Simple Pure Java

codeborne
well-crafted software

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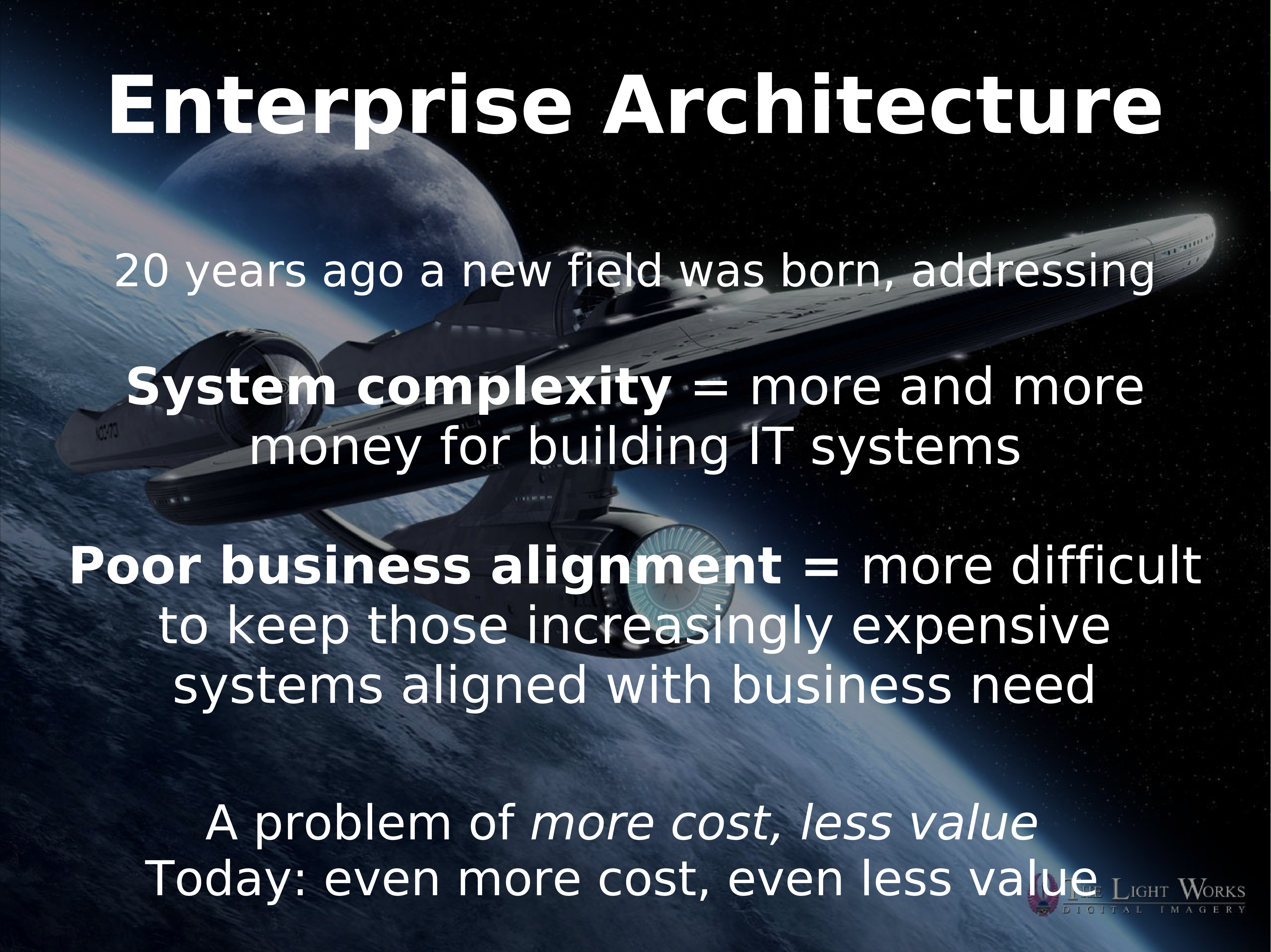
The Enterprise…



