



Petr Hošek @petrh

CZJUG, December 2010

Why do we need another web framework?

„Foursquare switched over to Scala & Lift last year and we've been thrilled with the results. The ease of developing complex interactive AJAX web pages enabled very rapid port from our previous platform.“

Harry Heymann, foursquare™

„Lift is the kind of web framework that enables you as a developer to concentrate on the big picture. Strong, expressive typing and higher-level features like the built-in Comet support allow you to focus on innovating instead of the plumbing. “

David LaPalomoto, **Novell**.

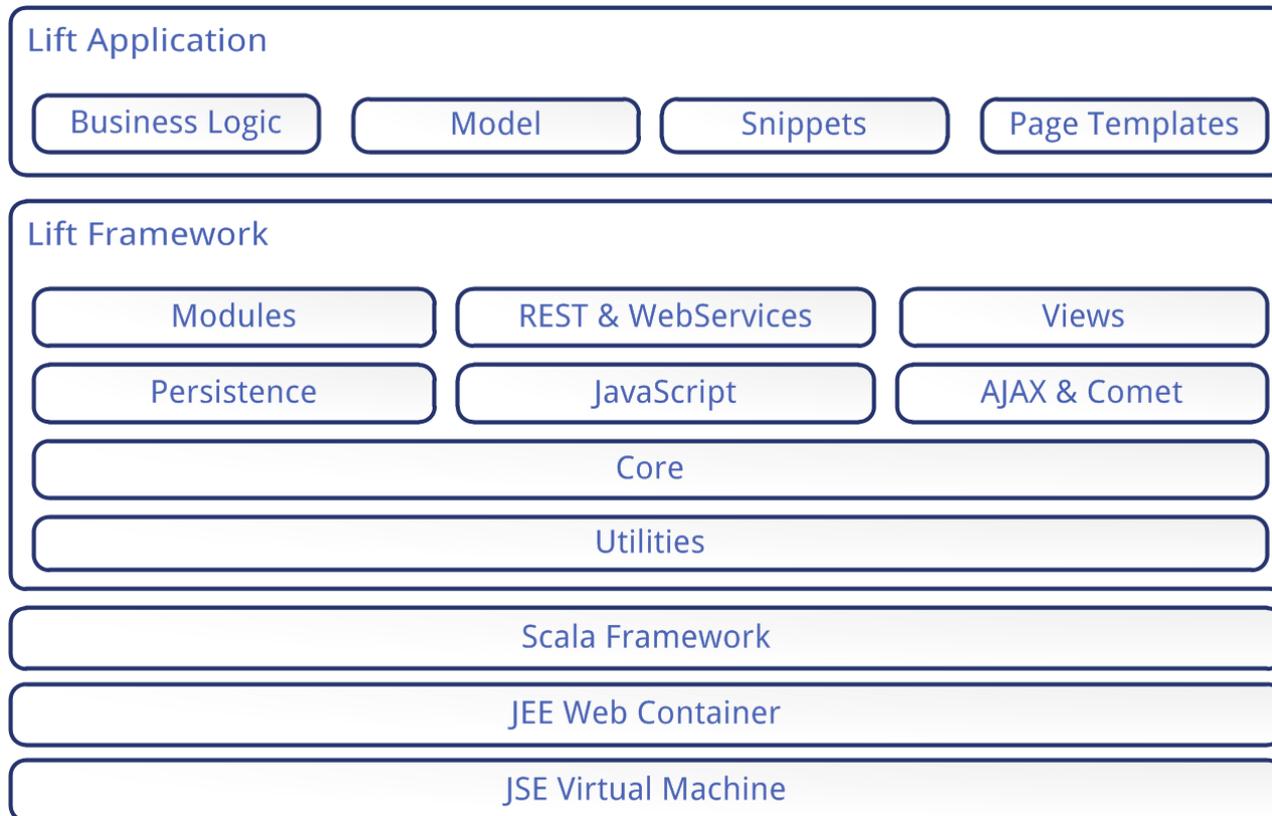
„Lift is the only new framework in the last four years to offer fresh and innovative approaches to web development. It’s not just some incremental improvement of the status quo, it redefines the state-of-the-art. If you are a web developer, you should learn Lift. “

Michael Galpin,  eBay®

„The fact that Lift-based applications run unchanged on the SAP's NetWeaver CE Java application server makes this an intriguing approach for enterprise applications in the SAP world.“

