Agile Infrastructure & Operations

A bit of Context

- Not about Development infrastructure
- Server and Network Oriented projects
- Within Large Enterprise context
- IT people, Operations separated from Dev. by design

Who I am

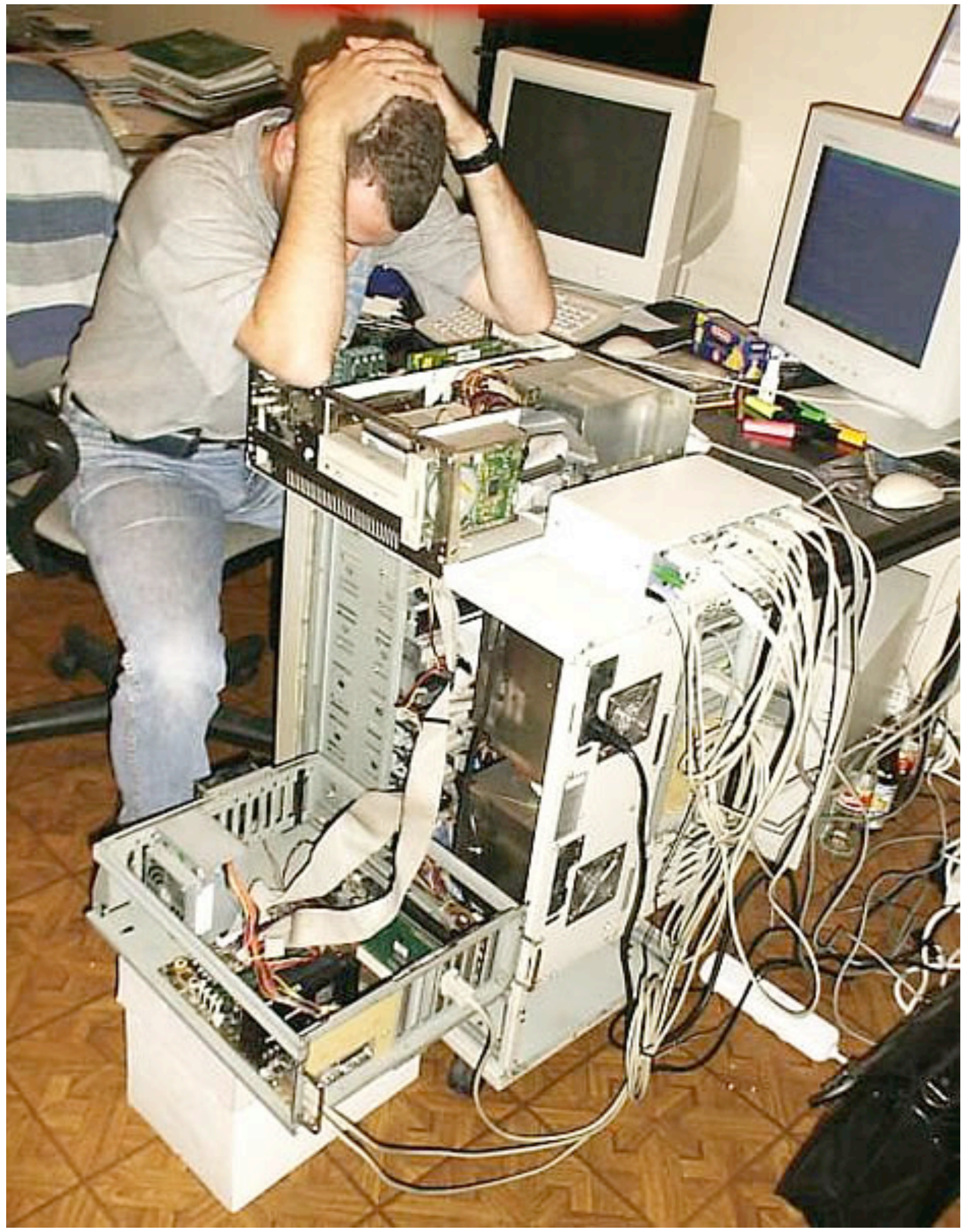
- Patrick Debois
- Independent Consultant
- I mainly do Servers/ Network/Security
- Guide development projects to operational status and beyond
- Currently developer ;-)

Any Developers here?

(coders, testers)

