DevOps for Systems of Record

An experience Report

High performance. Delivered.

Development

Operations

This is me…

Mirco Hering

- DevOps and Agile Lead in APAC

- Over 10 years of experience improving IT delivery through automation, methodology and innovation

- Mainly worked on very large clients

- Certified CSM, SAFe Agilist, Master Technology Architect

- Conference Speaker and Blogger

- Massive football (European) fan

- Outside of work: Travel, Tennis, Triathlon

Follow me on Twitter: @mircohering

Or read my blog: http://notafactoryanymore.com

What you will hopefully learn today

- The importance of COTS and other systems of record for your DevOps journey

- Initial Discovery – look under the covers to see whether there is code

- Challenges along the way – How to react when the system does not play along

- Find the right balance between one tool to rule them all and every team for themselves

- A typical automation journey and why this is especially problematic for COTS/Systems of record

Systems of Record – what is that?

Systems of Record

Or shall we call it: Legacy

Or be nice about it and call it: Enterprise

It doesn't matter – I mean those systems that don't play nicely: Packaged Software, Non-Custom code or older custom code that behaves like a package,…

Think – Siebel, SAP, Mainframe,…

Is this your world….

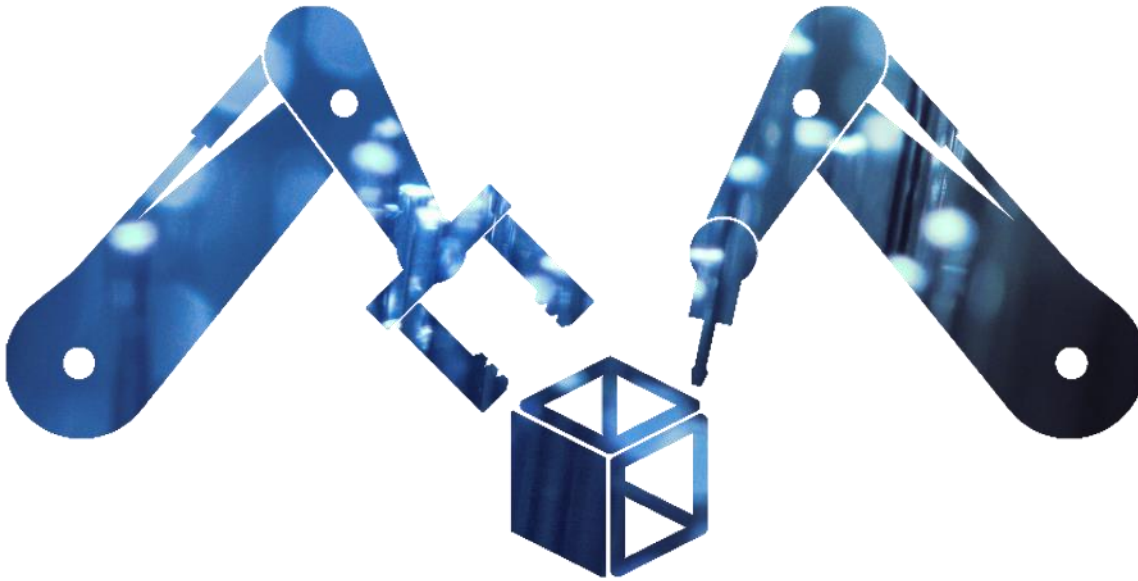# Business today is increasingly high velocity and software driven

