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Smart Manufacturing

Europe's competitiveness depends on its capacity to deliver high-quality innovative products, and at low cost. The innovative part of these products often originates from advances in ICT.

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ICT-based solutions applied across the manufacturing process chain help to make manufacturing efficient. Both elements in combination allow for a more personalized, diversified and mass-produced product portfolio and flexible reaction to market changes.

Manufacturing is a major consumer of natural resources and energy. Resources are increasingly extracted through recycling, for which ICT technologies such as RFIDs (Radio Frequency Identification) and robotics are key enablers. The production process uses more and more digital innovations such as data capturing, planning and control, modelling and simulation, cloud computing and big data analysis.

Automation processes are designed and controlled by engineers, so a highly skilled workforce becomes a pre-condition for the success of these innovation processes. Investments in common platforms or modeling techniques have to be part of a longer term strategy, which aims to create the economies of scale Europe needs to remain competitive.

Today's manufacturing industries are concentrated along value chains in a smaller number of regions in Europe. Since less developed regions have little opportunity to participate in value creation, ICT allows the creation of 'virtual' value chains independently from geographical location, bringing in skilled labour from other regions, at lower cost.

The European strategy on smart specialization aims to strengthen the competitive advantages of EU regions in terms of ICT skills, R&D capability, industrial output and infrastructures while linking up similar strategies at regional & national levels, and offering incentives for growth and differentiation.

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