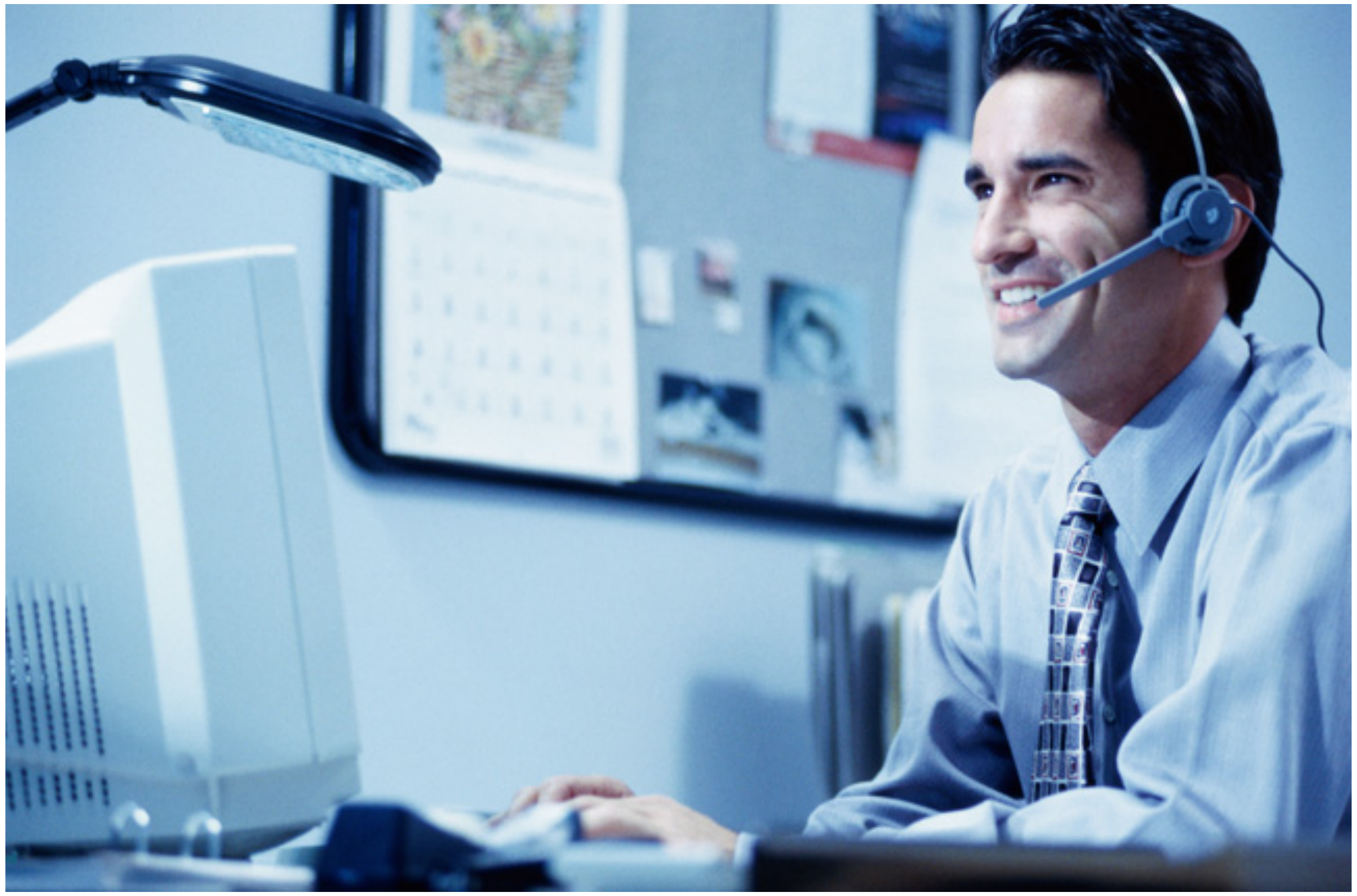
Any IT People?

(infrastructure,servers, network)



Any Operations?

(helpdesk, end-user support)



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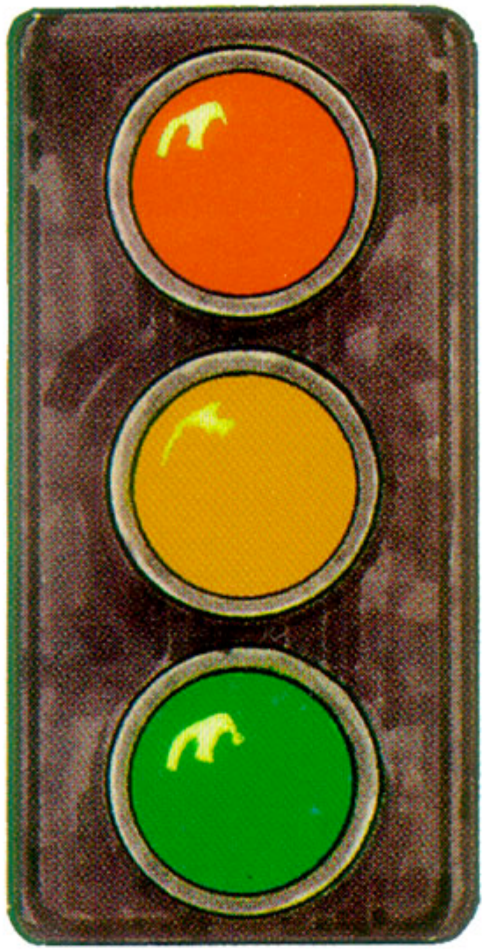
How Agile are your Developers?