Enterprise Architecture

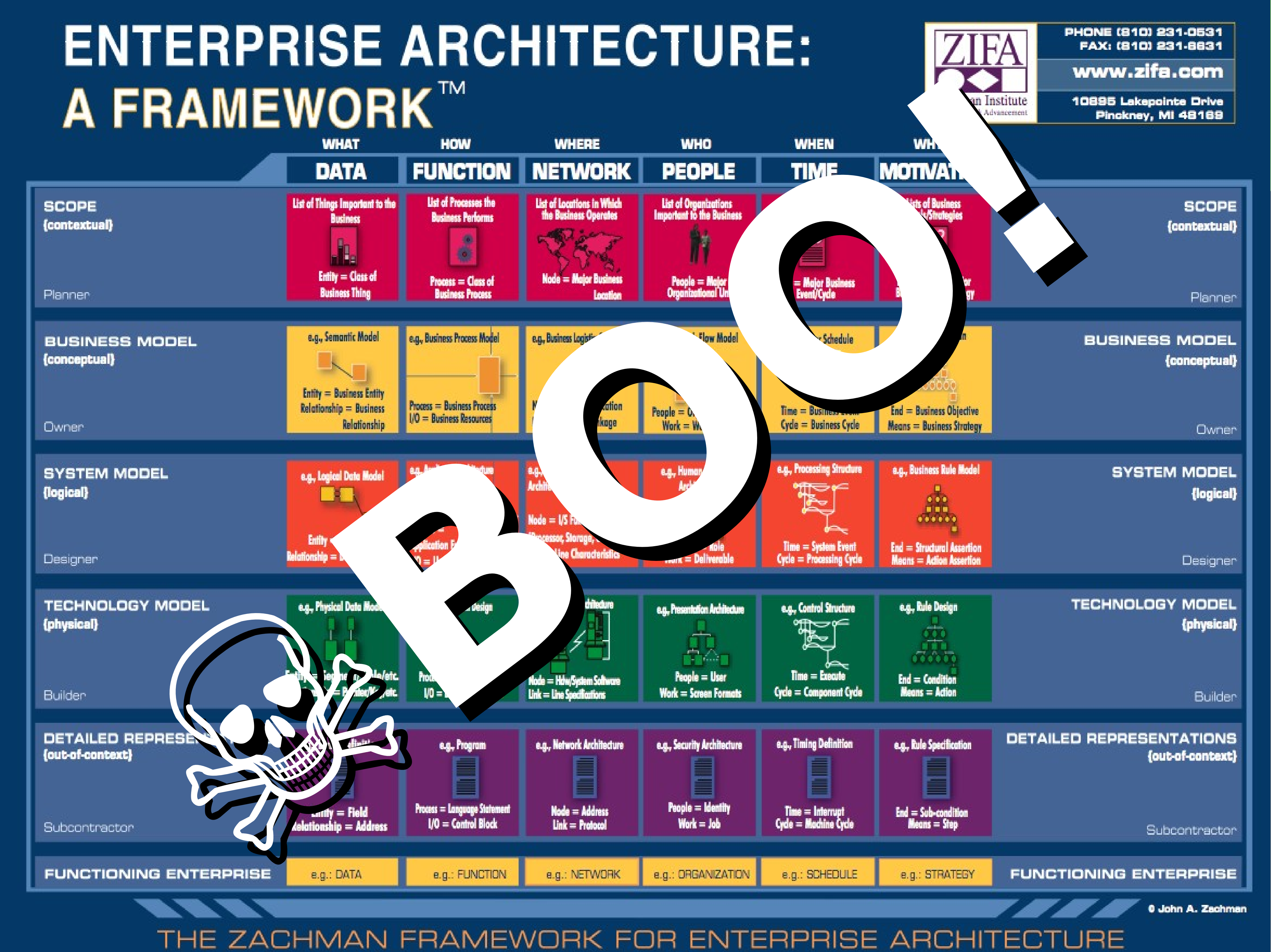
20 years ago a new field was born, addressing

