Agent Technologies, Inc.

Planning, Deploying, Managing and Supporting Customized Products in a Multi-Channel Sales Environment

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Executive Summary

How will your business: plan, deploy, manage and support customized products in a multi-channel sales environment?

The current wave of product customization, is gaining widespread acceptance due to advances in information technology. However, many of the resources used today to produce a custom product are based on individual design teams and their knowledge of the products that have been produced and engineered in the past.

This white paper outlines several issues that businesses must address in order to become effective in supporting custom or highly configurable products:

- understanding current system limitations and current sales, manufacturing, and engineering methods
- utilizing product configurators to support customized products

Agent Technologies, Inc. is the only vendor providing

- architected sales processes
- architected e-commerce delivery solutions
- architected manufacturing processes

all targeted at assisting in the deployment of customization strategies.

Agent Technologies, Inc.'s *architected sales process* helps you identify the sales opportunity and utilize an on-line price quote system to automate the sales process and reduce the cost of each sale.

Agent Technologies, Inc.'s *architected e-commerce delivery solutions* quantify the e-commerce value proposition for your company. We help identify your e-commerce readiness in sales, engineering and manufacturing and assist in identifying the steps for moving to a state of readiness.

Agent Technologies, Inc.'s *architected manufacturing process* utilizes made-to-order e-commerce solutions to assist you in creating custom and configurable products quickly and efficiently to effectively meet customer needs while greatly reducing rework.

Contents

1. Product Customization

Due to customer needs, made-to-order customized products will soon become the norm. “Demand for more customized goods will transform manufacturing by creating shorter product life cycles, and thus shorter production runs. Batches of identical products will become smaller as consumers increasingly demand differentiated offerings and marketers respond to information about customers with increased segmentation and customization [1].”

By 2005, 45% of mobile phones will be customized. By 2006, drugs will be customized for genetically identified, at-risk populations. By 2015, up to 30% of automobiles will be customized to some degree from cosmetic features to safety features [2]. Indeed, the made-to-order segment is growing quickly. However, due to the negative growth in Information Technology spending in manufacturing, manufacturers will increasingly need to look for ways to optimize their current sales process and information systems for made-to-order products.

2. Current Problems with Product Customization

Currently, companies face many challenges in attempting to customize products for specific customer needs. These issues include:

Engineering Issues

- Slow cycle time and inefficiency when engineering custom orders
- Imperfect translation of customer requirements
- Slow delivery in design of deliverables

Sales and Marketing Issues

- Delays in turnaround on requests for proposals
- Delays in getting feedback from customers
- Inaccuracy in meeting customer requirements

Manufacturing Issues

- Inability to accurately predict product shipment
- Long-lead times from poor systemization of the custom manufacturing process
- Inability to realize the cost savings possible from the direct-to-customer, custom manufacturing model
- Delays and inaccuracy in creating designs and drawings
- Rework and scrap on custom orders

