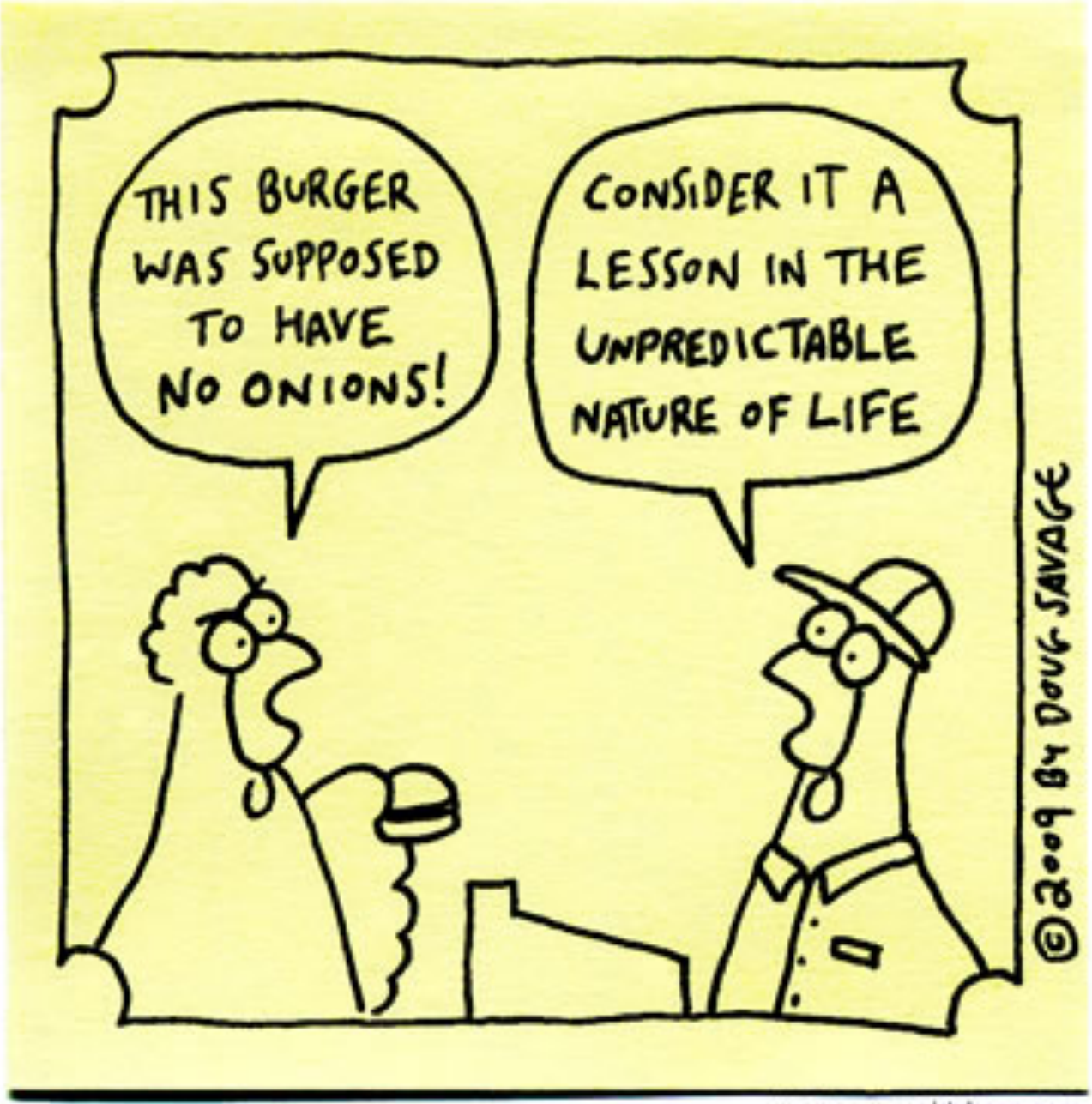
S**t happens – are you prepared?

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

Savage Chickens

by Doug Savage



www.savagechickens.com

The Facts of Life

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

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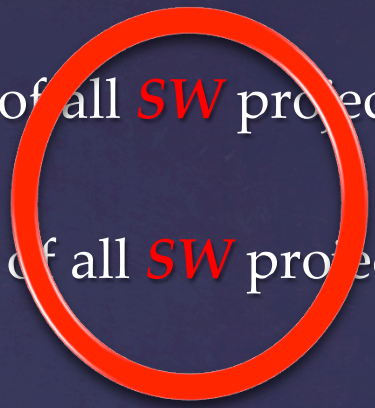

The Facts of Life!

