The eOffice Project by Ericsson Nikola Tesla

Marko Lukičić
Ericsson Nikola Tesla
Krapinska 45, Zagreb, Croatia
marko.lukicic@ericsson.com

Summary

In the last ten years separate EU countries has brought specifications to support delivery of eGovernment services to citizens and businesses. However, at the national level, Croatia still lacks of such interoperability standards and frameworks.

This paper is presenting a work on the eOffice solution developed by Ericsson Nikola Tesla company. The aim of this project is to offer the standardized eOffice application core that fulfills both national legislative and regulative and general practice. Such solution will help government institutions to deliver new services to public in a context of eGovernment.

First, existing Croatian eGovernment legal foundation is presented. National strategies and novelties in the new version of Records Management Ordinance are depicted. Finally, the state of the work and the experience on eOffice project are presented.

Key words: eOffice, eGovernment, writing office

Introduction

In the last century societies has become complex as never before. There have never been more government services provided to citizens and businesses than now. There have never been more open cases than now and the cases have never been more complex. Furthermore, citizens and businesses has never been such demanding as now requesting new services and optimization of old ones.

To cope with these problems, governments start to transform into electronic governments or eGovernments. eGovernment is a general term for using information and communication technologies (ICT) to facilitate more accessible government services, allow greater public access to information, and make government more efficient and accountable to citizens[1]. It should facilitate opening of new services and optimization of existing ones to sustain growth of complex society.

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[1] C. Jain Palvia, Shailendra; S. Sharma, Sushil. E-Government and E-Governance: Definitions/ Domain Framework and Status around the World. International Congress of e-Government. Foundations of e-Government. 2007.

However, before implementing eGovernment two critical tasks must be performed: one at the national level and another at the institutional level. At the national level, government must agree on national-wide technical and non-technical eGovernment frameworks, strategies, standards and principles. At the institutional level, every institution must reconsider its IT infrastructure and back-end systems and applications in respect to national eGovernment guidelines to support the eGovernment initiative.

Although the first task is crucial for eGovernment implementations, in practice the second task has shown as stumbling stone on the eGovernment way. The main reason lies down in inadequate ICT infrastructure, at the institutional level, not capable to follow national eGovernment guidelines. The infrastructure deficiency is caused by lack of sufficient enterprise architecture. This can be visible on all infrastructure layers such as: data layer, security layer, interoperability layer, legacy adapters, etc. Another problem is lack of functionalities (or non-compatible functionalities with eGovernment guidelines) in back-office systems. In most cases this lack is caused by:

- institutional regulations that doesn't comply with eGovernment framework, and
- back-end applications that only partly implements business processes leaving some of its parts un-automated.

If such ICT infrastructures remain unchained, implementation of eGovernment at the local institution level can lead to cost burden and administration efficiency degradation. As a classical front-office can not be dismissed, higher costs can be introduced by new Web based services that acts as Web based front-office. As this services still stays un-automated, additional labor must be performed at back-office to process the Web requests issued by citizens and businesses.

For that reasons re-evaluation of back-end systems should be a pre-task performed before implementing eGovernment at the institutional level.

One of crucial back-office applications is a writing office application. It is often considered as an application for nothing more than keeping tracks of all inbound and outbound communication (mainly mail) and case file documentation. However, with an appearance of new communication channels (such as E-mail) together with introduction of electronic documents and records into institutions, such applications are upgraded to provide functionalities such as: management and delivery of electronic files, cases and records, integration with case file management systems and archives, integration with collaboration portals, etc.

These applications are called eOffice applications, and offices that benefits of those applications are called *paperless offices*[2].

This paper introduces the legal foundation for records management and eGovernment. National strategies together with the new Records Management Ordinance are discussed. The overall Ericsson Nikola Tesla's eOffice project, an experience on all three implementation phases and current project state are presented.

The legal foundation

In 2009, Central State Administrative Office for e-Croatia[3] has issued two strategic documents regarding eGovernment initiative in Croatia. Electronic Government Strategy of the Republic of Croatia for the Period from 2009 to 2012[4] was adopted by Croatian Government in January 2009. The document presents a foundation for building of modern, transparent, efficient and streamlined public services for citizens. The strategy introduces ICT as a fundamental tool for reforming the public administration in respect to Public Administration Reform Strategy issued by ex Central State Office for Administration (later transformed to Ministry of Public Administration)[5]. The document introduces two phases of the eGovernment implementation. In the first phase, the government will:

- assess the current information systems, communication networks and eGovernment services, and
- set a single methodology and standards for the functioning of the various segments of eGovernment.

In the second phase, the public authorities will have at their disposal a complete ICT infrastructure enabling them to communicate with each other in a unified environment.

