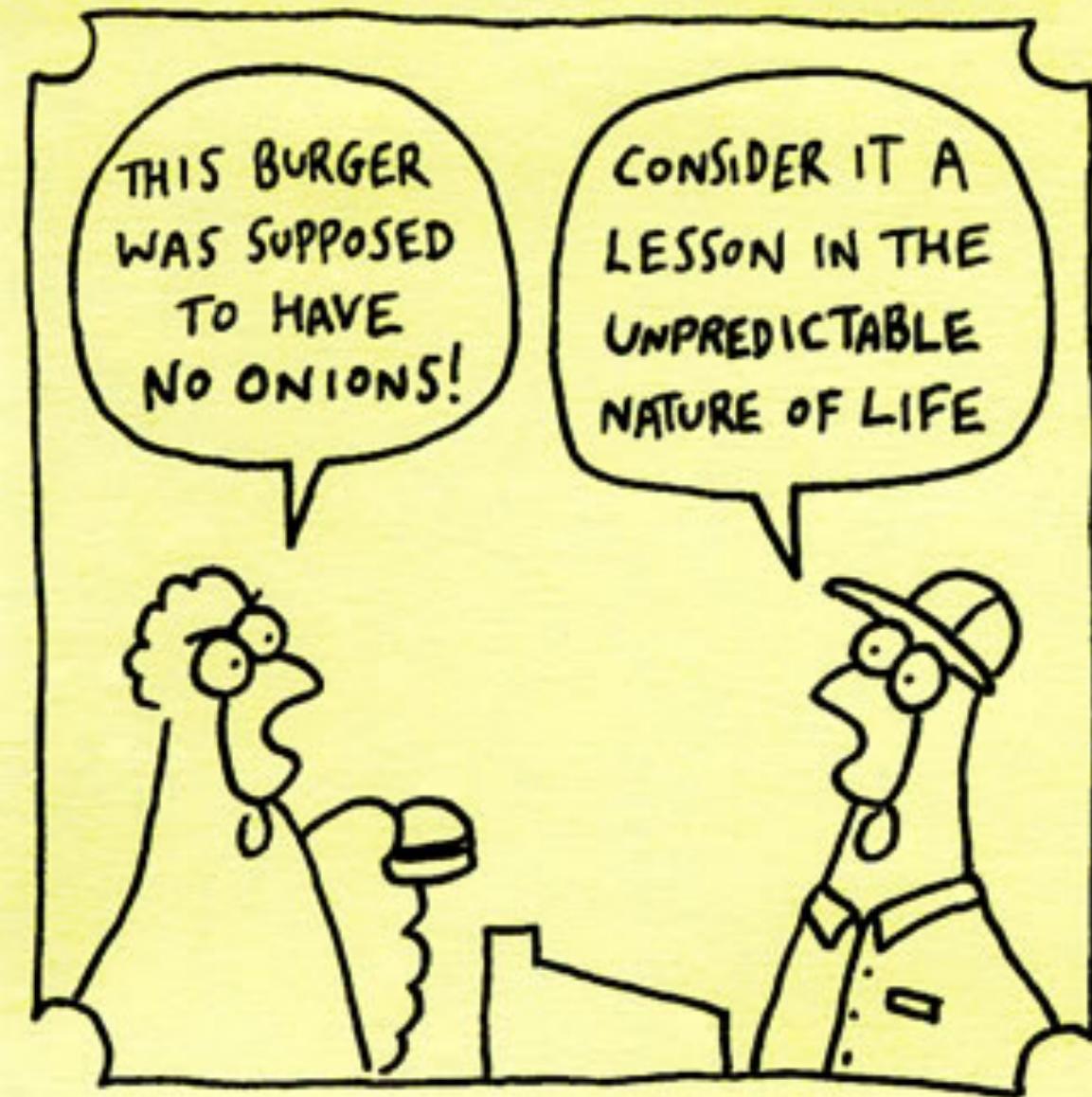


S**t happens – are you prepared?

