A New Breed of Manufacturing: Driving Innovation with Strategic Roadmapping
Executive Summary

Innovation is the engine that propels the growth of the majority of today’s companies. Most manufacturers have forward-looking strategic plans and research and development (R&D) projects underway for driving innovation, but too often those plans fall short of what’s needed to maintain a strong, competitive edge.

Strategic planning is essential to effective innovation. Manufacturers need to link R&D innovation to business goals. Research on strategic best-practices has validated that companies must roadmap their futures if they are to stay ahead of the competition and make informed long-term strategic planning decisions.

Strategic roadmapping manages uncertainty in the planning process by helping organizations conduct fact-based assessments of future plans. Roadmaps produce multi-dimensional views of plans, enabling users to identify the most valuable opportunities for innovation and make the right decisions about where to invest time, money and other resources.

This article examines how roadmapping:

- Enables real-time access to strategic information across the company.
- Supports fact-based decisions about the future with visibility into long-term plans.
- Provides a structured way to visualize the strategic impact of changes in markets, technologies, suppliers, competitors, regulations and other internal and external factors.
- Identifies opportunities for integrating technology into new products.

Because the product lifecycle is enormously complex, companies need to establish planning visibility early on and align functions so they can make more informed decisions. Roadmapping allows this visibility and provides the infrastructure necessary to achieve critical strategic alignment.
Innovation Planning Processes

Innovation is critical to a business’ success, never more so than today when the speed of technological evolution often outpaces the speed of production. According to the Aberdeen Group, companies are aggressively striving to improve top-line revenues through product innovation. In a recent Boston Consulting Group survey of over 2,400 senior executives worldwide, 66 percent said that growth from innovation was one of their top three strategic priorities.

Most manufacturers have forward-looking strategic plans and R&D projects underway for driving innovation. A common challenge is to generate higher business returns from investments in R&D. To accomplish this, manufacturers must link R&D innovation to business goals while structuring the process and providing long-range visibility into strategic plans for all stakeholders. Manufacturers must roadmap their future to stay ahead of the competition and make informed planning decisions.

To stay on target, manufacturers need insight into strategic assets, projects and intricate, cross-functional interdependencies. They need visibility into the future, including timely access to accurate information on emerging technologies, products and markets so that they can be nimble in taking advantage of change. Organizations need to map innovation to opportunity by managing the planning process.

There are four major steps in the planning process: gathering and analyzing external market data, establishing strategic objectives, translating those objectives into long-term plans, and using those plans to set investment priorities. Each step is complex in its own right and necessitates the ability to collaborate in unison across the organization. Without processes and software in place to support the management of these steps, ideas may be lost, deadlines may slip, and delivery could be delayed.

Managing Innovation

Accelerated innovation, increasingly complex technology, and expanded globalization are all challenges in effectively managing innovation. Furthermore, companies often lack information on customer needs, supplier capabilities, product profitability, and supply chain costs during the strategic planning process. Many are unable to efficiently synchronize needed internal and external customer and supplier information, slowing the movement of new products to market.

Challenges to Managing Global Innovation

- Difficulty achieving alignment across a global operation
- Little visibility into a cohesive plan for future opportunities
- Lack of structured, real-time planning information
-Disconnected departmental and business unit silos
- Difficulty achieving accountability
- Limited supplier/customer involvement
- No immediate way to identify gaps and opportunities
Managing innovation is most effective when formal processes are in place. Although formalization could be viewed by some as a restraint to innovation, the opposite is actually true. Formalized processes do not stifle innovation. They improve it. For instance, structured collaboration and pooled forecasting techniques typically strengthen process acceptance and buy-in from end-users, and advance the quality and positive business impact of project outcomes. Process structure also often contributes to stronger validation of, and heightened confidence in, the direction of potential projects by stakeholders.

**Use of Roadmapping**

Strategic roadmapping provides a way to achieve alignment and visibility across the organization. Roadmaps produce multi-dimensional views of an organization to identify the most important opportunities in which to invest time, money and resources before decisions are made. Roadmaps can include internal and external market data including product, technology, market and competitive information. This information is graphically depicted in the form of a “roadmap,” a document that visualizes the status and dependencies of an opportunity.

A roadmap illustrates the viability of an opportunity and can be viewed from different vantage points to assess whether a planned project meets business objectives. The stakeholder and contributing team members can evaluate whether a project is on target from a technology, competitive or regulatory perspective by changing the view of the roadmap.

Roadmaps visualize the strength of an opportunity over time, providing an extended view into the future. Individuals can link roadmaps to other planned projects and then analyze interdependencies to make better informed planning decisions. Linking roadmaps enables companies to understand how markets, customers, competitors, industry trends, and regulatory drivers affect their product planning.