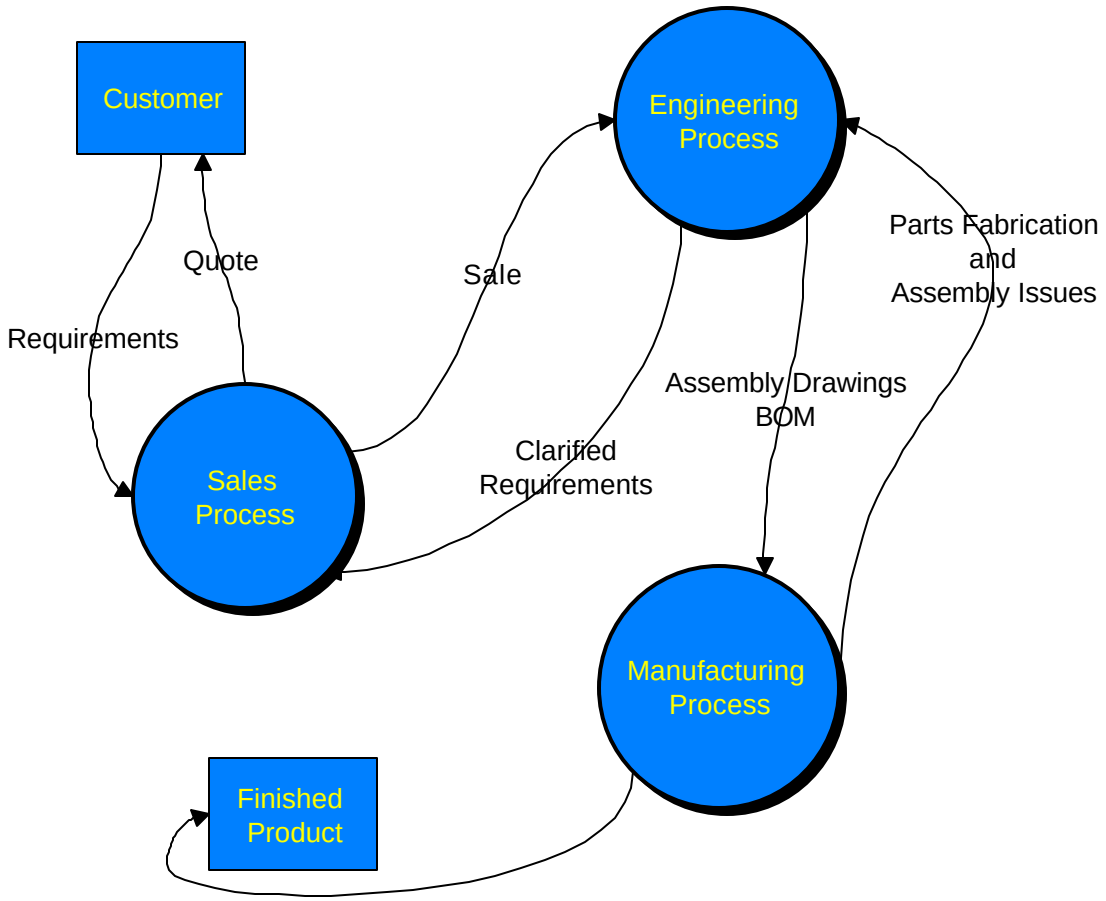
Corporate Issues

- Inability to realize expected increases in:
    - Revenue
    - Market Share
    - Profitability
    - Customer Loyalty

3. Current Custom Manufacturing Work Processes

Currently, for a product to be customized, there are a number of interactions that take place between the customer, sales force, engineers and manufacturers.

