

How to Combine Web, SOA and jBPM to Deliver a Flexible Case Management Platform

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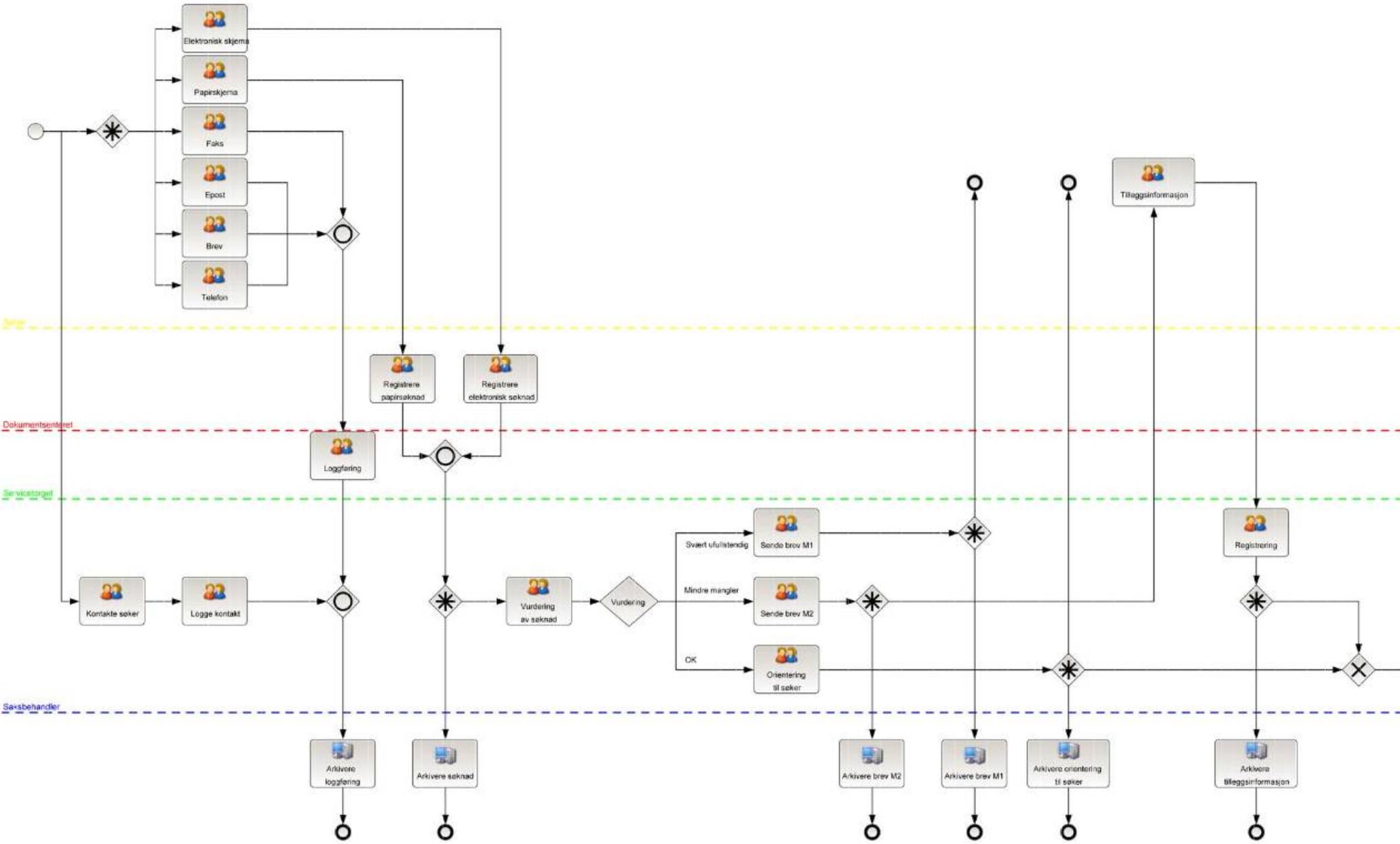
About us

- Redpill Linpro is the leading provider of Professional Open Source services and products in the European Nordic region and our staff of 180 includes some of the market's leading experts in their fields.
- Redpill Linpro has been awarded the prize of best Red Hat EMEA Infrastructure Partner of the Year for 2009.
- Jean-Marc Reymond is the Team Leader for Java/SOA in the Solutions Business Area which handles development projects and consulting services.
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Agenda