Once companies are able to relate customer needs to strategic plans, they can determine new opportunities for product innovation. This enables them to map out future products and strategic plans over 10 – 15 years and beyond while incorporating new technologies and supplier needs in the process.

**Benefits of Roadmapping**

By managing innovation using roadmapping, companies benefit from the increased visibility of plans. Such visibility makes it easier to model future scenarios for alternative investment opportunities. Executives no longer rely on “gut feel” to make decisions. Instead, they become informed decision makers who can view alternatives, perform ‘what if’ analysis and proceed with the best courses of action.

Flexibility in roadmapping also allows for quick modification of product offerings to meet new market demands and adapt quickly to change. It promotes in-depth collaboration between the company, its customers, and suppliers.

Roadmapping enables manufacturers to monitor the progress of any number of product development programs in real time and allows users to visualize where

“Roadmapping has emerged as a best practice, particularly for large, global organizations, in providing the framework for technology strategy and management where cross-functional alignment and integration are key requirements. By employing roadmapping from an enterprise perspective...an organization can fully exploit its entire spectrum of capabilities to drive growth.”

– Phil Whalen
The Whalen Management Group
those projects fit into the larger network of collaborative development initiatives. It also increases cross-functional visibility, an advantage that can help uncover opportunities for the reuse of technology across the organization.

Because redundant work is minimized and technology reuse is expanded, there are fewer product delays. Thus, time-to-market improves. Roadmapping is also an effective way to evaluate whether an organization’s competencies and capabilities are improving over time.

**Key Benefits of Roadmapping**

- Provides real-time access to strategic information that changes over time
- Increases visibility into long-range strategic planning across the enterprise
- Enables better informed decisions about the future
- Maps internal and external data that impacts innovation time, such as market factors, customer needs, technologies, environmental factors, and supplier changes
- Identifies opportunities for integrating technology into new products

**How Companies Use Roadmapping**

Because the product lifecycle is enormously complex, companies need to establish planning visibility early on and provide access to the information needed to make informed planning decisions. Roadmapping provides this visibility, along with the infrastructure necessary to achieve it.

Enterprises use roadmapping to structure the planning process, align development activity with business priorities, and identify opportunities to leverage technology across the enterprise. This creates a collective strategic, product, and marketing perspective for those involved in delivering innovation.

Using roadmaps, companies can visualize the relationships and dependencies across their inventory of possibilities and envision the path toward achieving product innovation. The following case studies illustrate the power of roadmapping.

**Motorola** lacked visibility into its global product planning process, contributing to project overlap and limiting group collaboration. The company implemented a software-assisted roadmapping process to create new efficiencies across more than 100,000 R&D projects. Within a year of deployment, Motorola had saved millions by consolidating redundant projects throughout the company.

According to Motorola’s manager of Planning Solutions, roadmapping “assures that we put in motion today what is necessary to have the right technology, processes, components and experience in place to meet future needs for products and services.”

**Corning** is now focused on entering new markets, but in the past the company’s strategic planning efforts were not synchronized with R&D initiatives or changing markets. The company implemented roadmapping software across three divisions.
with the goal of aligning corporate strategy, R&D, and portfolio planning. This helped them identify and select new market opportunities, enter markets early, and earn positive returns for the company.

**Honeywell** needed a robust business strategy tool to help them evaluate external conditions that were impacting their business, and to support their efforts to achieve their business goals as efficiently and effectively as possible. Roadmapping software facilitated the creation of a collaborative strategic planning process that created real-time linkage between technologists and marketing groups and enabled them to align their activities more closely with corporate objectives.

Companies that invest in strategic roadmapping experience a marked decrease in missed market opportunities as well as an enhanced ability to adjust to changing markets and technologies. They also benefit from improved visibility into upstream R&D efforts, ensuring that projects the company is investing in are on target with what has the greatest strategic importance today, and what is likely to deliver the greatest business return tomorrow.

**Reference Notes**

**About Sopheon**

Sopheon (LSE:SPE) is an international provider of software and services that help organizations improve the business impact of product innovation. Sopheon’s Accolade® software suite is the first in the industry to provide end-to-end support for strategic product planning, ideation and innovation process execution. The suite’s Vision Strategist™ component automates the roadmapping process, allowing users to visualize and plan the future of products and technologies. Accolade’s Idea Lab™ component helps organizations generate, select and develop winning product ideas. Accolade Process Manager™ automates the product innovation process and provides strategic decision support for the management of product portfolios.

Sopheon’s software is used by top innovators throughout the world, including industry leaders such as BASF, ConAgra Foods, Corning, Electrolux, Honeywell, Northrop Grumman, PepsiCo, SABMiller and Total Petrochemicals.

Sopheon has operating bases in the United States, the United Kingdom and the Netherlands, with distribution, implementation and support channels worldwide. For more information on Sopheon and its software and service offerings, please visit [www.sopheon.com](http://www.sopheon.com).