Custom Manufacturing Work Process



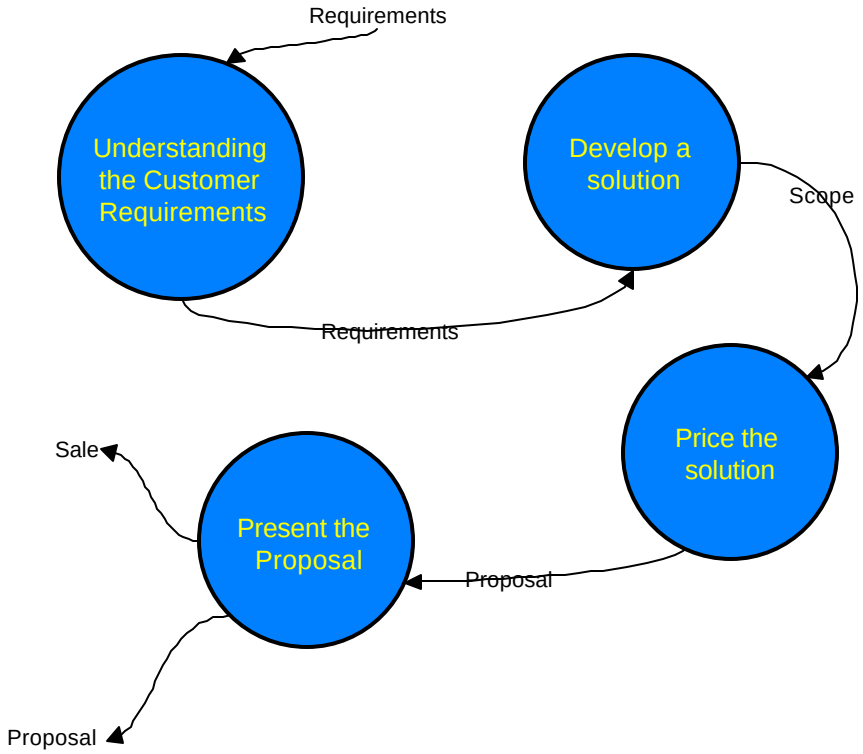
These interactions include: account representatives receiving customer requirements, providing quotes, clarifying requirements with engineers, creating assembly drawings, and providing solutions for assembly issues before creating a customized finished product.

