

# COMPLEMENTARY INDUSTRIAL CYBER-PRODUCTION

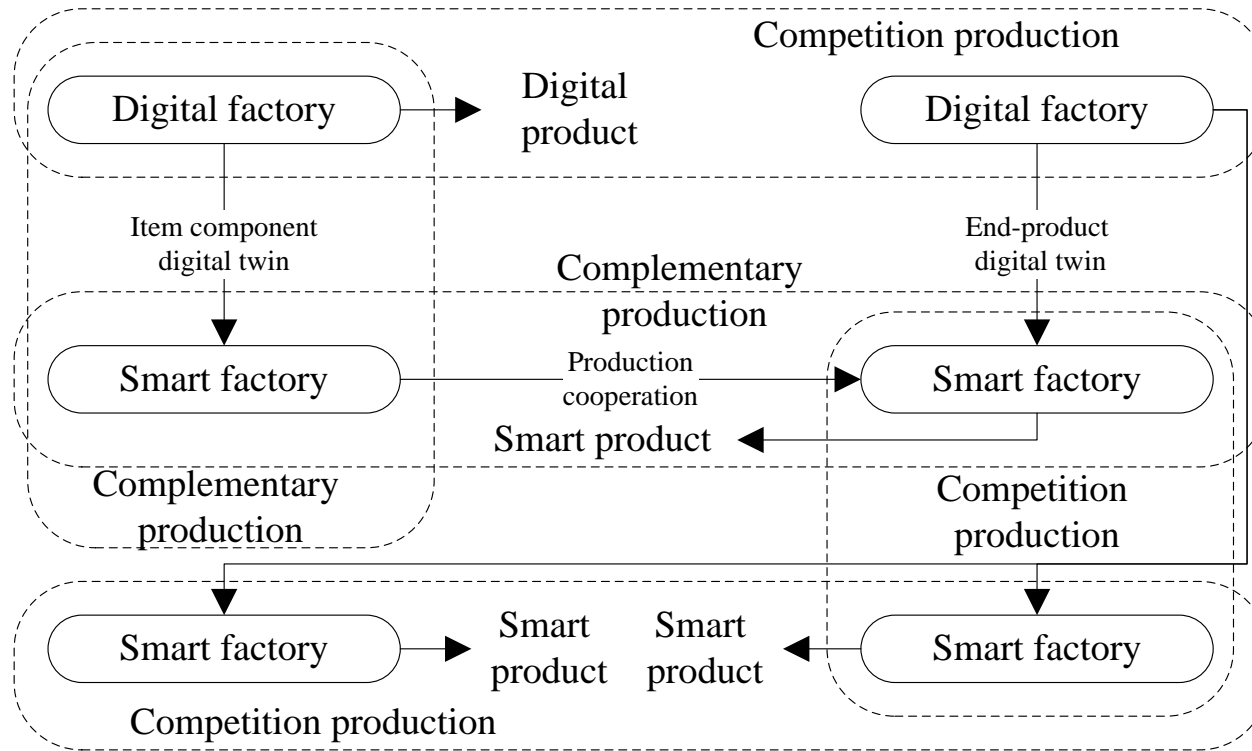
A V Shukalov<sup>1</sup>, I O Zharinov<sup>1</sup>, O O Zharinov<sup>2</sup>

<sup>1</sup> Faculty of Information Security and Computer Technologies, ITMO University, 49, Kronverksky Av., Saint Petersburg, 197101, Russia

<sup>2</sup> Department of Problem-Oriented Computing Complexes, Saint Petersburg State University of Aerospace Instrumentation, 67, Bolshaya Morskaia str., Saint Petersburg, 190000, Russia

E-mail: igor.zharinov.science@gmail.com

**Abstract.** A significant aspect of advanced industrial cyber-production (ICP) in the proposed understanding of the Industry 4.0 concept is complementarity. Complementary ICP is a business-system (BS) of mutually beneficial commercial companies interacting with each other. Companies resort to ensuring the complementarity of ICP to improve their business processes with the resources of the BS. The problematic issues and methods of organizing a stably functioning complementary ICP are considered. A promising way to improve complementary ICP is the introduction of adaptive management mechanisms for the supply chains of components in the overall BS. Adaptive supply chain management tools optimize inventory and supply logistics. A scheme of interaction between business entities forming complementary ICP is proposed. Adaptive management and complementary ICP bring to life the ideal business approaches of a virtual factory.



**Figure 1.** A complimentary ICP scheme based on industrial companies partnership.