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

THE REAL NUMBER IS HIGHER

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

- Concurrency
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The Big Six

- Concurrency
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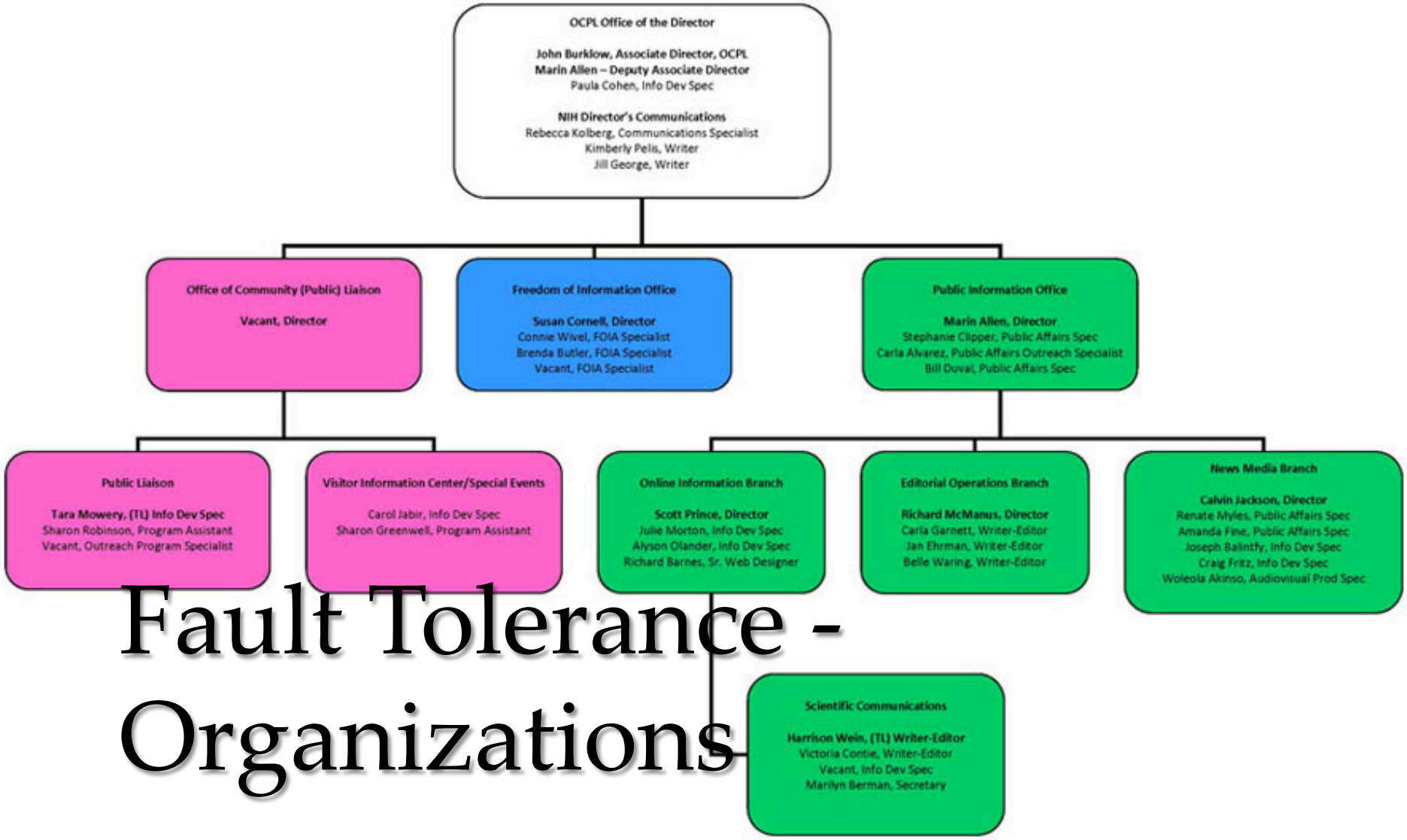
- Fault detection
- Fault identification
- Code upgrade
- Stable Storage

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

Fault Tolerance

Fault Tolerance - Systems

Fault Tolerance - Organizations



Fault Tolerance - Systems

The Big Six - Systems

- Concurrency
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The Big Six - Systems