Interactions in the custom manufacturing work process currently can take a great deal of time and can be very labor intensive. In addition, the knowledge required to meet the customer's needs, from the sales process through the manufacturing process, is typically stored in the heads of various people within the organization.

3a. Current Sales Process

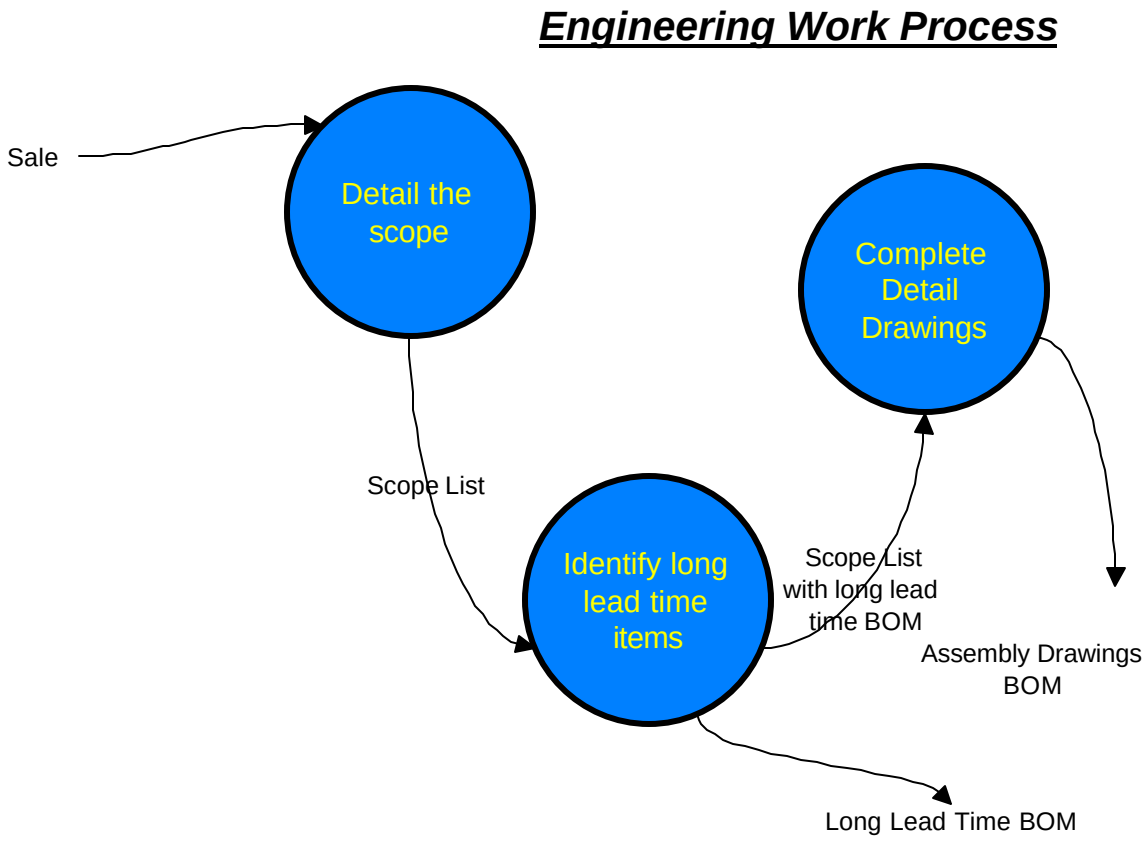
The time and effort required to develop a request for a quote can be staggering, and the quote may not even lead to a sale. The process usually involves a sales contact, a team of engineers, the manufacturing organization, and the heads of the company. The cost and time per quote can be in the $10,000.00 to $50,000.00 range or more depending on the complexity of the product. The losses from this sales process are not only reflected in the cost but also in the amount of time required by highly skilled people who could be supporting other aspects of building the business. Much of the knowledge in the current sales process resides in different experts within the company and is not integrated and accessible to the sales representatives and eventually to the customer. After the sale is made, resources need to be focused at determining the real customer requirements. Many times information discussed in the sales process is unclear or missed. The resulting quote may have to be adjusted or margins compromised to keep a satisfied customer.