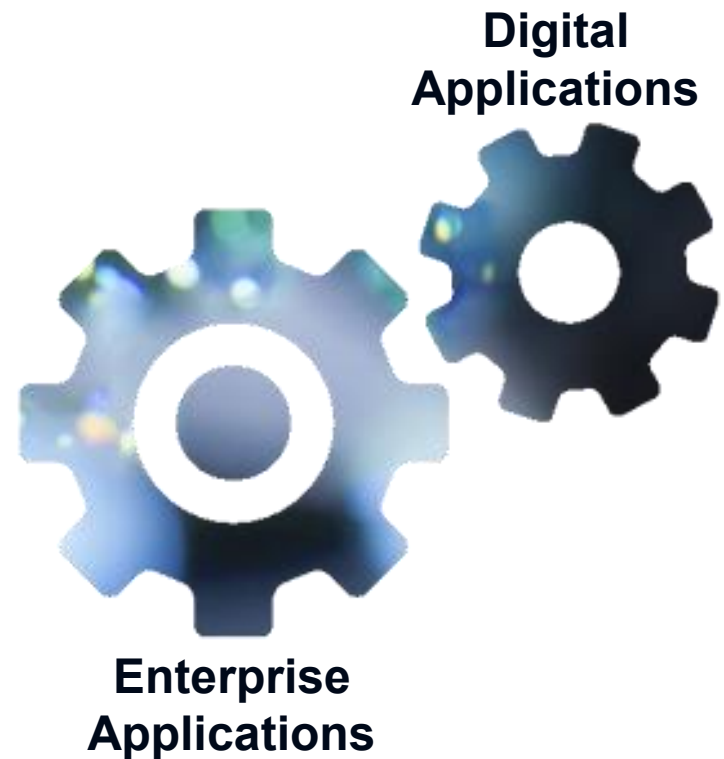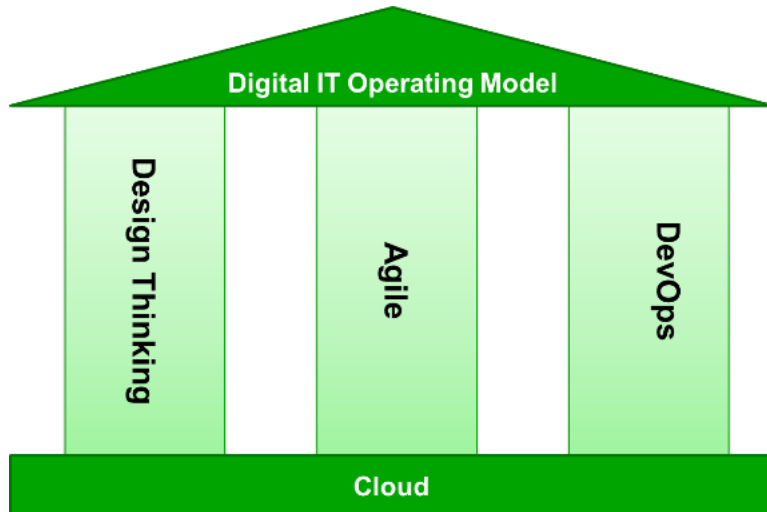What's needed is a new way to build software

One that is faster, flexible and more liquid. No longer can applications be "built" as one distinct activity and "maintained" as another. Engineering innovations such as Agile and DevOps enable software to be continuously delivered and evolve as business needs change.

- Accenture Future of Applications, 2014

Two-Speed IT is an intermediate step, but you should not forget the enterprise applications