- Case Management: What is it?
- The different Tiers
- Case management application functionalities
- Register application functionalities
- Layers, components and processes
- The ESB
- JBPM
- Integration jBPM/Seam
- Front end and JSF/JQuery
- Business benefits of using these technologies
- Lessons learned

What is Case Management (1)

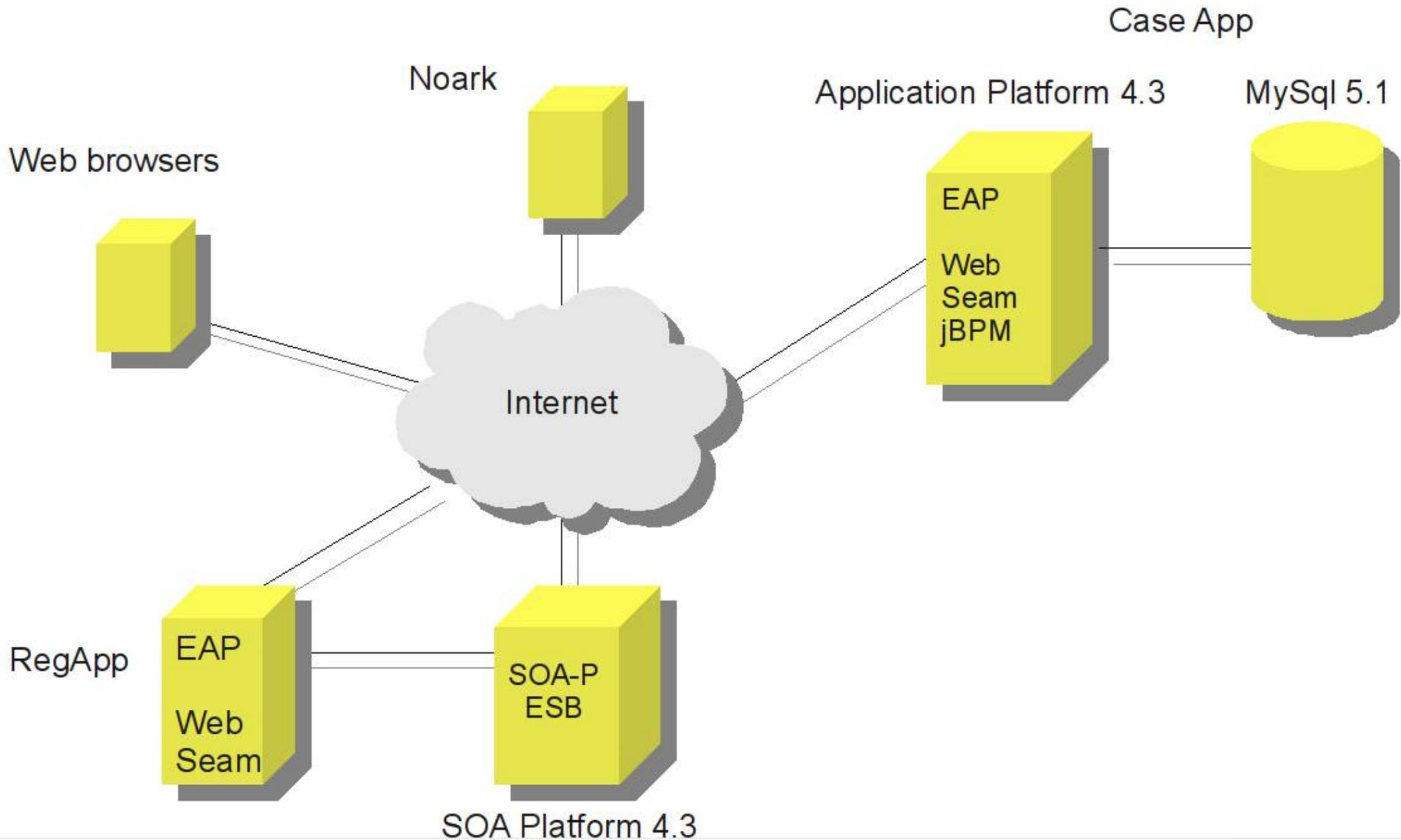


What is Case Management (2)