Sales Process



3b. Current Engineering Work Process

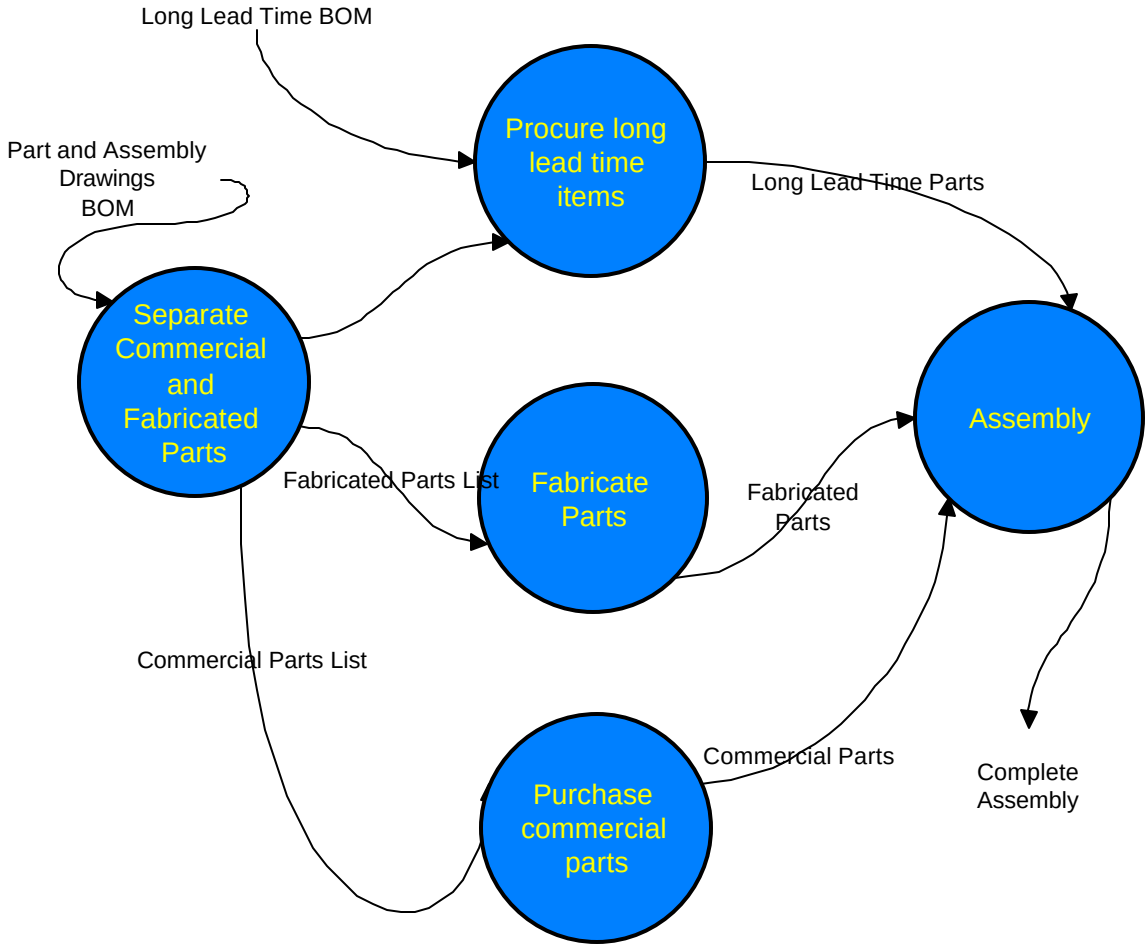
In the engineering process, the customer's needs are captured in the engineering drawings and documents. Once this is complete, the fabrication, procurement, and assembly of the product are started. The knowledge of what to procure and receive resides in the procurement organization that may find long lead times or problems with availability of the parts, resulting in reengineering the assemblies with different parts.



