

PUTTING THE C IN CPQ: CONFIGURATION MANAGEMENT IN HIGH TECH

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Report Highlights

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The configuration stage of the product to meet customer requirements is where a company's success is also determined.

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Almost half of High Tech companies feel that increasing product complexity is driving their decisions.

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Over half of High Tech Leaders have a good product configuration process versus less than a quarter of Followers.

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Over twice as many High Tech Leaders use a modern CPQ system with a product configurator as compared to Followers.

Configure, Price, Quote (CPQ) is a hot button topic and business process in High Tech. It is a process that crosses functional siloes and lays the foundation for a company's margins and market presence. This report will look at how successful High Tech companies have managed to automate CPQ and the impact it has on their operating results.

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All companies know that having an accurate, maintainable, and usable CPQ process is the key to staying ahead in High Tech.

High Tech companies have always struggled with providing accurate pricing and quotes that maximize profits. Historically, the CPQ process has been very manual and rife with inconsistencies. Part of the problem has been that the solution to the configuration part of the CPQ process is approached in multiple ways within the same company, which don't often align. The sales organization has attempted to solve the CPQ problem through processes that focus heavily on sales tools, while the engineering and product sides of the business have tried to solve it by exposing sales to more product information. Regardless of the approach, all companies know that having an accurate, maintainable, and usable CPQ process is the key to staying ahead in High Tech.

Based on the experiences of over 120 High Tech respondents from December 2013 and June 2014 research projects, this report will explore how organizations structured their CPQ processes to better serve customers and drive higher margins. The report details which processes are important, which ones are measured, and which ones get automated.

High Tech Definition

High Tech is a broad category that includes computers and components, automation and control components, semiconductor, consumer electronics, etc.

Why Focus on CPQ and Configuration Management?

The configuration stage of a product to meet customer requirements is where a company's success is also determined; it is at this point that margins and customer satisfaction start. Companies tend to gravitate towards one of a few different approaches to configuration management:

- A manual process where a small group of individuals become the interface between the customer, sales, engineering, and manufacturing.
- A semi-automated process that entails a rules-based system built on the knowledge of the organization. These

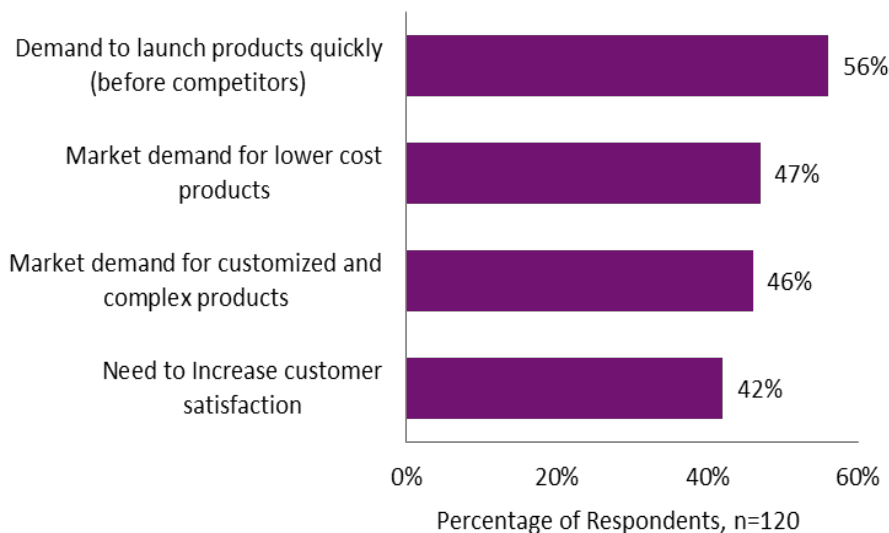
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typically still require manual interaction to get to a final quote because of a lack of integration with cost and product data.

- ➔ A fully automated system where Bills of Materials (BOMs) are utilized, which have had their data normalized and aligned with product data standards throughout the organization, a modern configuration system is in place, and the organization supports the maintenance of data and the systems that use the data to configure products.

