DEVELOPING ELECTRONIC RECORDS MANAGEMENT SOFTWARE APPLICATIONS AND MANAGING INSTITUTIONAL DIFFERENCES: A COMPARATIVE STUDY

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PRESENTATION OVERVIEW

❖ Regulations about **Electronic Records Management Systems** (ERMS) in Turkey

❖ ERMS implementations executed by Türksat A.Ş.

❖ The comparison of implementations

❖ Differences between effective parameters

❖ Conclusion

OVERVIEW OF ERMS APPLICATIONS IN TURKEY

Electronic Records Management Systems (ERMS) are supported by legal and administrative regulations in Turkey.

➢ Electronic Signature Law

➢ "e-Correspondence" initiative

OVERVIEW OF TURKSAT

Turksat is one of the leading information and communications companies in Turkey.

Turksat operates in 3 business fields:
1- Satellite
2- Cable TV infrastructure and digital TV platform
3- IT Solutions and Services (e.g. e-Gov Gateway)

Head Quarter: Ankara / Turkey
Local offices: 21 Provinces of Turkey
Numberof Employees: 864
Sales: ~ $500 M

ERMS IMPLEMENTATIONS BY TÜRKSAT

❖ Ankara University

❖ Türksat (as an inner customer)

❖ Undersecretariat of Treasury

❖ General Directorate of Forestry

❖ Ministry of Labor and Social Security

❖ Ministry of Interior

❖ Turkish Post (PTT)

❖ Turkish Disaster and Emergency Management

❖ Turkish Coastal Safety

THE IMPLEMENTATIONS CHOSEN FOR THIS STUDY

In the scope of this study, 3 ERMS implementations of TURKSAT are selected. These are:

➢ ERMS for Ankara University (a university)

➢ ERMS for Turksat itself (a company)

➢ ERMS for Undersecretariat of Treasury (a government institution)

DIFFERENCES BETWEEN IMPLEMENTATIONS AND EFFECTIVE PARAMETERS

This study examines the differences between ERMS implematations through effectice parameters.

These parameters are listed below:

