

# Chapter 25

## Consequences of Disruptive Technology: A Review of New Management Practices and Human Capability

**Güera Massyn Romo**  
*University of Johannesburg, South Africa*

### ABSTRACT

*There is an industry tendency to create new roles to compensate for the unavailability of adequately skilled staff. This contributes to establishing new business management practices in allocating and managing operational responsibility. An example of a permanent parallel organisation structure, namely Revenue Assurance (RA) in the Communications Services Provider (CSP) industry is described in context of the CSP industry challenges to ensure complete and accurate billing of communication services. This discussion is positioned with reference to organisational learning (OL) theory and objectives. This chapter argues that parallel structures be utilised as learning structures rather than operational compensating structures as is the case with the RA implementation in practice today. Future research must focus on competency destruction as a conscious organisational process in association with a renewed focus on targeted recruitment, adequate personnel performance management, and a continued reliance on existing business management practices such as project management and risk management.*

### INTRODUCTION

The adoption of disruptive technology or rapid advancement in technology poses challenges for the human capability of organisations as specified content domain competency is destroyed. While

general competency such as problem solving is not destroyed, these general competencies may not be present in the organisation at the time when the organisation has to replace its specified content domain knowledge. Technology Management training programs address some of the specified content domain knowledge gaps experienced in industry and the interaction between industry and

DOI: 10.4018/978-1-4666-0134-5.ch025

academia continue to work toward practice based integration. However, this is not enough.

Disruptive technology is described in the literature as radically new discovery and delivered in a faced pace manner, which provide organisations and individuals the capability to alter their business and personal environment. It either creates new markets and opportunities or reshapes existing markets and opportunities by delivering convenient innovations at a reasonable cost to a selected target group. The change in markets and opportunities is achieved through the introduction of new technology or a radical change in existing technology. The change in existing technology requires the value of the previous technology being destroyed and replaced with the value of the new capability. The value pursuit for the technology provider may be at a lower profit margin but it contributes to market share growth or market differentiation.

Current research focuses on the characteristics of successful development of disruptive technology including agility to identify opportunities and harness collaborative processes within the organisation to respond to unexplored opportunities (Christensen, 1997; Sainio, 2007; Garrison, 2009). The failure to develop disruptive technology is equally well researched (Thomond, 2002; Lettice, 2003). These accounts focus on the barriers experienced by organisations to develop new technology that could potentially be disruptive, the aim of which is to take the lead in the market. Constraints such as the inability to be creative or to sustain the production cycle of the new technology are often cited (Lettice, 2003; White, 2004; Negri, 2004; Assink, 2006; Garrison, 2009; Essman, 2009). The demand on human capability stands out as a major challenge for organisations.

There is little research that explores the adoption of disruptive technology (White, 2004). Adoption of technology implies two levels of adoption. There are firstly the early adopters or intermediary entities that make large scale innovation like the iPhone available to the end user. Early adopters

such as AT&T build business models around the features and functionality of new technology and translate these into sales plans and operational support processes to transfer the value of the new technology to end users. End users comprise of the second level adopters. The second level adopter is individual businesses or persons who use the technology in changing their environments. The technology has utility but does not constitute the core business objective of the organisation. The adoption of technology poses challenges for both the early adopters as well as the end users. This paper is concerned with the human capability concerns of specifically the early adopters of new technology.

The emerging research field of Technology Management(TM) endeavors to answer questions related to the practical adoption of new technology (Yanez, 2010). It focuses mostly on the specified domain content knowledge enhancement. TM is concerned with a holistic approach to aspects of technology definition, development, implementation and maintenance. While TM does not specifically focus on disruptive technology only, it comprises the foundation knowledge to support the focus of this chapter. Much of this literature is still only available in the traditional technology and functional-business-discipline literature (Beard, 2002) with some advances toward integration and development of the emerging TM discipline (Yanez, 2010; Sainio 2007).

The objective of the chapter is to explore industry trends in dealing with the demands of disruptive technology on the human capability aspect, both specified content domain knowledge as well as general knowledge or competencies of an organisation. The chapter positions the human capability concerns of Communication Service Providers (CSPs) as early adopters of disruptive technology as context for the discussion. The chapter commences with an overview of literature related to TM as an emerging discipline and Organisational Learning (OL) practices, which aim to address learning behavioural changes in

19 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/consequences-disruptive-technology/63845](http://www.igi-global.com/chapter/consequences-disruptive-technology/63845)

## Related Content

---

### The Role of Educational Technology in Academia

Muhammad Nadeem, Muhammad Asim Rafiq and Kiran Jameel (2025). *Encyclopedia of Information Science and Technology, Sixth Edition* (pp. 1-12).

[www.irma-international.org/chapter/the-role-of-educational-technology-in-academia/320790](http://www.irma-international.org/chapter/the-role-of-educational-technology-in-academia/320790)

### The Impact of Mergers & Acquisitions on IT Governance Structures: A Case Study

Pauline O. Chin, George A. Brown and Qing Hu (2004). *Journal of Global Information Management* (pp. 50-74).

[www.irma-international.org/article/impact-mergers-acquisitions-governance-structures/3615](http://www.irma-international.org/article/impact-mergers-acquisitions-governance-structures/3615)

### Exploring Information Technology and Supply Chain Governance: Case Studies in Two Brazilian Supply Chains

Pietro Cunha Dolci, Antonio Carlos Gastaud Maçada and Gerald G. Grant (2015). *Journal of Global Information Management* (pp. 72-91).

[www.irma-international.org/article/exploring-information-technology-and-supply-chain-governance/127025](http://www.irma-international.org/article/exploring-information-technology-and-supply-chain-governance/127025)

### Implementation of a Network Print Management System: Lessons Learned

George Kelley, Elizabeth A. Regan and C. Steven Hunt (2006). *Cases on Information Technology and Organizational Politics & Culture* (pp. 311-329).

[www.irma-international.org/chapter/implementation-network-print-management-system/6317](http://www.irma-international.org/chapter/implementation-network-print-management-system/6317)

### IS-Supported Managerial Control for China's Research Community: An Agency Theory Perspective

Wen Tian, Douglas Vogel, Jian Ma and Jibao Gu (2010). *Journal of Global Information Management* (pp. 53-81).

[www.irma-international.org/article/supported-managerial-control-china-research/46956](http://www.irma-international.org/article/supported-managerial-control-china-research/46956)