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The R&D strategy / strategic process

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A road map to R&D effectiveness, or the road to nowhere?

Developing an R&D Strategy through operation of an ongoing strategic process is probably the single most important step you can take to improving the effectiveness of your R&D group. An R&D strategy should not simply be something you check off your "to do" lists, or something developed once a year and tucked away in a drawer. The strategic process should be a living, breathing process that allows you to take facts and observations, understand them and develop insights. These insights are translated to implications for R&D, generating a portfolio of R&D projects and programs with maximum positive impact on business performance. All key elements affecting R&D performance—such as organization design, innovation, new product development, commercialization, quality stewardship, leadership and culture—flow directly from it.

To those skilled in strategy development, the discussion that follows should seem familiar and largely reinforce what you are already doing. To those who do not typically deal in strategy, a case will be presented on the importance of strategy along with a framework to initiate and operate the R&D Strategic process

R&D strategy defined

Strategy is an expression of intent that directs all actions of an organization toward a desired set of business results. The end result of the strategic process captures a point in time. It includes an evaluation of where you are now (assessment), where you are going (mission) and a description of the best path (strategy) to get there. As much as possible, it should deal in specifics, providing focus and setting boundaries. A well-articulated R&D strategy provides a basis for an appropriately balanced portfolio of R&D programs in

alignment with the business strategy, and the proper identification and utilization of resources to effectively execute them.

R&D strategy is both an input to and an outcome of the business strategy. In its preliminary state it provides a key basis for the identification, evaluation and selection of business opportunities and therefore, a set of options for the direction of a business. In its final form, it provides the agreed-upon blueprint for the setting and execution of R&D programs in technology, new products and product support as well as non-development activities, such as organizational change, system implementation, skill and capability improvements and cultural initiatives.

The case for strategy

Strategy is a key enabler to the effectiveness of your R&D organization. Done well, it creates the clarity of purpose and direction to mobilize and align resources toward the achievement of organizational goals. This often requires (and serves as a valuable catalyst for) collaboration across business disciplines. Intelligence gathering should include emerging trends, consumer needs, technical advances, and changes to the competitive and customer landscapes. Done poorly (or left undone), strategy places programs at risk of being sub-optimal or even inappropriate to the objectives of the business.

Multiple starts and stops and significant changes in program direction (the whipsaw effect) hamper many R&D organizations' productivity and effectiveness. With the knowledge and preparation a strategic process creates, you are able to adapt/respond quickly to modifications in direction rather than react des-

Elements of a good R&D strategy

A strategy is a company's best idea (often including best guesses) of how it will win: win market share, win consumer purchases, win customer loyalty and maximize profits. Here are the elements apparent in a good R&D strategy:

Specific and Actionable: Statements of R&D strategy need to be both specific and actionable. They spell out opportunity areas for focus, set boundaries and deal in specifics. Aspirational proclamations or broad statements of strategy where the focus has not been sufficiently defined can be worse than no strategy, creating a false sense of security that direction is clear.

Business Linkage: R&D strategy must be linked to the business strategy. Its purpose is to bring R&D's skills and energies to bear to achieve organizational business objectives, short- and long-term. A stand-alone R&D or technical strategy designed from any goal other than delivering the business plan will not succeed. It places all R&D's actions in question and jeopardizes the company's survival.

Strategic Process More Important Than the Strategic Document: The goal of strategic planning should not be focused on the creation of the strategy document. It should be focused on the development of the strategic process as an underpinning of R&D. The major benefit is the collaboration and analysis that goes into crafting it, the understanding and insights created, and the communication of findings that serves to create a fully aligned, better-informed, higher-performing organization.

Simple and Easy to Understand: When completed, an R&D strategy should be relatively simple and should be composed of familiar elements and logical conclusions. For those companies lucky enough to have a reasonably effective R&D strategy already in place, the key to the future is

developing new insights and modifying the strategy to incorporate those insights. Here, the R&D strategy starts with and builds upon the previous strategy.