- The process of treating an electronic application form in order to grant a permit
- Can involve several parties
- Provide traceability and ensure all steps are completed
- The processes can be county specific
- So far we have implemented 4 alcohol processes and one for driving scooter in the wilderness
- Kommuneforlaget builds the framework for all counties
- Challenges: many counties, many integrations, need to standardize similar processes



Tiers overview



The Case Management Application



Ola Nordmann 10100850090 02.aug.2009 15:41:20 Enkeltanledning NOARK saksnummer 1122

status

påminnelse

Merk som godkjent

Innhente uttalelser

+ Legg til

Uttalelse fra skatteetaten

Merk som godkjent:

Skap mal: Last opp:

Kommentar

Journalnr

Last opp

Uttalelse fra politimyndigheten

Merk som godkjent:

Skap mal: Last opp:

Kommentar

Meldinger

Hjelpetekst

Notater

Case management application functionality

- 3 levels of access
- Assign process definition to counties
- Assign process definitions to case workers
- Assign applications to case worker
- Centrally run (1 application for all Norwegian counties)
- Process workflow defined in jBPM
- Document templates + archiving + emailing
- Storage in Register application if case approved

The Register Application

[Startsiden](#) Velkommen, Jean-Marc Reymond! [Logg ut](#)

Person | Prøver | Virksomhet | Kommune | Omsetningssted | Bevillinger | Omsetning | Admin