Darren Hague, 

# Overall View



Expressive elegant web framework  
Combines best of other frameworks

seaside 



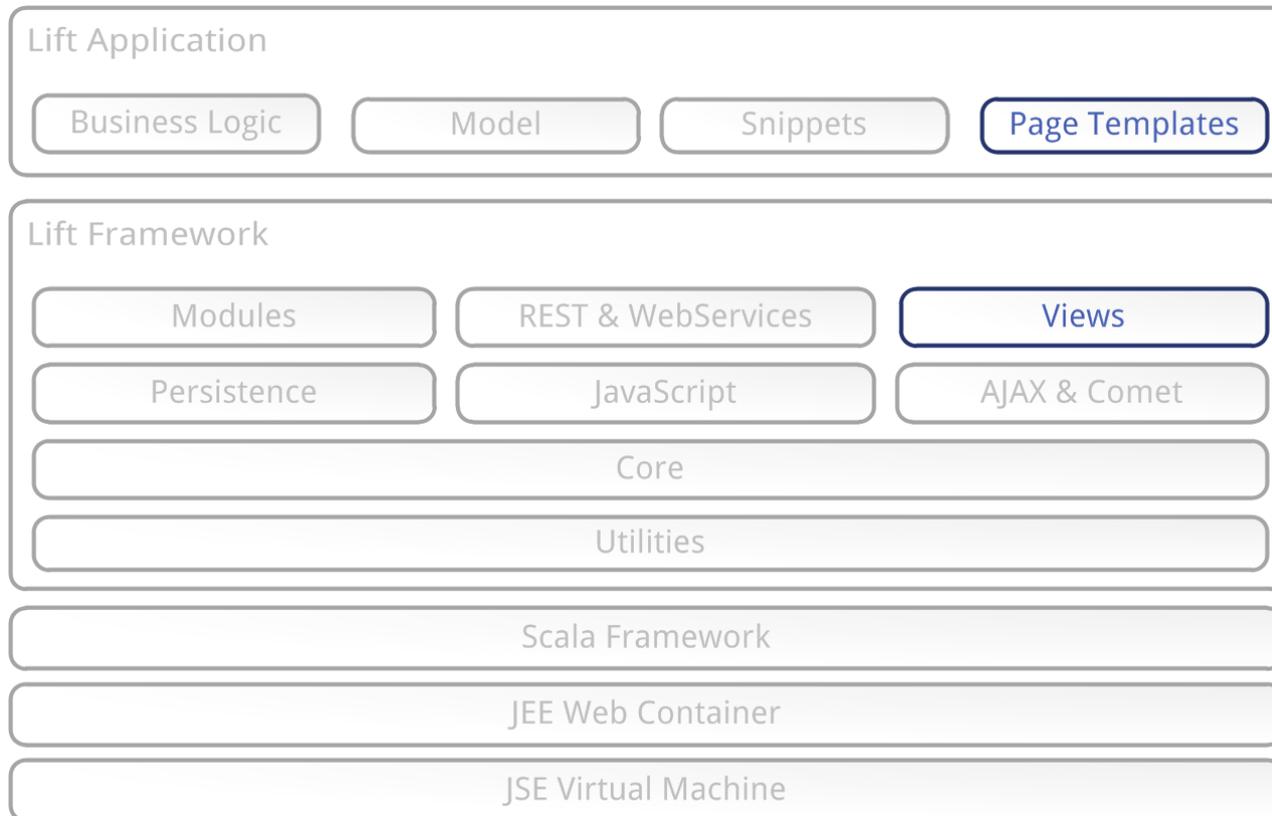
django



Powered by  **Scala** language

Modern object-functional JVM language

# View First Approach



## *View-Driven Development*

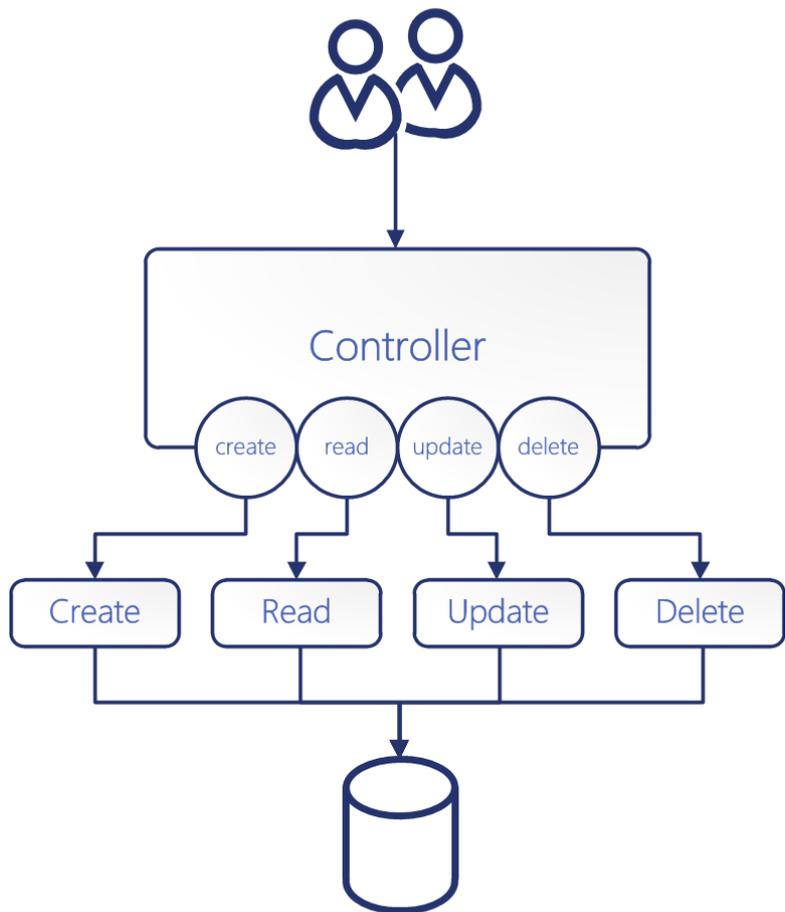
Similar to MVC but not exactly the same

No business code allowed in the view

Usually represents „seep“ of business logic

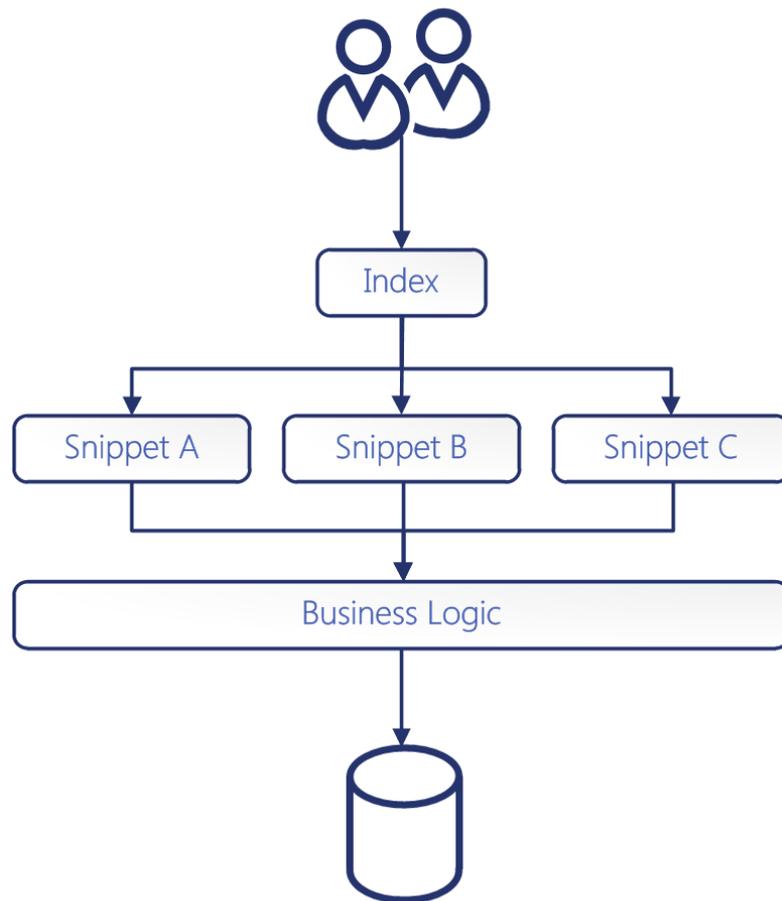
Designer friendly markup content

Views are well-formed XHTML/HTML5