The Big Six - Systems

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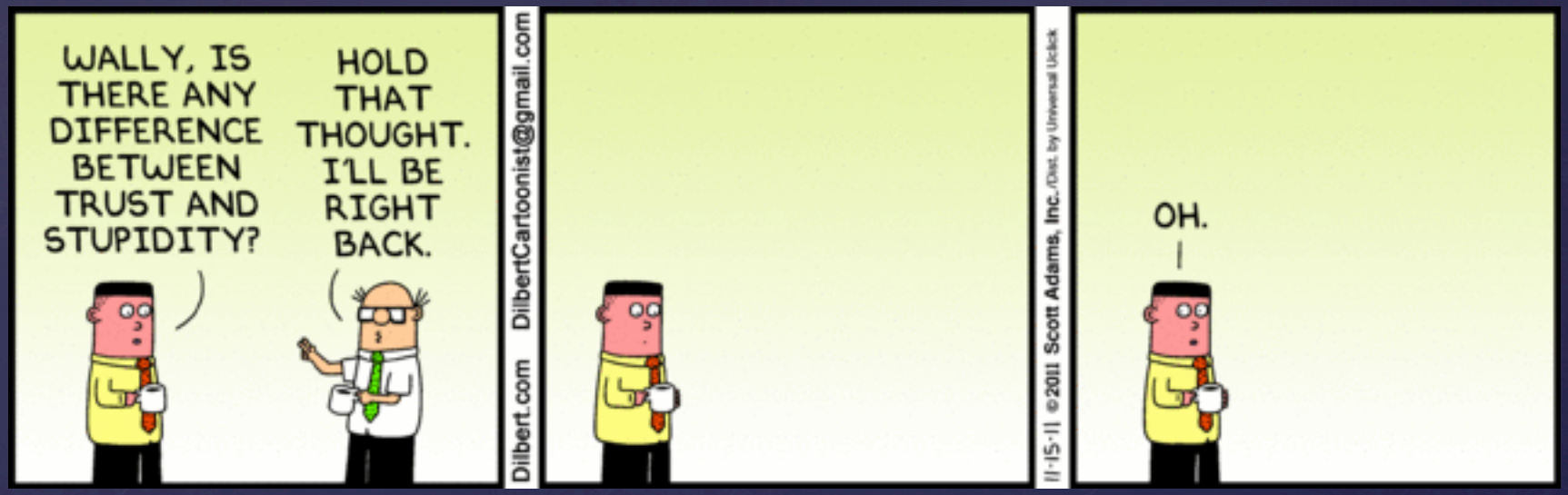
- Fault identificati
- Code upgrad
- Stabl ge

LOOSE COUPLING

Loose Coupling?