Establishment of an unambiguous system for managing electronic documents is stated as one of the strategy targets. Development of project documentation for the eOffice reference model is stated as one of the target's activities. It is aimed

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[2] Volarevic, Marijo; Strasberger, Vito; Pacelat, Elvis. A Philosophy of the Electronic Document Management. Proc. of the 22nd International Conference on Information Technology interfaces; 2000 Jun 13-16; Pula, Croatia. Zagreb: SRCE University Computing Centre, University of Zagreb; 2000. p. 141-146.;

[3] Središnji državni ured za e-Hrvatsku

[4] Central State Administrative Office for e-Croatia, Electronic Government Strategy of the Republic of Croatia for the Period from 2009 to 2012, The Government of Republic of Croatia, URL: http://e-hrvatska.hr/sdu/en/Dokumenti/StrategijeIProgrami.html, 2009.

[5] Central State Office for Administration, Public Administration Reform Strategy, The Government of Republic of Croatia, URL: http://www.uprava.hr/strat-hr.pdf, 2008.

to be used as a basis for the future implementations of eOffice applications for the public institutions.

The second document is The Action Plan for the Implementation of the One-Stop-Shop Program[6]. This operational plan, adopted by Croatian Government in June 2009, defines targets, tasks and services as well as implementation and audit mechanisms for a realization of the One-Stop-Shop program. Standardization of electronic systems for the management of electronic and non-electronic records in compliance with MoReq2[7] specification is stated as one of the measures needed for the One-Stop-Shop implementation. MoReq2 is a comprehensive catalogue of generic requirements for an Enterprise Records Management (ERM) system. It builds on the original MoReq specification, which was published in 2001. Specification is intended for use in public and private sector organizations which wish to use ERM systems. This standardization is a foundation for adjustment of back-office applications (such as eOffice) to the eGovernment architecture.

Records Management Ordinance

Records Management Ordinance[8] was adapted by Croatian Government on January 2009 with the purpose of modernizing writing office by automating its processes and introducing electronic documents. It is a cornerstone document for any eOffice application functional specification.

However, this ordinance is conceptually identical to the previous one[9] that originates from the year 1987. The document covers classical mechanisms for case prosecution audit trough evidencing and tracking the case file flow in the institution. Still, the ordinance does not cover the management of other non-case documentation regardless how important non-case documentation is for the operation of institutions.

Moreover, making it the central body for mail and file case documentation distribution the regulation is conceptually still oriented to writing office. On the other hand, implementation of eOffice applications removes this documentation flow bottleneck enabling direct distribution of electronic documentation from

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[6] Central State Administrative Office for e-Croatia, The Action Plan for the Implementation of the One-Stop-Shop Program, The Government of Republic of Croatia, URL: http://e-hrvatska.hr/sdu/en/Dokumenti/StrategijeIProgrami.html, 2009.

[7] Cornwell Affiliates plc. Model Requirements for the management of electronic records. MoReq2 specification. Office for Official publications of the European Communities as INSAR supplement VIII. Bruxelles. Luxembourg. 2008.

[8] The Government of Republic of Croatia, Records Management Ordinance, Narodne novine, 07/09, January 2009.

[9] SR Croatia, Records Management Ordinance, Narodne novine, 38/87 and 42/88, 1987.

one referent directly to another. This documentation flow can be managed by previously defined business processes and well tracked in the overall system.

Another document's defiance is its primary concentration on typical document cycle aspect of records management that consists the phases: receive evidence, distribute, dispatch and archive. However, classification scheme configuration and management, rights management, management of retention periods and disposal schedules are not covered by the ordinance.

The eOffice project

The purpose of eOffice project is to implement a core for the eOffice application which will:

- form a comprehensive basis for the eOffice application,
- comply with the legal foundation, corresponding standards and eGovernment trends,
- provide a basic eOffice functionalities (functionalities defined by Records Management Ordinance combined with the best practice)
- provide a broad and extensible data and security model, and
- allow easy and time non-challenging upgrade with specific client's functionalities to a final product.

eOffice project is split into three main phases. The first phase is an investigation phase. The investigation phase is consisting three components: economic, operational and technical. The operational component consists of methodology selection and setting up the project. Two most popular classes of methodologies have been evaluated: the classic and agile methodologies. Because of particular specificities of eOffice project, it was decided that a RUP (Rational Unified Process)[10] methodology, as a classic methodology, will be modified in some areas. This modifications were concerned mainly on the structure and content of the particular documents prescribed within RUP methodology.