R&D strategy should be stated clearly and concisely. Endless meandering dissertations discourage utilization and hamper understanding. A bench scientist or a non-technical business leader's reaction to the R&D strategy should be the same, one of understanding and agreement that it maps out the path to organizational success.

Comprehensive—Including Non-development Activities: R&D strategy should not be limited in scope to development activities, i.e. technology, product development, quality stewardship, etc. A comprehensive R&D strategy needs to speak to major non-development activities including organizational change (design, staffing, etc.), system implementation (project management, performance management, etc.), skill and capability improvements (training, software/tools, facility upgrades, etc.) and cultural initiatives (innovation, teaming/high-performance, etc.). These activities are critical to building and maintaining competitive advantage in a changing environment.

Broadly Communicated/Understood: To be fully effective, the R&D strategy needs to be broadly communicated, understood and assimilated. This requires consistency, clarity, cross-discipline translation and frequent repetition.

Organization Actions Reflect Strategy: Evidence of the quality of an R&D strategy is the degree to which the organization's actions and decisions are reflections of it. The range of R&D actions and decisions, from project portfolio/priority decisions, organizational evolution, individual development and career paths, etc., should be consistent with the road map that the strategy provides.

perately to unanticipated changes in the marketplace affecting the company's prospects for success.

R&D leaders sometimes mention that their input is not sought or that they are excluded from the business's strategic planning process. An important benefit of the R&D strategic process is that it leads to development of enhanced strategic thinking capability within R&D and opens the door to increased strategic participation on the part of R&D in business planning. By adding R&D's insights to the business strategic process, R&D can demonstrate its value and maximize its positive impact on the future direction of the business.

The critical thinking skills developed via the strategic planning process also serve to bring the organiza-

tion to a higher probability of success in its approach to its work. Critical thinking—thinking first then doing vs. doing then thinking—raises the probability for success of every R&D endeavor and minimizes wasteful uses of time and resources and missed opportunities.

Strategy can be a road map for change as well. Without the analysis embodied in the strategic process, issues, opportunities and the range of options available to address or capitalize on them might never be brought to light, jeopardizing a company's survival and opportunity for competitive advantage in the marketplace.

Over the past few years, changes to multidisciplinary teams, faster timetables and stiffer competition in

the marketplace have required significant changes in R&D. Comparing R&D to a large ocean liner or jumbo aircraft, a change in direction can be very difficult due to the mass and momentum. Without clarity of focus or direction, much of an organization's energy can be wasted. When changes in direction are needed, it can be difficult for an organization that is not effective to make a change or shift. A clear strategy enables large cultural or organizational shifts in how the work will get done.

Typical strategy issues

As important as strategy work can be for a successful and effective R&D group, several common issues faced by R&D groups are noted, which may either hinder or prevent the strategic planning process from taking place and greatly impact the output and benefits gained from the process.

Strategy Kumbaya: In a number of situations, we see attempts at organization-wide strategy-setting sessions. While looking to the organization for participation, ideas, options and buy-in is totally appropriate, strategy development is not a large-group activity. Strategy is the accountability of R&D leadership. Part of that accountability should include seeking input and clarity from other business leaders to craft a strategy that is fully aligned with the business strategy and provides input to the business strategy as well.

R&D leaders should be looking toward the future and pointing the R&D organization in the proper direction for technology, skill building, staffing, etc. This leadership accountability ensures that tough decisions, e.g. determining areas of focus, organizational change, etc., are made by strategic decision-makers rather than delegated to others, or worse yet, happening by default.

Strategy for Dummies: R&D leaders with mainly technical backgrounds may not be skilled in or comfortable with strategy development. In this regard, they should consider turning to others within or outside their organization for guidance or coaching in navigating the process.

"And the Answer is": Many times a business strategy does not exist at all or does not provide even a modest degree of directional clarity. "We don't know where we are going, but we'll tell you when we get there." This makes R&D strategy development pure guesswork. Without a defined business strategy, R&D work cannot be expected to be productive or effective at enabling business success. In these situations, R&D leadership, often with the support of out-

side experts, can serve as a catalyst to bring the strategic planning process to the entire organization.

