

# Chapter XX

## Security Challenges in Distributed Web Based Transactions: An Overview on the Italian Employment Information System

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### INTRODUCTION

Public administrations, during the last few years, activated modernizations in public service delivery. In particular, this arrangement relates to the service digitalization and automation, thanks to the massive inclusion of Information and communication technologies in public offices. This paved the way for internal and external organizational and technological changes, in that a new approach is required to leverage the new technologies. Moreover, the Internet technologies began to play an important role in public services delivery, and many transactions are Web-based nowadays.

In this perspective, several governments in Europe (Liikanen, 2003), and others all over the world, started their own plans of e-government with the goal of increasing the amount and the quality of the service offered to their customers (citizens, enterprises, profit, and no-profit organizations) via the Internet. In such a streamline, one of the fields where e-government is more fertile regards public employment services: in fact, due to their social implications (e.g., sustainability, workforce mobility, workers' re-qualification paths, training for fresh graduates and students), they are becoming more and more important. Consequently, employment information systems

Table 1. Goals of the Italian plan of e-government

|    |  |
|----|--|
| 1. | Management of the public administrations' autonomy: this concerns both national and local administrative aspects on financial, social and infrastructural problems.  |
| 2. | Proposal of innovative services for citizens, business, private and public entities, based on the most widespread information and communication technologies (customer relationship management, local institutional Websites and multi-channel advices). |
| 3. | Proposal of local information services targeted to the creation of statistical databases and data warehouses available for citizens, business, private and public entities.  |
| 4. | Development of local government functions in order to make the whole national administrative infrastructure more adherent to the information needs of the customers.   |
| 5. | Transition to e-governance: this means interaction among public administrations, populations and politicians, both with the single citizen and wider groups (communities, associations), for the methodological solution and control of the problems.    |

deserve a special attention in public employment service provision.

In Italy, the job workfair has been conceived as a distributed and cooperative network and is regulated by a law dated October 23, 2003. The job workfair plays an important role in the plan of e-government (CNIPA, 2002) that was launched in 2002. Table 1 sums up the objectives of the Italian plan of e-government.

As a general trend, we observe that public administrations opted for the creation of local portals at the beginning of the project. Each portal was directly managed by the local public administration, and had no relationships with other local portals. In a second phase, each local Portal joined a federation created to establish relationships among the local portals. The federation was conceived as glue of the local nodes (more back-end oriented rather than front-end oriented) and not as a replacement of the local portals. As a result, all the local Information Systems are connected into a distributed and cooperative Information System (Coulouris, Dollimore & Kindberg, 1994).

The local portals and the corresponding local information systems are very different from each other. They could not have been easily replaced by a single centralized version. The federative ap-

proach, although exploiting the local peculiarities, raises some issues concerning the management of global or distributed functions (e.g., should a customer look for a service provided by a portal different from the one where she or he authenticated herself or himself).

Before exploring deeper this topic, we would like to introduce some more information about the job workfair. The next subsection is aimed not only at exploring the job market place peculiarities but also to provide the rationale that driven the developers of the Italian job workfair (or "Borsa Continua Nazionale del Lavoro," BCNL) to build a distributed and cooperative information system.

## BACKGROUND

Services to employment, in the past years, were generally offered by local private work agencies and public centers for employment. These entities are autonomous, therefore the federation is the only way to share the information and thus to create a job workfair where the data concerning curricula and job vacancies might freely circulate among the participants.

The inclusion of Information and communication technologies, both in public administrations and in private organizations, heavily changed the way of collecting, storing and managing data. Previously, data collection and management was based on paper documents and huge amounts of physical archives. The availability of electronic data management is the premise to match curricula vitae and vacancies coming from different entities. Furthermore the advent of Web-service allows the creation of non-invasive federations of legacy information systems. Actually, enormous quantities of data are received from many sources and then stored into digital archives (databases and data warehouses as well) where they can be either easily resumed or updated. Web services allows easy sharing of the information content managed by each actor.

Many attempts have been done to design and execute the job requests and offers matching process in an electronic environment. Beginning

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