

# The Housing Lottery in Slovenia: e-Government Perspective

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- Business process and information system
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- Interoperability issues
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# Introduction

- The Housing fund of the Republic of Slovenia
  - Founded in 1991
  - Offer loans under favourable terms to citizens
  - Encourage savings in housing
  - **Intervene in real-estate market**
  - Offer housing subventions to young families
- Important Slovenian public institution
  - Considerable media attention

# The Housing Fund

- Financial figures:
  - 430 M€ assets
  - 125 M€ in long term loans to citizens
- Loans to citizens:
  - 24 floats
  - 44.743 applicants, 30.997 approved
  - 280 M€ granted
- Housing facilities:
  - 1.672 apartments sold, 741 in construction
  - 621 for non-profit rent

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# Business process

- Goal: offer commercial apartments at favorable prices to citizens
- Legal background: 2000, 2006
- Preferential categories
  - Savers included in the National Housing Savings Schema
  - Social aspects: family age and type, no. of children
  - Policy shift in the last tenders
    - from NHSS savers to young families

## Business process: six phases

- Tender preparation and publishing
- Application gathering
- Data entry and validation
- Priority ranking for flat distribution
- Random choice
  - When two or more applications fall in the same priority rank
- Applicant notification

# Information system requirements

- Severe time constraints
- High level of credibility
  - Transparency
  - Comprehensibility
- Controlling mechanisms
  - Data integrity
  - Data confidentiality
  - Expert system for data validation
- Flexibility and robustness with respect to change
- Interoperability with other e-Government services

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## Related work

- Task: find a suitable match between supply and demand
- Similar systems:
  - Green card lottery system
  - Student housing lottery system
- Criteria to compare:
  - Priority of applications
  - Mechanisms for assuring data accuracy
  - Required additional documents
  - Random selection

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# RSD DSS I

- Success factors:
  - Presentation on the Internet
  - Handling uncertainty about the size of demand
  - Interoperability with e-Gov services
  - Transparency of random choice

# RSD DSS II

- The role in the six business process phases
  - Tender preparation and publishing
  - Application gathering
  - Data entry and validation
  - Priority ranking for flat distribution
  - Random choice
  - Applicant notification