Both digital and enterprise applications must move faster to keep pace
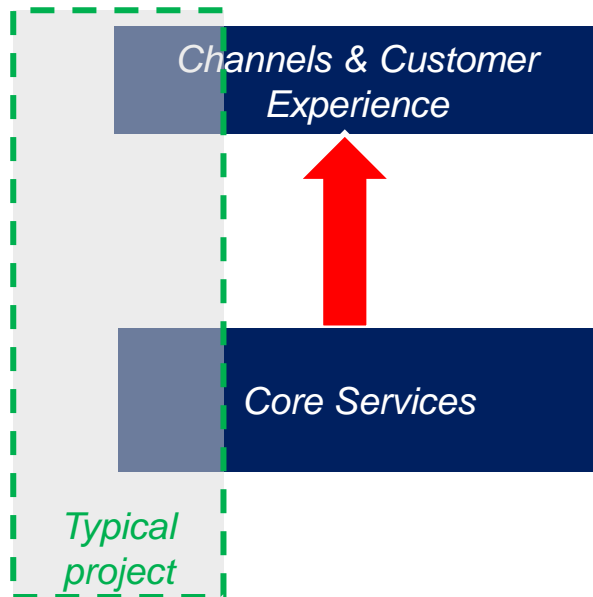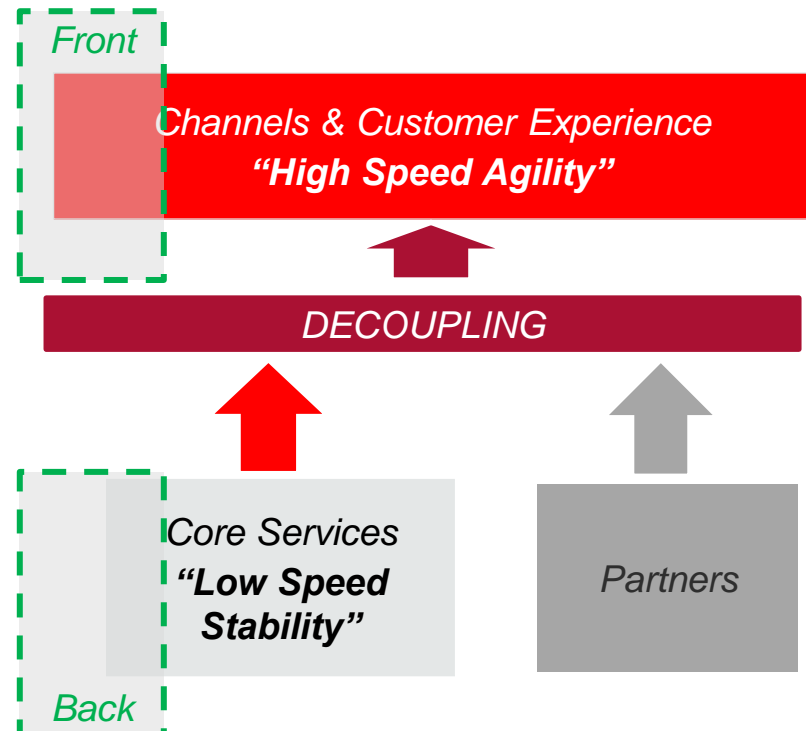
Digital IT Operating Model

Design Thinking

Agile

DevOps

Cloud

Digital Applications

Enterprise Applications

The Legacy Complication…

- Today -

Channels & Customer Experience

Core Services

Typical project

- Tomorrow -

Front

Channels & Customer Experience
"High Speed Agility"

DECOUPLING

Core Services
"Low Speed Stability"