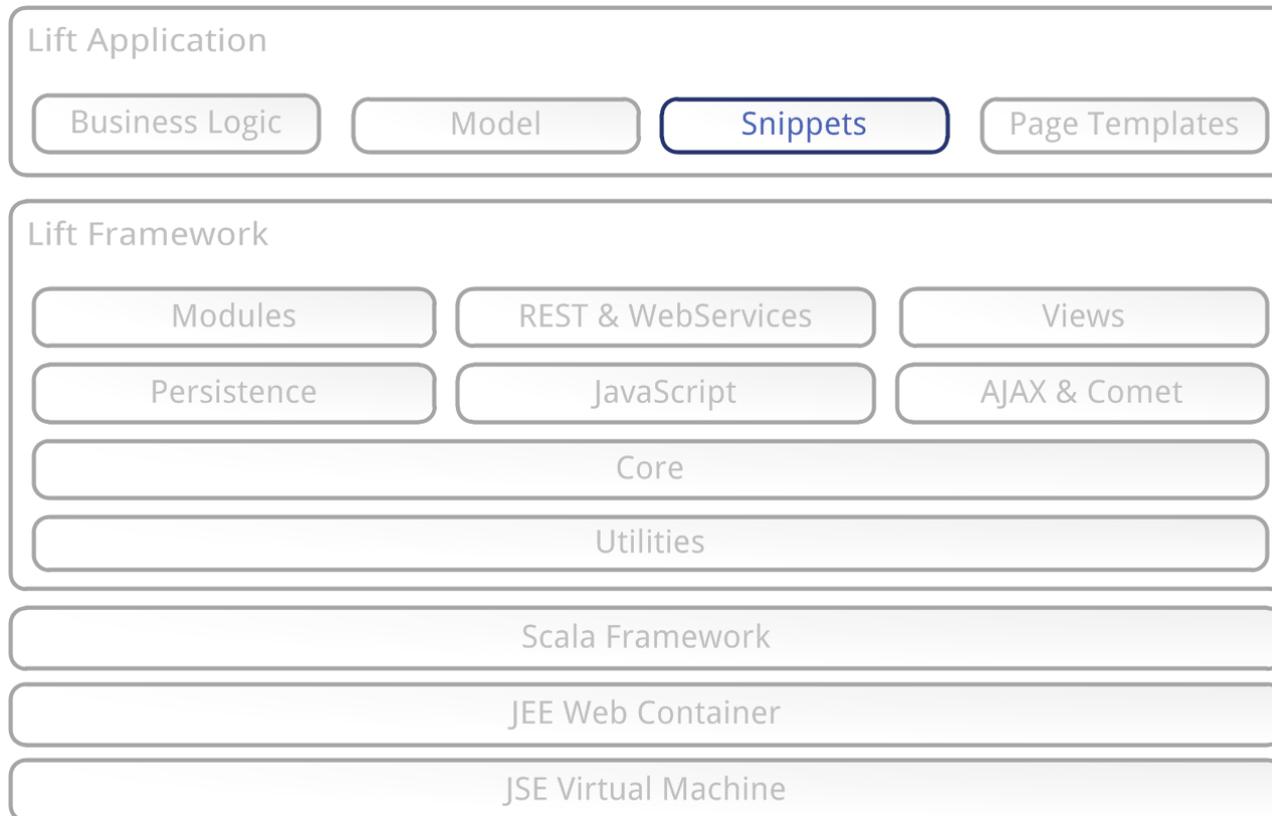
Model-View-Controller

VS



View-Driven-Development

# Snippets



Snippet provides rendering logic

Called arbitrarily times on multiple pages

Snippet is Scala class or object

Functions transforming sequence of XML nodes

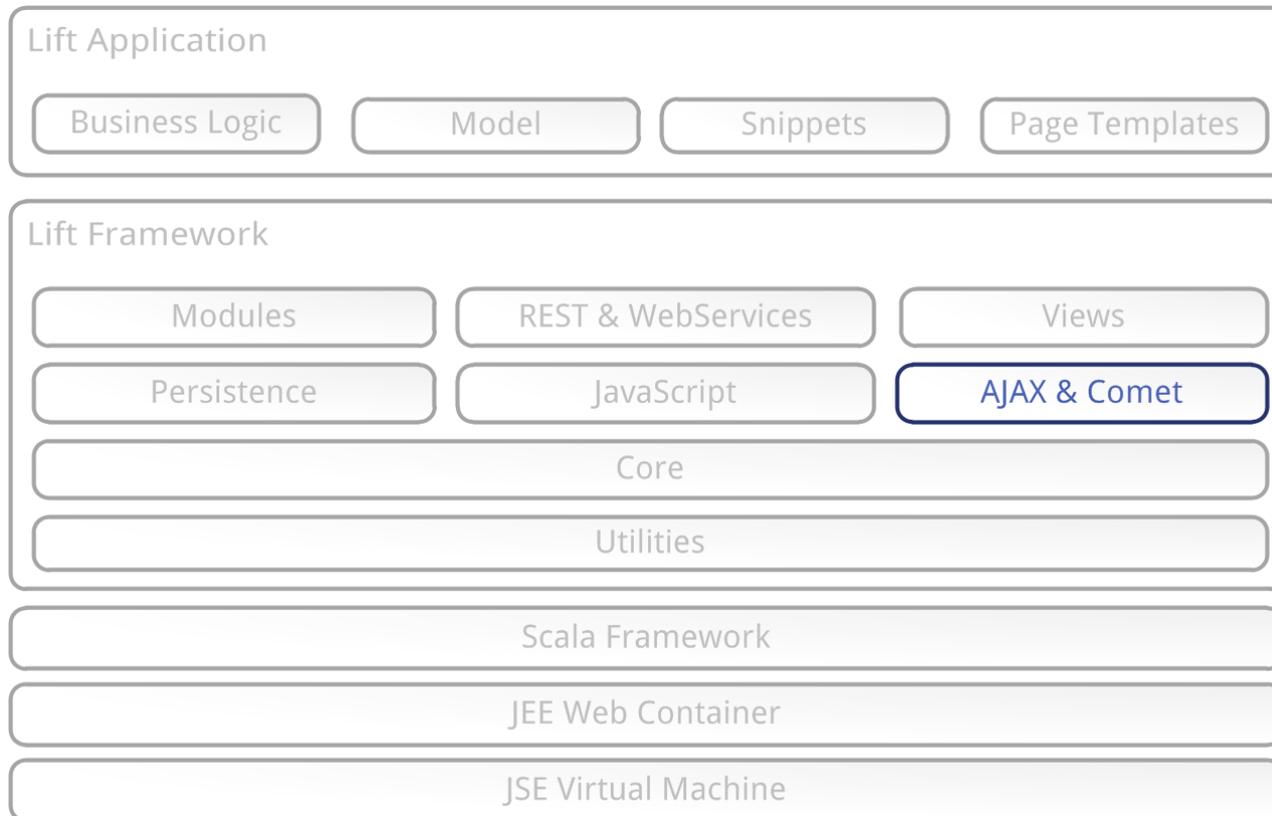
Snippets can be stateful or stateless

Using session affinity

No hidden magic or code plumbing

Everything is just well designed

# AJAX & Comet



Native support for AJAX and Comet

Probably best support available today

JavaScript becomes Scala functions

Using Scala function callbacks for AJAX

