Abstract. In recent years, increasing numbers of manufacturers are using outsourced manufacturing to supplement or replace their internal manufacturing of components, assemblies or finished products. In most instances, this is done after a thorough make versus buy analysis to ensure the company remains competitive with regard to its competitors in today’s cost sensitive environment. Once the make versus buy analysis has been completed and the decision to outsource has been made, it often falls upon the Supply Manager to take on an expanded role in making sure that quality is controlled at the outsourced supplier’s factory and acceptable product fills the company’s product pipeline. While quality has not traditionally been the responsibility of the Supply Manager, how the quality at outsourced suppliers is managed can greatly affect the company’s bottom line, its operational efficiencies and the Supply Manager’s credibility. Therefore, outsourcing as a supply strategy requires Supply Managers to take an active role in making sure product specifications and quality requirements are communicated clearly and completely.

Outsourcing’s Growth. Outsourcing has been a part of the Supply Management landscape since the early 1980’s with the first outsourcing of electronic components. The 80’s, 90’s and beyond saw a rapid expansion of the concept and all indications point to continued growth in outsourcing in the future. In 2005 the Center For Advanced Purchasing Study (CAPS) found that firms outsource an average of 33% of direct materials, 32% of indirect materials and 47% of their services while other studies have pointed to Supply Manager’s overall intentions to outsource more products & services in the coming years. Michael Corbett reports in his book, The Outsourcing Revolution that, “In fact, more than 90 percent of companies say that outsourcing is an important part of their overall business strategy.” Quality Digest states that “The trend is to outsource anything that’s not a core competency because the third party can do it better, cheaper and faster than you” whereas Mike Johnson notes in his book Outsourcing-In Brief that “it is clear that outsourcing is not just another passing management fad — if it is applied correctly — but a powerful management process that can reap huge benefits for those with the courage and the professionalism to get their organizational equations right”.

Outsourcing And Offshoring Defined. There are almost as many definitions of “Outsourcing” floating around as there are firms practicing it. The Institute For Supply Management (ISM) defines it as “a version of the make-or-buy decision in which an organization elects to purchase an item that previously was made or a service that was performed in-house.” Wikipedia defines
it as: “transferring or sharing management control and/or decision-making of a business function to an outside supplier” while The Outsourcing Journal and The Black Book Of Outsourcing both define it simply as: “the act of obtaining services from an external firm.” A service in this context is taken to mean both non-tangible Services as well as physical Products. “Offshoring” is one of the fastest growing areas of Outsourcing and is synonymous with “Global Outsourcing”.

The Outsourcing Continuum. The way that outsourcing activities manifest themselves in an organization may be thought of as existing on a continuum with one end of the continuum being pure Services (100% in-tangibles being exchanged) versus the opposite end, which represents pure tangible Products. This paper will focus on the Product side of the Outsourcing Continuum although at any point along the continuum; there will likely be a mix of both Products and Services being delivered. It is anticipated that the techniques discussed, while being developed from and relating primarily to the Products side of the continuum, have great relevance and applicability on the Services side as well.

Services     Products

Outsourcing’s Two Edged Sword. The debate over the benefits versus the downsides of Outsourcing runs from pure proponents to the conscientious objectors. These pros and cons are adequately documented and discussed in a host of published mediums but the bottom line is that at present almost all firms practice some form of outsourcing and the trend (although there has been some quiet retreat in the past few years) is growing. The most common benefit associated with outsourcing is typically overall cost savings combined with convenience and access to expertise and resources that may be unavailable in-house. According to Thomas Friedman, “… imports from China have saved U.S. consumers roughly $ 600 billion and have saved U.S. manufacturers untold billions in cheaper parts for their products.” The most common negatives are loss of control and communication issues and in the case of offshoring the loss of local jobs. The truth is that Outsourcing is very complex for most firms and successful management requires the use of proven models and industry best practices. Company culture and top management direction are further important variables in success. The need to control quality at outsourced supplier’s factories is key to overall outsourcing success. It is not enough to take the suppliers “word for it”, due diligence must be conducted to assess the suppliers capabilities and to verify claims made. It is important to form a strategic partnership with the outsourced supplier that includes monitoring quality processes and that involves a degree of two-way information exchange, coordination and trust. Once in production, materials and processes must be monitored to assure quality product is shipped. As Ronald Reagan is famous for saying: “Trust but Verify” and nothing could be truer when it comes to Outsourcing.
The Complete Outsourcing Model. So how does a Supply Manager deliver a successful outsourcing program? Most models of Outsourcing reviewed in this research offer closed loop approaches such as is summarized below:

- Goal Agreement: Tactical, Strategic or Transformational Outsourcing.
- Cross-Functional Team Establishment, Empowerment & Supplier Integration
- Defining Product Specifications & Quality Requirements (The “PSQR™”)
- Production & On-site Monitoring
- Quality Auditing
- Continuous Improvement (Cost, Quality, Delivery)

In addition to the focus on Product Outsourcing, further focus is on the details of the third element of The Complete Outsourcing Model, “DEFINE”, which is the most critical, yet often overlooked component of the overall outsourcing or offshoring activity. The adaptation of a standard template format for assembling and sharing of product requirements can help make the information more easily understood by all sides which can go a long way to minimizing the effects of outsourcing that may occur due to different geographical locations, cultures, norms, practices, standards, etc and provides a standard format to follow to control and transfer information between organizations engaged in outsourcing (offshoring). One of the most critical features of this model is the requirement for some sort of on-site QA monitoring activity at the outsourced supplier’s facility. This activity or some form of it, while often overlooked in outsourcing (offshoring), is deemed essential to success.

Goal Agreement And Establishment Of The Team. A coordinated company-wide commitment is needed to get the maximum benefits of outsourcing. First, top management buy-in is needed. This is critical. Next, cross functional teams need to be established between the outsourced suppliers staff and the company’s internal stakeholders in supply, marketing, engineering, quality, logistics and finance. Often there is a resistance to change in organizations, especially ones that are outsourcing for the first time or where such outsourcing leads to downsizing. With over 2 million manufacturing jobs lost in the U.S. over the past 10 years (according to the U.S. Conference Board), this resistance is understandable. One of the
The Product Specification & Quality Requirements ("PSQR™"): The ultimate goal of the PSQR is to act as a central point to assemble, share and verify critical information related to the product. The Product Specification (PS) details the product's bill of materials, packaging and other physical components and their assembly or relationship together. The Quality Requirements (QR) details what is expected from the product in terms of appearance, workmanship, performance, testing and packaging. Together they form the complete PSQR, which becomes a controlled document, and becomes the marching orders for the Quality Team at the outsourced manufacturer’s facility to see that the product produced and shipped is equivalent to everything outlined and detailed in the PSQR. Typically, the development of the PSQR is a cumulative and additive process with a focus on continuous improvements over a reasonable amount of time. Team involvement is essential to make the PSQR comprehensive and relevant for all users. Seldom is it perfect from the start. It is only after considerable contributions and sharing / debating by various personalities and disciplines within the system that a PSQR can be at its peak of usefulness and relevance. All participants in the PSQR development process must pay very close attention to details to ensure success.

The following template has been developed and refined over a number of years in practice of managing the quality of products at outsourced suppliers facilities. Designed to be prepared in close collaboration with the outsourced supplier it presents a standard format for compiling the Product Specifications and Quality Requirements and may easily be adapted to meet special requirements as needed.

The PSQR Delivery Method: How the information that makes up the PSQR gets collected, controlled, archived, etc is critical to the reliability and availability of it. The PSQR information must be exchanged in as close to real time as possible and must be effectively communicated and understood by all before it can be of use. While many companies are able to utilize a spreadsheet and paper or PC based system of control, larger efforts, particularly when a firm is offshoring may require a more advanced IT delivery system such as Microsoft’s Sharepoint® or other file sharing & editing websites or establishment of a browser-based database network operating system. The method of delivery of the PSQR information in as close to real time as possible is just as important as the data that is collected.

The Acid Test; The Outsourcing Quality Scorecard: The most important thing for any business is its viability and success. The most basic and critical measure of this often rests on the customer’s level of satisfaction, which may be measured in a variety of ways through QA
data such as ppm (parts per million) and/or external methods such as customer surveys or customer complaint or returns levels. It is dependant upon the individual organization to develop their own specific outsourcing QA goals and measurement methods and then to follow through after the fact to measure, analyze and use the results in continuing improvement efforts. It is only through the complete cycle of planning, executing, auditing and improving, as modeled above (The Complete Outsourcing Model) that Supply Managers can maximize the benefits of outsourcing and offshoring for their organizations.

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