Developers guide to server-side productivity

A flight through the landscape of feature sets, technologies and Open Source implementations

Motivation

- Increase productivity and quality of software
- Empower developers to have more fun
- All this achieved by making better decisions

About us

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Agenda

- What challenges are we facing
- A brief look at potential aid
- Case study
- Conclusion
- Q&A

What challenges are we facing

There can only be one!

- It is a myth!! - Example: J2EE
  - 1997 - superhot! All vendors(-Microsoft), all hotshots super stoked!
  - 1998 - Pet store. Statefull FUD. Year of EJB benchmarking.
  - 2000 - Hotshots turn against EJB. No silver bullet (again)
  - 2002 - Year of Spring in early adopters markets (Norway)
  - 2005 - Hotshots turn agains Spring and Java web development. Look at RAILS!!
  - 2009 - Hotshots turn agains Rails. Look at Scala and Lift.

There can only be one!

- There are plenty of examples:
  - RDBMS
  - Web applications
  - .Net
  - Windows
  - SOA and Web Services
  - HTTP RPC (REST)
  - [...]

There can only be one!

- Conclusion:
  - There is no silver bullet.
  - Use the brain, Developer!
  - Fun to follow the hype - but it does not create value
  - Different problems require different solutions (like in the rest of the world)

Decisions, decisions, decisions

Soa EJB ORM JPA

JDO JINI

Decisions, decisions, decisions

- How to make BAD decisions in this chaotic landscape:
  - Psycological aspects
  - Cultural aspects
  - Corporate policies
- Is there a better way?

Psychological aspects

- Fear of making wrong decisions:
  - Sartre: "Med valg følger angst"
  - "Nobody evers been fired for choosing IBM"
  - "You can´t go wrong with beige"

Company policies and decisions

- Thou shal only use Java/J2EE/.NET/LAMP[...]!
  - Reduces the value created from technology (50-90%)
    - Increases the startup and training costs (30-200%)
- You create a VERY big hammer that must be used for ALL tasks: hitting nails and changing lightbowls.

Company policies and decisions

- Special considerations regarding training costs.
  - Company policies increase them!
  - Using inadequate tools create solutions that are hard to understand. Training debt!
  - When problems seems hard to solve
    - Stop and think: Am I using the right tools for the job?

Company policies and decisions

- Special considerations regarding
    - Will you let your

Culture and religion

- Polarization
  - Lightweight vs Suites
  - Linux vs Microsoft
  - Remember: There can be only one!
- A religion war!
  - Easier to get attention when crying out loud.
  - Most effective way to create a revolution.

Decisions, decisions, decisions

- Context : f.eks Artikkelbase til publisering.
- Teknologi : f.eks CMS
- Implementasjon f.eks OpenCMS

How do you make decisions

- Read the white pages? (CMS matrix)
- Try out demos (CMS eksempelet?)
- Create prototypes?
- Expericence (own or others)?
- Implementere to løsninger?
- (vurdere en slide seinere som tar for

A brief look at potential aid

A counter measure to faith, culture and religion.

- We need some kind of help in order to resist the temptation of religion!

Categorization and exemplifying solutions.

