

RESEARCH BRIEF

DECISION PRODUCTION SYSTEMS AND ENVIRONMENTALLY RESPONSIBLE PRODUCT DEVELOPMENT (PREMISE)

The potential

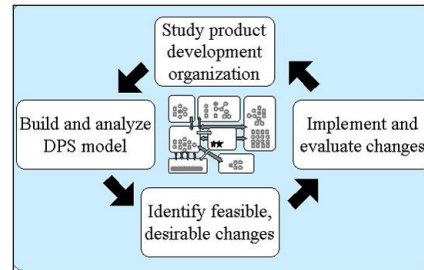
If manufacturing companies can implement efficient and effective ways to consider environmental issues during the design of new products, society will benefit. Such methods will consider environmental issues at multiple points in the product development process without adding time-consuming, costly analysis steps. The resulting affordable products that have no toxic materials and are easy to recycle will lead to a cleaner and safer environment.

The challenge

The main challenge to this research is overcoming the traditional view of product development, including the fundamental problem of poor information flow, which wastes time and money. Unfortunately, environmental performance analysis tools contribute to this problem by requiring additional activities that are inappropriate for the organization's processes. A solution to this challenge is to improve product development through a systems approach that improves product development processes.

The research

Researchers are seeking to understand how product development organizations use environmental information in their decision making when designing new products. This approach views organizations as dynamic networks of people and the people



The decision production system perspective can be used to improve the performance of PDOs in developing and deploying DFE tools, designing product information systems, staffing and changing processes.

involved in product development as a decision production system, so termed because the product development organization produces designs and other information resulting from decisions.

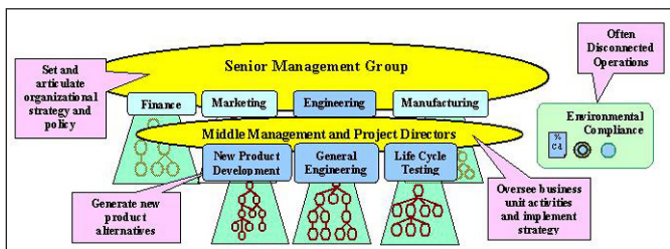
Typically, when organizations consider environmental issues during product design, they have developed a single Design for Environment (DFE) "tool" to deal with those changes. This research, on the other hand, uses a systematic methodology to create a complete DFE process and, when necessary, invents tools that fit the new process.

Working with Black & Decker, Dr. Jeffrey Herrmann and his research team have conducted an exploratory study to describe the nature of the information flows of the product development organization.

While the DFE process the research team has developed for Black & Decker will not necessarily work for other organizations because it is specific to Black & Decker's situation, the decision production system methodology is a general systematic approach that can be used in any organization. In this approach, an organization critically examines its own process and unique characteristics to determine where improvements can be made.

The value of this research lies in developing, validating, and improving a methodology that can help manufacturing firms solve real problems they face,

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The traditional hierarchy of a product development organization (PDO) insulates design engineers from decision-making, so they view designing as solving assigned problems.

not only with emerging environmental regulations but also with other difficulties that complicate product development.

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