

Chapter 69

Personal Mobile Cloud Computing Affordances for Higher Education: One Example in South Africa

Chaka Chaka

Tshwane University of Technology, South Africa

ABSTRACT

Within the cloud computing ecosystem and its different permutations, there exists personal mobile cloud computing. The latter has not been covered and investigated much in relation to its affordances for higher education (HE), especially in South Africa. Thus, this chapter argues that personal mobile cloud computing can offer HE significant educational affordances in the form of cloud computing value chain. It does so by providing one South African example entailing a two-project study in the HE sector in which the cloud affordances of Twitter and Facebook were leveraged for educational purposes. Regarding Twitter, one of its affordances is that it was exploited as a cloud based virtual blackboard for a course content, thereby facilitating micro-teaching and micro-learning. Concerning Facebook, one of its affordances is that it served as a cloud based mobile computing environment in which a course-specific writing process was mounted by the instructor and participants. A collective affordance for both Twitter and Facebook was both consumerization and BYOD approaches to teaching and learning.

INTRODUCTION

Cloud computing comprises an evolving ecosystem that is exponentially gaining traction in the computing ecosphere. Within this cloud computing ecosystem and its different strata, there exist both enterprise and personal cloud computing. The emerging upshot of the latter, especially among

consumers, is a personal mobile cloud computing permutation. Driven largely by both major Internet corporates that provide consumer cloud computing services (e.g., Google Apps, Dropbox, SkyDrive, (see Lin, Wen, Jou, & Wu, 2013), iCloud, iTunes and YouTube) and social networking sites (e.g., Facebook and Twitter), and enabled particularly by consumerization and the practice of *bring your own*

DOI: 10.4018/978-1-4666-8751-6.ch069

device (BYOD), personal mobile cloud computing seems to have convenient affordances to offer to higher education institutions (HEIs). Much work about the use of cloud computing in the higher education (HE) sector has been reported in some places, especially, in both the United States and the United Kingdom (Katz, Goldstein & Yanosky, 2010; Mircea & Andreescu, 2011). However, in other places such as South Africa, that is not the case. This does not necessarily imply that there is no cloud computing deployment and adoption in the HE sector in South Africa, but that there is not much documented and reported research work on the use of this variant of computing in this sector. This is even more so pertaining to the deployment of personal mobile cloud computing in the HE sector.

At the core of personal mobile cloud computing are, this chapter contends, disruptive twin trends: consumerization and BYOD. In this regard, HEIs that are willing to both *cloud compute* their academic services and operations and virtualize their information technology (IT) architectures stand a chance of leveraging affordances offered by this computing permutation, thereby assigning themselves the role of being game changers in the increasingly competitive and often cash-strapped HE sector. Against this backdrop, this chapter argues that personal mobile cloud computing can offer HE significant affordances in the overall academic cloud computing value chain. It does so by providing one South African example in the HE sector in which the cloud affordances of Facebook and Twitter were leveraged for educational purposes through an instructor's and participants' mobile phone handsets. In terms of its structure, the chapter, first, provides an overview of personal mobile cloud computing and mounts a relevant literature review. Second, it outlines a framework within which its main argument is located. Third, it presents a South African instance of the use of personal mobile cloud computing for educational purposes in one HE institution. Fourth, the chapter

presents the findings of this instance and outlines the limitations of this instance, while mapping out future research directions pertaining to personal mobile cloud computing within the HE sector.

DISRUPTIVE POST-PC TRENDS AND GAME CHANGERS

The personal computer (PC) has for a long time been the lifeline of the computing ecosystem – both the corporate and personal computing ecosystems – with the workstation and the desktop effectively being the dominant interface of this ecosystem. The PC era was, at its high watermark, dominated by what Cheston (2012) refers to as a *bring your own PC* (BYOPC) approach to corporate IT. This development helped entrench the PC as the mother lode of many variants of computing. However, this computing trajectory has been unexpectedly upstaged by personal mobile cloud computing, consumerization and BYOD, three trends gaining popular traction that this chapter perceives as disruptive post-PC trends and game changers. Cloud computing – itself not necessarily a new trend (see Thomas, 2009) – is mostly riddled with hype and diverse definitions and views (see, for example, Alberta Education, 2012; Katz et al., 2010; McDonald, MacDonald & Breslin, 2010). As a result, an eclectic working definition is provided here which is, though not definitive, but relevant to the chapter. Therefore, cloud computing refers to a practice in which computing infrastructures, platforms and software reside in the Internet and a network of servers, and are provided as service offerings in a connected way. This network and connection of servers mediating these service offerings within the Internet environment is metaphorically known as the cloud (McDonald et al., 2010; Mitrano, 2009; Thomas, 2009; Wang, Chen & Khan, 2014; cf. Katz et al., 2010; Kraan & Yuan, 2009; Plummer, Bittman, Austin, Cearley & Smith, 2008; Sarga, 2012).

20 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/personal-mobile-cloud-computing-affordances-for-higher-education/138345

Related Content

GAIA Bus: Cloud Computing Services for Agro-Food Chain

Georgios Kormentzas (2015). *International Journal of Wireless Networks and Broadband Technologies* (pp. 16-28).

www.irma-international.org/article/gaia-bus/125816

Design of WSN in Real Time Application of Health Monitoring System

Srinivas Sethi and Ramesh K. Sahoo (2017). *Handbook of Research on Advanced Wireless Sensor Network Applications, Protocols, and Architectures* (pp. 197-212).

www.irma-international.org/chapter/design-of-wsn-in-real-time-application-of-health-monitoring-system/162120

Lifetime Enhancement of Wireless Multimedia Sensor Networks Using Data Compression

Pushpender Kumar Dhiman and Narottam Chand (2015). *International Journal of Wireless Networks and Broadband Technologies* (pp. 56-78).

www.irma-international.org/article/lifetime-enhancement-of-wireless-multimedia-sensor-networks-using-data-compression/133999

Marketing Strategies in the Age of Web 3.0

Sonia Ferrari (2016). *Mobile Computing and Wireless Networks: Concepts, Methodologies, Tools, and Applications* (pp. 2132-2149).

www.irma-international.org/chapter/marketing-strategies-in-the-age-of-web-30/138372

SDWS: Semantic Description of Web Services

Maricela Bravo, José Rodríguez and Jorge Pascual (2016). *Mobile Computing and Wireless Networks: Concepts, Methodologies, Tools, and Applications* (pp. 217-240).

www.irma-international.org/chapter/sdws/138184