1- Organizational structure
2- Records intensity and capacity
3- Integration requirements and points
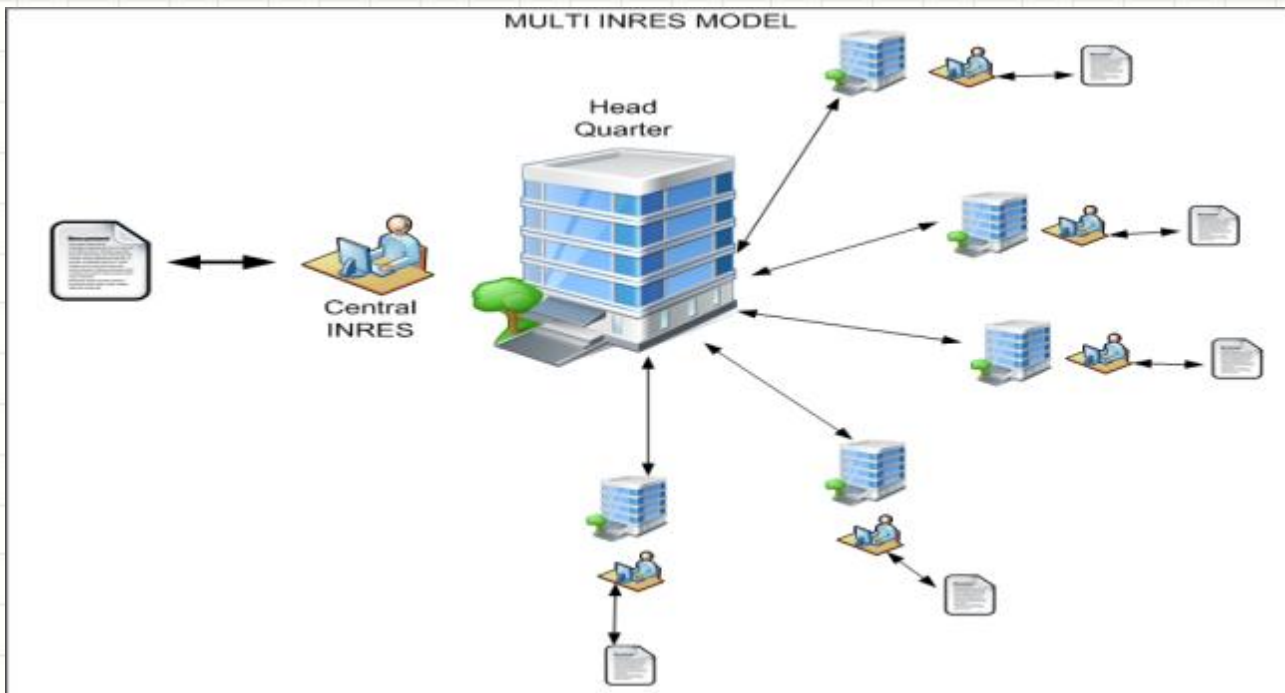4- Metadata schemas to be used
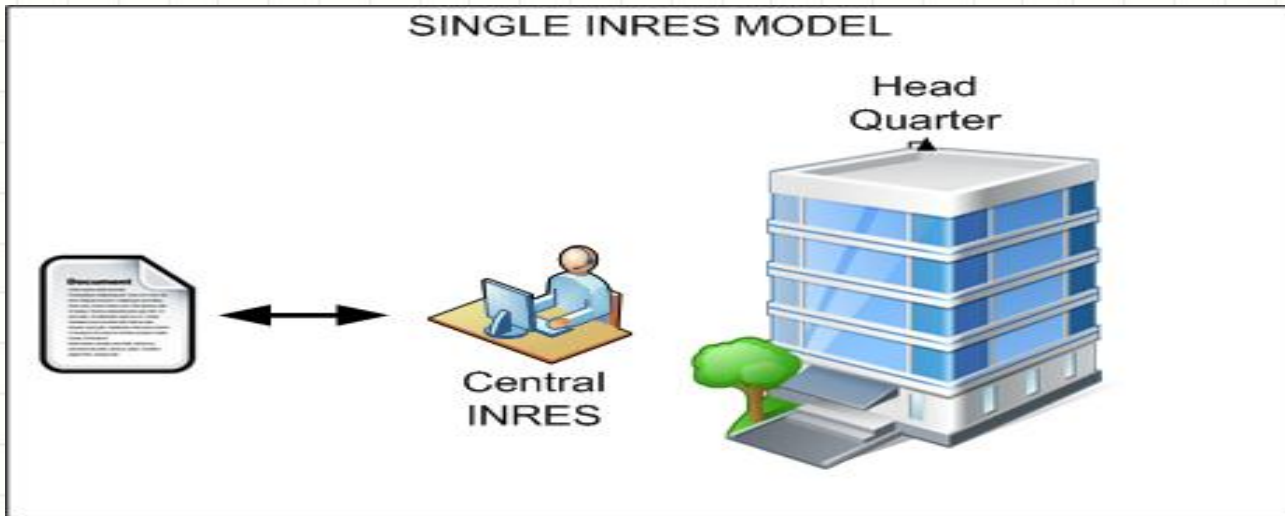
PARAMETER 1: ORGANIZATIONAL STRUCTURE

