Abstract:

Quality modelling in agri-supply chains has become increasingly popular in R&D environments, because of the availability of large amounts of experimental data and mathematical models. At the same time, in industrial supply chains a strong need exists for support in making complex decisions with respect to logistic, commercial, technical, financial and other aspects. Nevertheless, the majority of research models is not being used in real world applications. Our claim is that a more explicit analysis of specific decision-making processes will help to construct models that will be of use in practice. Therefore we propose to pay special attention to this aspect of the modelling process and to separate it from behavioural modelling. We distinguish between decision and control variables on one hand and behavioural variables on the other. Common modelling practice only deals with the latter. We review three cases from our own project experience with this conceptual distinction in mind: fresh-cut vegetables in MA-packaging, ripeness of mangoes and optimal planning of sowing and harvesting. This analysis has resulted in a systematic procedure to analyse the decision-making process and to construct context relevant models. Careful examination of potential applications along these lines will improve the interaction between users and developers of product and process models.