Partners
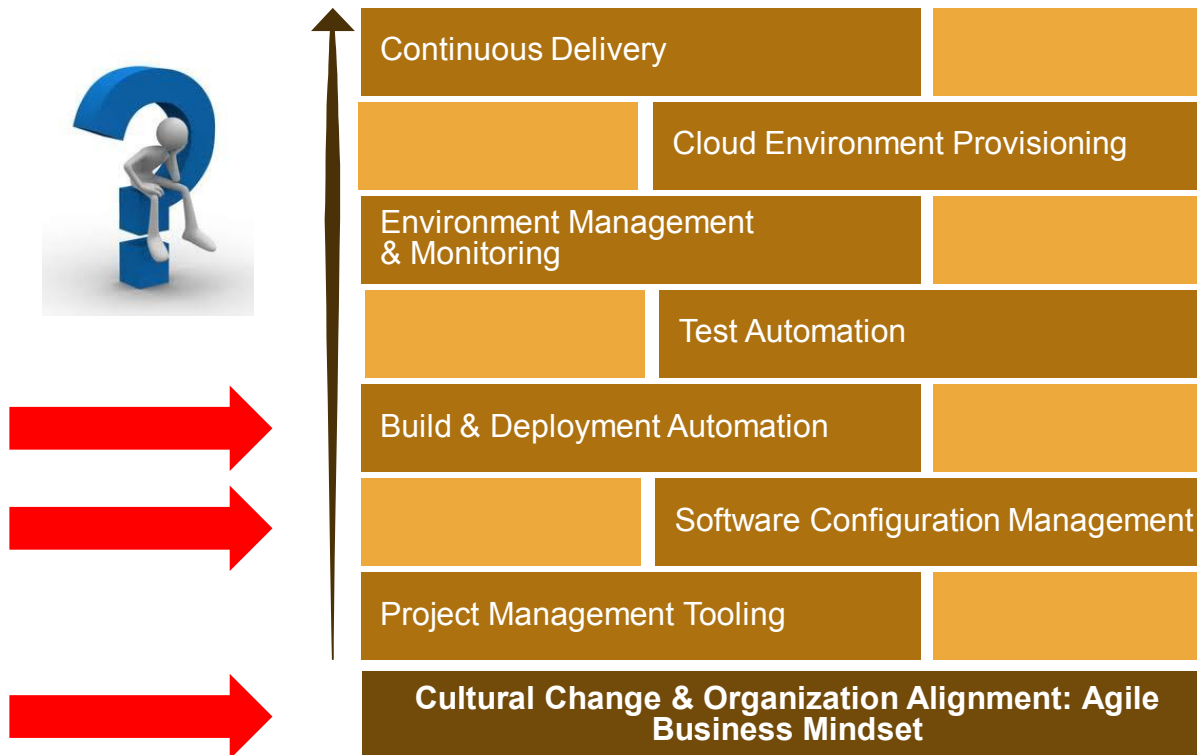
Back

What is DevOps ?

Development Operations

DevOps uses automation techniques to optimize collaboration across development and operations, enabling faster, more predictable and more frequent deployments to market

My view of DevOps

DevOps is a direction, not a goal!

So what can we do with systems of record

Continuous Delivery

Cloud Environment Provisioning

Environment Management & Monitoring

Test Automation

Build & Deployment Automation

Software Configuration Management

Project Management Tooling

Cultural Change & Organization Alignment: Agile Business Mindset

Is it technology or culture that holds us back?

Culture - A word of warning about maturity models
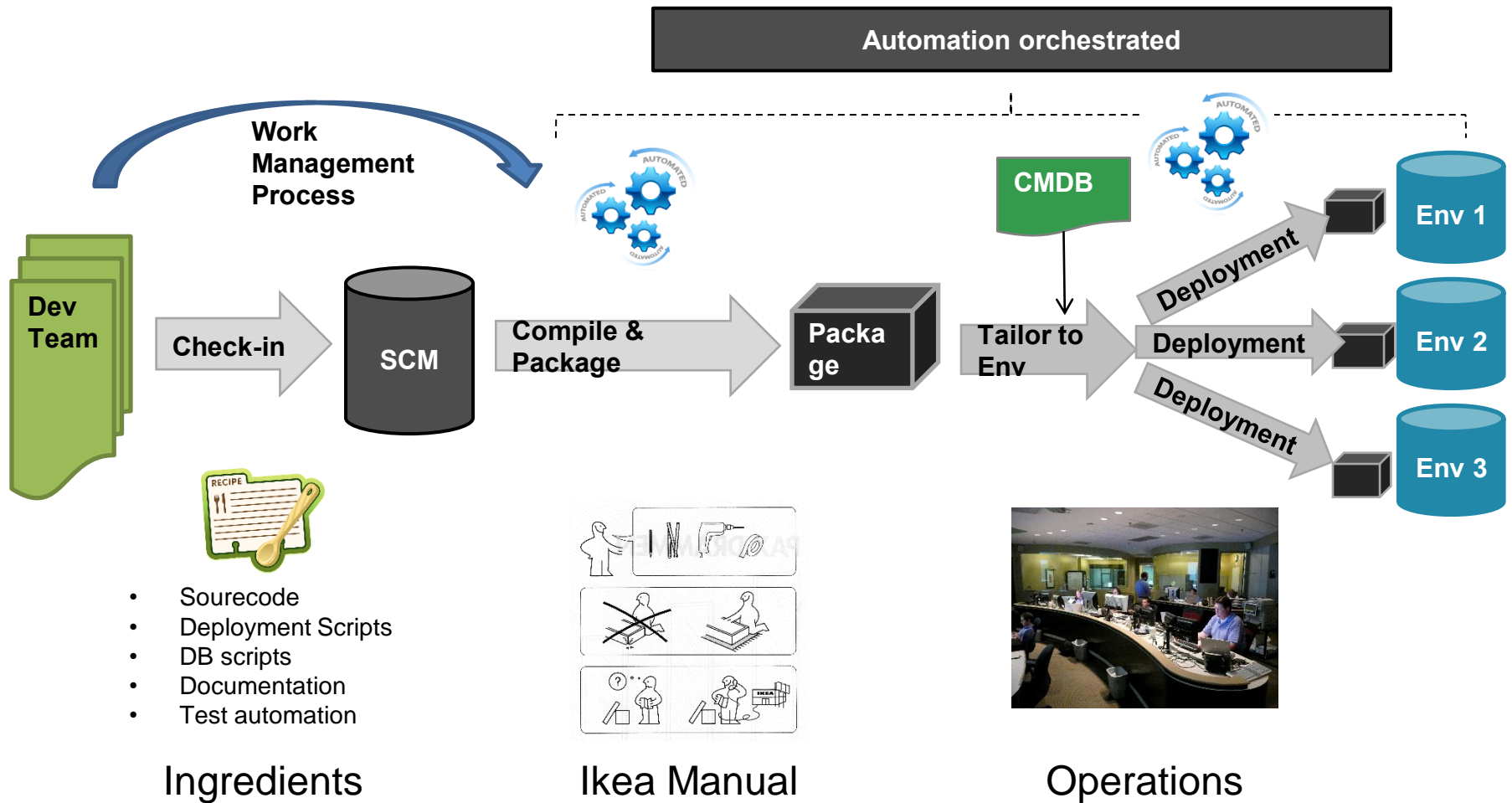
Dunning Kruger Effect - Illusory superiority