- Breeds Trust

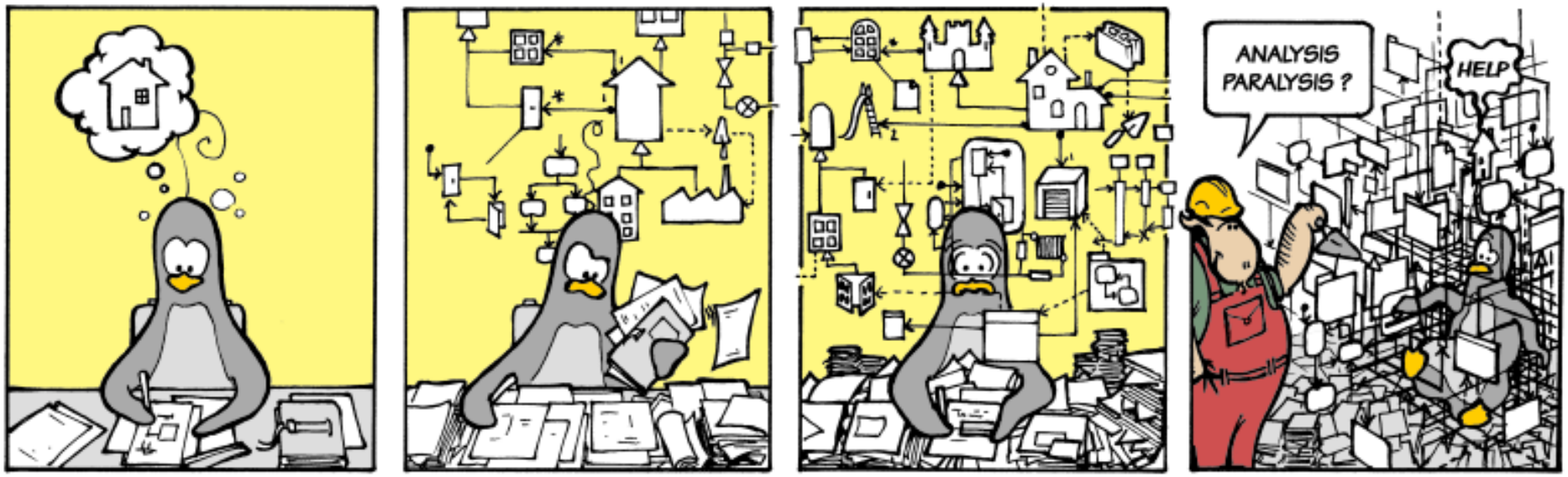
Loose Coupling



Loose Coupling

Loose Coupling

- Breeds Trust
- Devote more brainpower to specific areas



Loose Coupling

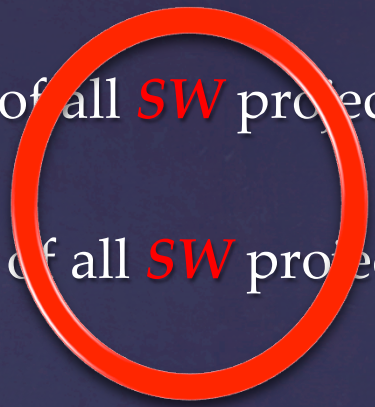
Loose Coupling

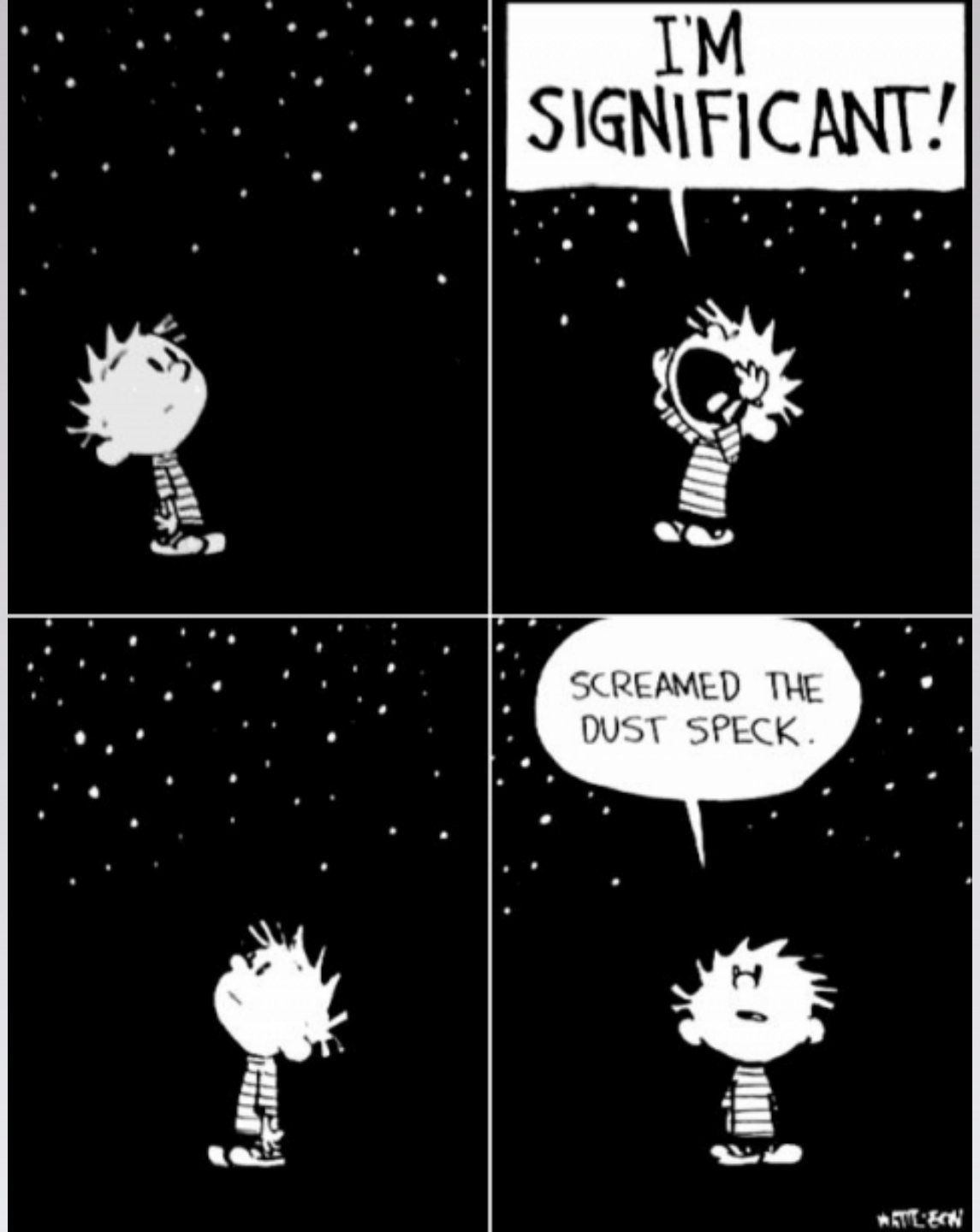
- Breeds Trust
- Devote more brainpower to specific areas
- No. of bugs/line is constant


Performance

Fault Tolerance

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




I'M SIGNIFICANT!
SCREAMED THE DUST SPECK.