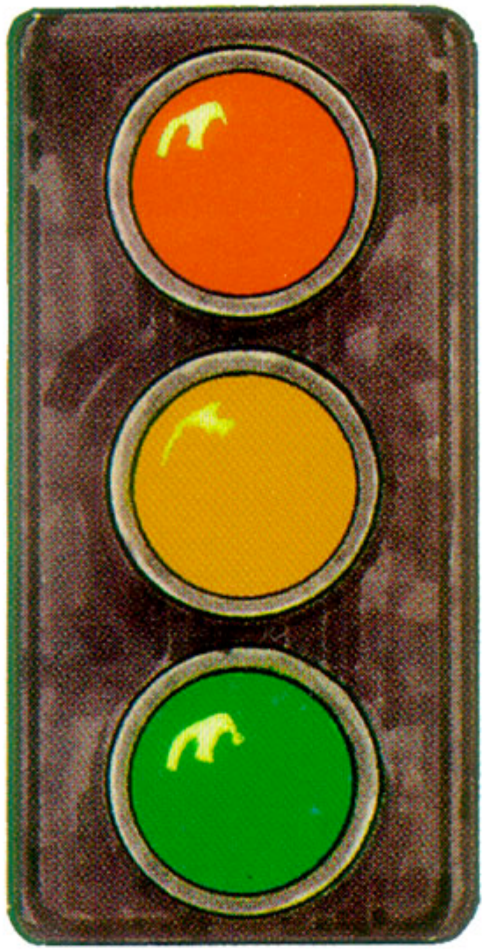


Waterfall

In between

Agile

How Agile is your IT department?

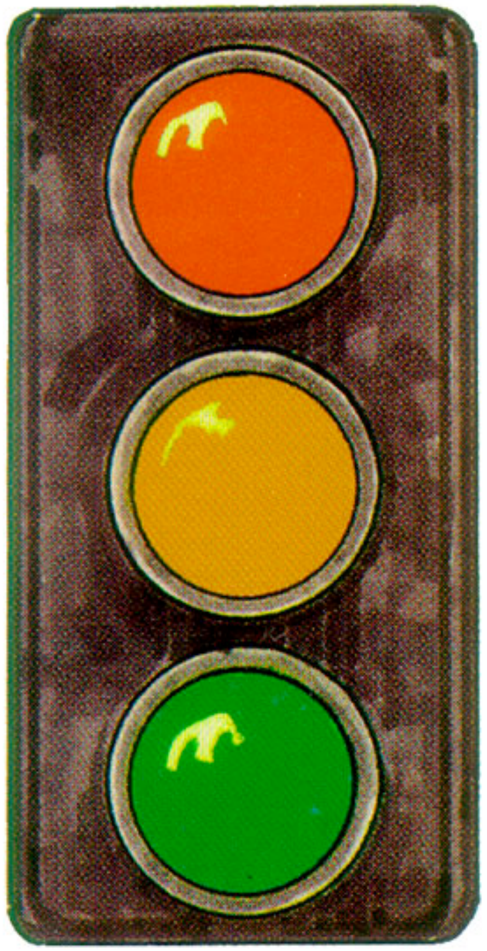


Waterfall

In between

Agile

How Agile is your Operations team?



