

# Chapter 5.11

## Web Services in National Healthcare: The Impact of Public and Private Collaboration

**Matthew W. Guah**

*University of Warwick, UK*

**Wendy L. Currie**

*University of Warwick, UK*

### ABSTRACT

The implementation of a national programme for information technology into the complex environment of the UK's National Health Service (NHS) system is only the first step in a system modernisation journey for this multifaceted organisation. This article reports the findings of a two-year research study on the decline of the ASP (application service provision) industry, from which the current move to Web services was born. It combines the case of the NHS with existing literature on disparate research perspectives to explore the effects of the 'Not Invented Here' syndrome on an IS implementation journey. The article also suggests ways that project leaders can redirect such strong feelings about a new system to increase the chances for a successful outcome. Information systems (IS) is "an instantiation of

information technology (IT), where the same information technology is instantiated in different ways" (Lee, 1999). A rich organizational and political process is required for a given set of IT to be instantiated, relying greatly upon the continual managing, maintaining, and changing of technology to sustain the instantiation. Within a rather diverse NHS environment, IS may include relational aspects like the effectiveness of system design, the timely delivery of such systems, an appropriately obtained usability training by all users, and future impact of IT in the organisational and entire society.

### BACKGROUND

The National Health Service for the United Kingdom (NHS) has been responsible for the provi-

sion of health care and services in the UK for the past 56 years, on a “free for all, at the point of delivery” basis. The traditional perception of the NHS is one of a healthcare system organised as a professional guild, with unlimited finance from the government. This type of NHS is experiencing an irrevocable change, as taxpayers are no longer complaisant, and paternalistic employers are reacting against inflating costs and escalating complaints from the patients. The employer is reacting to the continuous massive flow of subsidies for inefficient physician practices, fragmented delivery systems, and cost-unconscious consumer demand. The patients are increasingly assertive as to their preferences, and few have expressed their willingness to make additional contributions for particular health benefits and medical interventions.

Web services (WS) are technologies with roots in the application service provision (ASP) business model which are used mostly to automate linkages among applications (Hagel, 2002). They are generally anticipated to make critical systems connections not only possible, but also easy and cheap (Kreger, 2003; Sleeper & Robins, 2001). One of the perceived benefits of WS is that organisations would be able to concentrate on their core competencies (Perseid, 2003). Service providers argued that the remote delivery of software applications would release managers from the perennial problems of running in-house IT departments, allowing more time to develop IT and e-business strategy rather than the day-to-day operations (Currie, Desai, & Kahn, 2004). This justification has been used in traditional forms of outsourcing over many years (Willcocks & Lacity, 1998).

The NHS is experiencing massive changes in the structure of information systems provision markets and organisations. The local service provision (LSP) and national service provision/provider (NSP) models, in use by the National Programme for Information Technology (NPfIT), are in a state of ferment. The payment methods

borrow from both capitation and ‘fee-for-service’, and methods of utilisation management that compromise between arm’s-length review and full delegation. LSP and NSP consist of large and more complex entities. These are the result of merger, acquisition, and product diversification. The service providers involved have had to take on a visible feature of ceaseless acquisition and divestiture, integration and outsourcing, and combination and recombination. Providers of medical systems, hospital administration systems, and health plans are coming together and then coming apart. They are substituting contract for joint ownership, creating diversified conglomerates and refocused facilities, and experimenting with ever-new structures of ownership, finance, governance, and management (Robinson, 2000). These would give the NHSIA the benefits not only of a middle ground between the extremes of vertical integration and spot contracting, but also a balance of coordinated and autonomous adaptation in the face of its ever-new challenges.

The general assumption is that expenditures in the nation’s health will outpace the overall growth in the economy (Collins, 2003; Pencheon, 1998). This is reflected in the percentage of gross domestic products (GDPs) of the U.S. (13%), Germany (10.7%), France (9.6%), and the UK (7.6%) being devoted to the total cost of healthcare resources (Brown, 2002). Unlike the UK, however, some of these countries are faced with limitations in social willingness to pay. It has been documented that millions of U.S. residents currently lack the most basic insurance coverage (Institute of Medicine, 2002).

## **Response to Emerging Technologies in the NHS**

Over the years, non-technologists in the NHS have managed to muddle through one powerful new system after another. ‘Generational strategy’ is one continuously being used to deal with some of the pressures induced by IS. Adopting such

11 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/web-services-national-healthcare/26312](http://www.igi-global.com/chapter/web-services-national-healthcare/26312)

## Related Content

---

### Biomechanical Properties of the Foot Sole in Diabetic Mellitus Patients: A Preliminary Study to Understand Ulcer Formation

V. B. Narayanamurthy, Richa Poddar and R. Periyasamy (2014). *International Journal of Biomedical and Clinical Engineering* (pp. 1-17).

[www.irma-international.org/article/biomechanical-properties-of-the-foot-sole-in-diabetic-mellitus-patients/115881](http://www.irma-international.org/article/biomechanical-properties-of-the-foot-sole-in-diabetic-mellitus-patients/115881)

### EEG Synchronization and Brain Networks: A Case Study in Fatigue

Anwesha Sengupta, Subhadeep Datta, Sibsambhu Karand Aurobinda Routray (2015). *International Journal of Biomedical and Clinical Engineering* (pp. 1-11).

[www.irma-international.org/article/eeg-synchronization-and-brain-networks/138223](http://www.irma-international.org/article/eeg-synchronization-and-brain-networks/138223)

### Nanobiotechnology and Therapeutics

Vikrant (2018). *Biomedical Engineering: Concepts, Methodologies, Tools, and Applications* (pp. 75-99).

[www.irma-international.org/chapter/nanobiotechnology-and-therapeutics/186672](http://www.irma-international.org/chapter/nanobiotechnology-and-therapeutics/186672)

### Gastrointestinal Motility Online Educational Endeavor

Shiu-chung Au and Amar Gupta (2009). *Medical Informatics: Concepts, Methodologies, Tools, and Applications* (pp. 1451-1471).

[www.irma-international.org/chapter/gastrointestinal-motility-online-educational-endeavor/26311](http://www.irma-international.org/chapter/gastrointestinal-motility-online-educational-endeavor/26311)

### Mental Task Classification Using Deep Transfer Learning with Random Forest Classifier

Sapna Singh Kshatri, Deepak Singh, Mukesh Kumar Chandrakar and G. R. Sinha (2022). *International Journal of Biomedical and Clinical Engineering* (pp. 1-17).

[www.irma-international.org/article/mental-task-classification-using-deep-transfer-learning-with-random-forest-classifier/301215](http://www.irma-international.org/article/mental-task-classification-using-deep-transfer-learning-with-random-forest-classifier/301215)