- In a survey of faculty at the University of Nebraska, 68% rated themselves in the top 25% for teaching ability. - Wikipedia

- In a similar survey, 87% of MBA students at Stanford University rated their academic performance as above the median. - Wikipedia

- For driving skill, 93% of the US sample and 69% of the Swedish sample put themselves in the top 50% - Wikipedia

- How do you think people would rate you as a leader?" It turns out that 74% of the respondents think they're either above average or the best leader their people have ever had. – SmartBrief on Leadership

Maturity models and what we can learn from Computer Games

Feature Toggling

Configuration Management

Unit Testing

Build Practices

Deployment Practices

Functional Testing

Virtualisation

Software Quality

Package Promotion

Reporting & Visibility

Read more on my blog:
http://notafactoryanymore.com/2015/03/26/what-computer-games-can-teach-us-about-maturity-models-choose-your-own-devops-adventure/

My Simplified View of the DevOps Software Supply Chain

Automation orchestrated

Work Management Process

Dev Team

Check-in

SCM

Compile & Package

Packa ge

CMDB

Tailor to Env

Deployment

Deployment

Deployment

Env 1

Env 2

Env 3

- Sourcecode
- Deployment Scripts
- DB scripts
- Documentation
- Test automation

Ingredients

Ikea Manual

Operations

3 Steps for your Systems of Record DevOps Journey

It won't be easy, but the rewards are worth it!

1. Look under the hood

2. Recreate the IKEA manual

3. Understand the path to production

Only a tool buys a tool to solve this problem…

Why is COTS software is different

Let's quickly compare your favourite web language with the usual COTS world

Code		**Hidden files**
Industry standard tools		**Proprietary**
Modular		**Monolithic**
Fast build	**VS**	**Long cycle times**
Unit Test		**Not made for unit testing**
Developers		**Configurators**
Web-based Test Automation		**?!?!?!?**

The role of DevOps is to understand how to find the moving pieces.

Now that we got code – what next
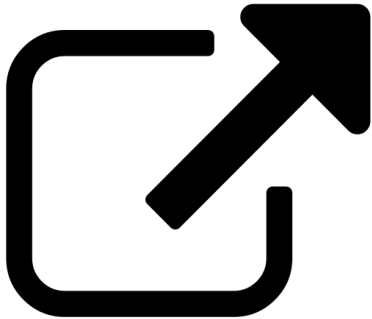
1. Get it out of the proprietary SCM solution