Abstracts underlying JavaScript libraries

Support for JQuery, YUI and ExtJS

## Comet support through Actors

Sending/receiving messages to/from browser

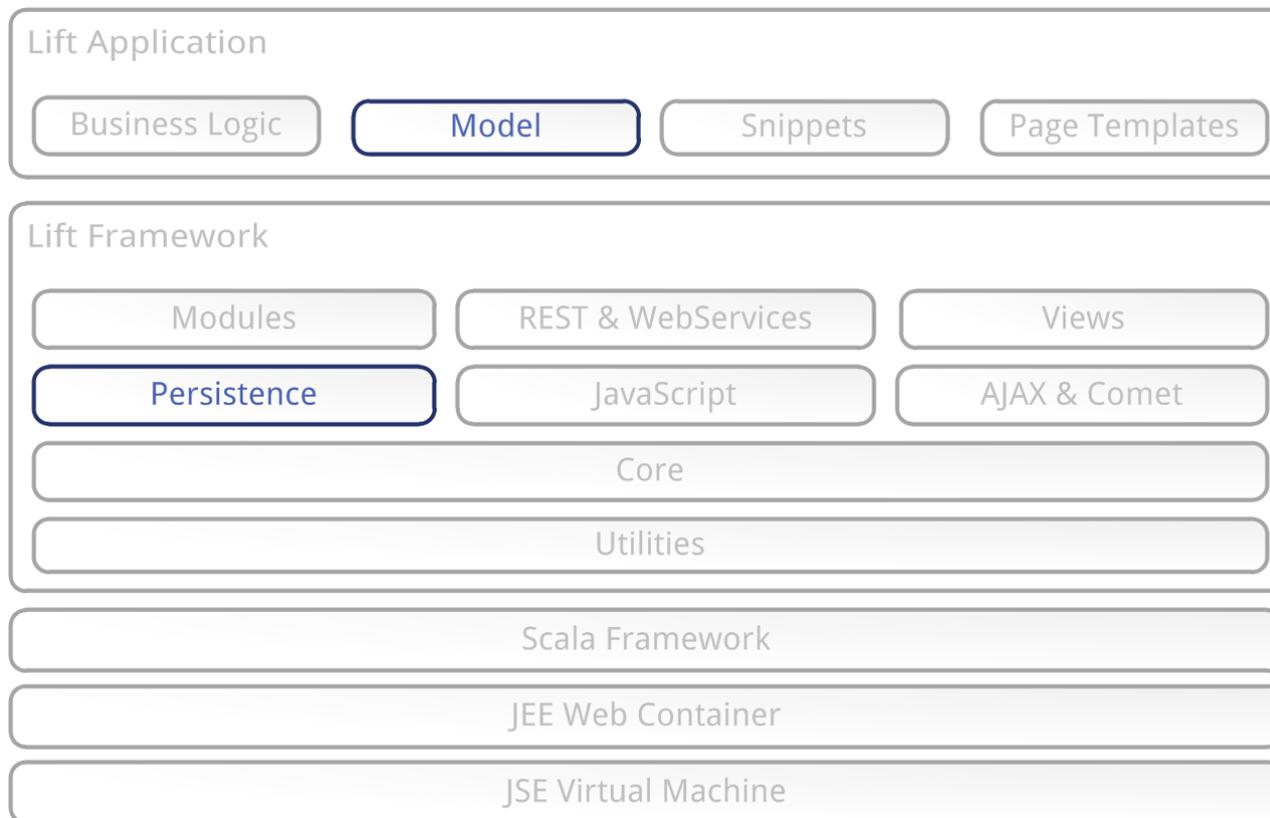
## Utilizes long-polling

Future use of HTML5 web sockets

## Provides inherent security

Using opaque GUIDs for AJAX & Comet URLs

# Persistence Support



*Mapper* persistence framework

Original persistence framework

Lightweight object-relational mapping

Similar design to ActiveRecord

Support for common relational databases

MySQL, PostgreSQL, Oracle Database, etc.