Waterfall

In between

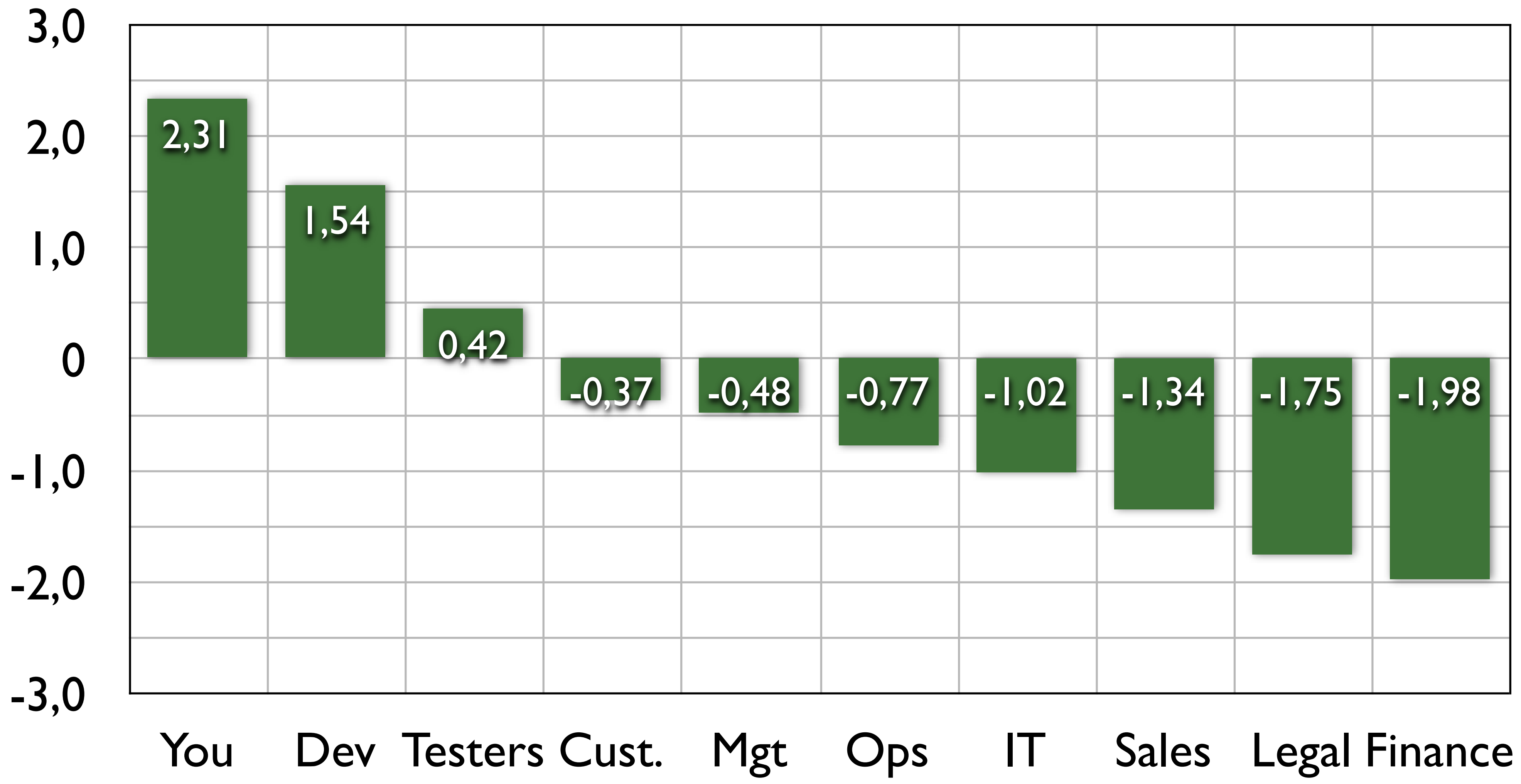
Agile

How Agile is your enterprise?

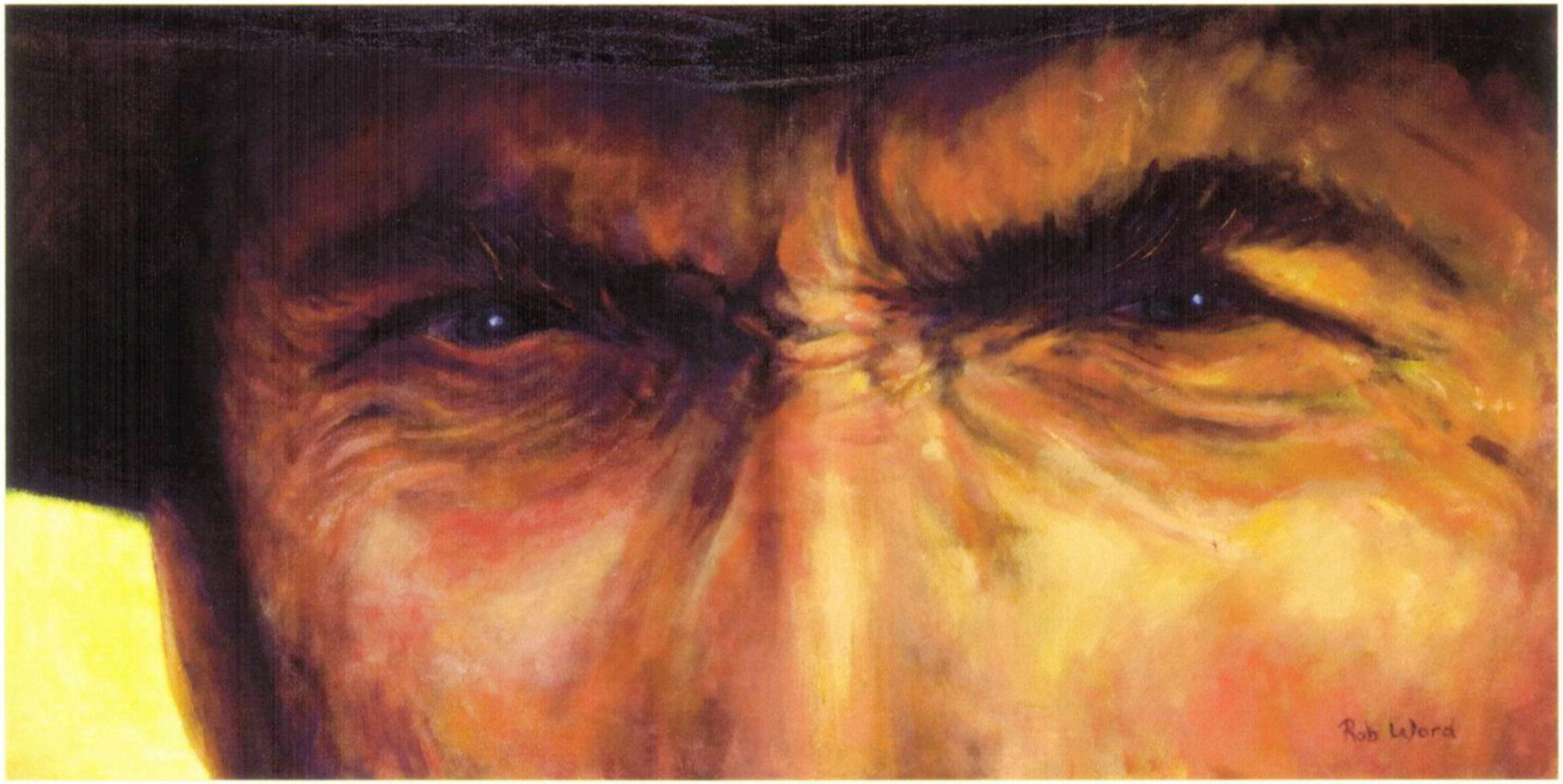
The Emperor	Darth Vader	Storm Trooper	Han Solo	Luke Skywalker	Yoda
100% Waterfall	Talks Agile, walks waterfall	Doesn't care, just executes orders	Likes Agile, but doesn't practice it	Learning the Agile Powers	A true Agile Master