Figure 1 shows the overall pressures that High Tech companies are feeling, related to productivity.

Figure 1: Metrics Used to Measure Productivity



Source: Aberdeen Group, April 2015

From an overall business standpoint in High Tech, product complexity, speed, and customer satisfaction are critical. Table 1 shows just how fast product complexity is becoming a very large issue for High Tech companies.

What is CPQ?

Configure, Price, Quote (CPQ)

- **Configure:** The process to align the customer requirements with the existing product format. The core for this process is aligning the requirements with a Bill of Material (BOM) that is built from the product's basic design parameters.
- **Price:** The process of calculating the actual price that the customer will pay. The core of this process is getting the actual costs and applying the appropriate margins.
- **Quote:** The process of delivering the product description and price, along with terms and scheduling proposals to the customer. The core of this process is applying all information from the above processes in a format that aligns with company capabilities and legal needs.

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Table 1: Increasing Product Complexity in the Last Two Years

	All Respondents	High Tech
Number of Mechanical Components (% increase – past two years)	13.4%	12.4%
Lines of software code (% increase – past two years)	34.4%	36.0%
Number of Electrical components (% increase – past two years)	19.6%	20.0%

Source: Aberdeen Group, April 2015

You can see that the complexity of products is skyrocketing overall, and especially in High Tech. Any High Tech company that has a manual CPQ process is at risk of not being able to respond to the rapidly changing and growing market.

What's Typically Wrong with a CPQ Process in High Tech?

As defined above, the CPQ process is really three processes. All three together have some requirements:

- ➔ **The heart of CPQ must cross siloes.** It starts at the customer, moves through sales, most likely has a stop in engineering, and usually touches manufacturing data. In High Tech, it typically touches supply chain and procurement as well.
- ➔ **Capturing human knowledge is a key aspect of CPQ** to harness the details that people outside of managing the customer requirements miss. The product configuration is really a group of rules and decision-making actions that require detailed knowledge from engineering,

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manufacturing, legal/compliance, and other departments.

→ **Distributed operation is a given for CPQ.** The CPQ process must be able to interact with people or systems scattered across many geographic locations. Customer locations, supplier locations, internal experts, etc. are no longer in centralized locations.

The short of it is that in most High Tech companies, data access and human resources leave the CPQ process lagging.

My personal experience highlights this all too well. I ran a manufacturing operation that supplied tooling for the High Tech industry. Our CPQ process consisted of our sales person or channel seller calling our quoting department with customer requirements to get a formal quote. The customer requirements were taken by a quote builder who had been in the plant for 40 years. The quote builder had a background as a supervisor and technician in the plant, so had detailed historical knowledge of the operations and dealing with sales. That person then used that knowledge and walked through the plant to build out the product workflow. Materials were added to a BOM and a quote was sent out.

Every time that person went on vacation, our quoting process stopped. This was and is an incredibly risky way to do business. The situation was finally resolved through a lengthy process of capturing the quoter's knowledge through a CPQ system. But prior to the CPQ system, that one person represented immense risk to the sales process.

High Tech Leaders Understand and Manage the CPQ Process

High Tech Leaders are typically ahead of the game from a CPQ standpoint. They understand that the foundation of their

Determining High Tech Leaders?