- To make good selections, we need to categorize the problems and contexts
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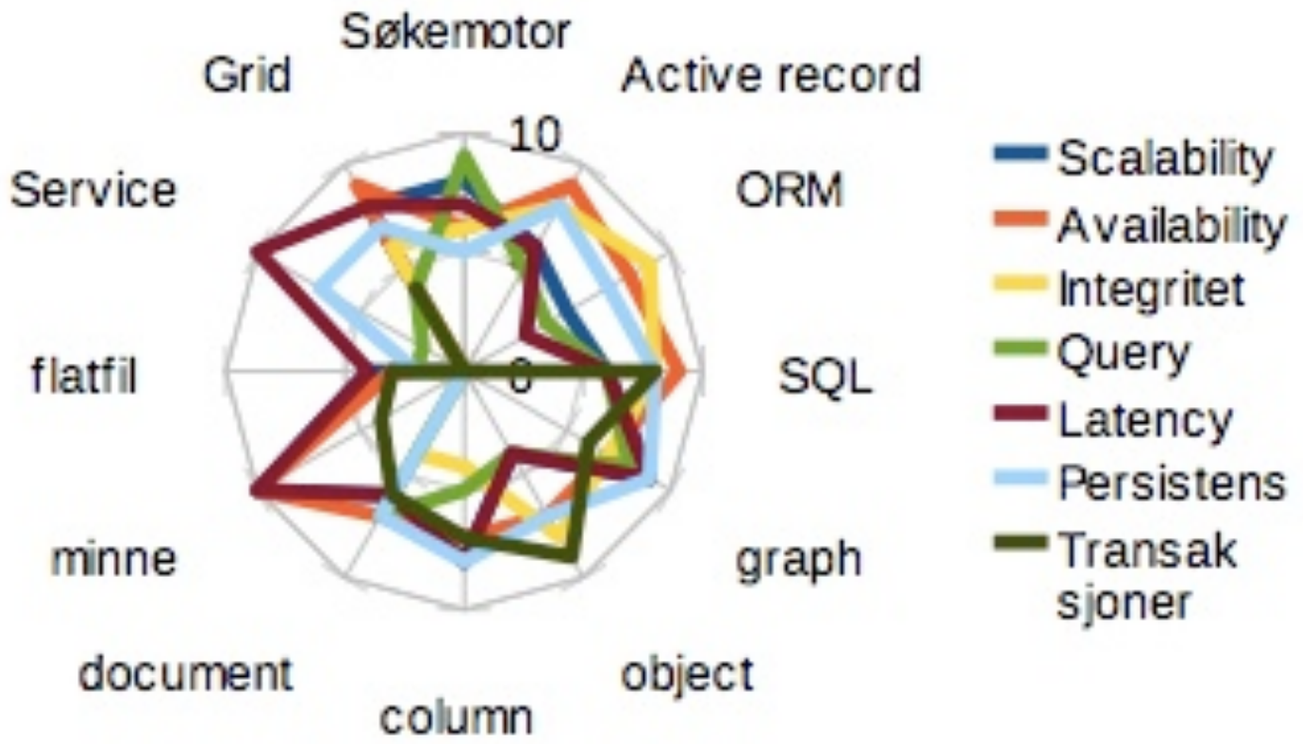
State

- Lets look at which strategies we have regarding handling state in server-side systems

Datastyles

- And what are our options redarding datamodels?

Landscapes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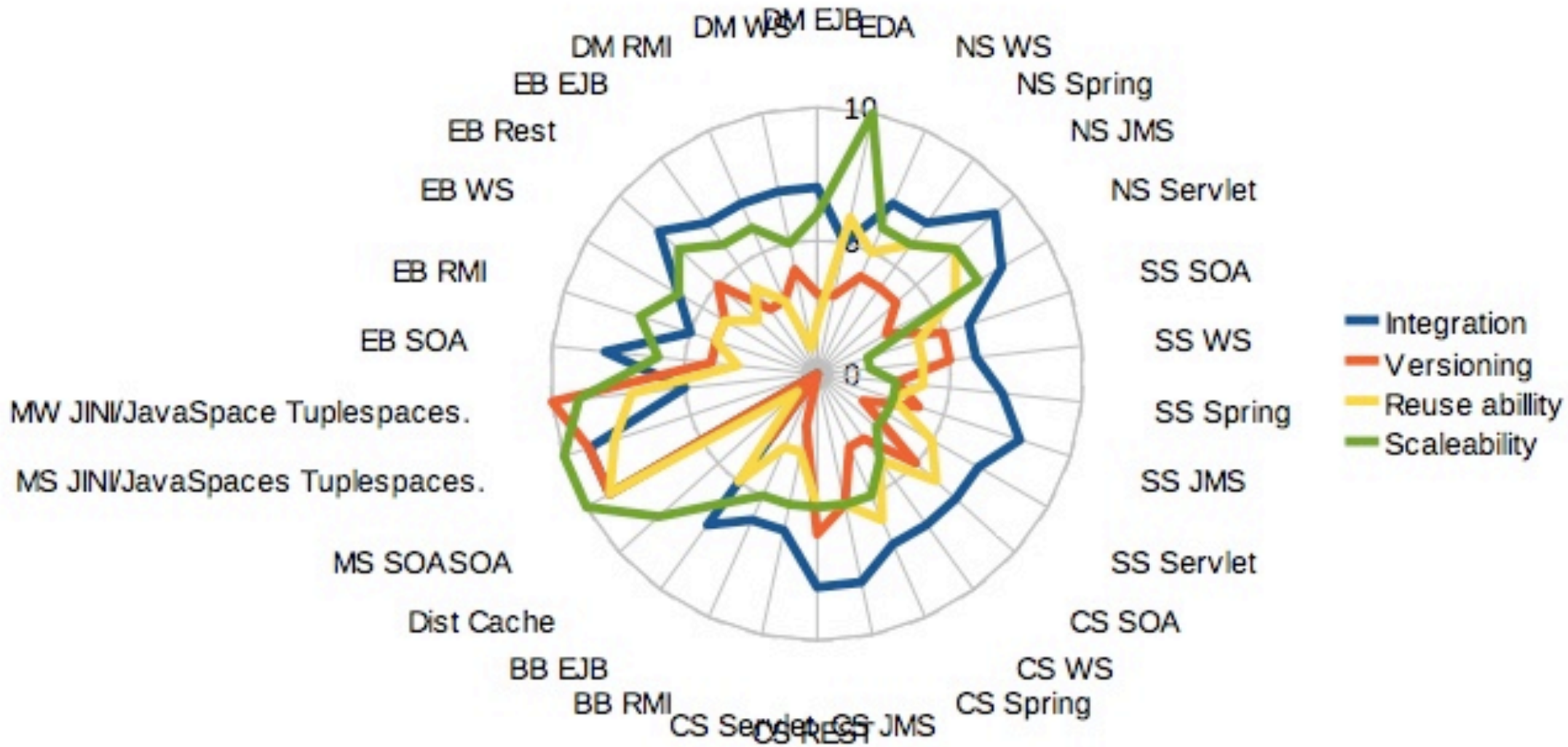
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NS Spring
EB Rest
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NS Servlet
EB RMI
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EB SOA
SS WS
MW JINI/JavaSpace Tuplespaces.
SS Spring
MS JINI/JavaSpaces Tuplespaces.
SS JMS
MS SOASOA
SS Servlet
Dist Cache
CS SOA
BB EJB
CS WS
BB RMI
CS Spring
CS Servlet
CS JMS
CS REST
10
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Integration
Versioning
Reuse abillity
Scaleability