Support for different persistence systems

Hibernate, JPA, etc.

*Record* persistence framework

New store-agnostic persistence framework

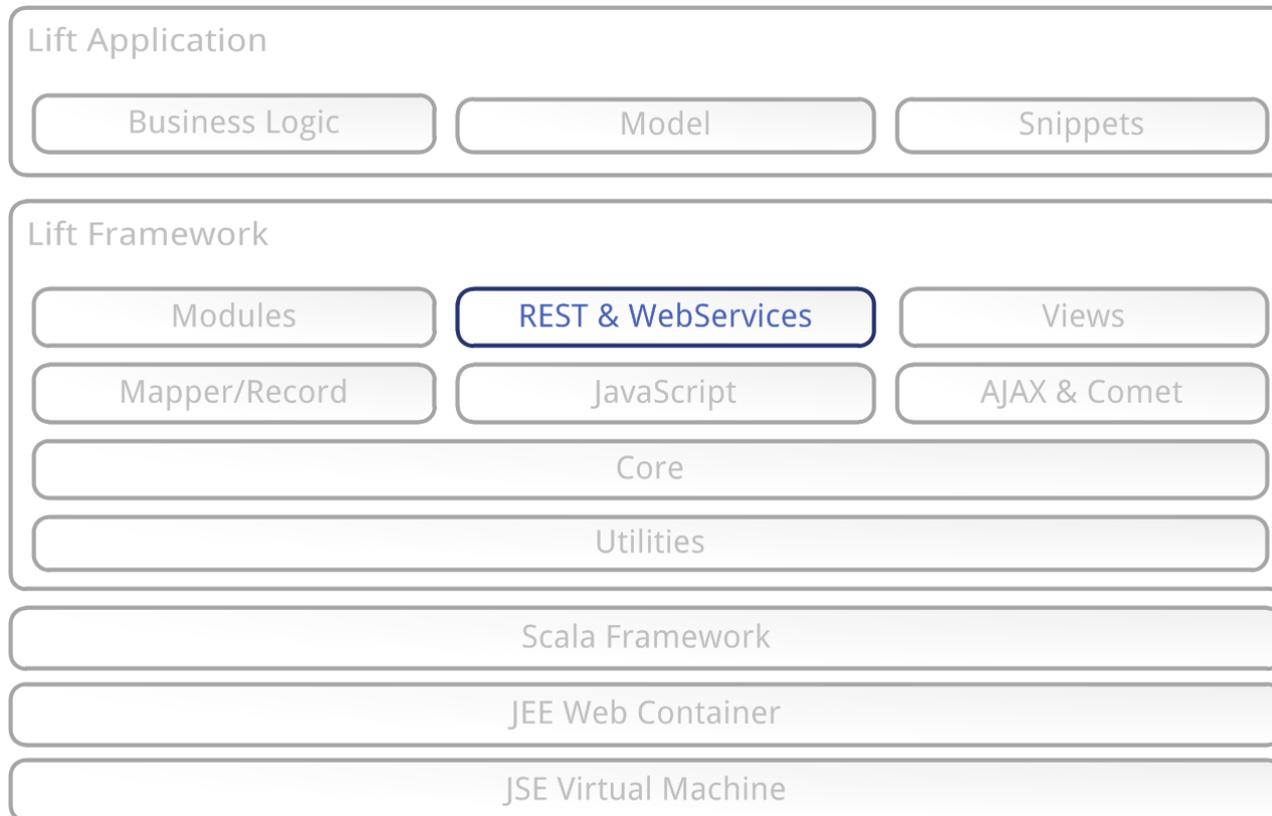
Support for different stores

MongoDB, CouchDB, Squeryl, etc.