The Big Six - Systems

- Concurrency
- Error encapsulation
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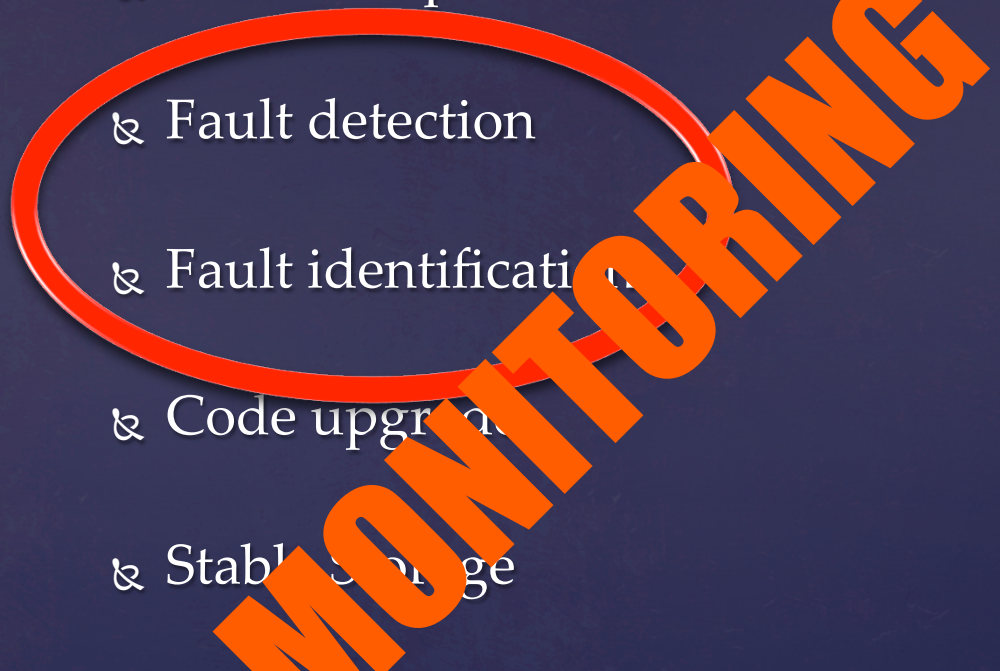
- Fault identificati
- Code upgr
- Stabl ge



Monitoring?


DRIVER DOOR
OPEN
--:--
19°C
KM/H
20
40
60
80
100
120
140
160
0
1
2
3
4
X10 W
ECO
READY
T2
189.1

BE DIFFERENT

The Big Six - Systems

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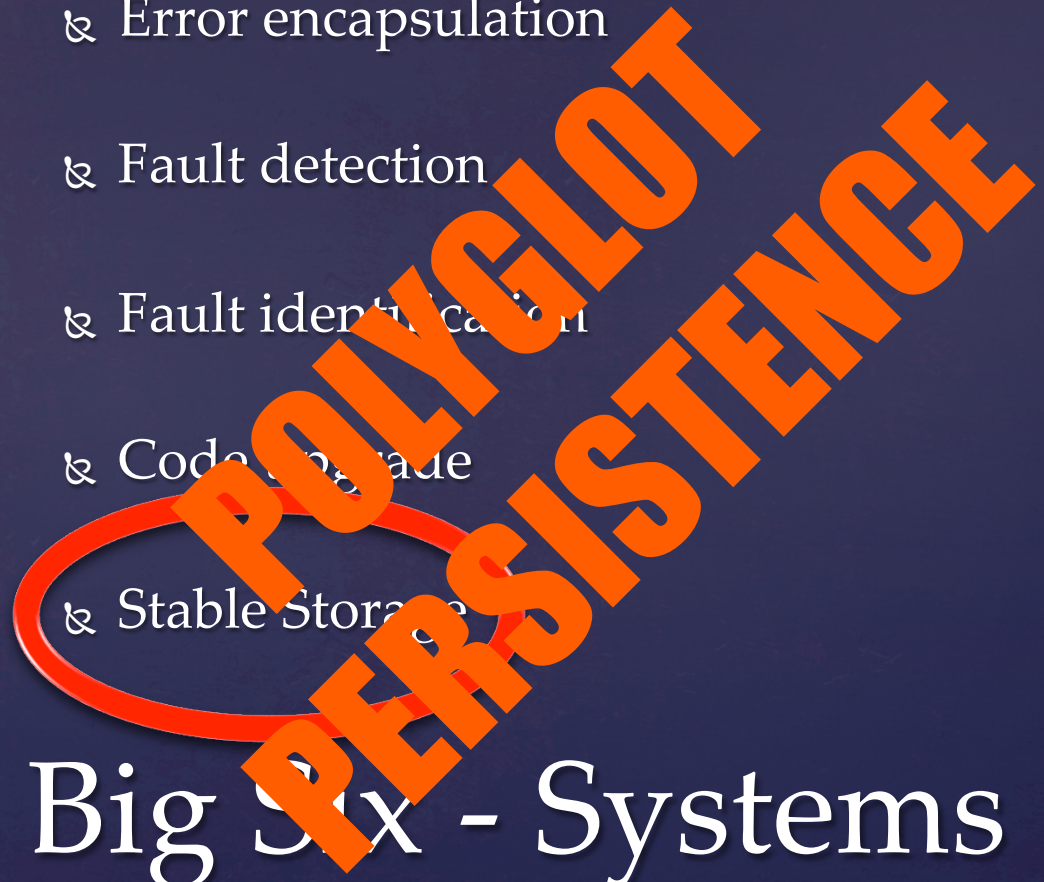