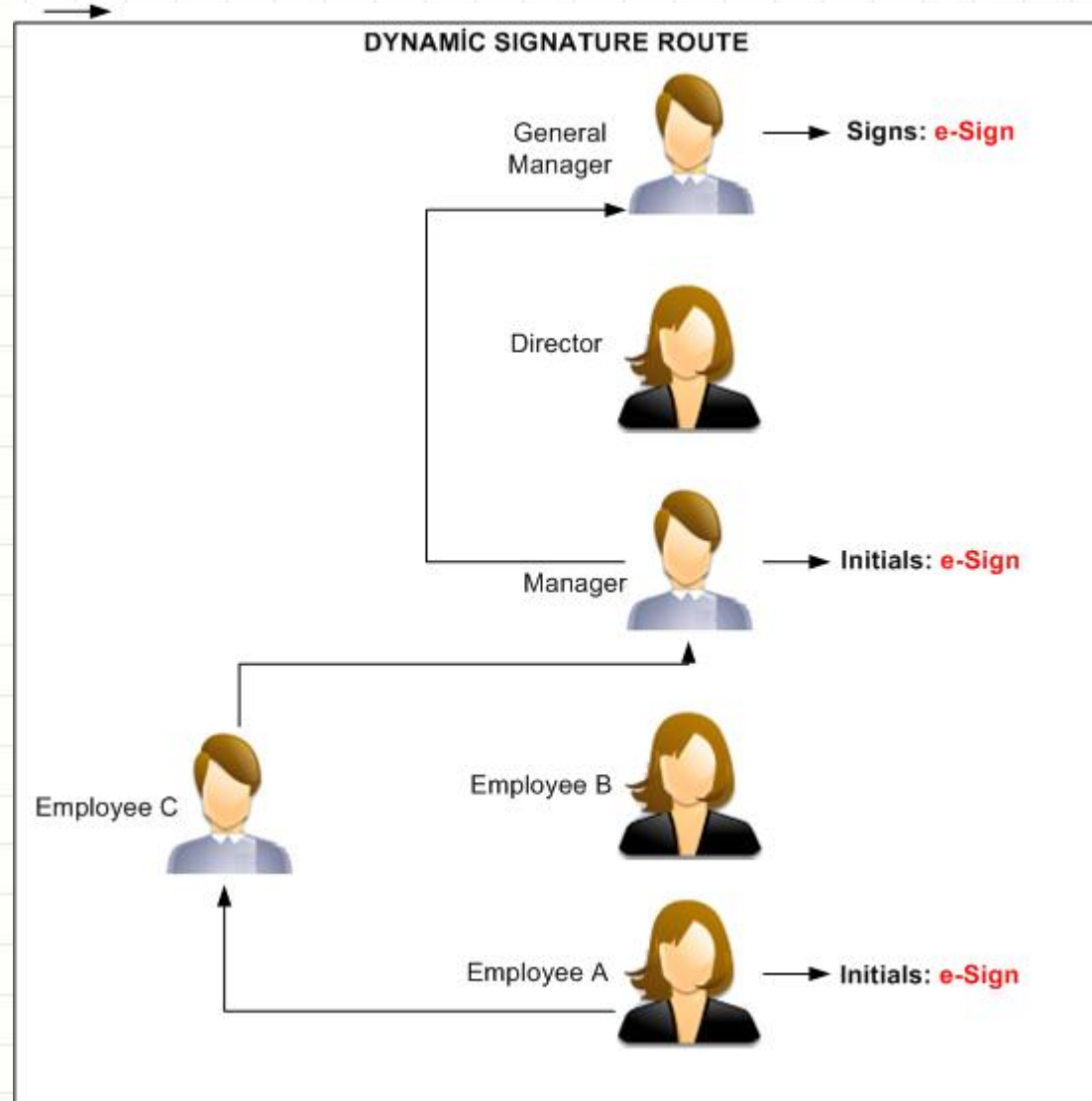Organizational Structure effects the ERMS implemantation in 2 ways:

1- The establishment of the mechanism for responding incomming /outgoing records INRES (i.e. records from /to other institutions, companies and citizens)

2- The mechanism for constructing the signature (approval) route or order.