The technical component is the crucial one. Its purpose is to identify key eOffice processes and functionalities and to help with selection of key technologies. In this phase Records Management technology was recognized as basis for the eOffice. The different Records Management platforms were evaluated against earlier identified project requirements and MoReq specification as well. Finally, the IBM FileNet was recognized as a platform that suits the eOffice solution most. As FileNet platform consist of a Content Management module, Business Process module and Records Manager module, the eOffice application can be easily upgraded to support specific case file management, automate specific business processes and implement an archive – what is recognized as crucial upgrades for achieving full back-office automation, Figure 1. The platform's

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[10] IBM. Rational Unified Process; Best Practices for Software Development Teams. Rational Software Whitepaper. Rational Software. 1998.

richness is recognized as one of the key elements for reducing further infra-structure and system integration investments.
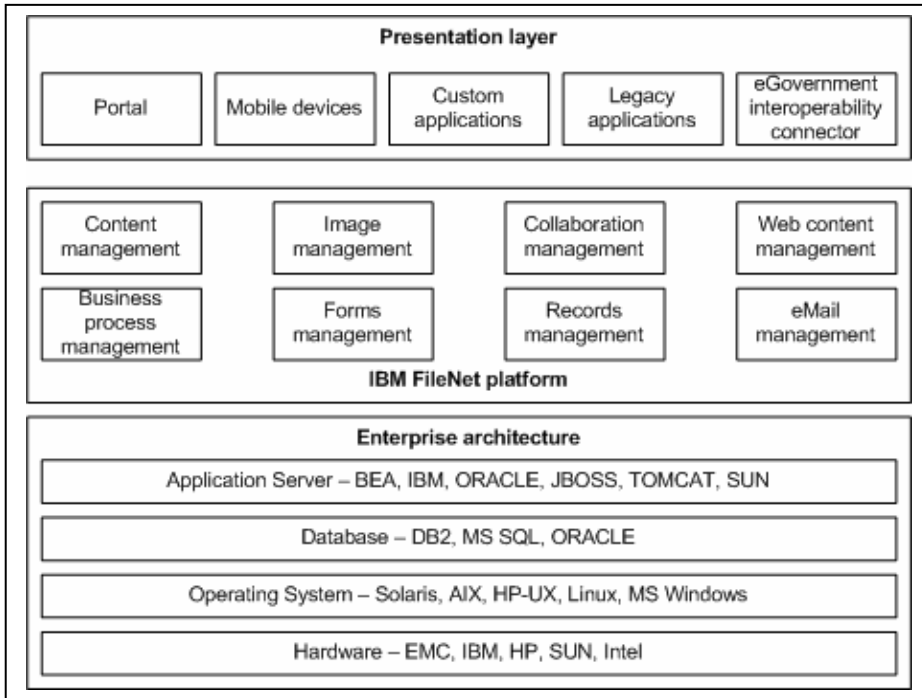

Figure 1. The FileNet platform in the enterprise architecture.

The first phase generated eOffice Conceptual Design document as an output. This document consists of:

- a basic description of the eOffice application,
- a description of organizational and security aspects,
- a preview of all business processes showed in BPM notation[11],
- use cases for every task in every process,
- an example of user forms, and
- a description of additional functional and non-functional requirements.

eOffice Conceptual Design was the input for the second phase: the preparation. In the preparation phase all documentation needed for eOffice application programming must be done. The basic technology foundation is extended with specific development technologies and sub-systems in accordance with functional and non-functional requirements from the conceptual design. As European Un-

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[11] A. White, Stephen. Business Process Modeling Notation. The Business Process Management Initiative. May, 2004.

ion suggests the use of open standards[12], main technology criteria was support of: UML or RDF for data modeling, XSLT for data transformation, Dublin Core (possibly with national extensions) for metadata, Web Services for interoperability, etc. The Solution Design document is the end result of this phase. It contains all implementation details needed for programming the eOffice. It details the solution from deep technical perspective and elaborating each eOffice technical layer (ex. data layer, business layer, etc.) from the programmer's viewpoint (ex. detail specification of database definition, object model, program modules, etc.).

The last phase is the Development and Test phase. In this phase teams of developers maps solution design instructions into program modules, develops final eOffice program, and develops test scripts, Figure 2. Test scripts are performed on a testing environment to indicate on eventual program defects and weaknesses. Key users, such as domain experts, perform functional and ergonomic tests, and database specialists perform consistency tests on a data model trying to cause application malfunction by corrupting data. The development and test phase is considered as finished when all tests results meets predefined criteria.

Current status

The investigation and preparation phases are successfully completed with accepted eOffice Conceptual Design and eOffice Solution Design documents. The development and test phase was started and in progress at the time of writing the article. A FileNet team of specific domain experts (such as developers, database administrators, etc.) is allocated. This team will carry out the most tasks of design and test phase.

Until now, the FileNet team customized a FileNet platform to meet eOffice needs, and already developed the critical components of the program (such as data and object model, security, audit, etc.). Most of writing office processes are designed and implemented in FileNet platform using FileNet Process Designer. A basic concept of graphic user interface is designed and connected to FileNet processes. However, there still remains one large task to be performed: implementation of testing scripts and performing tests. This task will start with finalization of the eOffice development.

