

# Chapter 25

## Environmental Challenges in Mobile Services

**Amit Lingarchani**

*University of Technology Sydney, Australia*

### ABSTRACT

*Pervasive mobile services are part of almost all business processes. These services are provided irrespective of location, time and place using devices such as mobile phones, smartphones and laptops. This boost in mobile services has also resulted in numerous environmental challenges ranging from design and manufacturing of the mobile device through to mobile service providers and corresponding network infrastructure. This chapter outlines the use of mobile services to increase customer base. In addition, it also provides a better view on opting mobile wireless services over wired services. Environmental challenges around the use of mobile services are described as part of the chapter. Finally some suggestions to reduce carbon emissions and to be energy efficient are provided. In short the chapter goes in line with sentence “Going green is no longer optional from business vantage point” (Brenner, 2008).*

### INTRODUCTION

Mobile technologies provide two significant advantages to business: *location-independence* and *personalization* (Unhelkar, 2008, Unhelkar, 2009). Mobility enables the enterprise to interact with the customers independent of their location. Mobility also enables the business to dynamically customize (i.e. personalize) the specific services of the business required by the customer. As a result,

mobile technologies play an increasingly pivotal role in providing enhanced customer experience and value. Services can be customized to suit the specific needs and tastes of the consumers, and offered to them on their personal mobile devices.

These enhanced services, however, indirectly contribute to carbon footprint of an organization. This is so because concerns about energy consumption and resulting generation of ‘green’ house gas (GHG) are raised by mobile technologies and mobile business. The entire cross section of consumers, workers and business leaders

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concern themselves with the carbon content of their business processes and the underlying technologies that support those processes. Mobile technologies and associated infrastructure needs to be studied, understood and improved from the carbon viewpoint.

This chapter focuses particularly on the environmental challenges due to carbon emissions of mobile services. Section 1 focuses on the introduction of mobile services and how carbon footprints are generated due to their use. In section 2, environmental challenges faced due to use of mobile services are described and section 3 discusses challenges raised due to mobile services and solution to tackle environment challenges is highlighted in same section. Lastly, the chapter is concluded by briefing the aspects of environmental challenges.

## **MOBILE SERVICES AND CARBON FOOTPRINTS**

Organizations which act as service providers (telecom companies) are becoming richer by providing mobile services to required customer base. Mobile service refers to radio-communication service between mobile stations. Nowadays, mobile services are offered by every telecom service provider. These offerings include vast range of services from 3G to mobile broadband. Various providers of Australia such as 3, Optus and Telstra provide easy to use and connect mobile internet as part of bundled mobile plans. This helps telecom companies to create a robust platform to transmit data, voice and video/TV over mobile devices. In addition to above services, various social networking services such as Facebook, Twitter and MySpace are offered in same bundled mobile plans.

Due to mobile services mentioned above, consumers have started moving from wired devices to wireless mobile devices. This gives them freedom to access data and be in touch with their peer groups irrespective of time and location. Due

to demand of internet services on mobile phones, service providers try their best to package all these services in one bundle so that consumers don't need to buy every service separately. The other reason for popularity of wireless services over wired services is access of information to compete in market. Mobile service providers are trying their best to include every possible service in same bundle / package without increasing overall cost.

With increase in mobile services, service providers are facing environmental challenges. They service providers are unable to identify and handle overall environmental impact of widespread mobile service business. For e.g, the ubiquitous mobile phones, their batteries, the mobile networks, the RFID tags, the mobile transmission towers and the myriad mobile devices such as the PDA's and tablet PCs all form part of the growing environmentally challenging issue that mobile businesses need to address. Mobile service provider need to understand supply chains of mobile services in order to tackle the environmental challenges from end to end. Cartland (2005) writes about the significance of studying and optimizing supply chains with regards to sustainability in business. Different businesses participate in overall supply chain of mobile services. Hence, there is a need to emphasize the importance of environment responsibilities within business strategy. According to Unhelkar and Dickens (2008) and Unhelkar and Trivedi (2009), specific types of business strategies need to be highlighted for the importance of Green ICT. They call such strategies as environmentally responsible business strategies (ERBS).

## **ENVIRONMENTAL CHALLENGES OF MOBILE SERVICES**

There are three categories of environmental challenges faced by organizations involved in supply chain of mobile service life cycle. These challenges could be understood as follows:

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