Søk | Ny

Søk etter personer «

Fødselsnummer

Fornavn

Etternavn

Adresse

Levende Ja Nei

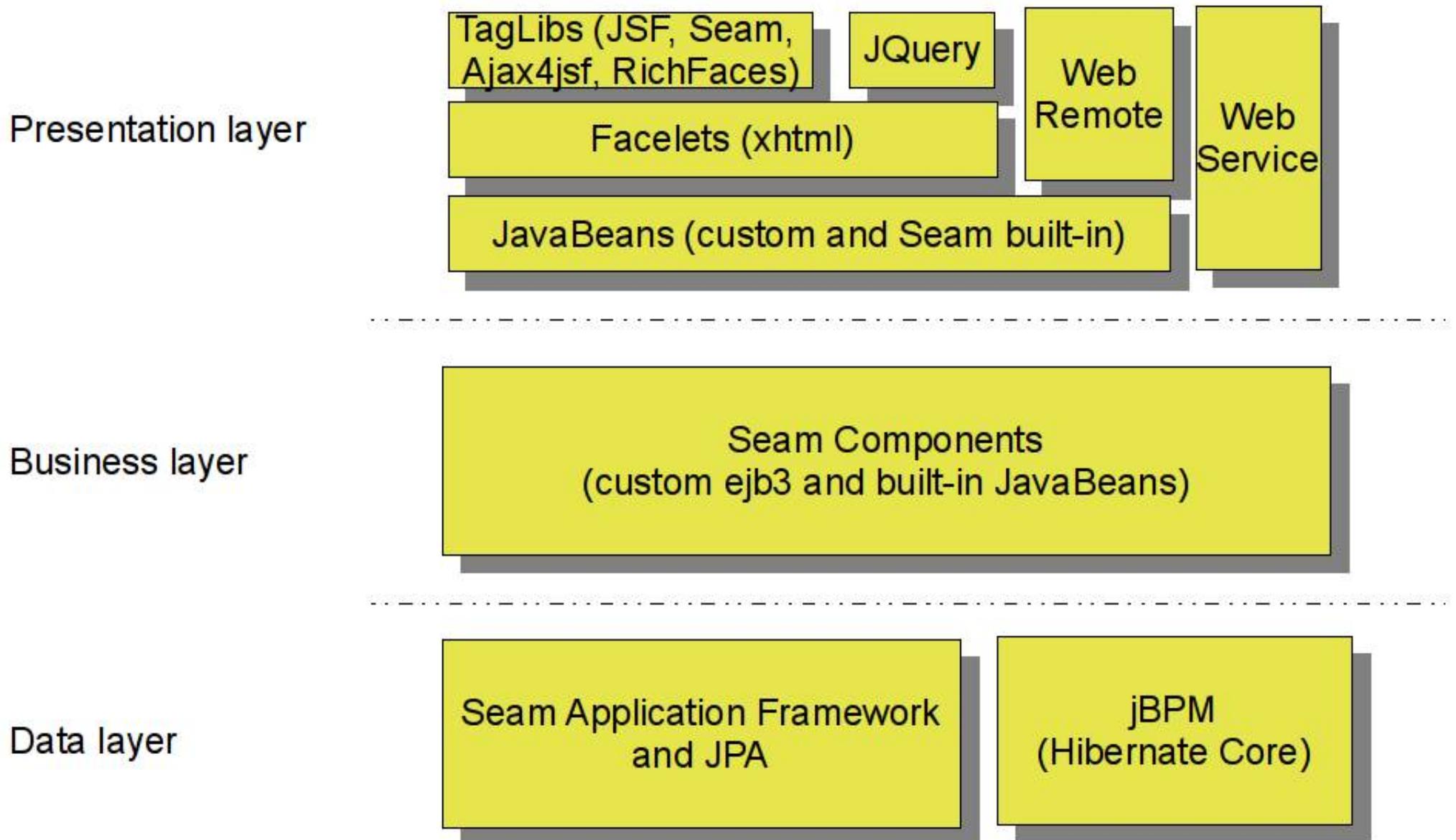
Søkeresultat per side

Copyright (c) [Kommuneforlaget](#).

