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# A Model of a Complex New Product Development Process<sup>\*</sup>

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## *Abstract*

In large organizations that design complex products with multiple partners, it is the coordination of the creation and communication of information that has become important in the competitive performance of the product development process. Improving coordination of the interdependencies between design tasks offers an opportunity to substantially reduce span times and effort. In this paper a model of the development of a complex new product is described. The model evaluates the impact of various policy decisions (coordination mechanisms) that affect information flows. Simulation yields results that show the model's effectiveness.

*Key words:* Simulation, Coordination, New Product Development, Interdependency

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## **1 Introduction**

New product development (NPD) is a critically important part of product lifecycle. It consumes a large proportion of the overall time of bringing a product to market, and determines about 70% of product cost [1]. Increased competition and availability of new technologies have increased pressure on companies to lower costs and bring products to market more quickly. Economists estimate that each day's delay in introducing a new model of an automobile into the market represents a one million dollar loss in profit [2]. In the electronics sector the rule of thumb is that the first two manufacturers that get a new generation product to market lock up 80% of the business [3].

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