INCOMING RECORD/DOCUMENT REGISTERY (INRES) MODELS

SIGNATURE /APPROVAL ROTURE MODELS

STATİC (PREDEFINED) SIGNATURE ROUTE

Director — Signs: e-Sign

Manager — Initials: e-Sign

Employee B — Initials: e-Sign

Employee A — Initials: e-Sign

DYNAMİC SIGNATURE ROUTE

General Manager — Signs: e-Sign

Director

Manager — Initials: e-Sign

Employee C

Employee B

Employee A — Initials: e-Sign
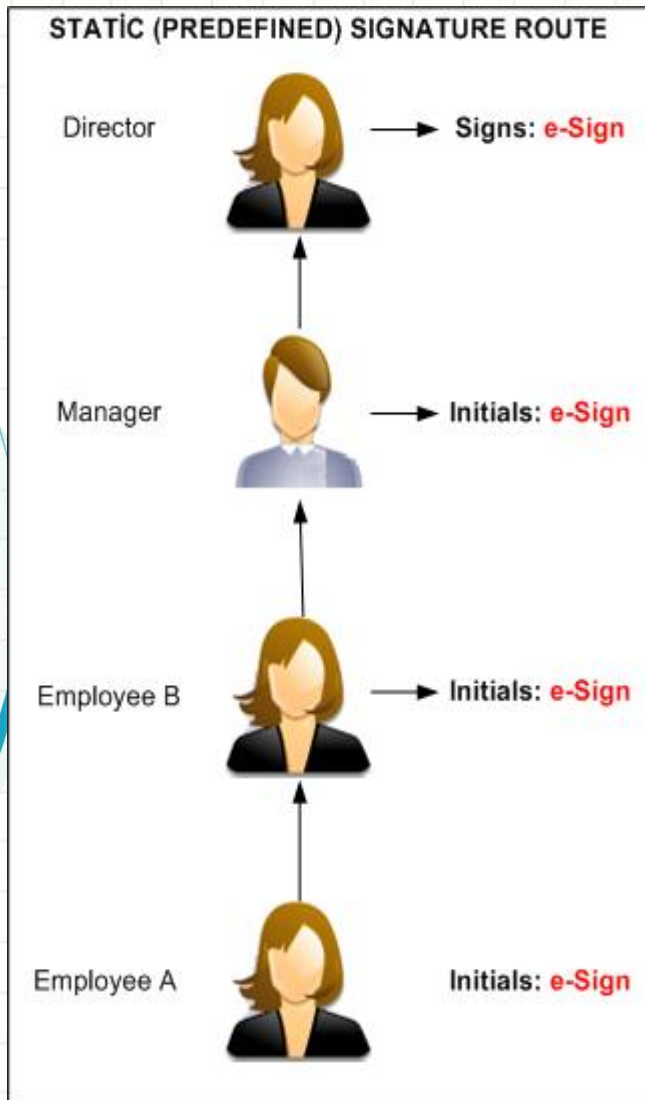
Comparison of Org. Structure – Ankara University

Under the Presidency of Ankara University, 3 Vice Presidents operates 5 councils, 14 Faculties, 13 Institutions, 9 Vocational Training Schools, 2 Research Hospitals, 36 Research Centers and 8 central directorships.

- Physically distant campuses and locations (one of the biggest universities in Turkey)
- There exists a central incoming records registery service (INRES) within the Presidency and discrete INRES within each location
- **ERMS needs to be adjusted to multi INRES structure**

Since, Ankara University has academic units involved in the official records and forms management
- Signature and/or approval routes are changeable for each record/document
- **ERMS needs to be flexible for defining dynamic approval routes**

COMPARISON OF ORG. STRUCTURE – TURKSAT

Under the Presidency of Turksat, 5 Vice Presidents operates 3 different business units. There are 24 directorships and 21 locations in provinces of Turkey.

- Each business unit has its own campus in Ankara, 3 in total.
- A central incoming records registery service (INRES) within the Head Quarter and discrete INRES within each campus and province location.
- **ERMS needs to be adjusted to multi INRES structure**

Since Turksat is a state-owned company, its signature and/or approval route procedures have similarities with goverment institutions.

- But the company can be represented with at least 2 signatures for outgoing records/documents.
- Frequent business trips of the executives requires a well established proxy signature/approval route mechanism
- **ERMS needs to be flexible for defining dynamic approval routes**

Comparison of Org. Structure – Treasury

Undersecretariat is the head of Turkish Treasury. The institution operates under the supervision of 3 assistant undersecretariat, with 8 general directorates.

- Treasury operates only in its central campus in Ankara, without any othe distant locations.
- A central incoming records registery service (INRES) within the Head Quarter
- **ERMS needs to be adjusted to single INRES structure**

Treasury is a typical governmental institution, which needs to process the records/documents according to legal regulations.