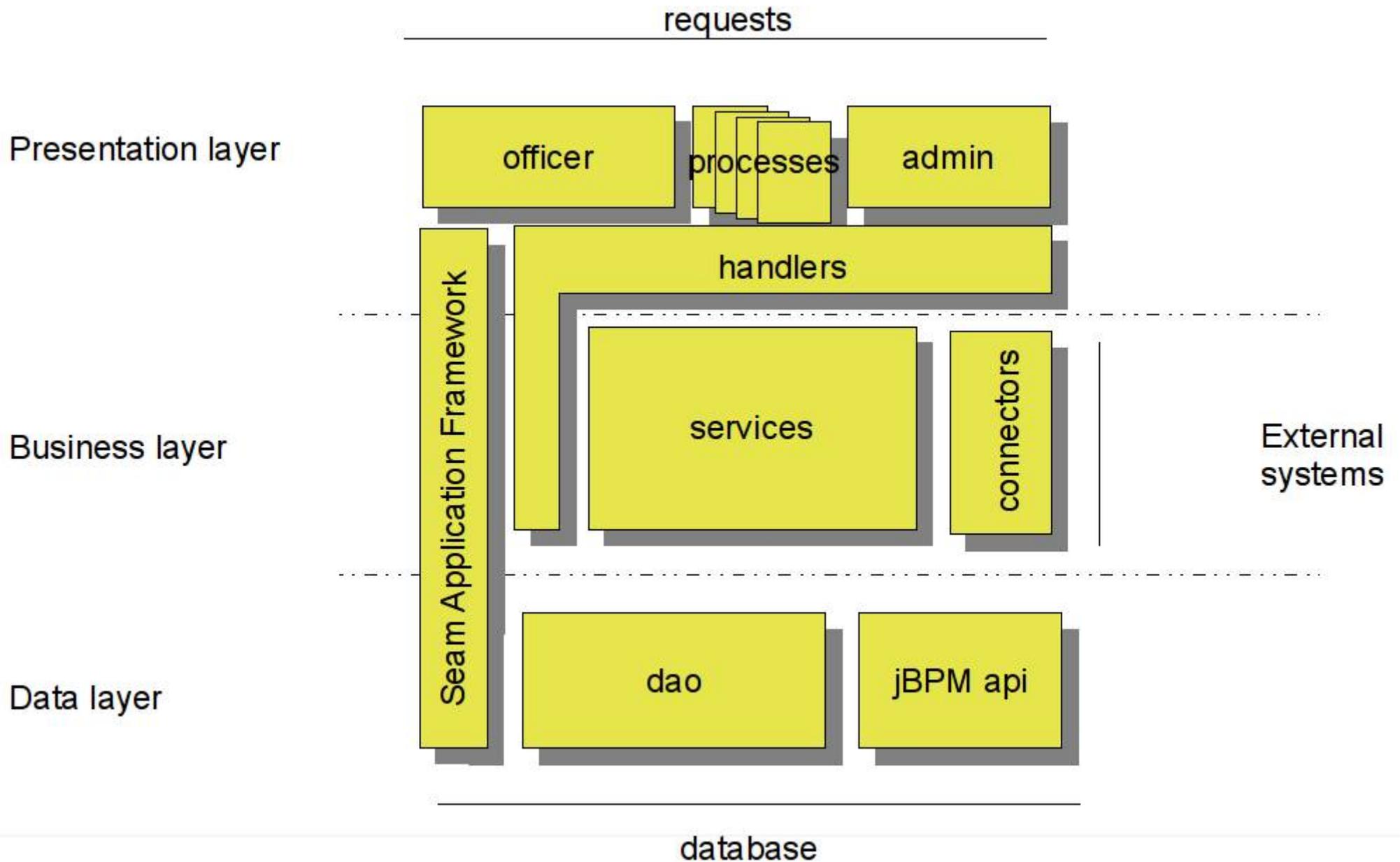
Register application functionality

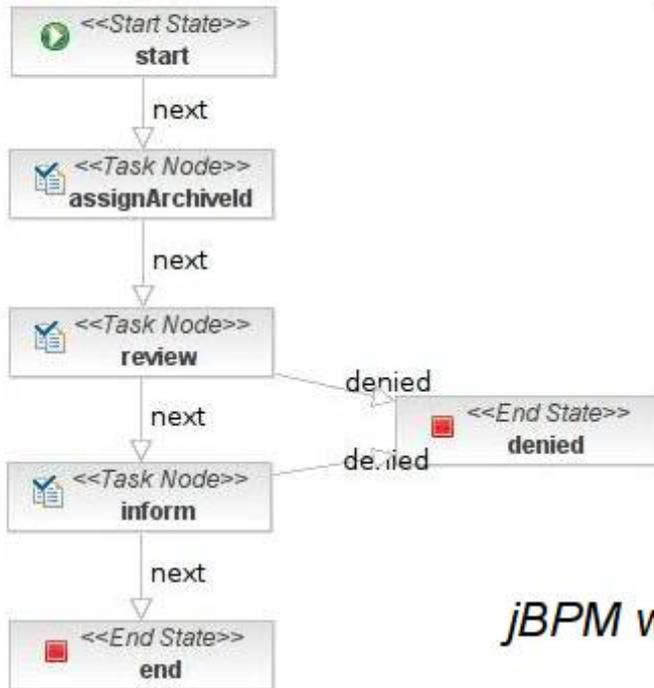
- Central repository for all granted permits
- Seam web application to retrieve and update data
- Keeps track of personal information and relationships
- Keeps track if people have passed necessary tests
- Keeps track of companies information
- Used to fight fraud and cheaters
- Queried by the case management application via WS

Layers overview



Components overview





jBPM workflow + Saksapp configuration = web process

Hjem | Brukerstøtte | Admin | Logg ut

✓ Godkjenne Skjema | ✓ Aktør | Vurdering av vedlegg | Innhente uttalelser | Komplett søknad | Innstilling | Forhåndsvarsel | Send vedtak

Ran Dom 12247006 01.mar.2009 23:17:28 Skjenkebevilling NOARK saknummer qwqwqw status påminnelse Merk som godkjent

Vurdering av vedlegg

+ Legg til

Firmaattest for alle selskaper som er involvert i driften av skjenkestedet(Brønnøysundregistrene)

