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Quality

R&D

All aboard

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In high-performing organizations, R&D leverages its unique position and capabilities to play a leadership role in assuring product value and quality, both initially and throughout a product's life cycle. Last month, we focused on translating product design parameters to the supply chain, a process commonly known as commercialization. This month, we focus on gathering product-performance feedback and associated maintenance, improvement and knowledge-building activities, which we call quality stewardship.

Quality stewardship

In most cases, products are designed, developed, implemented and then transferred to the plant and quality assurance for ongoing support. Should this be the end of R&D involvement? The answer is no. Far too often, however, this is not the case. During development, specifications and formulations are established with limited information, locked in, and rarely evaluated again. In reality, products and processes are dynamic. Ingredients will vary, equip-

You can sink a product if R&D disembarks after the launch.

ment will wear, and people will change. What was considered important to consumers during development may not be so once "real" data on sales, competitive activity and consumer feedback are received. The reverse may also be true.

Quality stewardship is a set of activities performed by R&D and others throughout the product's life cycle, resulting in improved product quality, manufacturing efficiency and profitability. Quality Stewardship assures product performance feedback is sought and acted upon to benefit the

product proposition throughout its life cycle.

A critical analysis of design intent, the marketed product and sources of variability identifies opportunities for improvement in consumer and customer satisfaction, supply chain reliability, product cost and quality, supplier performance and specifications. The bottom-line result of a well-executed product stewardship program is improved consumer loyalty, business profitability and elimination of quality crises.

The stewardship program

A well-developed Quality Stewardship program consists of activities that are planned and executed to deliver products to the customer and consumer that provide the desired design attributes consistently throughout the product life cycle. The program needs to establish mechanisms and measures that provide feedback on product performance (from the Supply Chain, from Customers and Consumers) in order to anticipate issues and identify opportunities for product and/or cost improvement.

A Tale of Two Companies – Chapter VIII

We continue with our tale of two fictional companies, contrasting R&D's leadership and participation in Quality Management at our extreme opposite food and beverage companies, Schiffer-Branes Foods and Nirvana Food Processing

Schiffer-Branes Foods

Schiffer-Branes Vice President of R&D Dr. Ernest Maladroit believes R&D should hand off responsibility for product quality to quality assurance and the processing plants once the product is launched. Recently, the company's consumer response toll-free number began receiving high numbers of consumer complaints relating to off-flavor in their "Valley Delight" beverage, a growing brand in its category and major contributor to Schiffer-Branes sales and profitability. This particular off-taste had never happened before. The product and all ingredients and materials met specifications. Given the product's importance to Schiffer-Branes, R&D was quickly called into to help identify and resolve the issue.

The problem was not easy to solve and, after several weeks without an answer, product was pulled from the shelf and replaced.

After several more weeks of indescribable pain and pressure, R&D's forensic efforts began to pay off. A minor ingredient was identified as the source of the problem, which resulted from a change in the supplier's manufacturing process. The process change was reversed and good production resumed at S-B bottling.

When Maladroit investigated how this happened, he found that ingredient specifications had not been reviewed since product launch many years earlier. Furthermore, they were not performance-based, indicating nothing about taste contribution to the beverage. An ongoing dialogue between technical experts at the supplier and S-B had been non-existent. One more quality crisis like this could cost Maladroit his job.

Feedback gathering begins with the product launch and focuses on the performance of the product/proposition from a number of perspectives. This includes consumer feedback (from consumer relations/call centers, market research tests & surveys), customer feedback (from sales and distribution), supply chain performance feedback (from suppliers, purchasing, QA, manufacturing and distribution), business and financial feedback (from marketing and finance). Feedback might signal any number of issues or opportunities in areas such as consumer satisfaction, product yield, product variability, spec-

Nirvana Food Processing

Nirvana, under the leadership of Vice President of R&D Maxwell Albright, has focused on commercializing new products as well as following products throughout their life cycles.

Nirvana R&D has developed a competency in translating product attributes into specifications and reconciling specifications with plant capabilities. Albright began his stewardship program in a small way with a post-launch follow-up to the new product process, where new product development team members collected and analyzed product performance data from consumer, customer, supply chain and financial perspectives for 12 months following launch. Once he demonstrated the value that was created, Nirvana formalized a quality stewardship program to continue following the performance of selected products.

Through this work, R&D more fully understands consumers, financials and the issues within the supply chain. As a result, new product introductions are more successful.

Nirvana hit the jackpot this year with its stewardship program. Consumers wrote in regarding a concern about the appearance of Savory Time Dippers, a key snack product. Upon critical review, the R&D stewardship group identified an issue with the current manufacturing process stemming from improvements in metering capability. Once corrected, Nirvana foods ended up with a marketable product improvement, a 10 percent bump in sales, and a \$500,000 cost savings.

ification conformance, supplier performance, product cost or competitiveness.

Feedback Analysis is the next step, during which information is applied in critical analysis to understand and identify problem areas, product improvement opportunities, business opportunities, production improvements, regulatory issues and early crisis prevention.

Stewardship activities also help the R&D team develop a deep understanding of ingredients, products, processes and consumers. As such, they not only create value for current products, but also

broaden the base of knowledge available to R&D for creating new ones.

Making it happen:

Identifying issues and opportunities is only the first step. Once identified, they need to be prioritized and resourced based on business impact and organizational capacity.

As many stewardship activities recur — such as specification review, supplier re-qualification, examination of consumer complaints, etc. — it is helpful to formalize a quality stewardship plan with both scheduled and opportunistic components as part of the R&D Plan. Stewardship programs promote the regular renewal and improvement of quality documentation to reflect best practices/current knowledge and reinforce design intent via revision and effective communication of formulas, specifications, manufacturing instructions, standard operating procedures, etc. for products, processes and packages. The results are optimized products with documentation and processes that are Correct, Current, Capable, Complete and in-Control.

Crisis prevention

Although all companies have the opportunity to develop stewardship programs when business is going well, a quality crisis is usually the impetus for initiating such a program. A rise in consumer complaints, decline in sales or loss of market share to a competitor often reveals the slow erosion of product quality. In many such crises, deficiency in R&D's support programs for existing products (i.e. lack of a quality stewardship program) is a systemic cause of these problems. Pay me now or pay me later.....you will eventually have to pay. Relatively few R&D organizations manage Quality Stewardship programs well, utilizing their time and resources for new product activities and addressing matters of urgency, such as product crises. A well-executed Stewardship program is a wise investment in time and resources that is the best means to prevent crises from occurring. R&D time is better spent preventing a crisis rather than cleaning up after it - and less painful, too!!

R&D is in a strong position to play a leadership role in product quality. In high-performing organizations, R&D leads and supports activities that assure (1) the design of superior consumer-driven products, (2) the translation of critical design information to the supply chain that promotes consistent quality and (3) the ongoing collection of product knowledge and performance feedback to guarantee a quality product throughout its life cycle.

Summary

As the developer of products, processes and packages, and possessor of critical product design and performance information, R&D is in a strong position to play a leadership role in creating and assuring product quality. In high performing organizations, R&D leads and supports activities that assure (1) the design of superior consumer-driven products, (2) the translation of critical design information to the Supply Chain to enable consistent quality at design levels and (3) the ongoing collection of product knowledge and performance feedback to guarantee a quality product throughout its life cycle.

Relatively few R&D organizations pay appropriate attention to Commercialization activities and even fewer to Quality Stewardship activities. Those who perform these two activities well provide critical direction and leadership to their company's Quality Management programs. Those who do not are jeopardizing the long-term success of the businesses they support. **□**

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