You Can Drive a Truck Through It: Just as problematic is when the stated business strategy is broad and not actionable. The organization has the false sense of security that clear direction has been given, when the reality is that almost anything done under the sun will fall within the strategy. This false belief also may create a barrier to developing a truly useful strategy and reaping the benefits of the strategic process.

Deck of the Titanic: When faced with business performance issues, many people's reflex action is to react desperately. "We are doing everything we can." Like rearranging chairs on the deck of the Titanic, you may feel like you are doing something, but in reality you are accomplishing very little.

At these times of crisis, an evaluation from a strategic level is most important. Maintain the course or shift direction? That question can be answered only by assessing: What has changed? Why? What is the best course of action?

The business strategic planning process and the R&D strategic planning process should occur simultaneously once an ongoing process is established. For those beginning the R&D strategic process for the first time, it will be necessary to have at least preliminary business goals and mission, business assessment and business strategies.

Strategy Development Steps

Below is an outline of key steps to develop an R&D Strategy. The Business Strategic Planning Process and the R&D Strategic Planning Process should occur simultaneously once an ongoing process is established. For those beginning the R&D Strategic Process for the first time, it will be necessary to have at least preliminary business goals and mission, business assessment and business strategies.

Business Strategic Planning Process

Identify business goals/mission: (Where are we going?) Develop a clear understanding of the business goals and mission. These will define where a company hopes to be in terms of growth, profitability and organizational capabilities and will tend to be somewhat aspirational.

Business Assessment: (Where are we now?) Complete a thorough assessment of the company, consumers, customers and competition. If we know where we want to go in our goals and mission, the assessment will help to show us how difficult the job will be,

what hurdles we will face, what our resources are, our strengths and weaknesses. It should define what the key issues are in the marketplace and identify areas of opportunity.

Define business/business unit strategy: (best path to get from “where we are now” to “where we are going”) Although several paths may be available, the business unit strategy should define the best path to achieve the goals and mission grounded in the reality of where we are now. The strategies should be as specific and as realistic as possible to include definition by product and product segment. Examples should be as specific as “One marketable piece of product news per year” or “A major new product introduction every three years.” Also included should be strategies by business segment, channel and class of customer.

R&D Strategic Planning Process

As stated, the R&D strategy is both an input to and an output of the business strategic process. The R&D strategic planning process should impact the final business strategies.

R&D Assessment: (Where are we now?) Complete a thorough assessment from an R&D perspective on the company, consumers, customers, competition and technologies. With technical skills and knowledge, this evaluation will look somewhat different than that completed by the business. It should include a technology assessment and an evaluation of the regulatory environment for identification of both opportunities and issues: What are competitive technologies and practices? What are new industry developments? What new tools are available to R&D? What customer and consumer needs are emerging? It should be viewed from the perspective of different disciplines within R&D, such as product, process and package development, sensory and consumer research, microbiology and quality assurance.

Define R&D Strategy: (Develop options and select path to get from “where we are now” to “where we are going”.) Alternatives for the path forward are identified and proposed. It should include defined paths by disciplines. In its “final” form, it provides the agreed-upon blueprint for the setting and execution of R&D programs in technology, new products and product support as well as non-development activities, such as organizational change, system implementation, skill and capability improvements and cultural initiatives.

Communicate and Implement R&D Strategy: Once a strategy is complete, it is meaningless unless the entire R&D group understands, assimilates and is

aligned to it. Completed strategy should be simple and memorable. Observations of the degree to which the organization’s actions and decisions are reflections of the R&D strategy need to be made, and corrective/reinforcing actions take. This requires impactful communication and repetition.

Monitor, Incorporate Ongoing Refinements: With an effective R&D strategy already in place, the key to the future is gathering information, developing insights and modifying the strategy to respond to those insights. The R&D strategy starts with and builds upon the previous strategy. The remaining step is to establish an ongoing process to gather competitive intelligence, review new technologies and industry developments and develop an ongoing forum to incorporate insights into the R&D and business planning process.

