Quality, Speed, and Cost – How to Achieve All Three with Innovation

by Tony Ceccoli

“Quality, Speed, and Cost. Pick Two.”

This long standing belief across chemical and industrial product companies is that it’s not possible to rapidly produce low cost, high quality products.

Many companies dedicate their best manufacturing equipment and people to quickly develop and launch a high quality product, but these additional resources drive up costs unexpectedly. In other situations, management decides to deliver a very low cost product very quickly by diluting expensive components or ingredients, or procuring components from lower cost suppliers (with potentially lower quality standards). This can result in a lower quality product that just does not perform to the level that the customer expects.

These are all risky scenarios that lead to market share erosion and unsatisfied customers. But it doesn’t have to be this way. With effective innovation practices - focused on meeting established performance goals - chemical and industrial manufacturing companies can optimize quality, speed and cost. Here are five areas to consider.

Align Ideation Practices with Business Goals

Einstein once said “No problem can be solved from the same level of consciousness that created it.” If we keep inventing the same way we’ve always invented, we will produce the same things over and over again. In order to keep product development and innovation alive and fresh, the process needs to be constantly reviewed and tested to make sure it matches current desired outcomes. If ideation relies solely upon which customer screams the loudest or which opportunity is the biggest, companies miss the chance to create something truly innovative. Look outside your four walls and outside the industry to get fresh ideas. Take stock and be honest about your capabilities and drive to your corporate goals first. If the goal is to generate 50% of revenue from new products, are your ideation practices good enough to meet it? Are there enough resources in the ideation or conceptualization phase to develop ideas? Is there enough manufacturing and engineering capacity to prototype and pilot the good ideas?

Streamline Manufacturing Processes

Quality, speed and lower cost can be gained through increasingly more efficient manufacturing systems and processes. Too many companies focus resources and spend solely on new product development. Look just as hard at manufacturing know-how and innovation. To remove redundancy, waste and bureaucracy from the manufacturing process, take a comprehensive look at how the product is conceptualized, prototyped, piloted and scaled to full commercialization. This can be done by applying lean manufacturing principles with critical eye to what matters most to the end customer. This all requires innovation in documentation, manufacturing process and commercialization practices.

Get Better at Managing Changes

Bills of materials for engineered products change frequently, and chemical formulations change to match the improvements made to innovative manufacturing processes. When processes must be reworked to comply with REACH standards and other regulatory constraints, speed is compromised. Streamlined formulation and engineering revision control can increase speed and lower cost.

Implement Smarter Revision Control

Revision control and change management is necessary when the R&D team is split between China and Ireland, the engineering team is in California, and the targeted manufacturing site is in Michigan. If half of your team revises a design that is outdated even by a few hours, the ripple effect through the product development team can result in rework that delays the project by weeks.

Understand Market Acceptance, Pricing Strategy, and Market Opportunity

An innovation team may have pushed an excellent idea through product development and out to the market, but is the market ready to accept this new concept at a level that meets management objectives? Is the idea valid but not acceptable at the established price? Pricing strategy is sometimes overlooked when companies enter an unfamiliar market or launch a new technology that is unique and unfamiliar to the commercial team.

Many companies focus on speed to market for product development, but forget about customer adoption rates. How fast will new customers adopt this? How quickly will current customers switch or adopt to this technology?
With an innovation lens, chemical and industrial product companies can get all three objectives aligned so that they have a distinct and disruptive competitive advantage. However, they must review and challenge current product development efforts, and long-held innovation beliefs in order to deliver results.

Originally published on June 12th, 2015

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Tony's areas of expertise include chemicals, polymers, and engineered products. He loves to discuss and problem solve the intricacies of product development. Tony is unlikely to be standing still between hobbies in men's groups, fitness, and cooking along with having four boys that participate in seven different sports.