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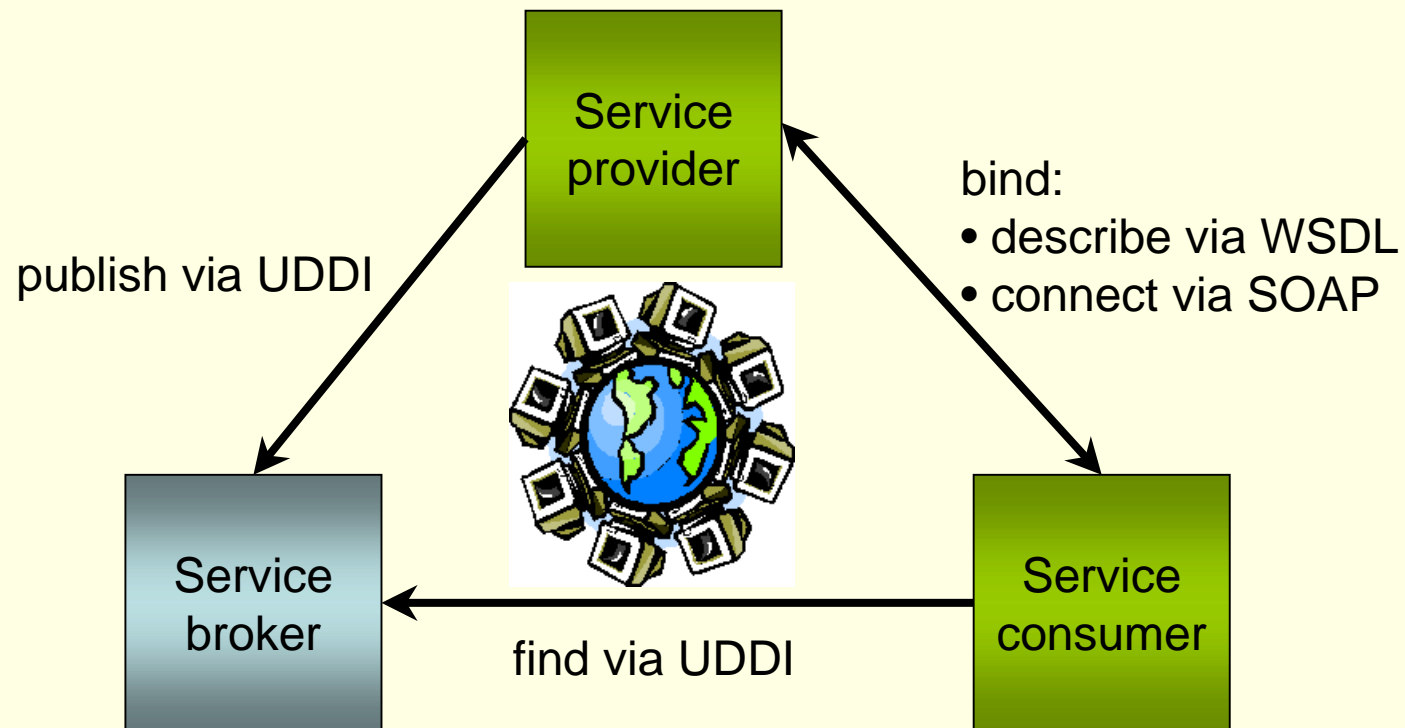
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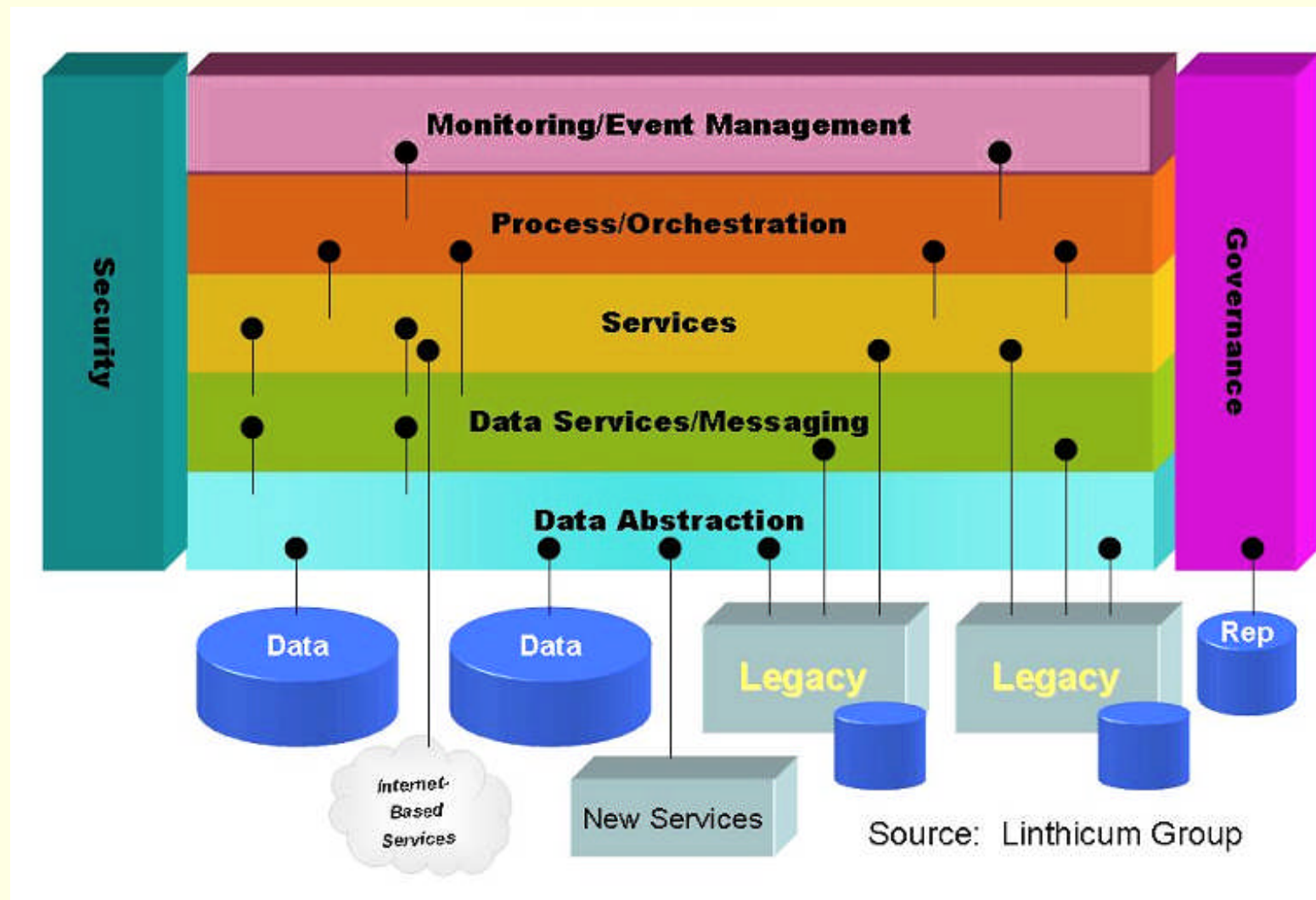
# Interoperability