Polyglot Persistence?

- Solution Oriented Stores

Polyglot Persistence

- 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

Graph

Document

Column

Eventually Consistent

Solution Oriented

Object

Key-Value

Ordered

Graph

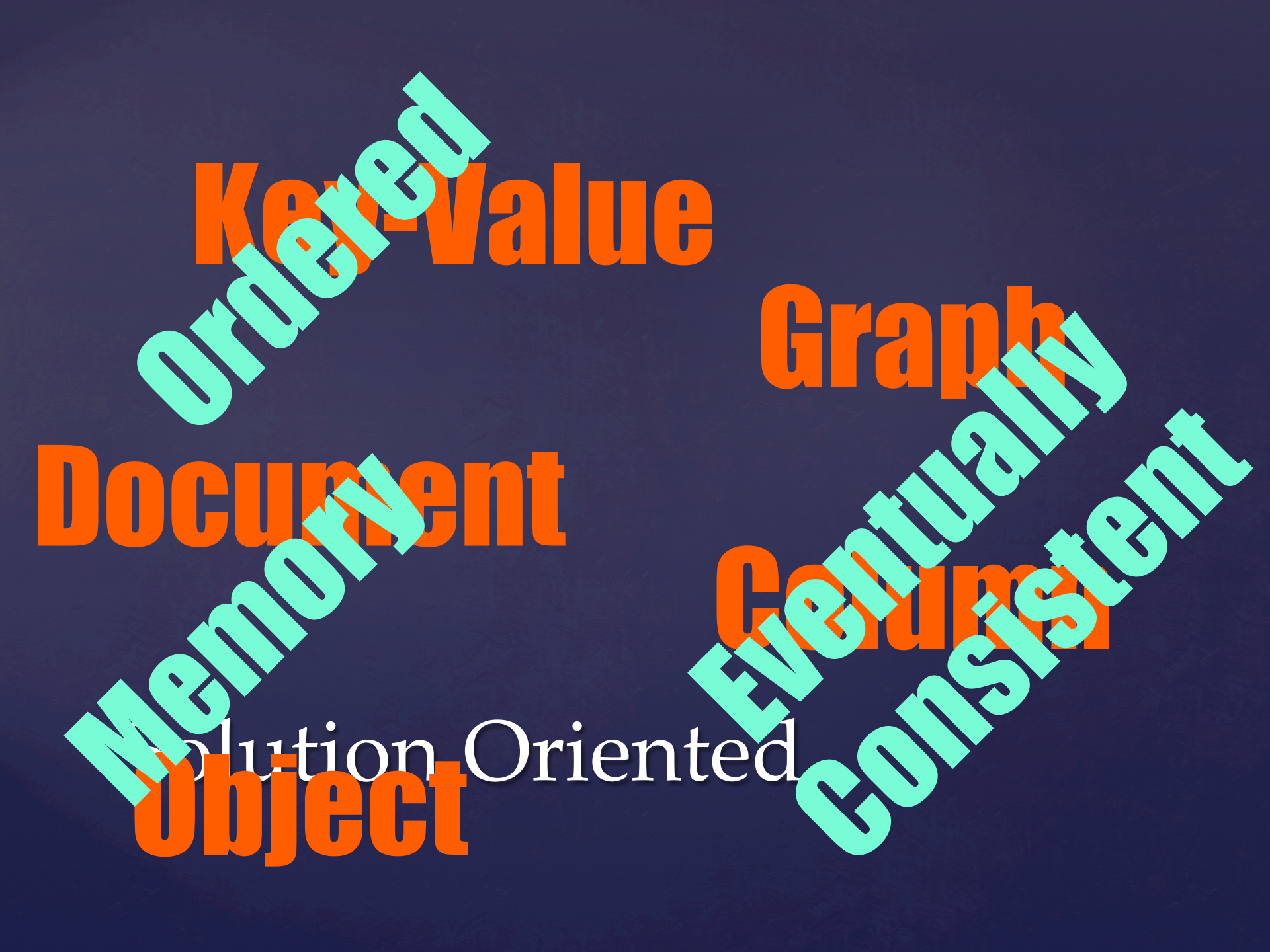
Document

Column

Eventually Consistent

Solution Oriented

Object


Key-Value
Ordered
Graph
Document
Memory
Column
Eventually
Consistent
olution Oriented
Object