{ Mahesh Paolini-Subramanya (@dieswaytoofast)
V.P. Ubiquiti Networks

Savage Chickens

by Doug Savage



©2009 By Doug Savage

- 60 - 90% of all **SW** projects fail
- 10 – 25% of all **SW** projects get abandoned

The Facts of Life

- 60 - 90% of all **SW** projects fail
- 10 – 25% of all **SW** projects get abandoned

The Facts of Life

THE REAL NUMBER IS HIGHER

& 60 - 90% of all **SW** projects fail

& 10 – 25% of all **SW** projects are yet abandoned

The Facts of Life!

Fault Tolerance

& Concurrency

The Big Six

From http://www.erlang.org/download/armstrong_thesis_2003.pdf

& Concurrency

& Error encapsulation

The Big Six

From http://www.erlang.org/download/armstrong_thesis_2003.pdf

The Big Six

- & Concurrency
- & Error encapsulation
- & Fault detection

From http://www.erlang.org/download/armstrong_thesis_2003.pdf

The Big Six

- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification

From http://www.erlang.org/download/armstrong_thesis_2003.pdf

- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade

The Big Six

From http://www.erlang.org/download/armstrong_thesis_2003.pdf

- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade
- & Stable Storage

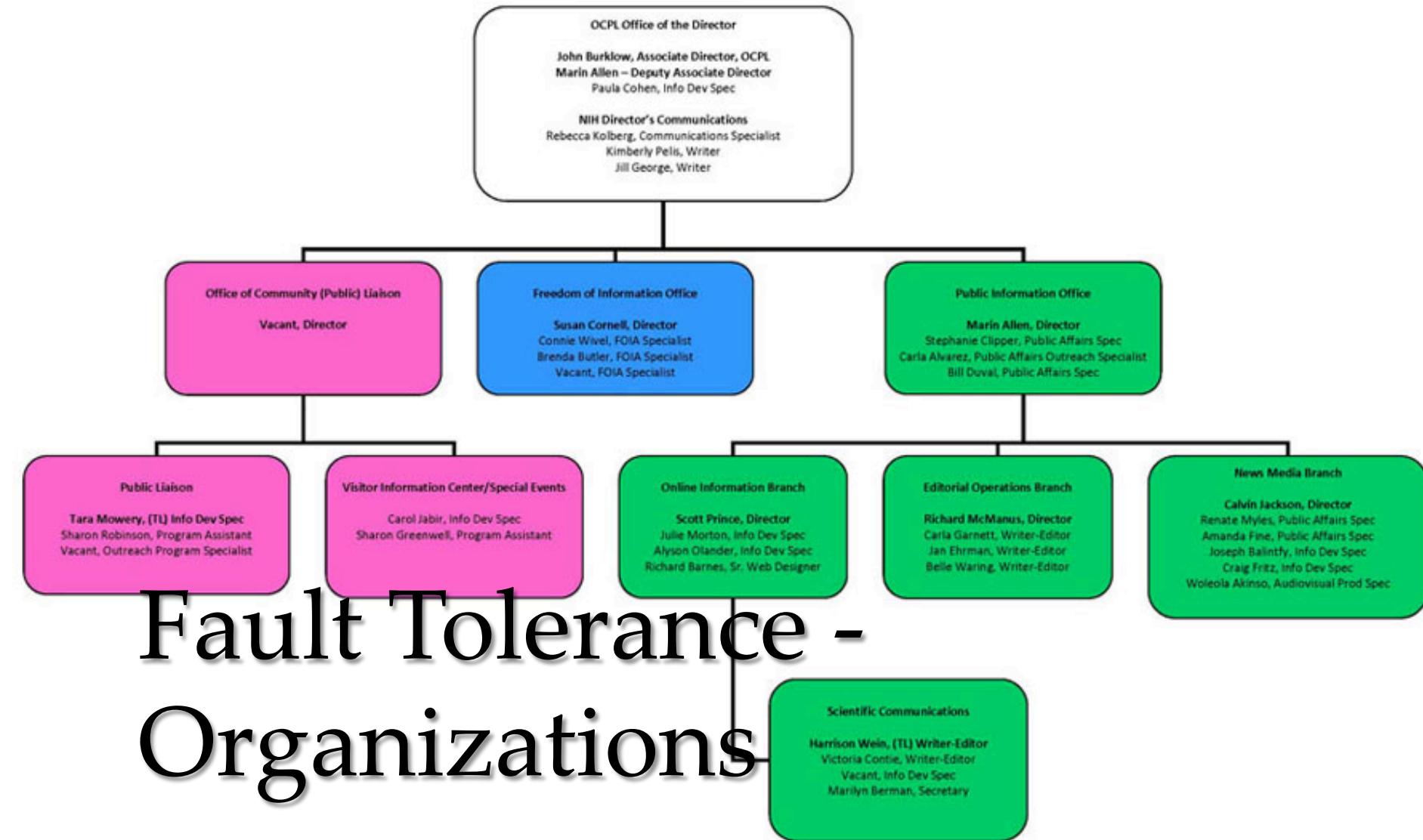
The Big Six

From http://www.erlang.org/download/armstrong_thesis_2003.pdf

Fault Tolerance

Fault Tolerance - Systems





Fault Tolerance - Systems



- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade
- & Stable Storage

The Big Six - Systems

- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade
- & Stable Storage

The Big Six - Systems

The Big Six - Systems

- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade
- & Stability

Loose Coupling

Loose Coupling?

Loose Coupling

& Breeds Trust

WALLY, IS
THERE ANY
DIFFERENCE
BETWEEN
TRUST AND
STUPIDITY?



HOLD
THAT
THOUGHT.
I'LL BE
RIGHT
BACK.



Dilbert.com DilbertCartoonist@gmail.com



OH.
—

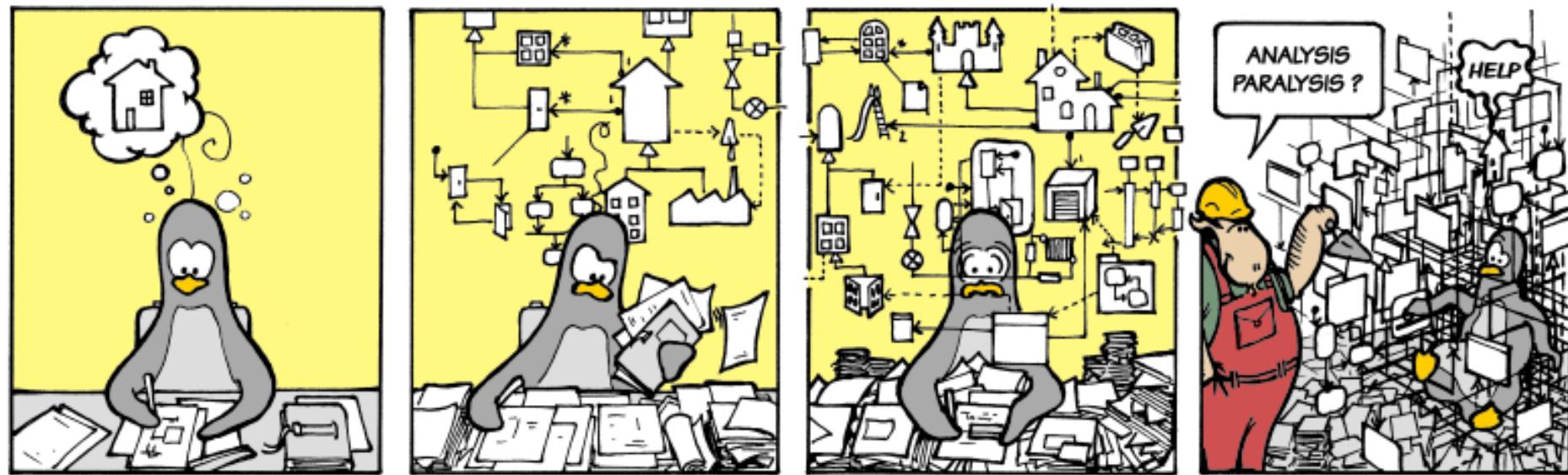
11-15-11 © 2011 Scott Adams, Inc. Dist. by Universal Uclick

