

## Chapter 18

# Efficient Implementation of E–Government Interoperability in Labour Market Information Systems Based on Service Oriented Architecture: A Case of Thailand

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### **ABSTRACT**

*In many countries, governments have been developing electronic information systems to support in labour market in form of on-line services, web-based application as well as one-stop service. One of the biggest challenges is to facilitate the seamless exchange of labour market information (LMI) across governmental departments. This chapter introduces an efficient implementation of Thailand's e-government interoperability project in LMI systems using service oriented architecture (SOA) based on XML web service technology. In Thailand, the Ministry of Labour (MOL) has developed a Ministry of Labour Operation Center (MLOC) as the center for gathering, analyzing and monitoring LMI to assist the policy makers. The MOL consists of four departments: department of employment, department of labour protection and welfare, department of skill development, and social security office. These departments utilize electronic systems to manage LMI such as employment, labour protection and welfare, skill development and social security. Provincially, MOL has 75 branches called "labour provincial offices" located at 75 provinces in Thailand. Each office has developed a "Provincial Labour Operation Center or PLOC" as the operating center in the province where the information system called "PLOC" system has been developed to analyze and monitor the localized labour information for the provincial policy-makers. Since these systems differ, it requires the process of data harmonization, modeling and standardizations using UN/CEFACT CCTS and XML NDR for achieving the common XML schema*

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*standard, with the implementation of SOA to integrate efficiently all those systems. We apply TH e-GIF guidelines for interoperable data exchanges and the XML schema standardization. In Thailand, the first Thailand e-Government Interoperability Framework – the TH e-GIF - came into being in November 2006. This chapter illustrates main concepts of TH e-GIF, the project background and methodology as well as key leverage factors for the project.*

## **INTRODUCTION**

Ministry of labour (MOL) in many countries has introduced major reforms to make the labour market more flexible, transparent and efficient (Alessandro, 2005). As an effect MOL has developed electronic government for making available on-line services, web-based application as well as one-stop service for labour sector. In 2002, the Japanese Ministry of Health, Labour and Welfare developed a web portal named 'Hellowork' for their online job information service (Genda, 2006). This lists jobs registered across Japan. The service has been continuously improved since its launch in 1999 with a comprehensive array of options available to job seekers. As well as providing a complete service for job seekers and employers, the Interactive Employment Service (IES) in Hong Kong attempts to bridge the digital divide by providing kiosks in job vacancy centers to make the more than 10,000 vacancies per month posted on IES instantly available at the point of need (Grance & Malcolm, 2002). A similar service is offered by 'Job centre Plus' in the United Kingdom, which is installing touch-screen Job point kiosks in Job centers in Britain to replace outdated vacancy display boards, allowing free access to every vacancy held by the Job centre network in Britain as well as vacancies from European employment service agencies and other third-party agencies (Coleman, 2004). Furthermore, the Job Clearing System (JCS) is one of the applications offered by the Electronic Labour Exchange (ELX) in Malaysia. Employers can use the JCS system to seek out future employees and to publish job vacancies. Vacancies can be posted on the site immediately by completing an online form, and

the ELX provides support for users who encounter problems in using the services, including a telephone and e-mail helpdesk (Vijayakumari, 2001). Under co-ordination of the Crossroads Bank for Social Security (CBSS) it disposes of a data warehouse with integrated information about the labour market and social protection. The data warehouse allows establishing statistics that one single institution is not capable to calculate. The management of the data warehouse has been entrusted to the CBSS (Stephen & Vivienne, 2003). Another helpful research for improving labour market is an Semantic Interoperability Infrastructure for e-government services in the employment sector (SEEMP) (Della & Cerizza, 2007). SEEMP aims at enhancing the already provided e-Employment services by developing a highly advanced, ontology-based, peer-to-peer (P2P) based interoperability infrastructure. Based on a Service-Oriented Architecture, it offers access to semantically-enriched employment services. SEEMP will allow interoperability between the existing National/Local job market places (PES systems) at pan-European.

In Thailand, Ministry of Labour (MOL) has tried to develop electronic government to support labour market. In 2005, MOL has developed Ministry of Labour Operation Center (MLOC) as the center for gathering, analyzing and monitoring labour statistic information to assist the policy makers. MOL consists of four departments: department of employment, department of labour protection and welfare, department of skill development, and social security office. Those departments create labour information: employment, labour protection and welfare, skill development, and social security. Electronic links between four

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