

## **Strategic Benefit Potentials of RFID Application in Supply Chains**

**Dieter Uckelmann**

### **Abstract**

RFID technology can be used to acquire data decentrally and provide relevant information to all participants of the supply chain. By using these data, each of them can achieve his specific optimization potential in production planning and control or in stock and transport control. But the installation and operation of RFID technology cause costs. And costs and benefits are not evenly balanced for each stakeholder. In this paper the benefits of RFID technology will be measured quantitatively and differentiated by supply chain participants. This can be taken as the basis of cost and benefit allocation to the accordant participants. Therefore, an usage dependant billing model can be defined. A detailed model was developed by using the System Dynamics methodology. It was designed on the basis of a real scenario of the beverage industry, to cope with the complexity of these supply chains. To provide a technical proof of concept a demonstrator was set up, including RFID and an EPC network infrastructure for the beverage scenario. The evaluation of the benefits of RFID and the technical infrastructure result in a billing model concept for RFID and the EPC network throughout the supply chain. This model helps to open up optimization potentials and to accelerate the dissemination of RFID and information sharing in industry.