3c. Current Manufacturing Work Process

Once the parts are released to manufacturing for fabrication, part tolerances may not be clear leading to some parts being unable to be assembled. The subassembly process may require special knowledge because of the custom nature of the assemblies.

Manufacturing Work Process



In summary, the process can require much rework and cost both time and money to your organization and the customer.

4. What are Product Configurators?

Developing a product configuration system involves the identification of standard parts subassemblies and processes that can be configured to meet customer needs. These standard parts subassemblies and processes are engineered to meet a wide range of customer needs.

Product configurators allow for the dynamic configuration of complex products (meaning that many products can be made available with numerous interdependent options). Utilizing a product configuration system drastically reduces the time involved in selling, designing, and manufacturing custom ordered parts, assemblies, or finished products by intelligently identifying the physical attributes of a manufactured item and utilizing specific parameters to generate engineering and manufacturing deliverables.

5. What are the benefits to Product Configuration?

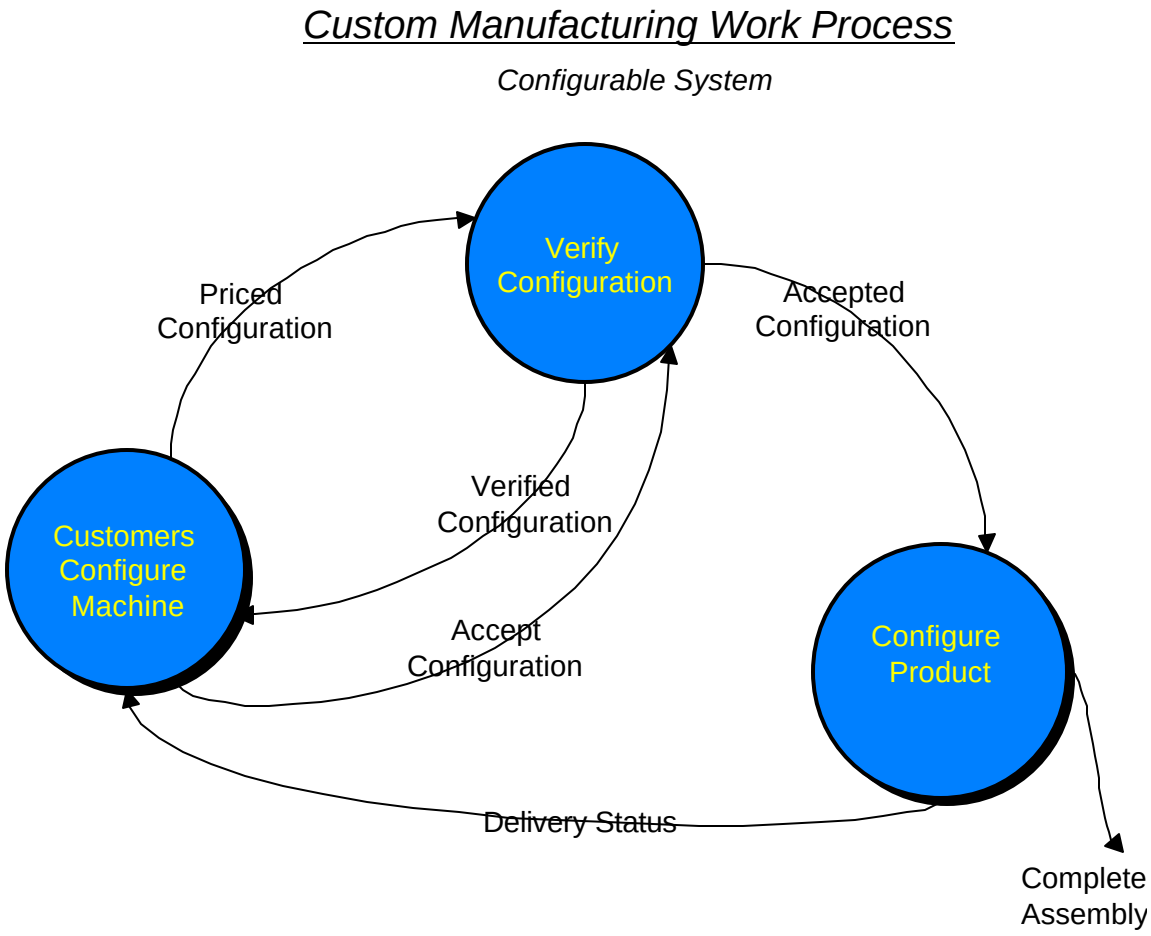
A configurable product approach lends itself to meeting customer needs in a fraction of the time and cost of the traditional approach. Product Configurators offer a 50-70% reduction in rework expenses for organizations with a 25% or greater order error rate. 25% being the industry average for made-to-order/assemble-to-order manufacturers [3].

