

## Chapter 34

# Green Health:

### The Green IT Implications for Healthcare & Related Businesses

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#### ABSTRACT

*Healthcare is a rapidly growing domain covering wide areas of business activities including those in hospitals, pharmacies, insurance, health administration and related supporting services. In an environmentally conscious world, healthcare is being increasingly compared with other industries in terms of the carbon footprint generation. This chapter starts with a broad overview of the healthcare industry from an environmental perspective and then discusses the stakeholders involved, use of ICT in healthcare, and the relative size of the carbon footprint generated in the sector. The emphasis in this chapter is to bring to the fore the elements in healthcare sector that affect the environment and the potential application of Green ICT to address.*

#### INTRODUCTION

The healthcare industry, including hospitals, pharmacies, insurance, health administration and related supporting services, is one of the fastest growing sectors of the economy globally. This is so because of population growth, demands from an aging population and increasing sophistication in modes of treatments. Thus, advances in medical technologies serve to increase expectations which provides further stimulus to growth in the

healthcare industry. Taking a holistic view of the health care industry and the challenges faced, this chapter looks at the healthcare industry and how the application of Green ICT can help address key issues in the industry.

#### ASPECTS OF THE HEALTHCARE INDUSTRY

Worldwide, the healthcare sector is one of the fastest growing sectors of the economy and it deals with the most valuable assets of our

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economy, namely people. Healthcare is already a mammoth industry; it is globally valued to be worth USD 6 trillion. According to Kalorama's market study,[Kalorama, Wireless Opportunities in Healthcare. Kalorama Information, 2007] USA healthcare spending alone was USD 2.3 trillion in 2007, with 8 percent compound annual growth rate (CAGR). According to the estimates by Frost & Sullivan (2009), the global healthcare market ended at about US\$1.06 trillion and the sector is expected this to reach to US\$1.16 trillion in 2010.

The healthcare industry has some unique aspects to it that influence its environmental footprint. These include:

- Service provider selects for the customer – In contrast to many other markets where customers make the buying decisions, in healthcare the service provider (the doctor or pharmacist) often makes many decisions on behalf of the customer (the patient).
- Little choice of where services are purchased – Customers often choose where they wish to purchase services but in healthcare, the customer (patient), especially those having a sudden health problem, either goes to a local serviced provider or is just taken to the nearest outlet.
- Little say in purchasing decisions - Once in a hospital, doctors often decide on the management plan, define which diagnostic tests are required, determine what kind of treatment or medicines to receive, whether to go for an operation and determine the length of stay. Whilst significant efforts are made to advise and consult patients, the purchasing decisions are effectively made by the doctor.
- Subsidised market – From subsidised prescriptions through to bulk billing for visits to general practitioners, market forces are heavily influenced by subsidies.
- Directed buying decisions - The market for pharmaceuticals is different in that many

consumers do not make their buying decisions. They buy medicines as suggested by their doctors.

- Regulation – The regulations around healthcare are often very strong and a heavy regulatory overhead with extensive reporting, often at many levels, prevails.
- Supplier dependency – Patient care decisions are heavily dependent upon the diagnostics, quality assurance and accuracy of test results provided by other suppliers (logistics chain), i.e. a greater criticality is seen within the logistics chain within healthcare than many other industries.
- Indemnity exposure – The liability exposure and related insurances needs are somewhat unique within the healthcare industry.
- Market distortion and moral hazard – The healthcare market maybe more open to distortion. Consider health insurance. Since insurance-holders do not pay their medical bills directly, there is relatively less involvement from the patients in terms of the financial implications of their choices. The potential to take advantage of the insurance by patients exists and due to commercial pressures, service providers may order additional services for those insured over those with little or no insurance.

Challenges faced by the healthcare industry include:

- *Rising need for healthcare services* – An aging population brings with it the challenge of maintaining quality of life against an increasing prevalence of conditions such as diabetes, cancer and obesity.
- *Escalating cost pressures* – The need for global cost containment is forcing pharmaceutical firms to demonstrate value, creating demand for financial controls and operational efficiencies.

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