Utskriftsdato

Meldinger | Instruksjoner | Notater

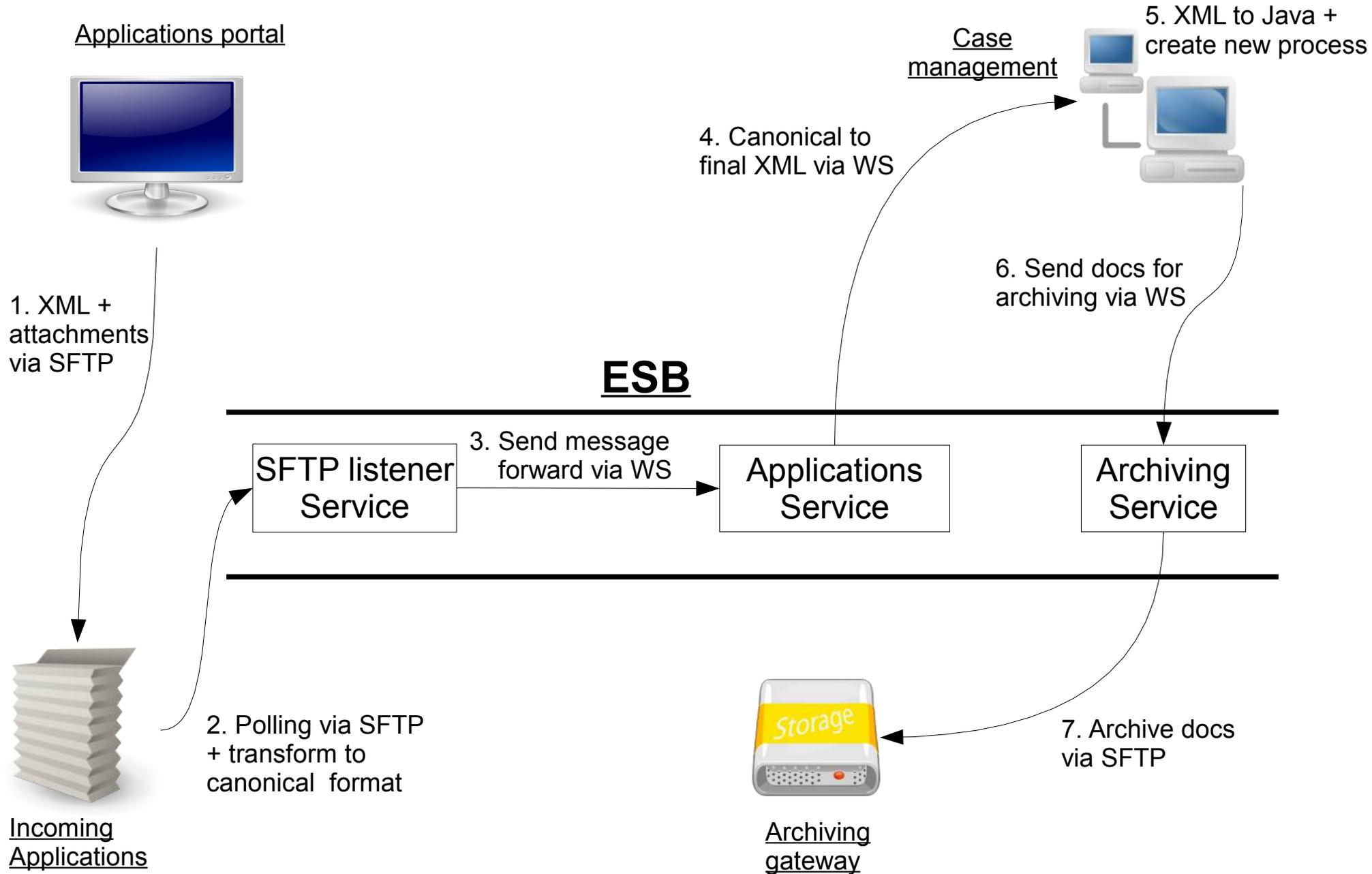
Systemmeldinger

- Application reminder!

Prosessmeldinger

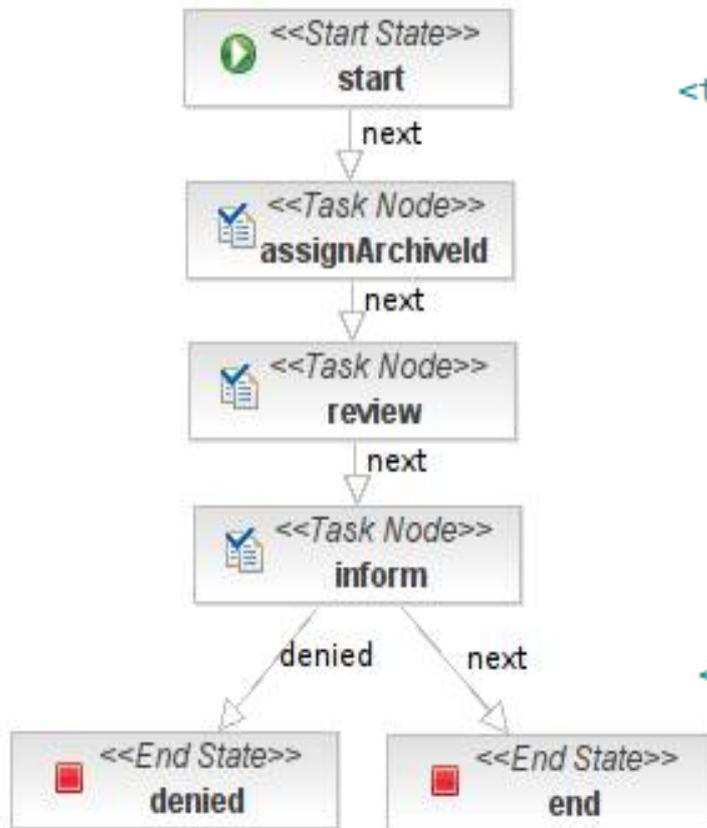
The ESB

- Transformations (smooks)
- Extensibility
- Routing (not used yet but needed if several Case Management servers)
- Overview of messages flow (next slide)