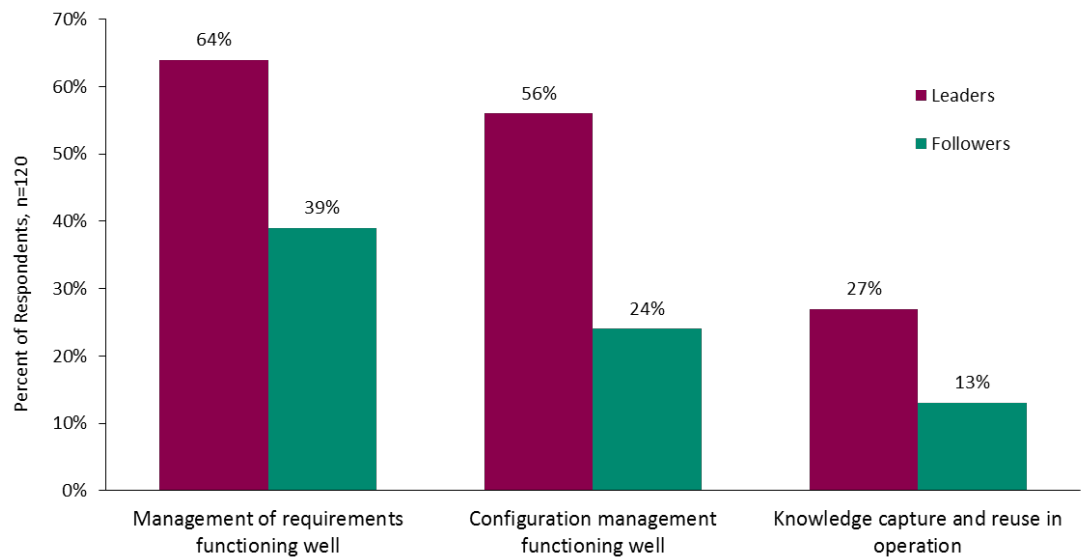
These are the metrics we used to segment Leaders from Followers in High Tech. The top 35% in the following metrics are considered Leaders and the rest (65%) are Followers.

- **Product Revenue Goals:** Leaders had 72% of their products hit revenue goals vs. 47% of Followers
- **Product Margins:** Leaders had 65% of their products hit margin goals vs. 23% for Followers
- **On-time quotes:** Leaders had 89% of their products hit quote timelines vs. 57% for Followers

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success is in getting customer requirements right the first time, getting that information aligned with product data, and producing a valid quote. Figure 2 shows that High Tech Leaders tend to have the needed capabilities to manage and succeed at the CPQ process.

Figure 2: Core Capabilities for CPQ Success



Source: Aberdeen Group, January 2015

It took us three tries to get our configuration process operating effectively with our channel. But it cut seven full days out of our quoting process.

~ VP of Sales, \$700M Systems Manufacturer in US

So not only do High Tech Leaders tend to have well-functioning requirements management and configuration management, they are also more likely to have a process in place to capture new information during the CPQ process. It might be some customer-specific information that can be immediately applied to a new order, or it might be a new compliance issue that has been discovered in a specific geography. The key change for the Leaders is that they are much more likely to not have to relearn the same things over and over.

It's All About Automating the Process

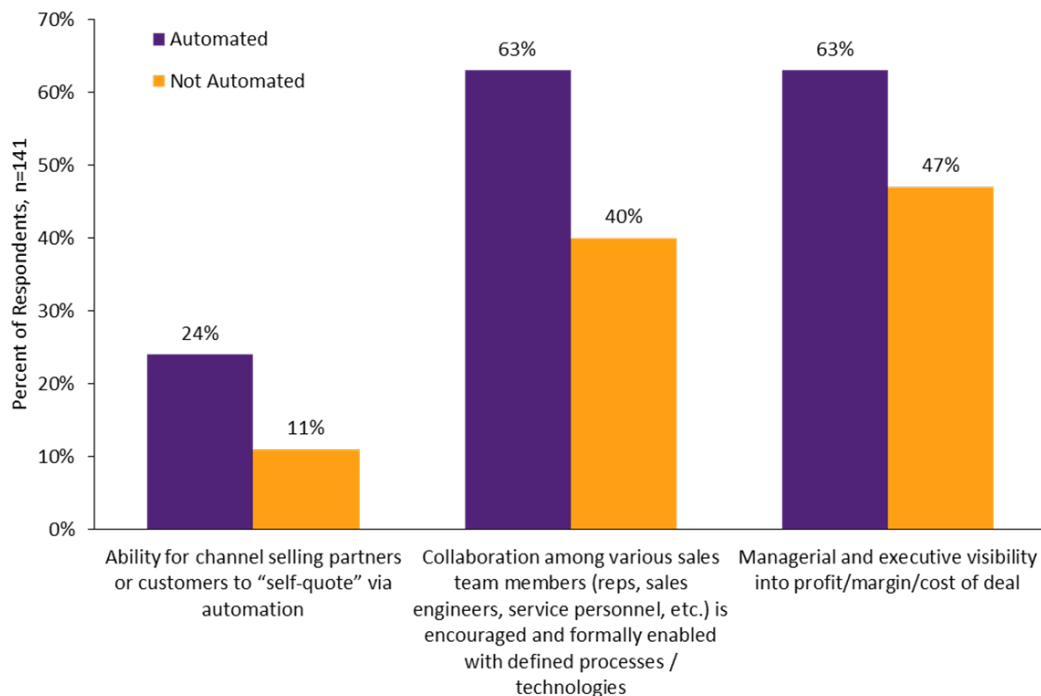
We have seen what is driving companies toward focusing on the CPQ process and we have seen from above that High Tech