- Well defined and rarely changeble signature and/or approval routes.
- **ERMS needs to be flexible for defining static and predefined signature/approval routes**

RECORDS INTENSITY OF THE INSTITUTION

- Records intensity of studied implementations is different because of (i) the size of the institution, (ii) the number of users, (iii) the number of correspondent institutions etc
- Records intensity of the institution plays an important role in determining the hardware infrastructure.
- **ERMS needs to be scaleable interms of processing power and storage capacity**

Yearly Numbers (on avarage)	Ankara Unv.	Turksat	Undersecretariat of Treasury
Incoming Rec.	505.000	26.400	43.000
Outgoing Rec.	495.000	57.000	60.000
TOTAL	1.000.000	83.400	103.000
Avg. Size of each Record	4 MB	4 MB	4 MB
Required Storage Capacity (Yearly)	4.000 GB	333 GB	412 GB

INTEGRATION REQUIREMENTS AND POINTS

Within the scope of this study, the following integration requiremens and points for the ERMS implementations are selected:

1. Integration with an existing human resource software
2. Single Sign On (SSO) integration
3. e-Signature integration
4. İntegration with Turkish State Organization Database (SOD)

HR SOFTWARE INTEGRATION – COMPARISON

- If the customer uses an HR Software, in terms of efficiecy and maintainabilty ERMS should integrate with the software at either service or database level.
- This way, the users, their roles, organisational hierarchy, authorization can be managed through the HR Software.
- If there is no HR Software used in the customer, ERMS should provide interfaces for management of the users.
- **ERMS needs to be flexible to either integrate with HR softwares or provide use interfaces**

Ankara Unv.	Türksat A.Ş.	Treasury
- No HR integration - Users are managed via ERMS interfaces	- No HR integration - Users are managed via ERMS interfaces	- HR Software Integration - Database level integration

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- In the case when SSO is integrated with ERMS, the users can access the ERMS with their domain usernames and passwords.
- **ERMS needs to be flexible to either integrate with LDAP servers provide authentication and authorization mechanisms**

Ankara Unv.	Türksat A.Ş.	Treasury
• No LDAP integration during test and traning phase • LDAP will be used during production phase	• LDAP integration	• LDAP integration

ELECTRONIC SIGNATURE INTEGRATION – COMPARISON

- The legality of the records/documents is provided with the electronic signature.
- Legaly, all executives must use e-Signature. But paraph (or initials) of subordinates does not necessarly require e-Signature.
- Customers can procure e-Signature API which is provided by different vendors (free-market)
- **ERMS needs to be flexible to manage different choices of e-Signature usage models and API of the customers.**

Ankara Unv.	Türksat A.Ş.	Treasury
- No e-Signature for the paragh(intials) - e-Signature API of the state	- E-Signature for all users regardless of executives or subordinates - E-Signature API of the state	- E-Signature for all users regardless of executives or subordinates - E-Signature API of a private company

STATE ORGANIZATION DATABASE INTEGRATION – COMPARISON

- State Organization Database (SOD) is the system in which the govermantal institutions and attached companies are managed in an hierarchical way.
- This system eases correspondence problems especially in inter-institutional record/document sending.
- **ERMS needs to be flexible to integrate with SOD and to provide user interfaces for manuel interferences.**

Ankara Unv.	Türksat	Treasury
• Full SOD integration • Interfaces required for manual recording of correspondences which are not in SOD	• Full SOD integration	• Full SOD integration

METADATA SCHEMAS

Metadata schemas used for ERMS are:
- Turkish e-Correspondance Initiative Schema
- TS 13298 Schema
- Dublin Core Standarts

- The Turksat ERMS, supports the the first two schemas fully (which are obligatory) and the third partially.

- The software can be personalized according to the determined metadata type by the system managers.

CONCLUSION

- Different attributes of organizations require fundemental modifications within the Electronic Records/Document Management Systems .
- Examining the effective parameters within this study showed us that, ERMS needs to be flexible to:
  - ➢ adjusted to multi and single INRES structure
  - ➢ define dynamic and static (predefines) approval routes
  - ➢ scale up/down processing power and storage capacity
  - ➢ integrate with HR softwares and provide user interfaces for user management
  - ➢ integrate with LDAP servers or should provide authentication and authorization mechanisms
  - ➢ manage different choices of e-Signature usage models and API of the customers.
  - ➢ integrate with databases like central state organization (SOD)

CONCLUSION

- Electronic Records/Document Management Systems are becoming an essential part of the e-State infrastructure.

- ERMS needs to be modified greatly for each institution or customer.

- Todays well developed ERP systems can be good model for ERMS, interms of parametric adjustment rather than custom software development.

THANK YOU