Internet Survey
60 People Participated
Posted on agile mailing-lists
By no means scientific!

Survey Results



Three cases



The Good

Case 1: Infrastructure only, no development

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Moving a data-center

- 50 applications for public use (government)
- no new development, maintenance only
- design was taking long time, no actual result
- "I don't care if it is not finished, I need something now, you can improve later" (political deadline)
- Made us switch to Agile (Scrum)

Product Owner

- The people specifying the requirements where not there anymore
- Applications as a product owner (infrastructure requirements + SLA)
- Operational Team (monitoring, remote access, ...)

Product Backlog

- Ordering by value saved vs. added value
- Functional requirements of the application did not matter.
- Non functional requirements of the application = infrastructure functional requirements (security, performance, ...)

Sprint Backlog

- First sprint : prepare minimal working
- Second sprint: deploy first application
- Third sprint: mix of improvement + new application

User Stories

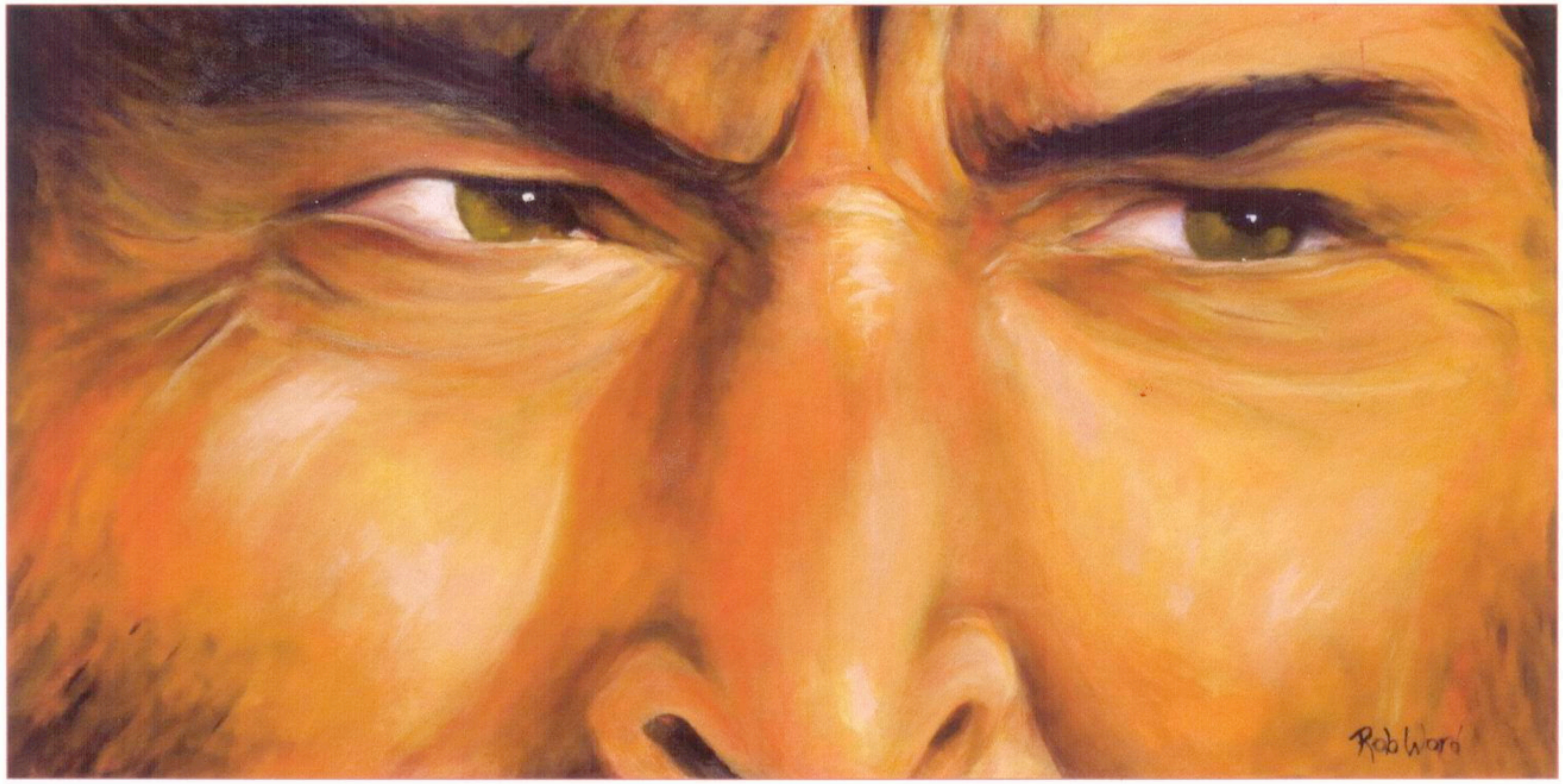
- As an administrator I want to connect to System X so that I can reboot the system
- As an application I need a database so I can store my data
- As a service manager I need a report of the CPU, Memory and Disk so I can report it on the weekly service meetings