Easy to develop custom back-end

Automatic validation,CRUD and REST support

# REST & WebServices



**Built-in REST and Webservice support**

Using either simple DSL or full dispatching

**Both statefull and stateless**

Declarative rules for URI dispatching

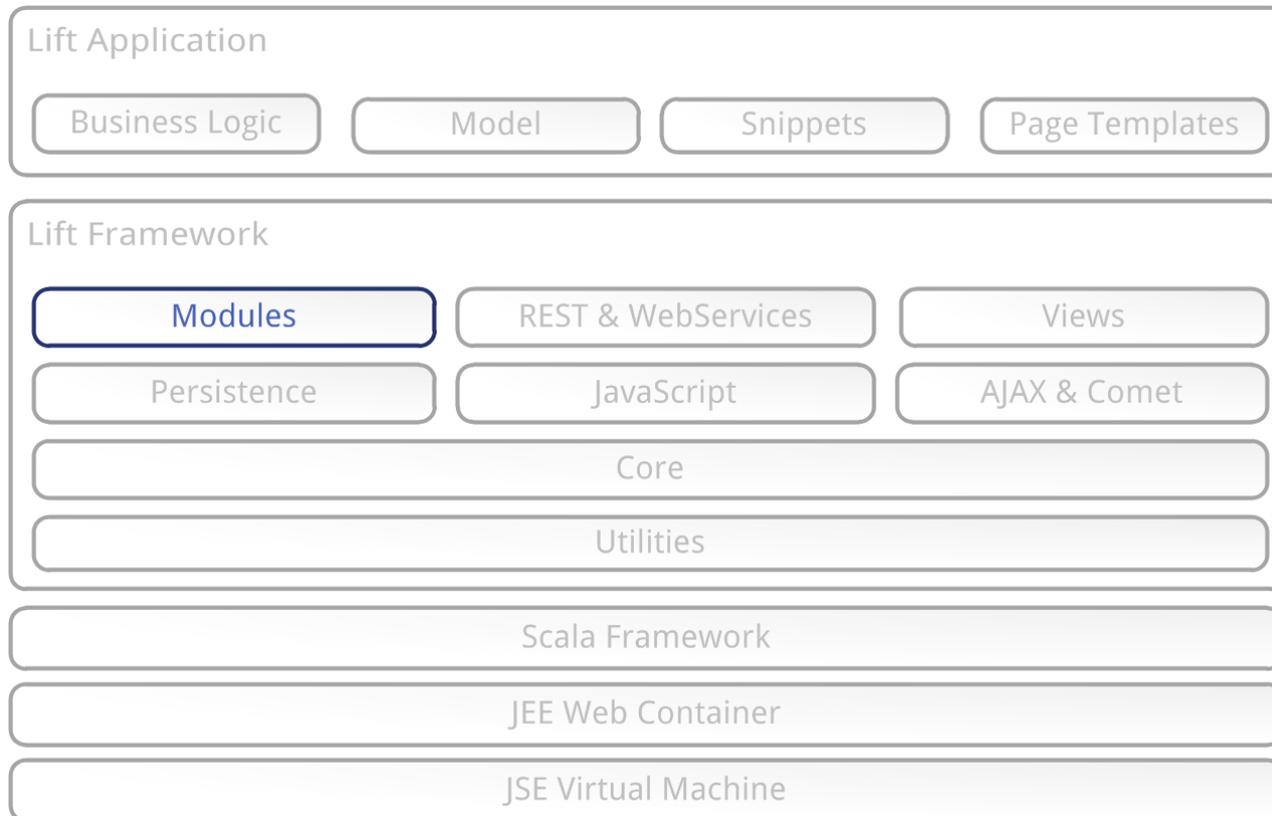
**DSL for JSON construction**

Extremely fast serialization/deserialization

**First-class XML support**

Native part of Scala language

# Modularity



*Lift* uses modular architecture

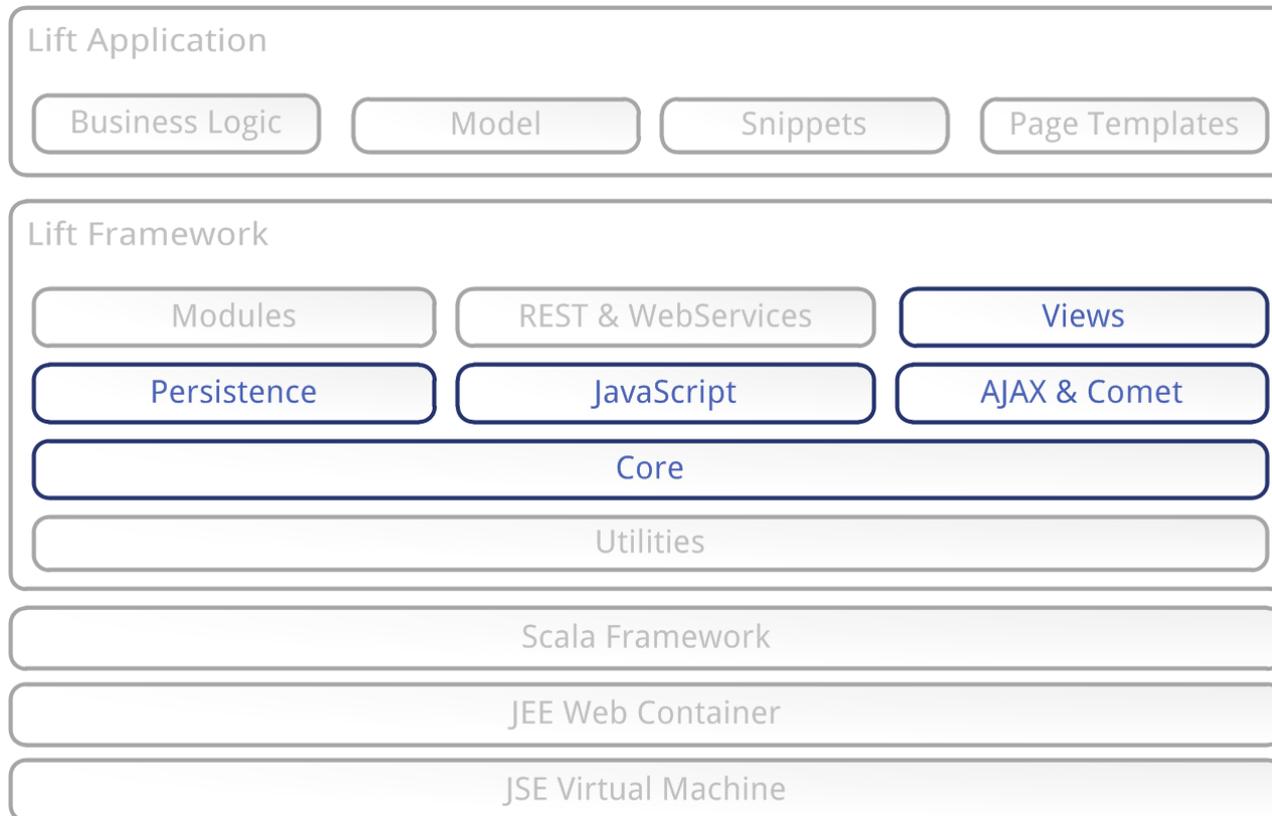
Using Apache Maven artifacts

Many existing modules available to use

Just add dependency into your project

OSGi  
OpenIDAuth  
Wizard  
Imaging LDAP  
JTA Facebook  
AMQP Paypal  
Textile XMPP