- Definition: *Ability to exchange and use information between applications*
- Four levels of application integration:
  - Information-oriented
  - Business process integration-oriented
  - Service-oriented
  - Portal-oriented
  - Source: Next Generation Application Integration, by David S. Linthicum
- User's view of interoperability
- Developer's view of interoperability
- Implementation – Web Services “exposed”

# Service-oriented architecture (SOA)



# SOA meta-model



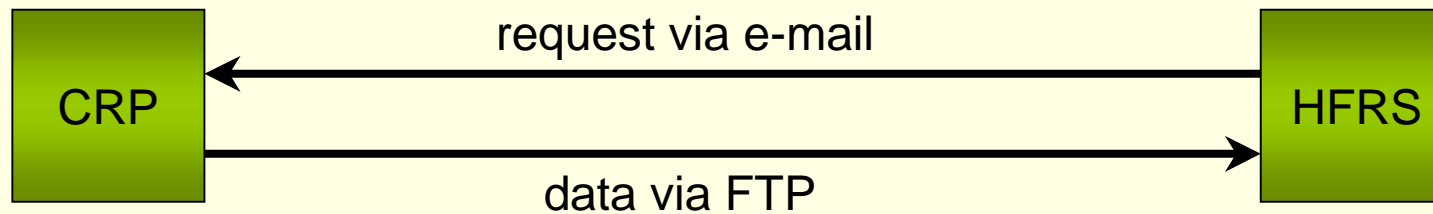
# Web services protocols

Business Domain Specific extensions	Various	<b>Business Domain</b>
Distributed Management	WSDM, WS-Manageability	<b>Management</b>
Provisioning	WS-Provisioning	
Security	WS-Security	<b>Security</b>
Security Policy	WS-SecurityPolicy	
Secure Conversation	WS-SecureConversation	
Trusted Message	WS-Trust	
Federated Identity	WS-Federation	
Portal and Presentation	WSRP	
Asynchronous Services	ASAP	<b>Transactions and Business Process</b>
Transaction	WS-Transactions, WS-Coordination, WS-CAF	
Orchestration	BPEL4WS, WS-CDL	
Events and Notification	WS-Eventing, WS-Notification	<b>Messaging</b>
Multiple message Sessions	WS-Enumeration, WS-Transfer	
Routing/Addressing	WS-Addressing, WS-MessageDelivery	
Reliable Messaging	WS-ReliableMessaging, WS-Reliability	
Message Packaging	SOAP, MTOM	
Publication and Discovery	UDDI, WSIL	<b>Metadata</b>
Policy	WS-Policy, WS-PolicyAssertions	
Base Service and Message Description	WSDL	
Metadata Retrieval	WS-MetadataExchange	

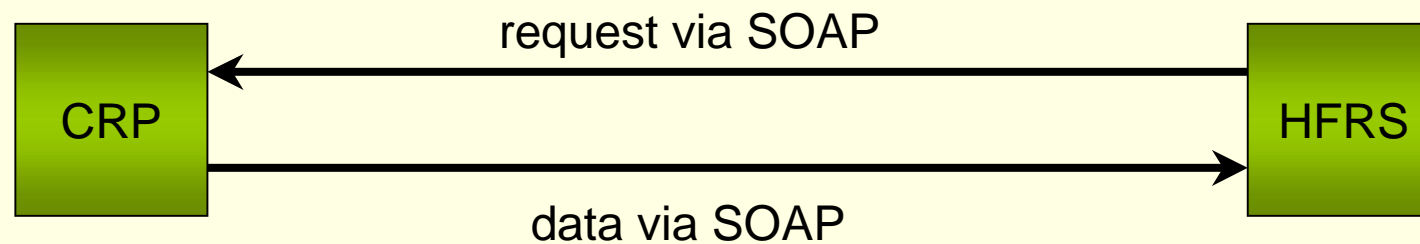
Source: <http://roadmap.cbdiforum.com/reports/protocols/>

# Schema for data exchange

- Old:



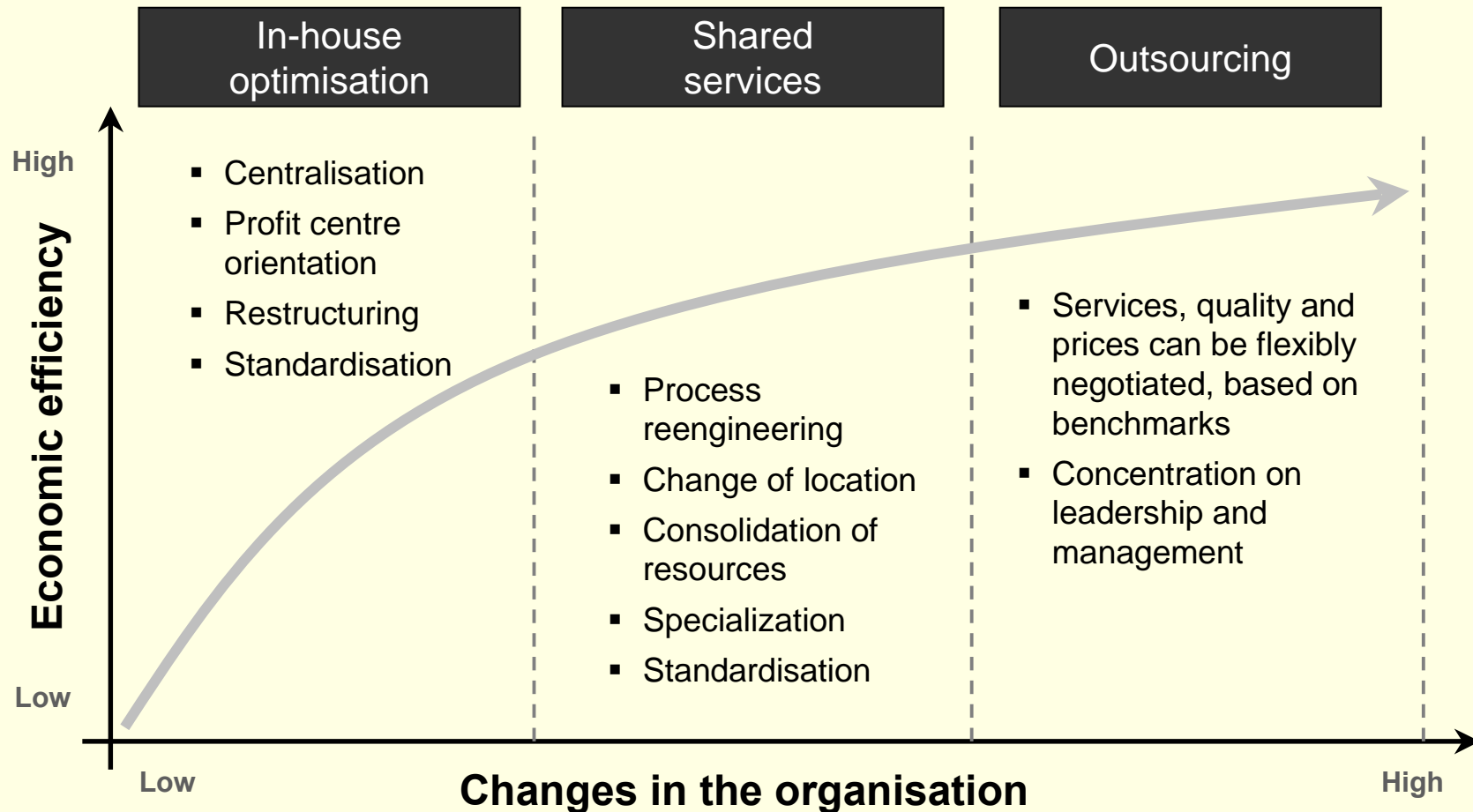
- New:



# Benefits of SOA interoperability

- Improved data quality => improved quality of decisions
- Increased frequency of data exchange
  - Old: batch mode once a week
  - New: during data entry phase
- Better government service for:
  - The Fund (**G2B**)
  - The involved citizens (**G2C**)

