Dynamic Optimisation of the Drug Development Pathway
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Abstract
Given the time, cost and risk associated with drug development, biopharmaceutical companies typically need to have a portfolio of drugs under development to be successful. Current pressures of cost and speed to market are driving the need for more effective means of assessing the value and risks of such drug portfolios. This paper presents research to generate a prototype computer-aided tool developed to predict the process and business outcomes for portfolios of biopharmaceutical drugs proceeding through the development pathway. The tool incorporates the interactions between drug development activities and the available resources. In addition to the business and process issues, the risks involved in the process of drug development have also been incorporated into the model. A case study is presented to illustrate how the tool can be used to assist business decisions regarding biopharmaceutical portfolio management. The example addresses the question of outsourcing vs. in-house manufacture of material for clinical trials.

Keywords: Biopharmaceutical drug development, Computer-aided simulation, Portfolio management, Risk, Decision-support tool.