System complexity = more and more money for building IT systems

Poor business alignment = more difficult to keep those increasingly expensive systems aligned with business need

A problem of *more cost, less value*
Today: even more cost, even less value

Complexity



ENTERPRISE ARCHITECTURE: A FRAMEWORK™

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	WHAT DATA	HOW FUNCTION	WHERE NETWORK	WHO PEOPLE	WHEN TIME	WH... MOTIVAT...	
SCOPE (contextual) Planner	List of Things Important to the Business. Entity = Class of Business Thing	List of Processes the Business Performs. Process = Class of Business Process	List of Locations in Which the Business Operates. Node = Major Business Location	List of Organizations Important to the Business. People = Major Organizational Un...	... = Major Business Event/Cycle	Lists of Business ...ls/Strategies ... B... ...or ...gy	SCOPE (contextual) Planner
BUSINESS MODEL (conceptual) Owner	e.g., Semantic Model. Entity = Business Entity Relationship = Business Relationship	e.g., Business Process Model. Process = Business Process I/O = Business Resources	e.g., Business Logi... N... ...ation ...kage	...Flow Model. People = O... Work = W...	...Schedule. Time = Business ... Cycle = Business Cycle	...n. End = Business Objective Means = Business Strategy	BUSINESS MODEL (conceptual) Owner
SYSTEM MODEL (logical) Designer	e.g., Logical Data Model. Entity ... Relationship = ...	e.g., A... ...ture. ...plication F... I/O = ...	e.g., ... Archi... Node = I/S F... (Processor, Storage, ...line Characteristics	e.g., Human ... Arch... ...Role ...Work = Deliverable	e.g., Processing Structure. Time = System Event Cycle = Processing Cycle	e.g., Business Rule Model. End = Structural Assertion Means = Action Assertion	SYSTEM MODEL (logical) Designer
TECHNOLOGY MODEL (physical) Builder	e.g., Physical Data Mod... Entity ...gment/Table/etc. ...Pointer/Key/etc.	...Design. Proc... I/O = ...	...hitecture. Node = Hw/System Software Link = Line Specifications	e.g., Presentation Architecture. People = User Work = Screen Formats	e.g., Control Structure. Time = Execute Cycle = Component Cycle	e.g., Rule Design. End = Condition Means = Action	TECHNOLOGY MODEL (physical) Builder
DETAILED REPRESE... (out-of-context) Subcontractor	...efinition. ...ntity = Field ...elationship = Address	e.g., Program. Process = Language Statement I/O = Control Block	e.g., Network Architecture. Node = Address Link = Protocol	e.g., Security Architecture. People = Identity Work = Job	e.g., Timing Definition. Time = Interrupt Cycle = Machine Cycle	e.g., Rule Specification. End = Sub-condition Means = Step	DETAILED REPRESENTATIONS (out-of-context) Subcontractor
FUNCTIONING ENTERPRISE	e.g.: DATA	e.g.: FUNCTION	e.g.: NETWORK	e.g.: ORGANIZATION	e.g.: SCHEDULE	e.g.: STRATEGY	FUNCTIONING ENTERPRISE

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THE ZACHMAN FRAMEWORK FOR ENTERPRISE ARCHITECTURE

Your average Java (web) app

- Framework(s)
- Model
- Portal?
- Services!
- Remote services, SOA, EJB
- JNDI
- Stubs, generated code
- How many layers?

...

- Patterns!
- Factory, Singleton, Facade
- Enterprise patterns!
- DTO, DAO, etc
- Getters/setters
  (what's the deal - generate 'em)
- JPA, JAXB
- JMS!

Bad words

Layer Tier Bus
Context Manager
Locator Assembler Bean
Broker Facade
Transfer Object DAO

...