Key-Value
Ordered
Multiple
Value
Graph
Document
Memory
Eventually
Consistent
Column
olution Oriented
Object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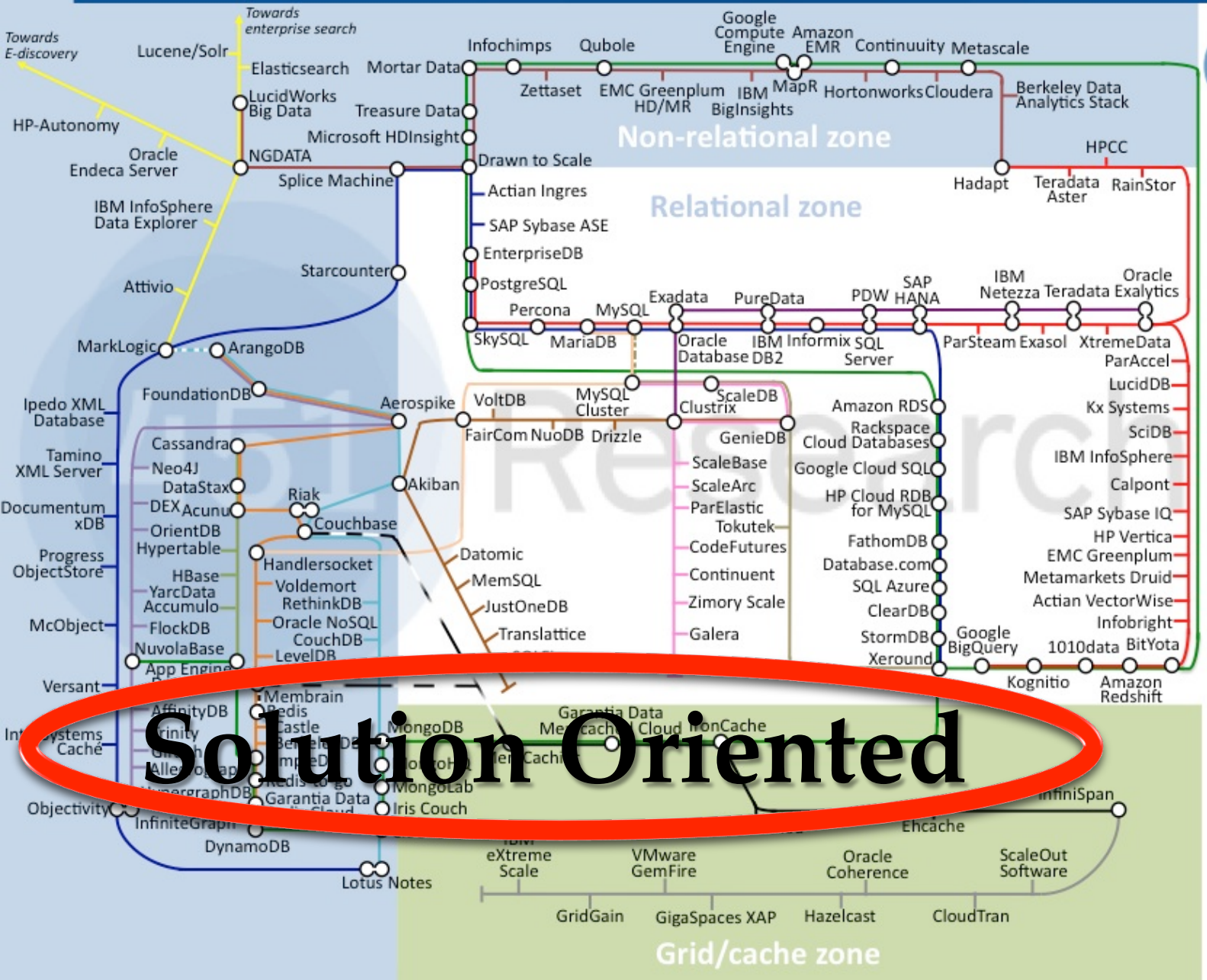
Solution Oriented

Database Landscape Map – December 2012



451 Research

Key:

- Operational
- Analytic
- -as-a-Service
- NoSQL extension
- BigTables
- Graph
- Document
- Key value stores
- Key value direct access
- Hadoop
- NewSQL extension
- Storage engines
- Advanced clustering/sharding
- New SQL databases
- Data caching extension
- Data caching
- Data grid
- Index-based data management
- Appliances

www.451research.com

@maslett

The Big Six - Systems

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- Fault identificati
- Code upgra e
- Stabl St ge

EVERYWHERE!!!

