Abstract

ICT in Dutch Horticulture: State of the Art and Future Challenges[*]

C.N. Verdouw[1], J. Wolfert[1,2] A.J.M Beulens[2] and P. Ravensbergen[3]

[1] *LEI Wageningen UR, P.O. Box 29703, 2502 LS The Hague, Netherlands*
[2] *Logistics, Decision and Information Sciences, Wageningen UR, The Netherlands*
[3] *Commodity Board for Horticulture, Zoetermeer, The Netherlands*

Dutch horticulture is acknowledged as a strong and innovative cluster with a great contribution to the national economy and a leading international position. The Flowers & Food (F&F) co-innovation program aims to stimulate sustainable innovations that contribute to maintaining and expanding this position. One of its spearheads is the use of modern Information & Communication Technology (ICT) to enable a seamless connection of intelligent greenhouses with the marketplace. This paper presents the results of a study, inducted by the F&F program, which aimed to assess existing ICT innovation projects in The Netherlands and to define the foremost remaining challenges.

The research was carried out in close interaction with 3 industry platforms, i.e. Frugicom (fruit and vegs), Florecom (ICT in ornamentals) and Florilog (logistics in ornamentals) and the Commodity Board for Horticulture. In total, 19 Dutch projects were investigated based on structured questionnaires and the results were reviewed in several workshops with representatives of the organizations mentioned above.

Results
1. State of the art: project investigation and classification (including objectives, status and remaining bottlenecks);
2. Analysis: definition of the key ICT issue for Dutch horticulture ('grand challenges'), including enterprise management systems (ERP) for horticultural produce, integration of ERP and automated horticultural production systems, coding of horticultural products and logistics units, standardization of electronic messages, systems for logistic and quality tracking and tracing, auto identification (including RFID), eGovernance and Business Intelligence.
3. Future work: advice for an open innovation program to strengthen the coherence of ICT projects in Dutch horticulture (including infrastructure for knowledge reuse, integrating architecture and expertise / training centre).