Case 1

- Web-based customer system for department in large enterprise (10k+ emp.)
- Existing database
- No suitable API´s to integrate with.
- Yet another database mirror through a web gui.

Which translates to the following features:

- Database layer
  - No though requirements in Scalability, Availability, Integrity, Query functionality, Latency, Persistence and transactions.
- Service layer
  - No though requirements in Integration, versioning, reusability, scalability.
- We are free to choose **fun** and **productivity**!

Decisions, decisions, descisions

- Context:
  - Driftsmiljø er i Java.
  - All developers know Java.
  - Corporate policy sier Java, Oracle og JPA.

- Valget er vel lett?

JAVA?

- Valgt et verdet?

nei og nei og nei.

- Til formålet finnes betydelig bedre verktøy.
- OG
- Husk corporate policies og opplæringsgjelden.

Andre alternativ

- Groovy and Grails
  - Fokus på høy produktivitet.
  - Gjenbruk av eksisterende Java-rammeverk.
  - ORM støtte gjennom GORM
  - Integerer sømløst med java.
  - Integerer sømløst med java
  - God XML støtte (grails)

- Ruby og Rails
  - Svært enkel ORM gjennom Active Record.
  - Integerer med java gjennom jRuby

- Scala og Lift
  - Svært god XML støtte
  - Støtte for active record.
  - Productivity i fokus.
  - Sterk typing.

Valget blir tatt:

- Ruby og Rails.
  - Har ikke noe fornuftig API å integrere mot. ActiveRecord gjør susen.
  - Enkelt og greit å få opp en liten formålstjenelig web app
  - Kan deployes på eksisterende infrastruktur.

Så hva skjer...

- Systemet ble en suksess.
  - Gav stor verdi på kort tid.
  - Lav investering.
  - Glade utviklere og brukere.

Flere vil ha

- Andre avdelinger vil ha sine kunder inn i systemet.
- Landskapet endres:
  - Flere databaser.
  - Forskjellige kundestrukturer
  - Standardsystemer med overnormalisert database.

Konsekvenser

- Ikke master for egne data:
  - Ingen oppdatering av kunder.
    - Delete skjer ikke.
- Endringshyppigheten går i taket.
- Forskjellig krav til oppetid
- Behov for konsolidering av data.

Så hva gjør vi?

- Frontend: Ikke stort.
- Backend: Mye.

Beholde Active record?

- "An object that wraps a row in a database table or view, encapsulates the database access, and adds domain logic on that data.“
- Greit som sugrør ned i datakilden... men løser ikke noe mer en det.

Men hva med standardsystemer?

- Generiske strukturer.
- Key value pairs.
- Glem ORM.
- Og ikke gjør databaseintegrasjon.
- Se etter API-er...

Løsningen

- Bruk adekvate verktøy!
  - ORM der det passer.
  - API-er der det passer.
  - Skriv mappinglogikken selv.

Ikke generaliser før du vet hvorfor du skal generalisere

Conclusion