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Leaders tend to have the requirements and configuration management under control, with some knowledge management to provide a foundation for decision making. Now let's take a harder look at what those Leaders are doing to get their processes under control.

In the end, it's about as much automation as possible. Our research shows that High Tech Leaders are 60% more likely to have automated key aspects of their CPQ process. Figure 3 shows that by automating critical parts of the CPQ process, companies are more capable of doing certain things.

Figure 3: Core Capabilities for CPQ Success



Source: Aberdeen Group, January 2015

Note that automating the CPQ process tends to provide the ability to manage your channel better, open up the siloes in your organization, and give senior managers better insight into

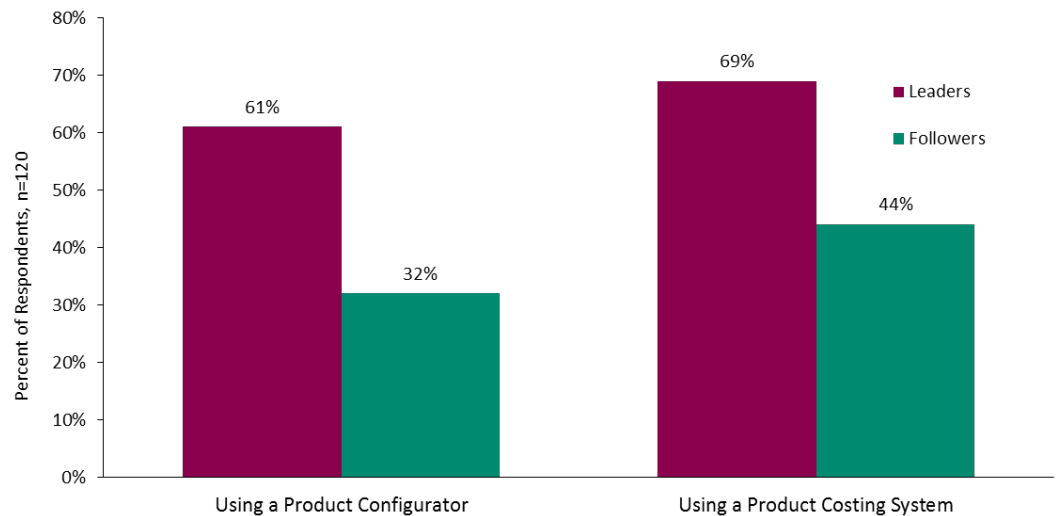
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margin performance. The key aspect here is to open up the data and process so that partners, sales engineers, and managers all have the ability to automate parts of their processes, as well as not have to manually track down all the information they need to manage customer requirements and keep the sales process moving efficiently.

How High Tech Leaders Automate CPQ

We know that automating as much of the CPQ process as possible is one thing that separates High Tech Leaders from High Tech Followers. But how do the Leaders start that automation process? Figure 4 shows one important part of that process.

Figure 4: Using Product Configuration in High Tech



Source: Aberdeen Group, January 2015

It is obvious from Figure 4 that one very important differentiator between High Tech Leaders and Followers is that the Leaders are very much more likely to be using a product configurator. They are also more likely to be using a system to manage the cost process that is the foundation for quoting.