Loose Coupling

Loose Coupling

↳ Breeds Trust

↳ Devote more brainpower to specific areas



Loose Coupling

Loose Coupling

- Breeds Trust
- Devote more brainpower to specific areas
- No. of bugs/line is constant

A blurred night city street with streaking lights and a red car.

Performance

- 60 - 90% of all **SW** projects fail
- 10 – 25% of all **SW** projects get abandoned

Fault Tolerance

I'M
SIGNIFICANT!



SCREAMED THE
DUST SPECK.



The Big Six - Systems

& Concurrency

& Error encapsulation

& Fault detection

& Fault identification

& Code upgrade

& Stability

MONITORING

Monitoring?

DRIVER DOOR
OPEN

19°C

60

40

20

KM/H

100

120

140

160

N
3557
T2 189.1



3

X10XW

4

READY

ECO







BE DIFFERENT

- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade
- & Stable Storage

The Big Six - Systems

The Big SIX - Systems

& Concurrency

& Error encapsulation

& Fault detection

& Fault identification

& Code upgrade

& Stable Storage

**POLYGLOT
PERSISTENCE**

Polyglot Persistence?

Polyglot Persistence

& Solution Oriented Stores

& Solution Oriented Stores

Polyglot Persistence

*What d'you want the data to look like when you fetch
it from the database?*

- Casey Rosenthal

Solution Oriented

Key-Value

Solution Oriented

Key-Value

Solution Oriented
Object

Key-Value

Column

Solution Oriented
Object

Key-Value

Document

Column

Solution Oriented
Object

**Key-Value
Graph**

**Document
Column**

**Solution Oriented
Object**

Key-Value

Document

Object

Graph
Cassandra
Eventual
Consistent

Solution Oriented

Object
Solution Oriented

Document

Key-Value
Ordered

Graph

Eventual
Consistent

Key-Value

Graph

Eventual Consistency

Document

Object

Memorystore

Ordered

Evolution Oriented

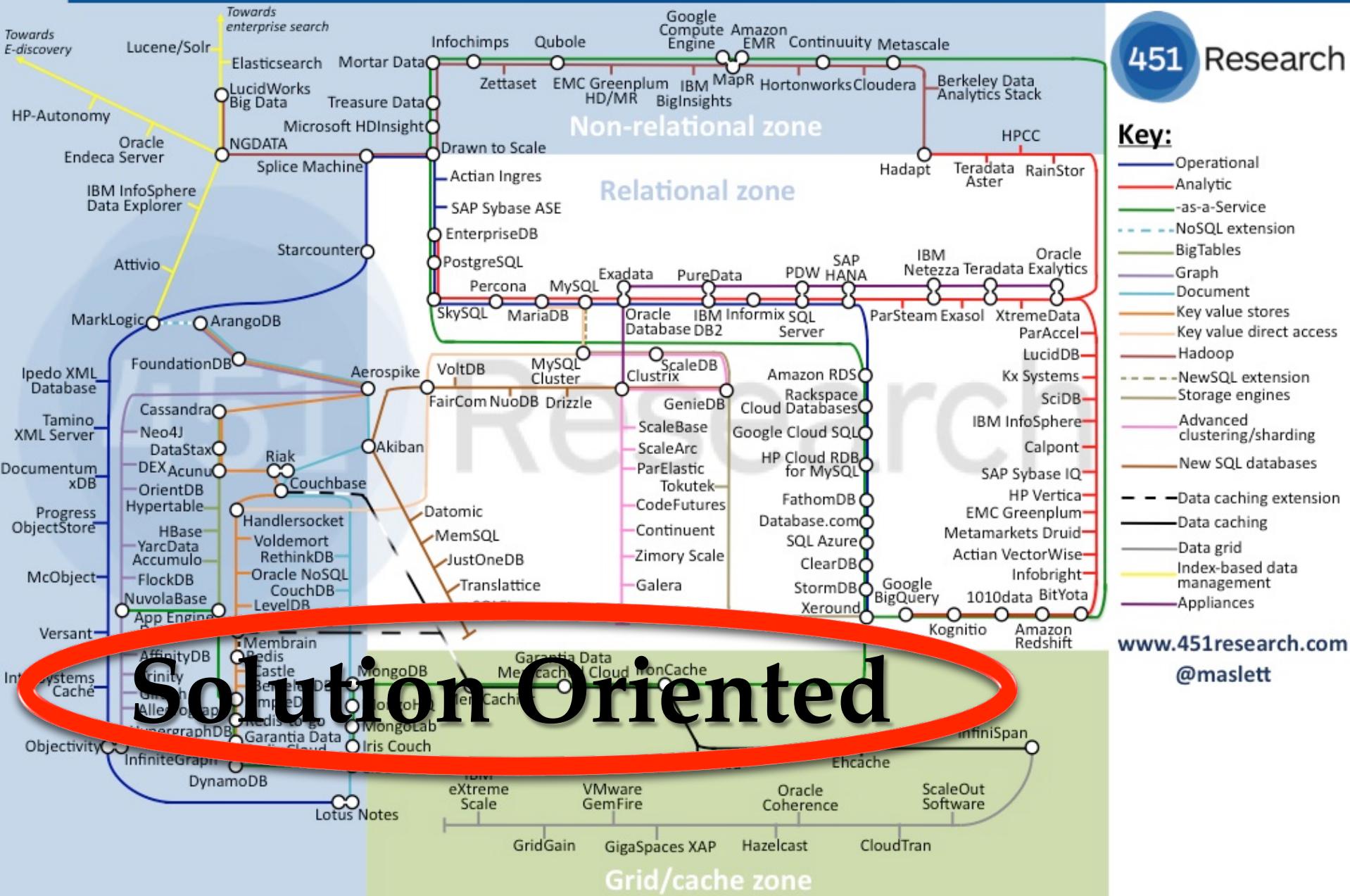
Object
Oriented
Document
Memory
Key-Value
Ordered
Multiple
Value
Graph
Eventual
Consistent

The diagram illustrates the relationship between different database models and their characteristics. At the center is the word "Document". Surrounding it are several other terms, each associated with a specific model or characteristic:

