Chapter I

Smart Organizations in the Digital Age

Erastos Filos, Directorate-General Information Society and Media, European Commission, Belgium

Abstract

The chapter aims to present and explain the concept of the smart organization. This concept arose from the need for organizations to respond dynamically to the changing landscape of a digital economy. A smart organization is understood to be both internetworked and knowledge-driven, and therefore able to adapt to new organizational challenges rapidly. It is sufficiently agile to respond to opportunities of the digital age. The three networking dimensions of smart organizations, ICT-enabled virtuality, organizational teaming, and knowledge hyperlinking, are elaborated. This networking capability allows smart organizations to cope with complexity and with rapidly changing economic environments. The paper also shows how managing the smart organization requires a more “fuzzy” approach to managing smart resources: people, information, knowledge, and creativity. Research is also presented, mainly from the European perspective. It has been key to creating the conditions for organizations to become smart.
Characteristics of the Digital Age

Over the last decades, information and communication technologies (ICT) have been the enabling factor in organizational change and innovation, and there is now evidence of their impact on industrial value chains. Organizations today strive to become agile and to operate profitably in an increasingly competitive environment of continuously and unpredictably changing markets.

The digital age is different from the industrial age in various ways (Figure 1). For example, today ICT represent a substantial—and increasing—part of the added value of products and services. ICT-intensive sectors include manufacturing, automotive, aerospace, pharmaceuticals, medical equipment, and agro-food, as well as financial services, media, and retail. In the automotive sector, for instance, an estimated 70% of innovations that happened over the last 20 years were related to ICT.

According to recent studies, more than half of the productivity gains in developed economies can be attributed to ICT (OECD, 2003; O’Mahony & van Ark, 2003). The gains stem both from the production of innovative, high-value goods and services based on ICT, as well as from improvements in business processes through a wider diffusion, adoption and use of ICT across the economy. Their impact on the economy and on society at large has led to remarkable changes.

Figure 1. Industrial vs. digital age characteristics

- **Industrial age**
  - Organizations: ‘Efficient’, hierarchical
  - Assets: tangible
  - Economic environment:
    - Certainty, little change
    - Value based on ‘law of scarcity’
    - Simple jobs, traditional skills
    - Mass production
    - Simple products & processes

- **Digital age**
  - Organizations: ‘Learning’, internetworked
  - Assets: tangible + Intangible
  - Economic environment:
    - Uncertainty, highly dynamic
    - Value based on ‘law of abundance’
    - Complex jobs, e-skills
    - Mass customization
    - Value-added products & processes

Copyright © 2006, Idea Group Inc. Copying or distributing in print or electronic forms without written permission of Idea Group Inc. is prohibited.
Related Content

Time Series Based House Sale Value Market Forecasting Using Genetically Evolved Neural Networks
www.irma-international.org/chapter/time-series-based-house-sale/44259/

Optimizing Group Waiting Time in Service System with Learning Effect
www.irma-international.org/article/optimizing-group-waiting-time-in-service-system-with-learning-effect/169218/

Intelligent IoT-Enabled System in Green Supply Chain using Integrated FCM Method
www.irma-international.org/article/intelligent-iot-enabled-system-in-green-supply-chain-using-integrated-fcm-method/126833/

Towards Automation of Business Intelligence Services Using Hybrid Intelligent System Approach
Rajendra M. Sonar (2013). International Journal of Business Intelligence Research (pp. 61-92).
www.irma-international.org/article/towards-automation-of-business-intelligence-services-using-hybrid-intelligent-system-approach/104739/

Using Groupware to Build a Scenario-Based Early Warning System
www.irma-international.org/chapter/using-groupware-build-scenario-based/22570/