jBPM

- Project history: first full BPM vision then only steps with back and forth allowed
- The processes - Tasks vs nodes



```
<task-node name="review">
  <event type="node-enter">
    <action expression="#{attachmentHandler.setup}"></action>
  </event>

  <task name="10-reviewInput" swimlane="handlingOfficer"></task>
  <task name="20-reviewActors" swimlane="handlingOfficer"></tas
  <task name="30-reviewAttachments" swimlane="handlingOfficer">
  <task name="40-sendRulingInfo" swimlane="handlingOfficer"></t
  <task name="50-reviewStatements" swimlane="handlingOfficer"><
  <task name="60-overallAssessment" swimlane="handlingOfficer">

  <transition name="next" to="inform"></transition>
</task-node>
```

jBPM processes

- Several process versions can run at the same time
- Deploying processes (here via Seam in components.xml but also via jBPM console or programmatically)

```
<bpm:jbpm>
  <bpm:process-definitions>
    <value>Enkeltanledning.jpdl.xml</value>
    <value>Salgsbevilling.jpdl.xml</value>
    <value>Serveringsbevilling.jpdl.xml</value>
    <value>Skjenkebevilling.jpdl.xml</value>
    <value>Motorferdsel.jpdl.xml</value>
  </bpm:process-definitions>
</bpm:jbpm>
```

jBPM tables

ID_	CLASS_	NAME_	DESCRIPTION_	VERSION_	ISTERMINATIONIMPLICIT_	STARTSTATE_
1	P	EnkeltanledningDrammen	NULL	1	b'0'	1
2	P	EnkeltanledningOslo	NULL	1	b'0'	7
3	P	SalgsbevillingDrammen	NULL	1	b'0'	13
4	P	SalgsbevillingOslo	NULL	1	b'0'	19

JBPM_PROCESSDEFINITION

ID_	VERSION_	KEY_	START_	END_	ISSUSPENDED_	PROCESSDEFINITION_
1	1	1010085	2009-07-23 15:49:59	NULL	b'0'	8

JBPM_PROCESSINSTANCE

ID_	NAME_	DESCRIPTION_	PROCESSDEFINITION_	TASKNODE_	SWIMLANE_
1	assignArchiveld	NULL	1	2	1
2	40-sendRulingInfo	NULL	1	3	1
3	50-reviewStatements	NULL	1	3	1
4	30-reviewAttachments	NULL	1	3	1
5	10-reviewInput	NULL	1	3	1
6	20-reviewActors	NULL	1	3	1
7	60-overallAssessment	NULL	1	3	1
8	70-reviewRulingStatements	NULL	1	4	1
9	80-sendRuling	NULL	1	4	1

JBPM_TASK

Integration jBPM/SEAM

- Seam components giving access to jBPM objects
- jBPM groups for permissions
- jBPM components in Seam (in org.jboss.seam.bpm)
 - PooledTaskInstanceList - taskInstanceList
 - ProcessInstance – TaskInstance
 - jbpmContext
 - `BusinessProcess.createProcess(definition.getName(), false);`
 - More!
- Dynamic pathway controlled by jBPM task names and process name for the URL

Front end & JSF/JQuery

- Dynamic pathway
- Mark step as approved
- When a jBPM task is finished, corresponding pages are read-only
- Modal windows + ajax + javascript = nice UI
- All this glued thanks to Seam

The screenshot displays a web application interface. At the top, there is a horizontal process flow bar with eight steps: 'Godkjenne Skjema' (checked), 'Verifisering av opplysninger om aktør' (checked), 'Vurdering av vedlegg', 'Komplett søknad', 'Innhente uttalelser' (active), 'Beslutningsgrunnlag i saken', 'Forhåndsvarsel', and 'Send vedtak'. Below this, a dark header bar contains user information: 'Ola Nordmann 10100850090 02.aug.2009 15:41:20 Enkeltanledning NOARK saksnummer 1122', along with buttons for 'status', 'påminnelse', and 'Merk som godkjent'. The main content area features a blue header for the task 'Innhente uttalelser' and a 'Legg til' button with a plus icon. On the right side, there are three tabs: 'Meldinger', 'Hjelpetekst', and 'Notater'.

