

Wesley J. Howe School Research Update

A portion of the fees paid by Alliance Sponsors goes to support the Center for Technology Management Research. This is the first article in a series that will appear in the Newsletter from time to time highlighting individual research projects.

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Research (CTMR)

To be a world-class provider of education and research related to innovation and the management of technologies in the global economy.

---- Vision Statement, Wesley J. Howe School Strategic Plan, October 2001.

Overview

In accordance with the above vision, the Howe School is embarking on an ambitious plan to develop its potential in both teaching and research. Currently, the Howe School has great research strength in the areas of technology management (its traditional strength), innovation management, and project management. It is also building strength in global technology management, information assurance, strategic alignment of information technology, and workflow and systems integration.

This article provides a very brief overview of two major initiatives are under way in the area of Innovation Management. Additional information on our research and a complete list of current publications is available at the CTMR Website: <http://attila.stevens-tech.edu/~ctmr>.

The Front End of Innovation (FEI)

Professor Peter Koen's research is on the Front End of Innovation (FEI). The innovation process may be divided into three areas: the FEI, the new product development process, and commercialization. The FEI is defined by those activities that come before the *formal and well structured new product development process*. Even though there is a continuum between the FEI and the new product development process, the activities in the FEI are often chaotic, unpredictable and unstructured.

The research is supported by the Consortium for Corporate Entrepreneurship, whose mission of is to significantly increase highly profitable products through focused research in the FEI. Currently

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members of the Consortium are ExxonMobil, J&J (Ethicon division) and Rohm and Haas. The research goals are to:

- Optimize the Front End of Innovation by determining the most effective practices
- Determine how idea generation for highly profitable products actually occurs
- Understand how knowledge creation and flow in the front end occurs.

New initiatives begun this year include:

- Case studies of lead generation teams (i.e. the teams in companies responsible for breakthrough projects)
- Determining best practices using the Knowledge Creation Framework, a framework has been developed which characterizes the six key elements for enhancing knowledge creation. These elements are: Communities of Practice, Knowledge Mapping, Shared Future Vision, Project Snapshots, Knowledge Creation IT tools and a Collaborative Environment.
- Creation of a Community of Practice around inventors.

Initiative to Improve New Product Team Performance

Research conducted by Professors Gary Lynn and Richard Reilly seeks to capitalize on the data from 800 case studies of product team development performance that has been developed over the last eight years. This unique database offers many insights for the management of teams involved in the development of new products and business ideas.

New products and services are the lifeblood of companies large and small. Companies are turning to new products not just to grow but in many cases to survive. One source estimates that only

approximately one idea in 3,000 is commercially successful in the marketplace. To address this challenge, we began researching new product development teams. Over the past eight years, we have built a solid foundation of experience and expertise based on studying over 800 new product teams from companies including 3-Com, AlliedSignal; AT&T, Bell Atlantic, Exxon, GE, Lucent, MCI, Merck, Merrill Lynch, Nabisco, Pfizer, Roche, Telcordia, as well as from government entities such as NASA, the U.S. Army Communications Electronic Command CECOM, and the U.S. Army Armaments Research & Development Center (ARDEC).

Since teams have been recognized as the core of successful new product development, this research emphasizes understanding the drivers of performance for new product/service teams. One of our ultimate objectives is to use the knowledge developed from our research to provide assistance and training to both internal (Stevens) and external clients to help them accelerate the pace of introducing successful products to market. Our research focuses on 1) diagnostics, 2) identifying critical variables in successful new product and service development and commercialization and 3) disseminating this knowledge via seminars and customized training and consulting in our geographical area and via the internet to companies outside our geographical area. We plan on developing partnerships with other centers at Stevens Institute and to start-up and mid-sized companies and venture capital companies and their clients where management of the technology, business planning, and market development are critical.

Dr. Richard R. Reilly is a Professor in the Wesley J. Howe School of Technology Management at Stevens, where he also chairs the Ph.D. program in Technology Management. He has published over 50 articles and chapters on various topics in Human Resources Management, including issues related to the assessment and development of employee competency.

Professor Stohr is Associate Dean for Research and Academics at the Howe School. His research interests are centered on the problems of developing computer systems to support work and decision-making in organizations. He has edited two books on decision support systems and has published articles in many leading journals.

**Comments on Newsletter?
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