# Security



# Out-of-the-box security

No vulnerability from the  OWASP Top Ten

Difficult to introduce vulnerabilities

Developers needs to make an effort

Page elements have opaque GUIDs

Used to reference server components

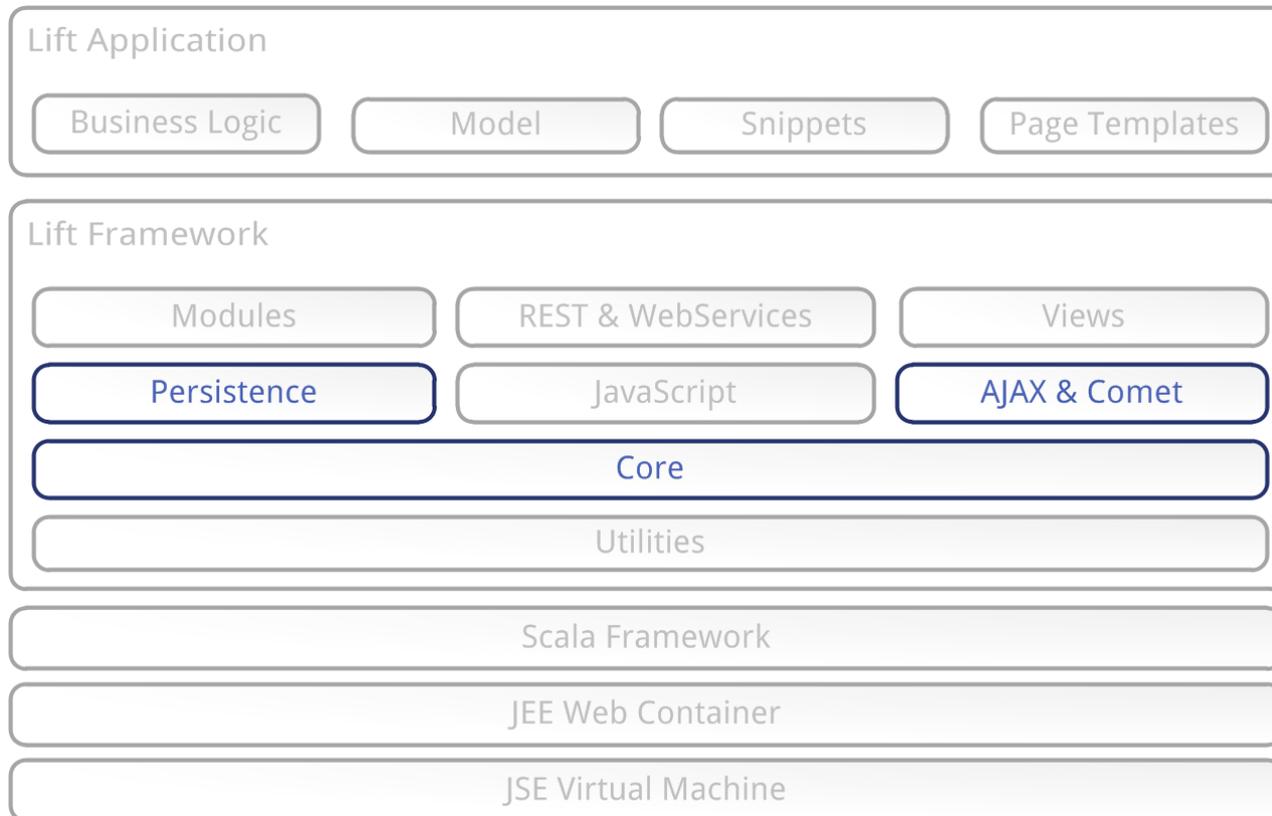
AJAX and Comet use similar GUIDs

Sensitive data are not exposed

Persistence safe from SQL injection

SQL queries sanitization enforcement

# Scalability



Support for database sharding

Using federation of database servers

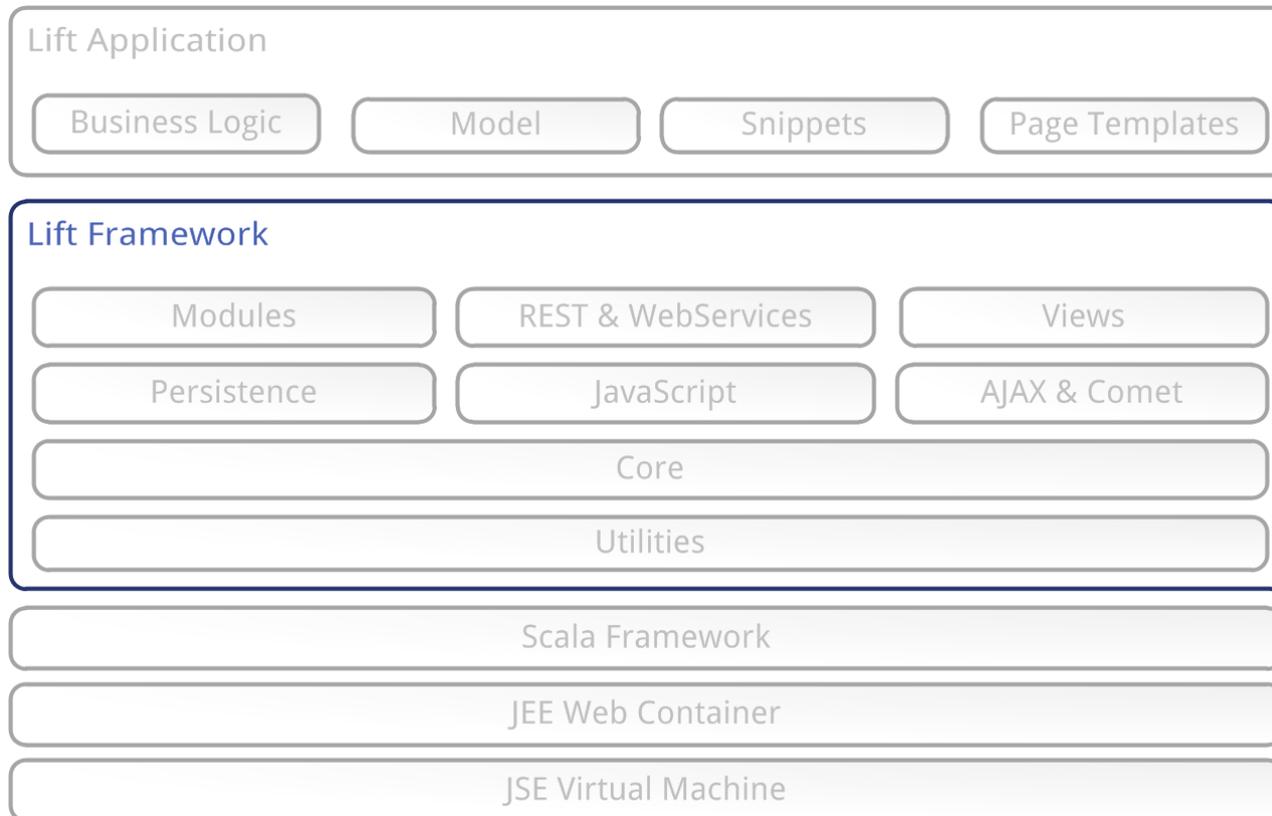
Using non-blocking input/output

Out-of-the-box support for Jetty Continuations

Decoupling threads from requests

Implemented via Scala Actors

# Negatives & Drawbacks



The good, the bad and the ugly

*Lift* has downsides as well

Framework „takes over control“

What is happening in the background?