Business benefits of using these technologies

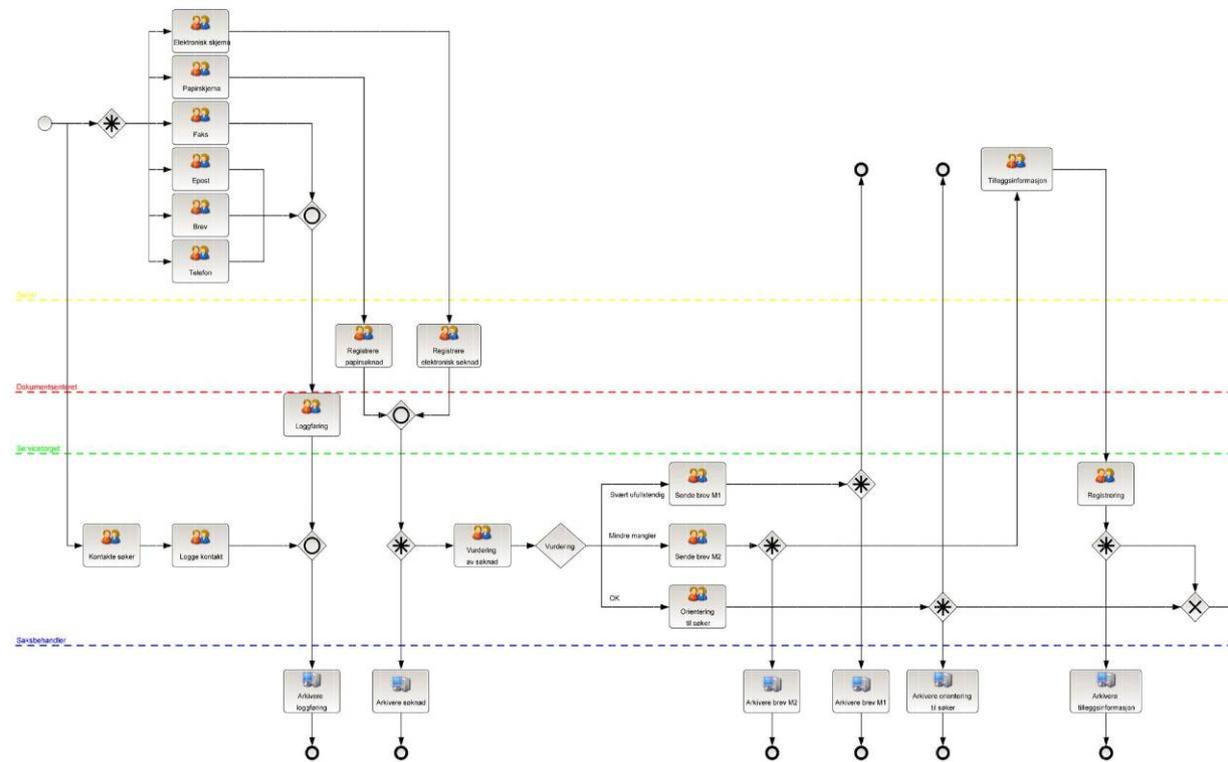
- Created a framework for handling almost any process for any county nationwide
- Adding a new county using existing process takes 3 clicks!
- Adding new processes only requires new message definitions in the ESB, new jBPM and xhtml files
- Flexibility to get functionality via the bus (e.g. authentication against LDAP server)

Lessons learned: what worked

- jBPM/SEAM integration gave us flexibility
- JBoss stack well integrated together (ESB, jBPM, Seam, Drools,...)
- JQuery
- Strict change handling regime due to fixed price project
- Agile handling of unplanned "biggies"
- Visual specs aka static prototype



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Ola Nordmann 10100850090 02.aug.2009 15:41:20 Enkeltanledning NOARK saksnummer 1122 status påminnelse Merk som godkjent

Innhente uttalelser

+ Legg til

Meldinger

Hjelpetekst

Notater

Lessons learned: what did not work

- Customer testing
- No contact with end users
- TestNG
- Configure JBoss to use MySQL as internal DB
- JBPM Web Console

QUESTIONS?

**TELL US WHAT YOU THINK:
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