# Profitability potential of changes



Source: E-Government Guide Germany, A. Zechner (ed.), Shared services, G. Lietz

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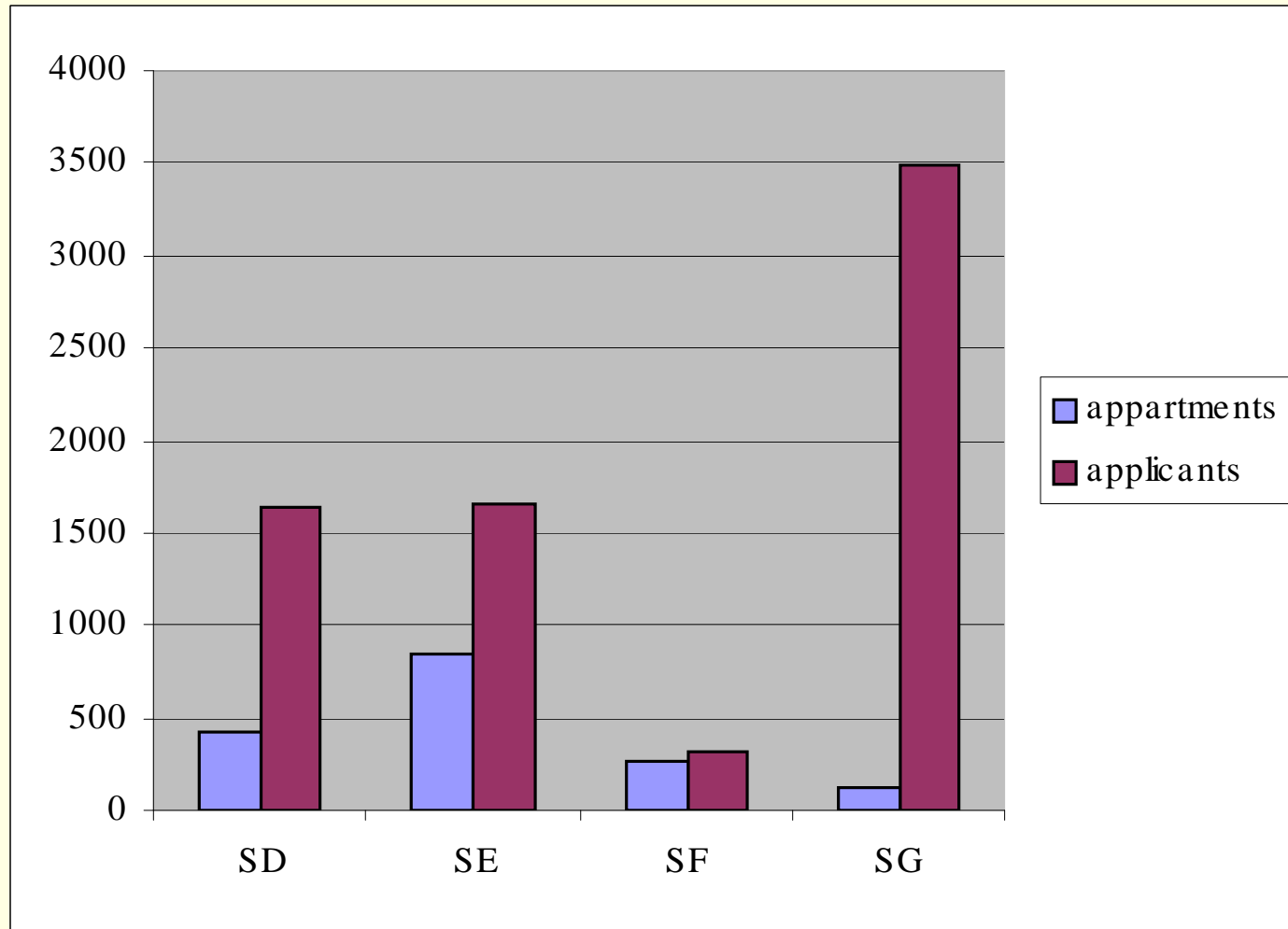
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# Implementation and experience

- Stakeholders
  - System developers
  - Business process owners
  - System users
- Emphasis on information correctness
  - Drastic consequences on the results
  - Expert system for data and application validation

# Supply and demand trend



# UI design

SG - Dodajanje stanovanj SSRS (C) TEMIDA 2007

Dobrodošla Upravljanje Stanovanjske Izpis Pregleda Objave Upravljanje Pomoč

Modni program Identi Številka obratnih zapisov: 3495/3495

Identi	OK	FI	Razl	Vrsta	Kategor	Stanov	Stanov	Sestava	Via	Dodeljeno	Pravek in vrta	Ulica	Pošta	Vredn
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Izporabniki: 2 (P30)Bojan - Datum: 02. 09. 2007 - Bes: DATUMVA.05G Redko Fica: 2Priloge

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# Conclusion

- Interoperability: a key success factor in e-Gov
  - Even moderate steps can bring substantial improvements
  - Information exchange with Central Register of Population
- The context: The Housing Lottery in Slovenia
- Additional topics:
  - User interface design
  - Change management - flexibility
  - Expert system for data and application validation

## Further work

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- Interoperability: from syntax to semantics
- Rely on:
  - Semantic web
  - Metadata
  - Knowledge management technologies

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