

报告 1

智能互联时代的制造业及其管理变革

Manufacturing Industry and Its Management Reform in the Smart and Connected Era

杨善林院士 | 中国工程院院士、合肥工业大学管理学院教授



报告摘要 Abstract

互联网与大数据作为一类新的战略性人造资源，正在不断融入经济社会系统中，从而变革网前时代和线上经济时代形成的产品结构、制造方式、交易规则、商业模式和服务体系。对制造业而言，互联网与大数据在产品构造、产品全生命周期过程、制造资源组织方式、制造业务模式和企业生态系统重构等五个方面对制造业产生深刻影响。因此，互联网时代的制造工程管理科学问题主要有互联网时代制造生态系统的演变与重构理论、互联网时代制造过程的价值创造与服务化理论、互联网时代制造单元的自组织与集成理论、互联网时代制造过程的智能运营管理理论以及互联网时代制造信息系统开放结构与智能决策理论等。

As a new kind of strategic man-made resources, Internet and big data are increasingly integrated into the economic and social system, thus changing the product structure, manufacturing mode, trading rules, business model and service system that formed in the “pre-Internet” and the online economy era. For the manufacturing industry, the profound impacts of the Internet and big data on the manufacturing industry mainly include five aspects, namely product structure, product life cycle process, manufacturing resource organization mode, manufacturing business model and enterprise ecosystem reconstruction. Therefore, the scientific problems of manufacturing engineering management in the Internet era mainly include the evolution and reconstruction theory of manufacturing ecosystem in the era of Internet, the value creation and service theory of manufacturing process in the era of Internet, the self-organization and integration theory of manufacturing units in the era of Internet, the intelligent operational management theory of manufacturing process in the era of Internet, and the open structure of manufacturing information system and the intelligent decision theory in the era of the Internet.