

Virtualisation of Agri-Food Supply Chain Networks: Strategies and Future Applications

C.N. Verdouw ^{a, b}, A.J.M. Beulens ^{a, b, 1}

Abstract – Supply chains in the food and agri-business are increasingly virtualised in response to market challenges and to opportunities offered by new information and communication technologies in particular the Internet of Things. Virtualisation removes fundamental constraints concerning place, time and human observation. As a consequence, virtualised products and resources do no longer require physical proximity to be controlled, which allows for the decoupling of physical flows and information aspects of supply chain operations. This paper explores the impact of virtualisation on the management of agri-food supply chains. It defines main strategies for object virtualisation and introduces applications.

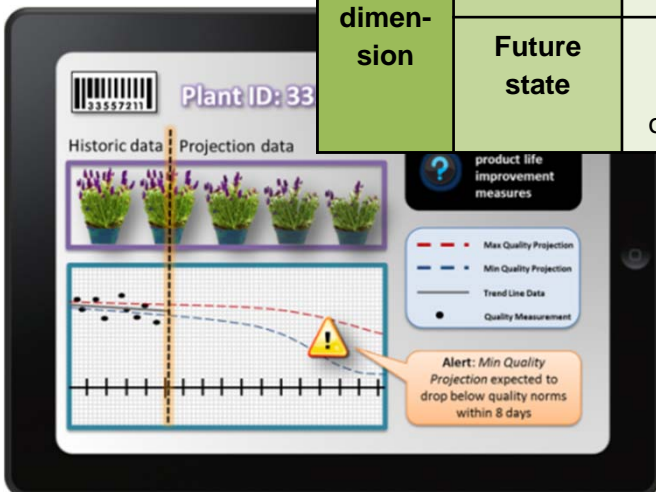
Example Strategy 1: Virtual Auctioning



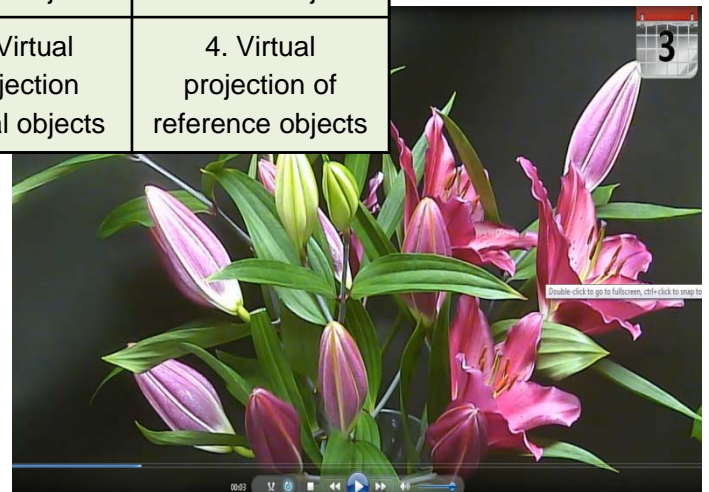
Example Strategy 2: Flower Webshop



VIRTUALISATION STRATEGIES		Reality dimension	
		Real physical objects	Reference objects
Time dimension	Current / historic state	1. Virtual representation of real objects	2. Virtual representation of reference objects
	Future state	3. Virtual projection of real objects	4. Virtual projection of reference objects



Example Strategy 3: Plant Quality Prediction



Example Strategy 4: Flowering Movie

1 Presenter. T: +31-650608049.. E: Adrie.Beulens@wur.nl.
 a LEI Wageningen UR, P.O. Box 35, 6700 AA Wageningen, The Netherlands
 b Information Technology Group, Wageningen University, P.O. Box 8130, 6700 EW Wageningen, The Netherlands