2. Tightly integrate it with your IDE

3. Solve for Merges

Many frontends, but a common platform

Each developer should be able to work in the best IDE for his specific technology
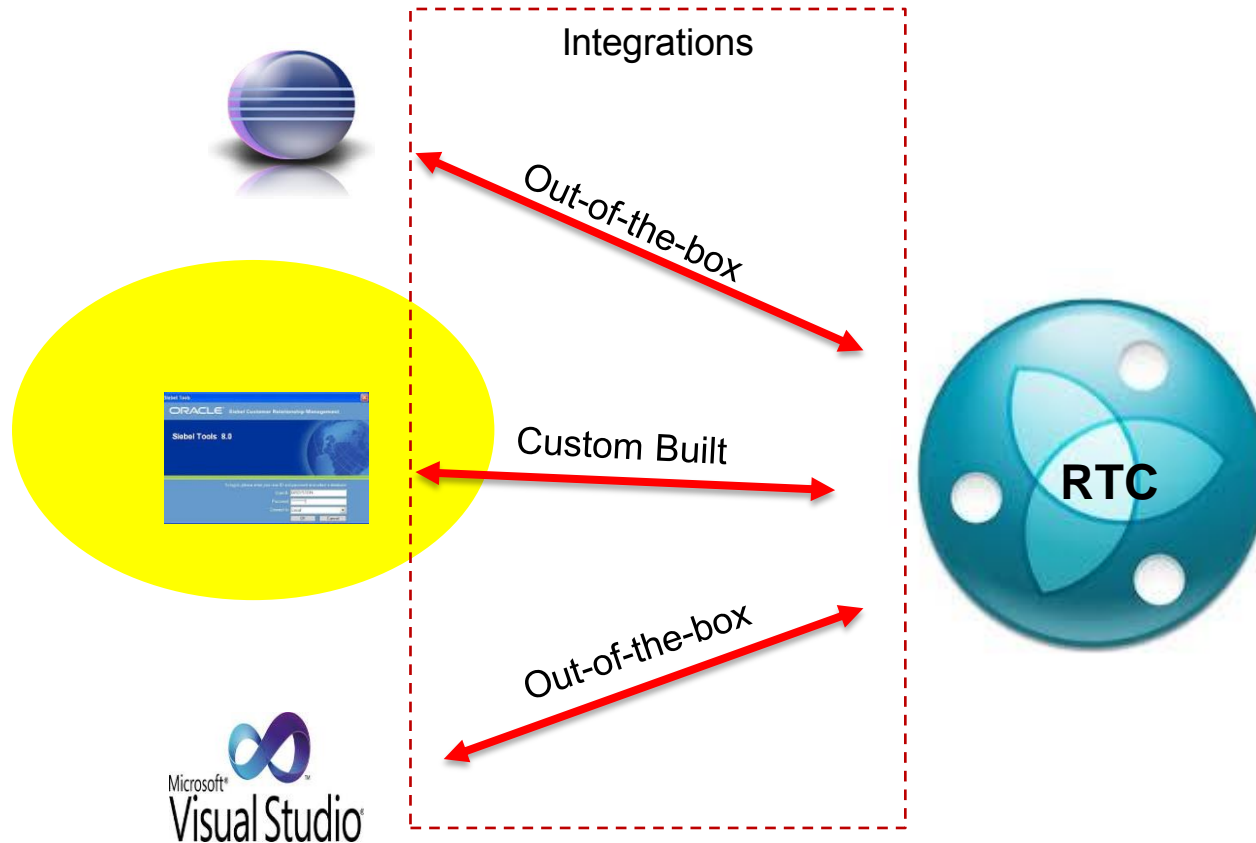
Make it easy to do the right thing

Username & Password for RTC

Location in RTC

Search Window to find Work Items

Check-In Comments
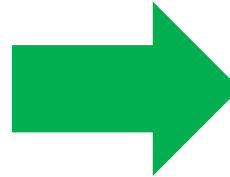
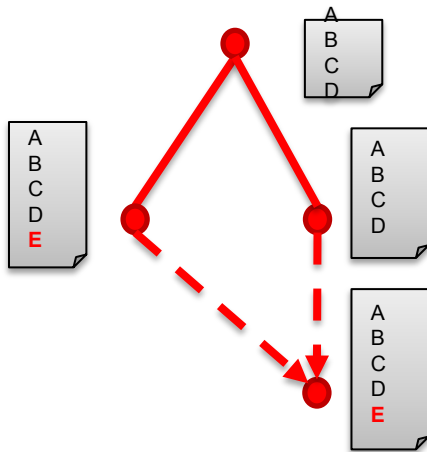Close the loop by refreshing the environments