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[12] Interoperable Delivery of European eGovernment Services to public Administrations, Businesses and Citizens. European Interoperability Framework for Pan-European eGovernment Services. European Commission. Office for Official Publications of the European Communities. ISBN: 92-894-8389-X. 2004.
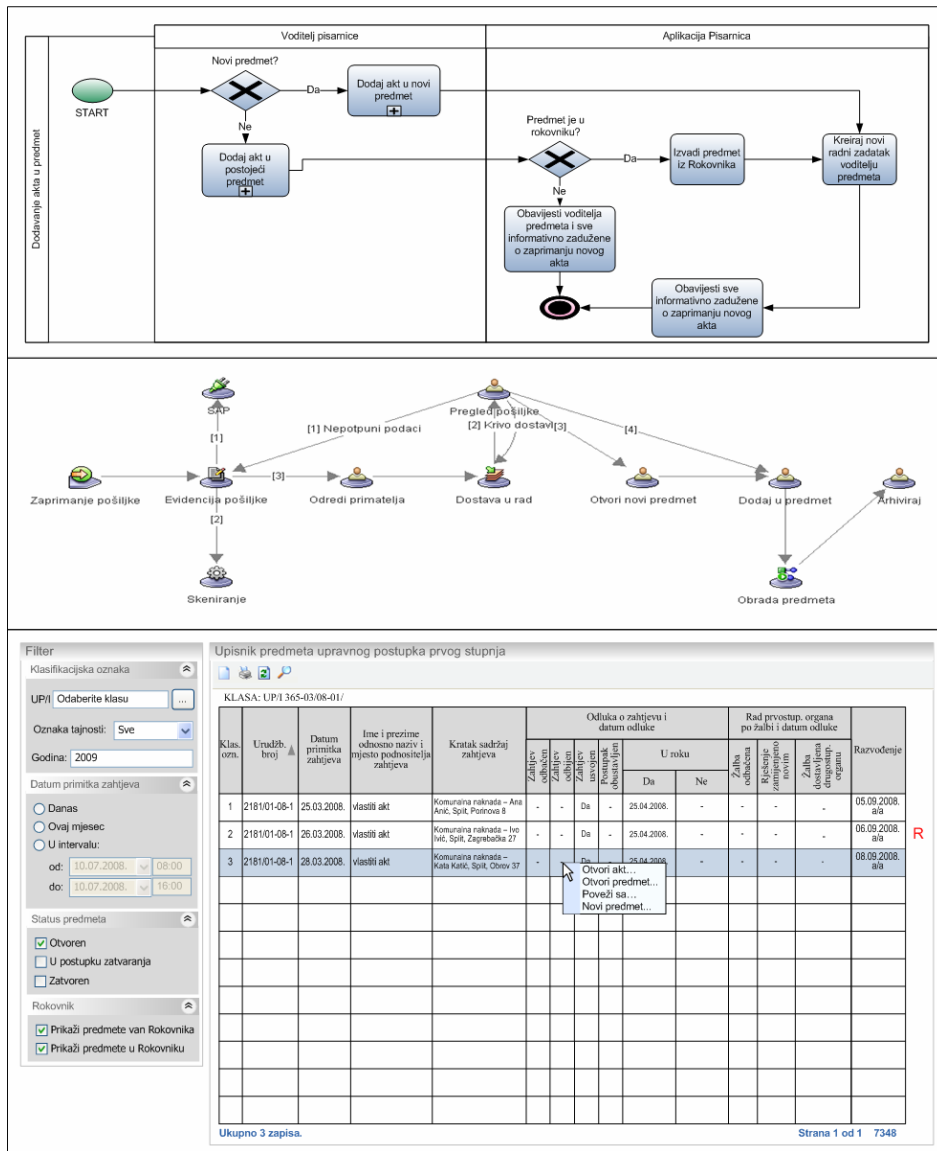
Figure 2. Top: An example of the process definition in BPM notation.
Middle: An example of a process implemented in FileNet platform.
Bottom: Graphical user interface of the eOffice application running FileNet processes in the background.

Conclusion

This paper presents the work on the eOffice application. As this application is building with keeping in mind the legal foundation, national strategies, open standards and EU standards and guidelines regarding eGovernment, the eOffice will avoid incompatibility of back-office systems when implementing the eGovernment framework at the institutional level.

At the other hand, considering not only Records Management Ordinance but best practices as well, we believe that the eOffice application provides additional functionalities that will empower end users with all features of paperless office.

From the technical perspective, with the reliance on comprehensive platform, such as FileNet, IT departments can accomplish homogenous infrastructures, minimize the future investments and benefit from total cost reduction.

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