The second source of cost savings is related to cost of sales. The two primary areas of sales expense are good-will promotions for customers that have received misconfigured shipments and technical sales support expense. Enterprises can expect nearly a 90 percent reduction in good-will promotions (e.g., rebates on future purchases). However, the greatest leverage is in reducing technical sales support staff. Product Configurators offer a 25% reduction in the cost of sales by decreasing the number of technical sales support staff to sales staff because sales personnel will be able to configure more orders without assistance of technical personnel [3].

Through 2004, product configuration deployments will provide sales organizations with at least a 2 percent increase in win rates and order size, resulting in a 5.4 % increase in revenue [3].

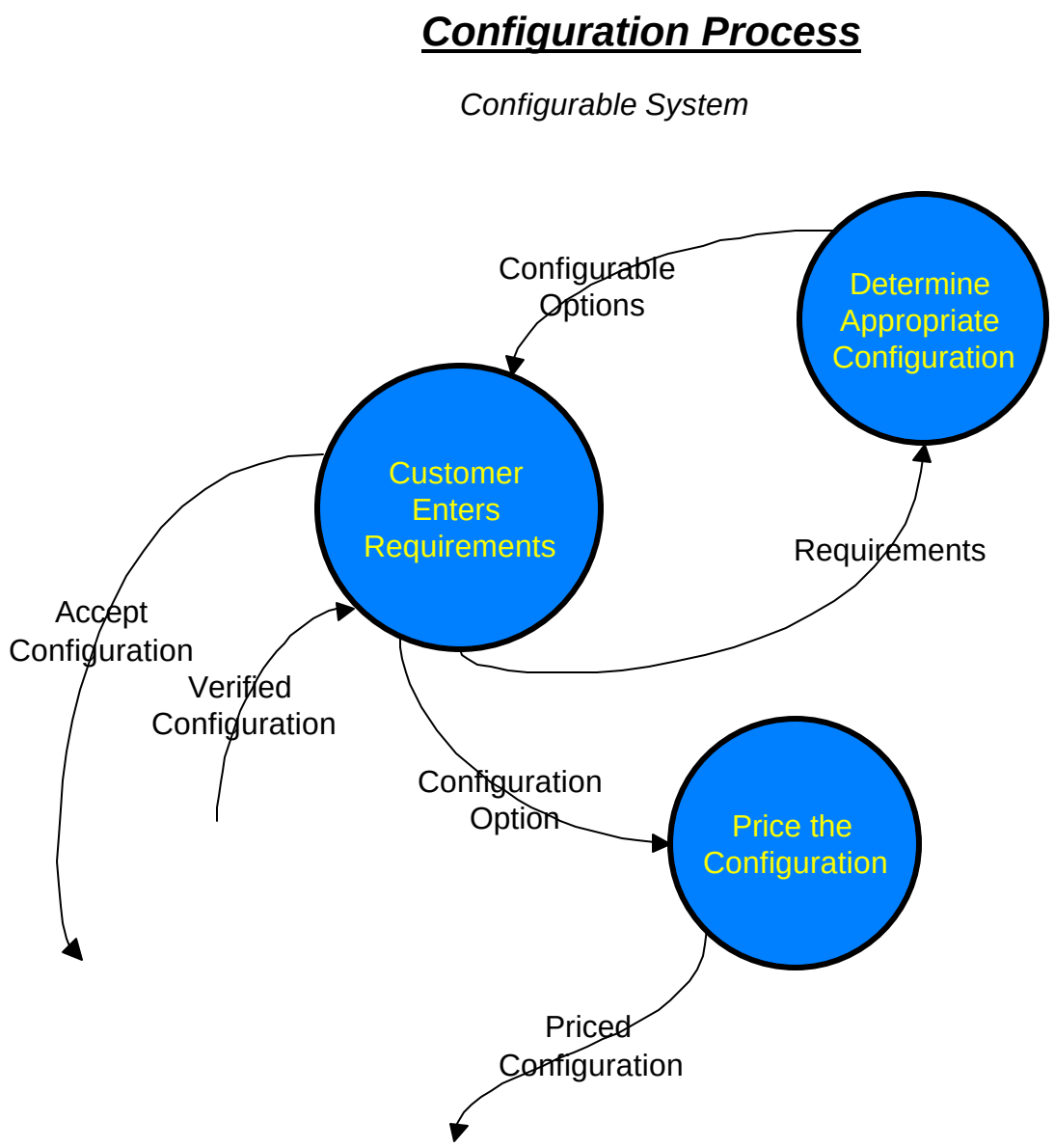
6. Configurable Custom Manufacturing Work Process

With a configurable model, automation reduces the number of interactions that take place between the customer, sales force, engineers and manufacturers.