Iterative/Refactoring

- host files -> DNS; server routing -> real Router; local disks -> SAN Storage; apache Proxy -> SSL accelerator; VLAN's -> multiple physical network
- Doing the same story multiple times with improvements, at least we had something
- Was first seen as temp solutions as usual, but now there would be a followup.

Test Driven Infrastructure

- No OS or SAN unit tests exist
- Tests executed at the application level
- Implicit test of components
- Monitoring probes, Load testing as test scenario's



The Bad

Case 2: Infrastructure, Development and Operations

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Disaster Recovery

- Infrastructure was failing
- Applications were crashing
- But they needed disaster recovery?
- Infra team put a lock on the door!
- Infra team did not care about the applications

Technical Debt

- No updates/patches because of unknown impact
- Machines maintenance expiring
- Restart scripts for fast fixing
- Migrations half finished

Group vs. Team

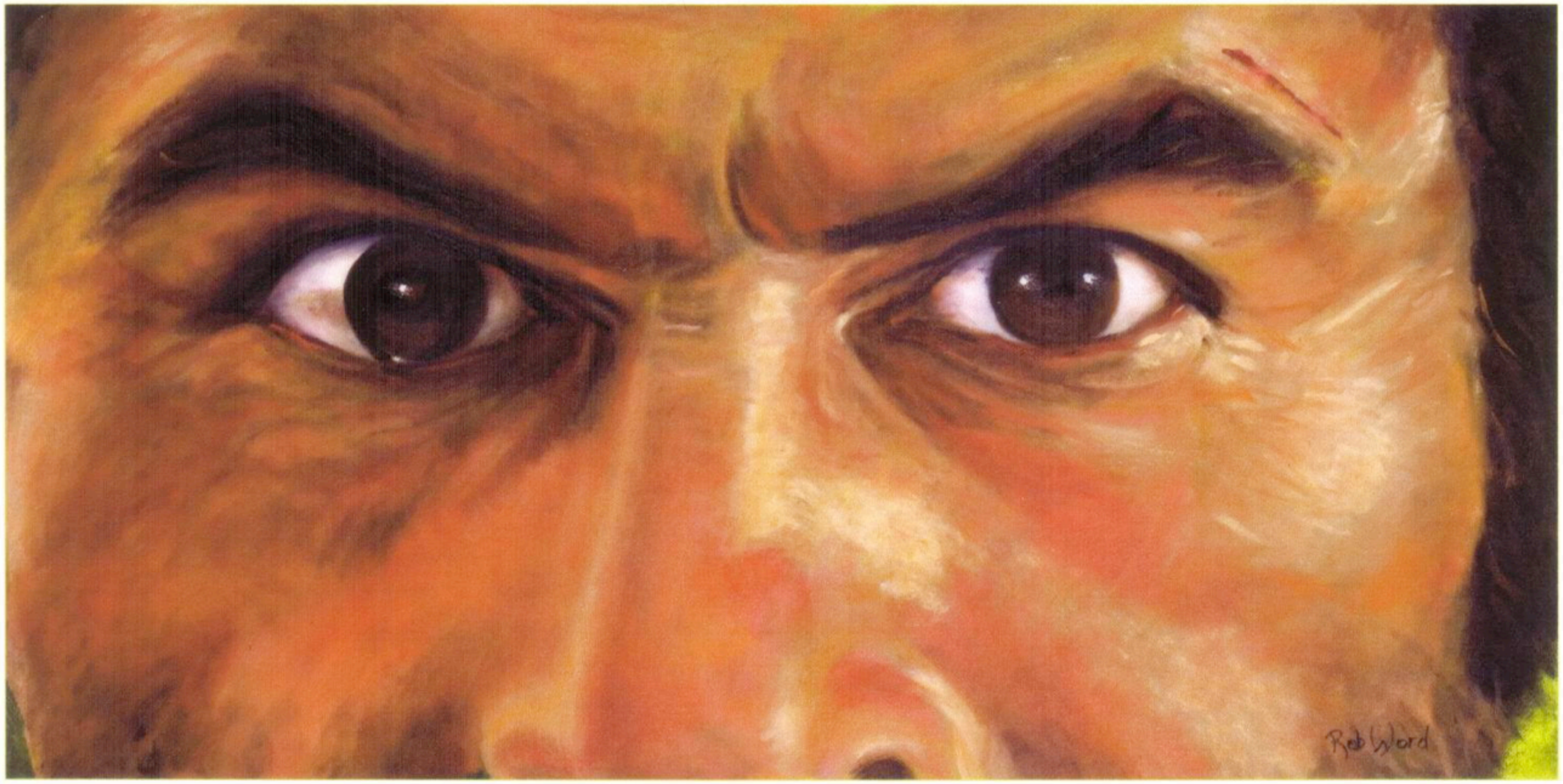
- Technical specialists (Desktop, Security, Network)
- Nobody did other tasks (not capable)
- Backlog was a list of TODO’s
- No application knowledge internal
- Injected middleware people to bridge