Documentation is insufficient

Many important details are missing

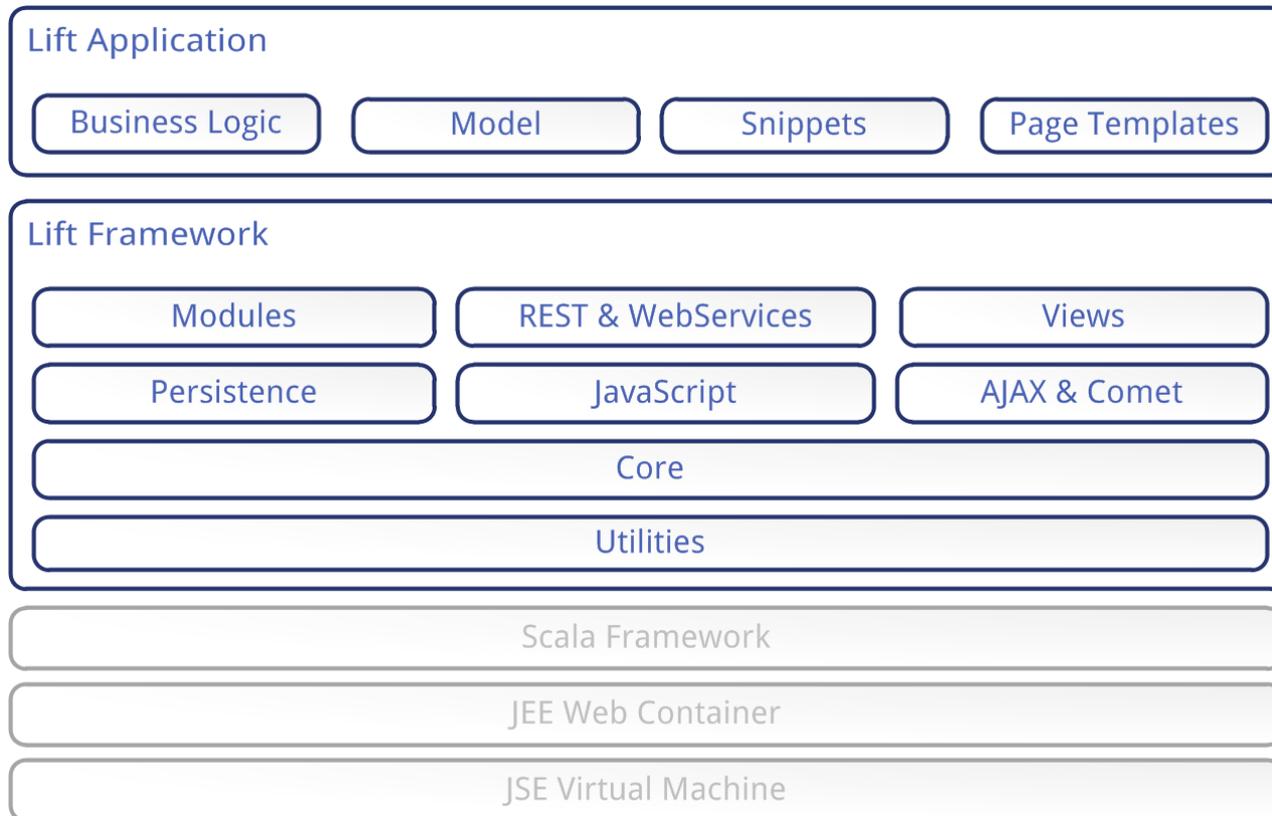
*Exploring Lift* book is incomplete

Upcoming *Lift in Action* book is still in EAP

No direct tool support

Related to insufficient Scala tool support

# Summary



*Lift* makes the web development simple

*Lift* combines many ideas & methodologies

*Lift* has new take on web development

*Lift* is inherently secure

*Lift* has excellent AJAX and Comet support

*Lift* is already proven in the industry



Content adapted from *Lift in Action* book

Timothy Perrett, Manning Publications, 2011

Content adapted from *Exploring Lift* book

Derek Chen-Becker, Marius Danciu and Tyler Weir, 2009

Content adapted from official website [liftweb.net](http://liftweb.net)

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