It's always nice to see guys like

SessionServiceContextManager

or **AbstractStrategyFactoryProxyFacadeBuilder**

EAR, WAR, WAR, WAR

Configuration, descriptors!

JNDI!

ESB? ;-)

Must be a wizard to make it all run!

Improves job security index :-)

For a small thing we create

- ManagedBean
- MegaServiceWrapper
- CoreServiceLocal, Stub (JNDI lookup?)
- CoreService (&& CoreServiceImpl)
- AggregatedService
- ConcreteService
- ConcreteDAO
- JPAAdapter
- ...

The result?

- It kills productivity
- Thousands lines of code, very few functionality
- Well hidden ”business logic”
- N minute deploy time (+ N minutes app server startup)
- Oops, sometimes redeploy doesn't work, need to restart
- Slow UI responsivness

What to do?

- Concentrate on domain terminology
  - This was the intention of OOP
- Avoid overly defensive code
  - You are not writing a framework!
  - Fellow developers are friends
- Follow **Clean Code** by Robert C. Martin

Java platform and language

- Java (EE) is a victim of JCP
    - Many unreal/unusable JSRs
- Stick to proven open-source stuff
    - Less standards – the better
- Java language is ok
    - The biggest miss are closures
    - DSLs are possible: Mockito, LambdaJ
    - Don't bloat (generate) your code

Code style

- Is your code style limiting readability?
  - Avoid too many line breaks and braces
  - Emphasize what is important

```
public int size() {
  if (root == null) {
    return 0;
  }
  else {
    return root.numSiblings();
  }
}
```

```
public int size() {
  if (root == null) return 0;
  return root.numSiblings();
}
```

```
public int size() {
  return root != null ?
    root.numSiblings() : 0;
}
```

Code style

- Avoid over-indenation (or code ladder)

```
public void startCharging() {
  if (customer.hasFunds()) {
    if (!station.isCharging()) {
      if (!station.currentlyBooked()) {
        reallyStartCharging();
        return;
      }
    }
  }
  throw new UnableToStartException();
}
```

```
public void startCharging() {
  if (!customer.hasFunds()) throw new UnableToSt
  if (station.isCharging()) throw new UnableToSt
  if (station.currentlyBooked()) throw new Unabl

  reallyStartCharging();
}
```

Code style

- Prefer shorter code (use static imports)

```
List<Integer> list = Arrays.asList(1, 2, 3));
list = Collections.unmodifieableList(list);
return list;

import static java.util.Arrays.*;
import static java.util.Collections.*;
...

return unmodifiableList(asList(1, 2, 3))
```

Looks a bit like functional programming, isn't it?

Code style

- Prefer good naming to comments
- Avoid getters/setters, equals, hashCode, toString unless necessary
- Break free from 'conventions'
- Work towards a DSL

```
when(session.currentUser()).thenReturn(fakeUser);

assertThat(person.age, is(25));

sort(people, on(Person.class).getAge());
```

Proper Java app

- Jetty Launcher (esp in development)
- Know the APIs well: servlets, filters, etc
- Avoid vendor-specific stuff
- Keep environment-specific configuration in version control
- Dependency Injection
- Avoid scattering cross-cutting concerns
- DB migrations (w/ liquibase/dbdeploy)
- Start thin and simple, prefer higher SNR

Web UI

- Your framework tells you don't need to know JavaScript? (GWT, JSF, etc)
- B.S.!
- Keep it under control: learn basics of JQuery instead
- Knockout.js, Backbone.js can help
- You are not limited with Java syntax on the client side :-)

Worth reminding...

- **D**on't **R**epeat **Y**ourself
- **K**eep **I**t **S**imple **S**tupid
- **Y**ou **A**in't **G**onna **N**eed **I**t
- **T**est **D**riven **D**evelopment

Let's continue on github:

github.com/angryziber/simple-java

(or just google: ”gotocon simple java”)

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