No battle plan survives contact with the enemy

- Not just about Systems ☹

Fault Tolerance


Fault Tolerance

Friday | June 29, 2012


BÚZIOS

Beware the Black Swan

The Fault Tolerant Organization

- Concurrency

The Big Six - Organizations

SPEED BUMP/ by Dave Coverly

- Concurrency
- Error encapsulation

The Big Six - Organizations


MUNSTER
AHRENS

- Concurrency
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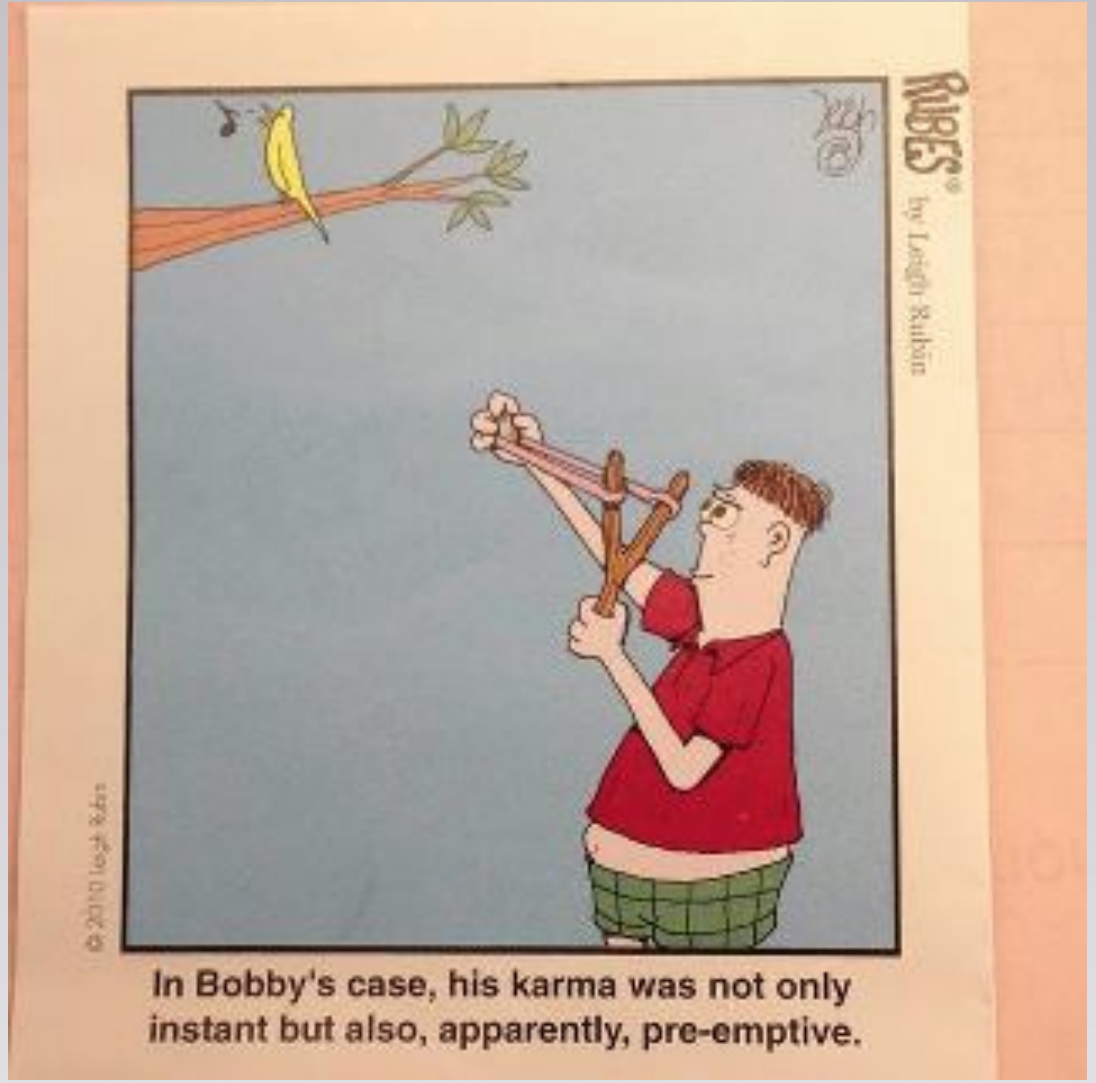
The Big Six - Organizations

Is It Safe?

Coda

Beware the Black Swan



Questions

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@dieswaytoofast