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A Short Case-in-Point in High Tech

I have worked with a couple of mid-sized High Tech manufacturers over the last few years, but when it comes to CPQ, one stands out. An assembler of circuit boards that has annual revenues of less than \$80M specializes in custom boards for factory floor automation. For decades they have struggled with managing the quoting process to their customers around the world.

Their metrics five years ago were as follows:

- ➔ Quote turnaround time – 18 days
- ➔ Margins – varied from – 2% to 7%
- ➔ Revenue growth – 2% from 2008 to 2009

They came to the conclusion that this performance was unacceptable and could only lead to closing the business. The Senior VP of Operations established and led a team of executives to figure out what was wrong. Their conclusion was that the sales process was being held back by the quoting process and it was significantly impacting margins and revenue.

They established that they needed to be at a 36 hour turnaround on quotes and they needed to be more disciplined in accepting business. But three main issues stood in their way:

- ➔ Each quote passed through a very small group of systems engineers who had to spend time working out production costs and supplier capabilities.
- ➔ Margin decisions were being made by local salespeople who were paid only on sales and delivery, not taking into account profit margin.

Demographics

- *Role – 34% Executive Management, 32% Sales, 21% Engineering /Product, 13% Operations*
- *Level – 11% Exec, 72% Manager/Director, 17% Staff/Other*
- *Size (employees) – 34% <100, 31% 100-1,000, 48% 1,000-10,000, 18% >10,000*
- *Vertical – 100% high technology, consumer electronics, high tech assembly, component manufacturing, and semi-conductor*
- *Regions – 42% North America, 25% Asia, 18% Europe/Middle East /Africa, 15% Latin America*

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- The customer change process was very manual and supported only through email and spreadsheets with almost no management input on cost of change.

To tackle the first issue, the company implemented a CPQ process based on a configuration management system. The system captured the knowledge of the systems engineers and provided access to sales and channel partners. The knowledge that was captured was product routing, costing of components, risk of changes, historical BOMs, compliance issues, etc. For standard products, which are 85% of the products sold, it reduced quote lead times to less than 48 hours.

For the margin issue, all orders going through the CPQ process are now put into a daily management report that allows senior managers to evaluate and stop any deals not meeting margin requirements. Another key aspect is that salespeople are also commissioned on deal profitability.

As for change management, that aspect is still being addressed. The plan is to put in place, using the CPQ process, a requirements management process that more adequately documents the original requirements. This will allow sales to push back on customers asking for changes beyond the original quote. The interesting aspect is that the configuration management portion of the CPQ process worked so well freeing up systems engineers' time that they can now focus on the change and requirements management aspect of the process.

The company completely retooled its CPQ process around a configuration management system, and they also fixed simple things like standard terms, supplier management, change management, etc.

Fixing your process and then building the process around a key enabler like configuration management can really move a

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company from the brink of disaster to becoming a Leader. The end result for the company was a steady increase in margins to over 14% and an annual increase in revenues of over 20% in each of the last three years.

Key Takeaways and Recommendations

In summary, there are three key areas that organizations can focus on to drive and improve productivity:

- ➔ **Fix your CPQ process.** Make sure you look at all aspects of the CPQ process. You will have to cross departmental siloes to get all the pieces, but skipping one silo will always keep your company as a Follower.
- ➔ **Automate your CPQ process.** In High Tech, running any part of your CPQ process manually is a big risk. Take a look at that bottleneck for quoting and capture as much of the knowledge as you can by automating it.
- ➔ **Use the technology that is available.** Product configurators are not new, but they have moved well beyond a specialty tool that requires incredibly skilled users. Make sure you evaluate the ease of use of this technology because it will become the centerpiece of a leading CPQ process in High Tech.

These recommendations apply to all High Tech companies, but the companies ripest for exploiting them are those sub-\$1B companies that have for too long relied on manual processes to operate the most important business process in their company.

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For more information on this or other research topics, please visit www.aberdeen.com.

Related Research

[Configure-Price-Quote: Best-in-Class Deployments that Speed the Sale](#); July 2013
[Configure-Price-Quote: Better, Faster, Sales Deals Enabled](#); October 2014

[High Tech NPD: Ensuring Success by Managing Risk](#); April 2014

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