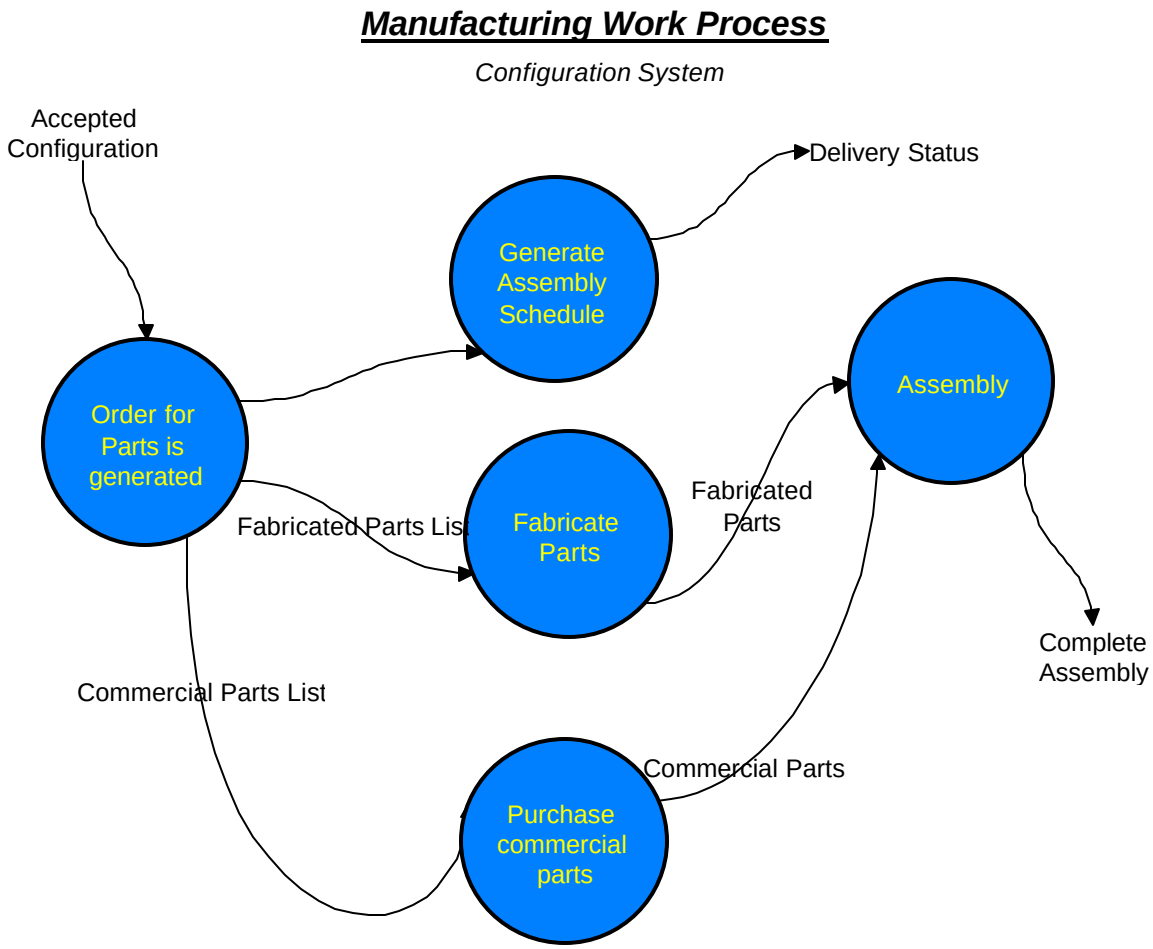
6a. Configuration Process

The Configuration Process in a configurable system uses software applications to allow the customer to enter specific requirements. However, customer options are limited to specific parameters and options based on company standards.



6b. Configurable Manufacturing Process

Using configurable products, the manufacturing process becomes much different than current made-to-order product manufacturing. In a configurable system, ordering for parts is automated, making it clear which parts need to be fabricated and which need to be purchased through a commercial vendor.



8. Challenges to Using a Configurable System

It takes some forethought and work to determine the functional requirements for each part and subassembly in a configurable system. The structures need to be defined in a way that parameters are defined and the parts can change to meet the varying requirements. Discipline to stay within constraints of the configurable parts is essential to making money with configuration engineering. Engineers by nature want to create a much-improved solution to meet each specific customer requirement. This effort often leads to highly specialized solutions that are more expensive and difficult to manufacture, requiring a great deal of new learning in the fabrication and assembly process.

Establishing the critical few standard components and only customizing where unique value can be added is the key to successfully win in a highly competitive market.

9. Summary

As manufacturers look for ways to optimize their existing sales processes for made-to-order products, Agent Technologies' architected e-commerce delivery solutions, online price quote systems, made-to-order e-commerce systems and consulting services are ready help optimize sales processes by increasing revenues, lowering the cost of a sale and lowering rework rate.

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10. References

[1] *Made To Order*, 1 to 1 Magazine, October 2001.

[2] *Institute for the Future and Peppers & Rogers Group*, Consumer Research Report, 2001.

[3] *Product Configurators Enhance Revenue and Reduce Costs, Gartner, June 1, 2001*.