Multiple Product Owners

- What’s the ‘correct’ order?
  - End-Users (no value)
  - Project Managers (value added)
  - Operational Manager (non functional)
- Got no ‘real’ decision ..

Daily Scrum

- Depending on the priorities people were interested or not (fatigue)
- Still it was a form of information radiation
- People would pair for tasks (spread knowledge)



The Ugly

Case 3:Agile Infrastructure and Development

Application Server Upgrade

- Developers need new application Server functionality
- They ‘check’ it (wizard style) -> It works
- But what about non functional
  - monitoring, redundancy, backup agent, JVM, OS libraries ...

Cross Functional Team

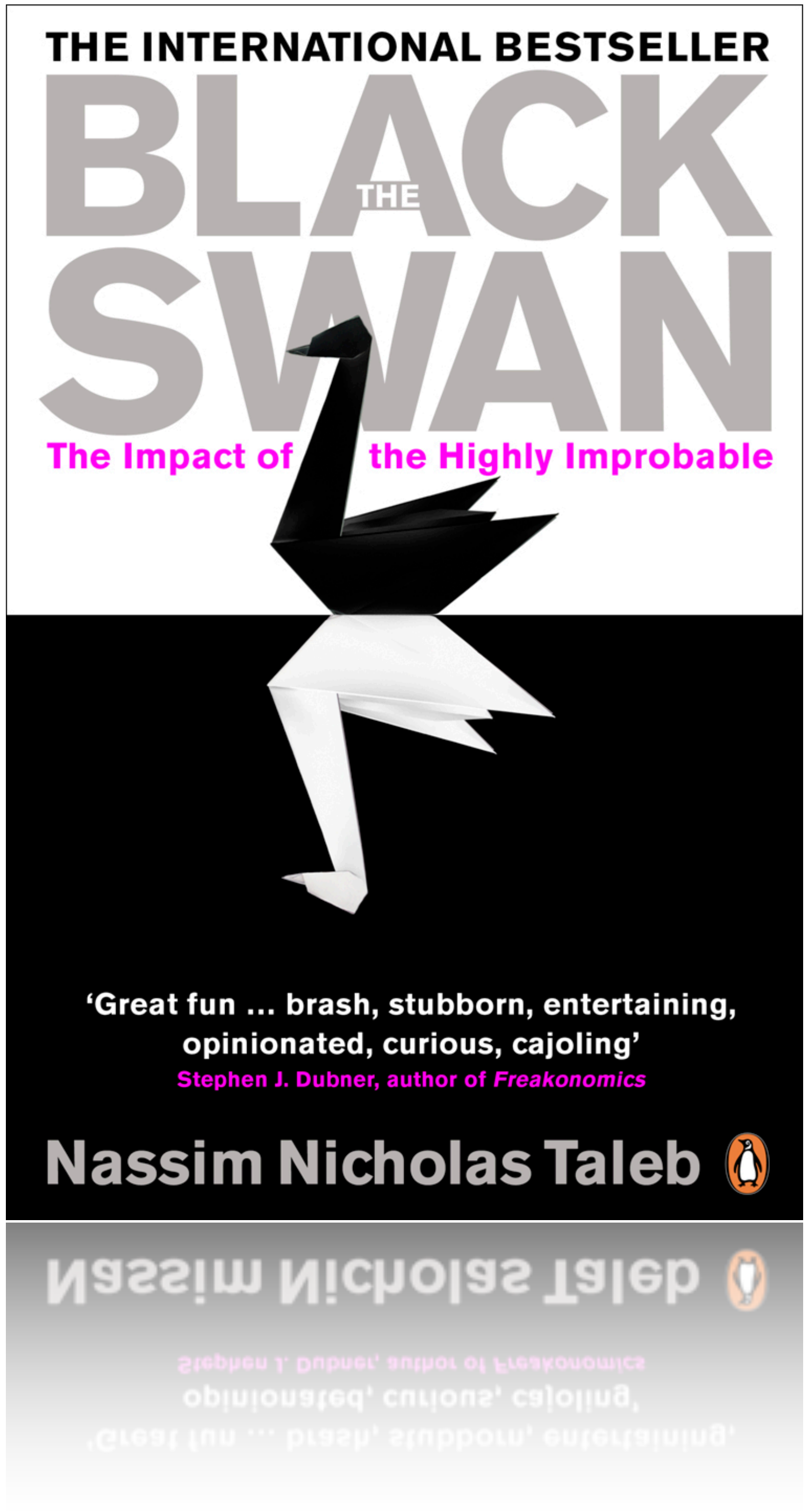
- Break the Agile Development by including infrastructure people in the team
- Infrastructural changes get radiated better
- Infra requirements sooner visible
- Problem with who owns the resource (project mgr, operations mgr?)

