. The paper also focuses on the challenges faced in implementing the model and the lessons learned. It was concluded that the outsourcing sustainable practices using best value approach is successful and can be used as a model for others to follow.

*Keywords:* Waste Management, Facility Manager, Best Value, Sustainable, Outsourcing

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### 1. Introduction

The facility management (FM) role is continuously evolving due to technology, economy, social responsibilities and environmental changes. Real estate, property operations and maintenance and office administration were the three main activities in the role of an FM [1]. Current FM's constantly have to add value, reduce costs, and provide a safe and friendly environment while focusing on their organization's vision. In the last 10 years FM's are not only expected to maintain and operate the facility to its highest optimum quality but also emerge as innovators that have to function and adapt according to organization characteristics, business sector and facility features [2]. Moreover, innovation is an important factor for the development of an FM as a discipline, but there are very few innovation processes in the industry as an FM [3].

\* Corresponding author. *Email:* [Rick.Corea@onsemi.com](mailto:Rick.Corea@onsemi.com)

## 2. Problem

The problem is finding qualified vendors to handle the waste management program at this manufacturer's Phoenix office. The current process was not satisfactory. Authors propose that one of the main aspects of being an innovator is to change the traditional ways of doing business and find innovative ways that can add value to the organization. An FM for the local semiconductor manufacturing company in Phoenix, AZ realized that the current procurement system of hiring vendors based on low price is not ideal. In order to change this trend the FM partnered with the researchers at Arizona State University (ASU) to assist the company in outsourcing their waste management services using best value model.

The reason the waste management services was chosen for the testing of Best Value model is the increased focus from organization leaders on the effect of sustainability. FM is in a unique position that gets to see the entire process and is the leader of the group over the entire life cycle of a facility [4]. Hence, FM can become innovative by hiring experts rather than managing the vendor and sustainability is the key factor as an FM in this industry. The previous waste removal company at the manufacturing facility was a legacy company that was started by another semiconductor and was a standard pull and dump process, with minimal success in recycling. To change the facilities group mind set on how to manage their waste removal, the Phoenix facilities group explored different methods to simplify their process and sought the best value contractor who would be responsible for implementing their own process.

In 2013, the United States Environmental Protection Agency reported that Americans generated about 254 million tons of trash. The amount of recycled and composted was about 87 million tons of this material, equivalent to a 34.3 percent recycling rate. On average, the recycling and composting was 1.51 pounds of the individual waste generation of 4.40 pounds per person per day [5].

The company's main goal was to identify a waste management company using an innovative best value model that would take ownership of their waste streams by managing, educating, removing, recycling, sustaining and reducing cost. This paper presents a case study of a best value model to achieve this goal by procuring waste management vendor for recycling, shredding and trash services.

## 3. Methodology

Since 1992, ASU has been researching and testing best value and leadership based concepts to develop organization and service models that increase efficiency and performance, while minimizing risk. There have been other performance models that have been proposed in the industry [6], [7] [8]. The ASU best value technology is unique since it has been tested over 1,804 times on \$6.4 billion in project value (\$4.2 billion in construction projects and \$2.2 billion in non-construction professional service projects), in six countries, 32 US states, with a 95 percent success rate over 22 years [9]. This research uniquely optimizes effective practices by the client and the expert vendor. Traditionally, FMs tend to manage vendors, but if a system was in place where the vendor actually knew what to measure in cost and time deviations, this would allow them to do their own quality control. This allows the FM to take care of quality assurance. Confusion and guess work is eliminated in knowing if the vendor is meeting the client's goals. This is documented by the vendor with the FM's signoff. It builds an accountability factor throughout the life of the contract.

The *best value procurement (BVP)* was used because it replaces the owner/buyer's decision making and management, direction and control (MDC) with the utilization of expertise. It is an approach which transfers the control of the project to the best value expert vendor. Experts have no risk. The expert vendor then uses transparency to minimize risk that they do not control.

The study for the manufacturing facility was designed as follows:

- Using the best value model for selection of a waste management vendor
- Pre-planning and risk minimizing by the selected vendor
- Creating a measurement system throughout the life of the contact using key metrics
- Educate other FM's in the industry to use the Best Value model in procurement of vendors and services

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