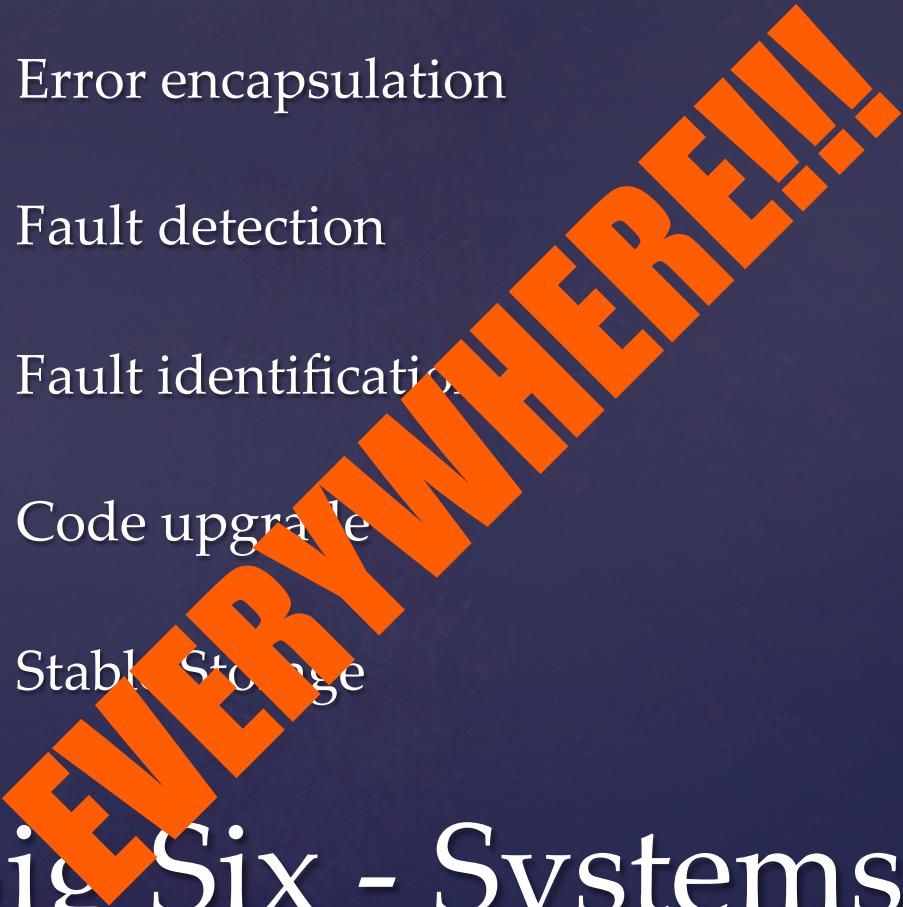
- Key-Value**: Associated with "Object" and "Consistency".
- Ordered**: Associated with "Object" and "Consistency".
- Multiple Value**: Associated with "Column" and "Consistency".
- Graph**: Associated with "Column" and "Consistency".
- Column**: Associated with "Column" and "Consistency".
- Row**: Associated with "Table" and "Consistency".
- Table**: Associated with "Table" and "Consistency".
- Relational**: Associated with "Table" and "Consistency".
- Object**: Associated with "Object" and "Consistency".
- Consistency**: Associated with "Column", "Table", and "Object".

A red oval highlights the words "Solution Oriented" and "Object".

Database Landscape Map – December 2012



The Big Six - Systems



- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade
- & Stable storage



**No battle plan survives
contact with the enemy**

¶ Not just about Systems ☺

Fault Tolerance

A detailed illustration of a woman with long brown hair leaning over a man who is resting his head on her lap. The man has his eyes closed and appears to be in distress or exhaustion. The woman's hand is gently placed on the man's forehead. They are both wearing dark-colored clothing. The background is a soft, out-of-focus light color.

Fault Tolerance

Friday | June 29, 2012



BUZIOS



Beware the Black Swan

The Fault Tolerant Organization

& Concurrency

The Big Six - Organizations

SPEED BUMP / by Dave Coverly

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4-5



& Concurrency

& Error encapsulation

The Big Six - Organizations



30

MARYLAND
AHRENS
Munster

& Concurrency

& Error encapsulation

& Fault detection

The Big Six - Organizations



30

MARYLAND
AHRENS
Munster

& Concurrency

& Error encapsulation

& Fault detection

& Fault identification

The Big Six - Organizations



30

MARYLAND
AHRENS
Munster

- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade

The Big Six - Organizations

- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade

The Big Six - Organizations



- & Concurrency
- & Error encapsulation
- & Fault detection
- & Fault identification
- & Code upgrade
- & Stable Storage

The Big Six - Organizations





Is It Safe?

Coda



Beware the Black Swan



KUBES® by Leigh Rubin

In Bobby's case, his karma was not only instant but also, apparently, pre-emptive.

Questions

mahesh#dieswaytoofast.com
[@dieswaytoofast](https://twitter.com/dieswaytoofast)