Deploy Often

- Nightly builds (config files)
  - not only application
  - also OS, Virtual machine, DB, AppServer
- Reconfiguration becomes reinstallation
- Patches tested every iteration
- Operations to use it after the project is finished= using unit tests to test OS patch
- simpler to setup; faster setup time; backup less

Conclusions?

Caveat!


THE INTERNATIONAL BESTSELLER
THE BLACK SWAN
The Impact of the Highly Improbable
'Great fun ... brash, stubborn, entertaining, opinionated, curious, cajoling'
Stephen J. Dubner, author of Freakonomics
Nassim Nicholas Taleb

Reality is complex, changing and is not always amenable to narrowly focused technical models.

Platonicity

Conclusions

- Three Levels need to be tackled
  - technical level (tools, skills, iterative working)
  - project (communication to teams, reach out to other enterprise)
  - operations (mix off non planned things, operational mgr vs. project mgr priorities)

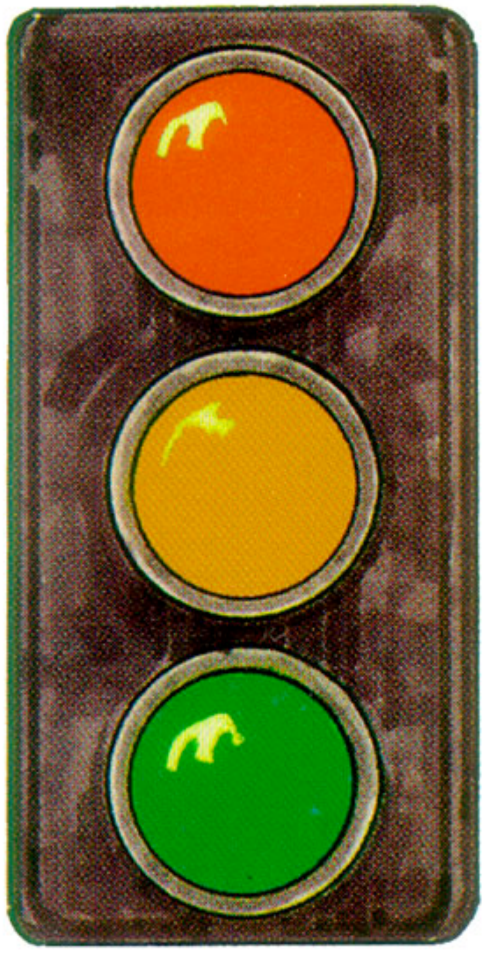
Agile Infrastructure Blue or Red Pill?

Agilista, This is your last chance. After this, there is no turning back. You take the blue pill - the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill - you stay in Wonderland and I show you how deep the rabbit-hole goes

Questions?

Thank you!

Developers don't care about the Server or the Network

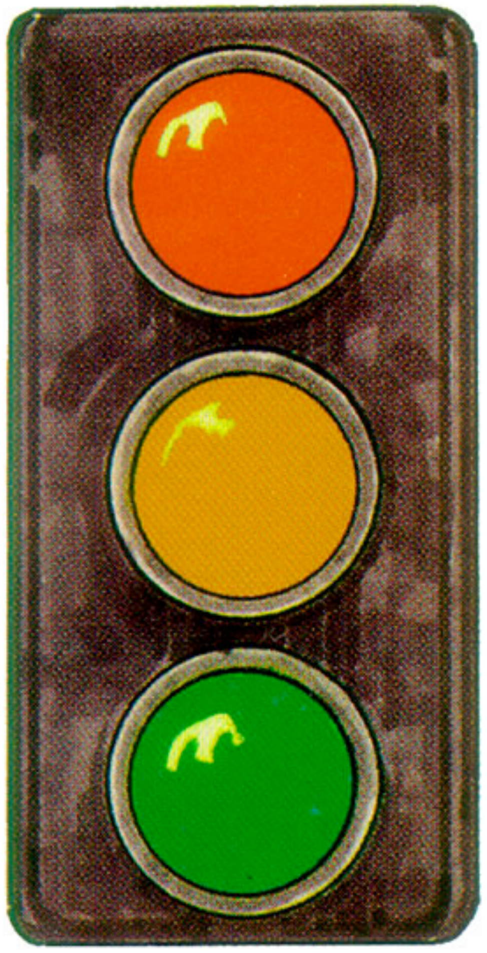


No way

Maybe

Absolutely

Developers need more IT skills



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