A tale of two companies: Chapter III

Let’s revisit our friends at the two fictional model food and beverage companies, Schiffer-Branes Foods and Nirvana Food Processing.

Strategy at Schiffer-Branes Foods

In our last installment, we exposed you to Schiffer-Branes’ business strategy: to deliver above-average return to its shareholders and grow sales and profitability at a rate above the average for the category. After reading this statement in the S-B Annual Report, the vice president of R&D, Dr. Ernest Maladroit, was determined to complete an R&D strategy. Over the past two years he had completed several strategic documents, which he had shared narrowly, but nobody seemed to pay attention or care. As a result he started fresh each year and tried new approaches with new product areas, each year with a different twist.

In afternoon breakout sessions, groups of R&D employees developed elements that were assembled into a stand-alone technical strategy. It called for significant effort in development of new technologies, making a major commitment to development of new products and fully supporting all existing businesses. While covering many areas of R&D’s role at S-B, it did not address current R&D problems in introducing new products nor did it identify any opportunities to improve R&D effectiveness through organization design, employee development, cultural change, etc.

Given his tenuous relationship with operations, sales and marketing, Dr. Maladroit did not want to include them until the strategy was complete.

Well into the year, several innovative competitive threats to S-B’s core snack and beverage busi-

nesses appeared on the shelves of local grocery stores. As S-B's president became aware of these, he contacted Dr. Maladroit, who was embarrassed that nobody had told him earlier of the oncoming competitive threat. Once again he adjusted the strategy to respond and quickly developed products in response to the threat.

Since this work needed to be done on an ASAP basis, no time could be spared for analysis or planning. The entire organization from sales and marketing to supply chain and R&D made a valiant effort, but to no avail. After spending six months on this exercise, they realized they were too late to effectively enter the marketplace, and the work was halted. Dr. Maladroit was particularly concerned that this work had put R&D over budget.

Strategy at Nirvana Food Processing

Nirvana also expects to outperform their competition. In a Strategic Plan developed with R&D's participation, Nirvana stated their desire to, "Introduce major (>\$50 million sales) new entries in innovative good-for-you grain-based snacks and indulgent frozen desserts every two years; create significant product/package news every year for their key beverage and snacks brands; and control Supply Chain costs below the rate of inflation."

Nirvana's vice president R&D, Maxwell Albright, assumed accountability for the R&D strategic planning process, making key managers and technical staff members responsible for gathering technical and market intelligence, analyzing the information and developing insights about what could be done to benefit the company. This work was done on an ongoing basis and summarized annually. While managing a diverse and intense portfolio of projects, participants found this future-oriented work truly enjoyable because it gave R&D leadership an opportunity to shape the course of their company's future. Since communication between Albright, his staff and business leaders occurred on a regular basis, the strategic plan was the forum to debate and decide where the company was going based on the insights generated throughout the year.

Once the strategic plan was finalized by the business, the R&D leadership team, in turn, finalized the R&D strategy. The plan that was presented

was familiar to most, as it was an evolution of the previous plan based on new information, analysis and insights.

In Conclusion

Developing a comprehensive R&D Strategy through the operation of an ongoing strategic planning process is the single most important step you can take to improving the effectiveness of your R&D group. Strategy is the focal point for the establishment of and improvement of R&D effectiveness, since all key elements contributing to effectiveness are analyzed through it and addressed by it.

The insights derived from the strategic process are translated to implications for R&D generation a business-aligned, balanced portfolio of R&D projects and improvement programs. The effective communication of Strategy to assure business alignment, understanding and assimilation, followed by effective monitoring to ensure the organization's decisions and actions reflect the Strategy result in R&D contributions with maximum positive impact on business performance over short and long terms. The R&D Strategic Process also serves the purpose of creating a well-informed, critical thinking, strategically skilled R&D organization.

R&D Strategy is the roadmap by which an organization charts the course that they will take to the desired, successful future state. Having a roadmap maximizes the chance for arriving at the desired destination on time, with the maximum positive experiences along the way. While failure to provide a roadmap does not alter the desired destination, the chances for arriving on time and enjoying the trip are dramatically diminished. **FP**

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