

STEVENS ALLIANCE FOR TECHNOLOGY MANAGEMENT

Roundtable Meeting Take-Aways

TURNING INNOVATION INTO A POWERFUL BUSINESS STRATEGY

1) MAPPING INNOVATION: AN EXPLORATION OF PRINCIPLES AND PROCESSES

In accord with inputs received at the November 2004 Advisory
Board/Roundtable meeting, the February 2005 SATM Roundtable began a yearlong examination of the aspects and processes of innovation. The ultimate goal of the series is to develop answers to the fundamental question, how can innovation be turned into a really powerful business strategy?

The objective of this initial meeting was to explore the "topography" of innovation – that is, to provide a broad overview of the field in order to identify the crucial elements that must connect synergistically in order for innovation to successfully occur. We deliberately opted for considerable breadth in this first session, in order to uncover the specific interests and needs of Alliance organizations that should receive more focused, in-depth treatment in future meetings. The meeting was hosted by ARDEC at Picatinny Arsenal. The facilitators were Larry Gastwirt, SATM Director, and Anthony Le Storti, Executive Consultant, IDEATECTS, Inc.

Larry opened the session by pointing out that a large number of the Roundtable meetings conducted by the Alliance over the past dozen years have dealt with innovation in the broad sense, whether or not the word "innovation" appeared in the titles, as have many of the papers published in the SATM quarterly publication. He handed out a selection of readings drawn from the publication. (The list can be obtained from the SATM office, and the papers can be downloaded from the SATM web site, http://howe.stevens.edu/SATM/)

Larry tabled some initial definitions of innovation and invited discussion, to ensure that we were working from a consistent understanding of this fundamental term. In its most fundamental sense, innovation is the introduction of something new. Elaborating, innovation can be considered the process by which ideas for responding to business needs and opportunities are conceived and advanced from the concept stage to utilization for economic value. A succinct formulation used at Benjamin Obdyke, Inc. is "the creation of value through the implementation of new ideas".

Larry suggested that a useful way to begin our exploration was with a review of the SATM Innovation Model, developed through research conducted by the Alliance in the 1990's, since the model offers a comprehensive description of the critical elements underpinning innovation. The slides used in Larry's presentation can be obtained from the SATM office. Some key points follow; for further details, see "A Prescription for Innovation," (Jack McGourty and Lem Tarshis) in the Summer 1998 Newsletter.

Innovation in "best-of-breed" organizations is not happenstance. Rather, it is an outcome of the systematic practices put in place by leaders to develop and sustain a cultural environment that stimulates employee behaviors that further innovation. The SATM Innovation Model, depicted stylistically below, identifies the major factors associated with innovation as Culture, History, Behaviors, Strategy, and Organizational Practices. Culture - the set of normative, stable, everyday behaviors exhibited by the individuals in the organization - is a major driver of innovation. The cultural environment encompasses the relevant behaviors and is, in turn, defined and reinforced by employee behaviors as well as by organizational practices.

An organization's history clearly impacts on its culture. The views and beliefs of founders and leaders and the stories of successful innovations – and how they were handled in the organization – have a profound effect on what employees think and how they behave. Although nothing can be done to alter history, management must recognize what the history is and either use it, if it is supportive of innovation, or deal with it appropriately if it is not.

Based upon its study of "best-of-breed" organi-

zations, the SATM Innovation Model defines four distinct behavioral patterns common to individuals in organizations that are leaders in innovation: Inquisitive, Advocative, Collaborative and Goal-Directed behaviors. These innovation-producing behaviors, in turn, are encouraged and supported in leading organizations through the application of specific managerial and organizational practices, which can be summarized under the following categories: Strategic Drivers, Employee Selection, Employee Development, Reward and Recognition Systems, Support Systems for Idea Generation, Multifunctional Structures, and Leadership. The model breaks the behavioral patterns into some 25 distinct behaviors, and the managerial and organizational practice categories into more than 50 distinct practices.

The SATM research found a clear, statisticallysignificant difference between high and low innovators when we measured these behavioral patterns and the related organizational practices required to create and maintain an innovative work environment. SATM has developed an Innovation Audit that permits organizations to measure its behavioral patterns and organizational practices, and to benchmark its ratings against a population of "best-of-breed" organizations.

Tony Le Storti followed with a "mapping" of innovation. A copy of his slides is available from the SATM office. His first point was that, while innovation is usually thought of in terms of new products and services offered to customers and consumers, organizations can achieve significant new value through "internal innovations" that can be applied to the business model, organizational processes, and systemic structures.

Tony put an early focus on the obstacles to innovation, those elements or dynamics that too often impede or derail innovation efforts. The first of these is complacency due to market success. This attitude often focuses thinking on current products, an approach that usually results in line extensions rather than significant novelty. Other obstacles include short-term thinking by organizations and individuals, lack of a clear strategy, tight clustering (a narrowing of focus or tendency to look inward that is based on expertise, but results in an inflated organizational ego), lack of systematic processes, a non-supportive culture, lack of

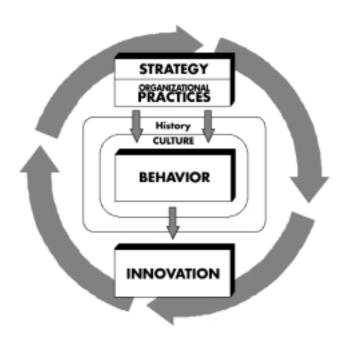
ability in gaining acceptance of novel ideas, failure to build an adequate community around a new idea, and poor leadership.

The concept of a "portfolio" of modes and means of innovation was then outlined. (For details, see Tony's article in the Fall, 2003 issue of the newsletter, cited below.) The challenges here include composing the portfolio, assuring broad coordination and cooperation, establishing a strong information/innovation management system, and sharing learning among individuals, teams, and departments.

The next point of discussion was creativity, the insight at the front end of innovation. Tony offered definitions of creativity as a process and as a product, i.e., as the cognitive activity of generating, developing, and evaluating new ideas, and as the novel and appropriate object, technology, or manner of performance that results. He noted that there are four components to creative productivity that managers need to develop in their staffs: domain knowledge and skills, process skills (creative thinking tactics), motivation (especially intrinsic motivation), and organizational environment.

A quick outline of the most and least used sources of innovation was provided. Most used included competitor observation, research and development, customer suggestions, and analyzing competitors' products. Least used were customer complaint analysis, suppliers' suggestions, customer surveys, and hiring from competitors.

Tony then presented an overview of innovation as a strategy. He labeled as "desired market impact" the combination of areas of prospective innovation and types of market share approaches. The former includes incremental growth in existing product areas through line extensions and complimentary products, movement into existing categories but new to the business, and efforts at "white space" innovations that would be new to the market in general. Market share approaches were described as either incremental growth and/or incumbent protection of current market share or attempts at disruptive innovation.



The group then explored specific strategies for generating and/or capturing potentially innovative ideas: building on the past, leveraging networks and partnerships, promoting new linkages, harvesting ideas from everyone in the organization, gathering and providing abundant information, aligning organizational levels of understanding, ensuring a supportive culture, and broadly diffusing learning.

After a brief characterization of a culture that is conducive to innovation, Tony concluded by describing the most important challenges that leaders of innovation must address. These are forming the vision, defining a clear and coherent strategy, providing innovators with easy access to supportive relationships, ensuring an abundant flow of information, providing necessary resources and organizational support, developing an appropriate reward and recognition system, ensuring that learning is always a concomitant aspect of daily operations, and developing competencies for the future (as contrasted with competencies for today's technologies).

