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A Technological Development Model for Strategy Formation

Halvard E. Nystrom
Missouri University of Science and Technology

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A TECHNOLOGICAL DEVELOPMENT MODEL FOR STRATEGY FORMATION

Harry Nystrom
Institute for Economics

This paper presents a technological development model for product and company development based on a distinction between explicit and implicit technologies. Implicit technologies are evolving technologies while explicit technologies are established technologies. Based on empirical data from Swedish companies, a number of strategic dimensions will be discussed such as network interaction and combining knowledge from various sources. These concepts will then be used to present an integrated model of strategy formation and product and company development. It is argued in the paper that this view of technological development facilitates the understanding and analysis of innovation and entrepreneurship in highly changing and changeable technological and market environments. In these situations traditional management models based on predictability and planning are not sufficient if we are to understand how radical technological breakthroughs take place and be able to create favorable conditions for their occurrence.

Direct inquires to: Harry Nystrom, Institute for Economics, Box 7013, Uppsala, Sweden

MANAGING THE SOCIAL DIMENSION OF TECHNOLOGY

Terry Bristol
Institute for Science, Engineering and Public Policy

New technology has become the driving force transforming modern society. During the next two decades, new technologies will be a major factor reshaping virtually every product, every service, and every job. The technological process has always been a social process. Culture has influenced technology as much as technology has influenced culture. R&D is largely supported by society. As citizens have come to better understand that technology is a social force and that they are financing our technological enterprise, there have been increasing demands for improvements in the management of the social dimension of technology. The technology manager of the 21st century will need to be more aware of, and sensitive to, the social concerns about developing technology. Engineers have always been more that just technical contributors to the technology process. Social judgments are made every time an engineer employs a margin of safety. The technology assessments of the industrial framework have been partial and limited. In the social framework we must seek to achieve a more complete evaluation. The existing decision-making processes in engineering practice are already based on multiple perspective decision making, and explicitly evaluate alternatives and tradeoffs. These are powerful and appropriate tools for technology assessment that the technology manager brings to the management of the social dimension of technology. A simple expansion of the technology manager's perspective is needed. Changes in engineering management education, to bolster confidence and cultivate wise judgment, are called for.

Direct inquiries to: Terry Bristol, President and Executive Director, Institute for Science, Engineering and Public Policy, 1717 SW Park, Suite 1500, Portland, OR 97201, USA