Merge/Retrofit Automation Process
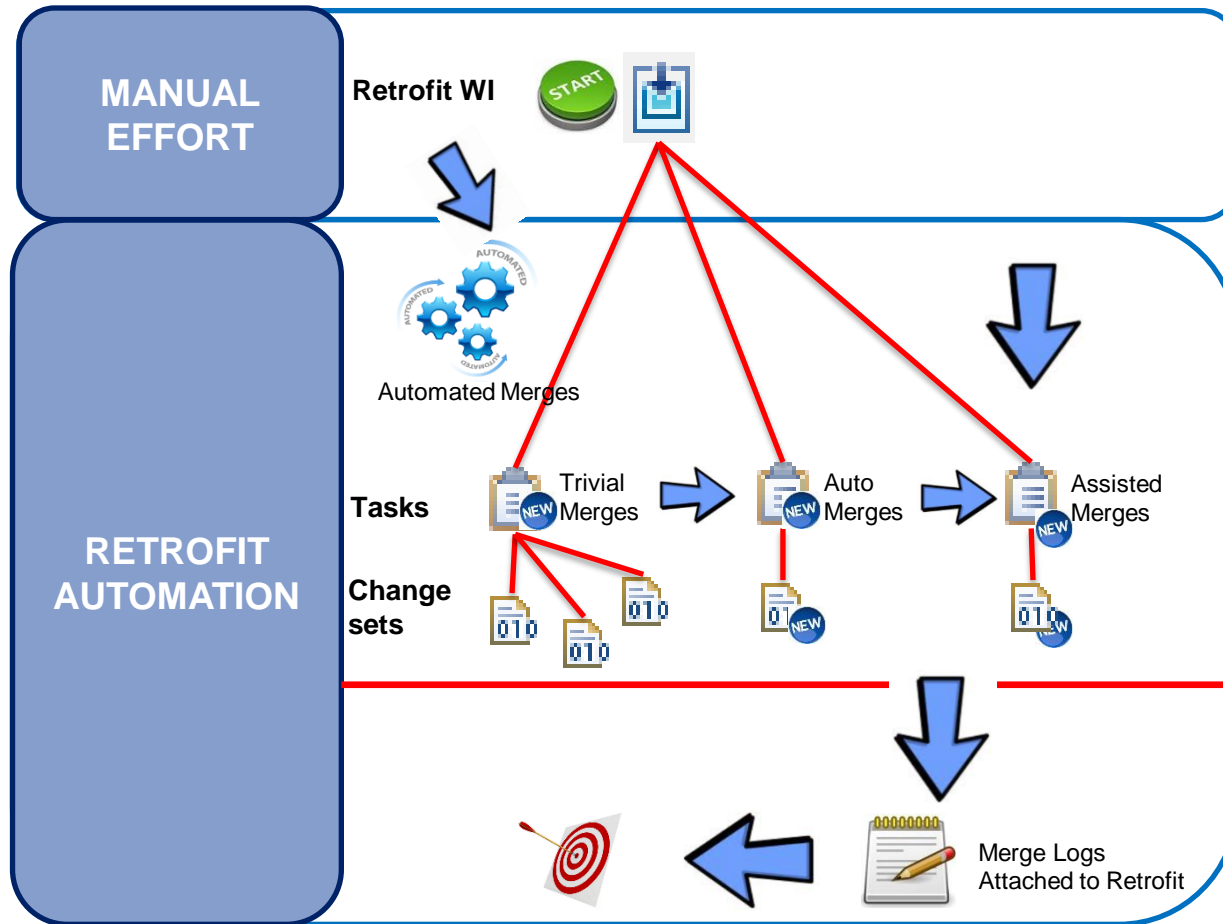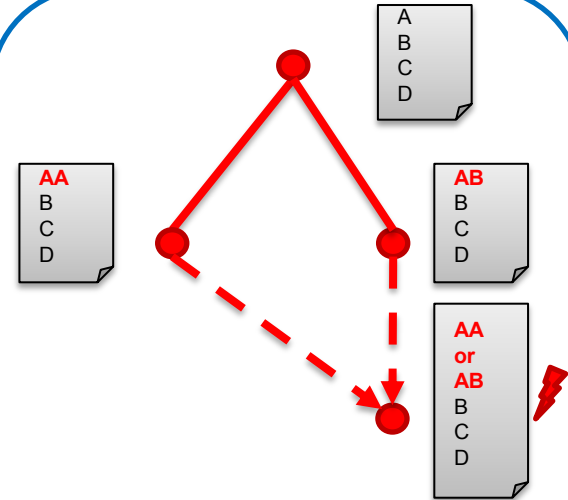
3 Types of Merges are being adressed

Trivial	False Positive	Complex
	Can be auto resolved using 3rd Party Tool	Cannot be auto resolved

Old World

528 Objects manually merged

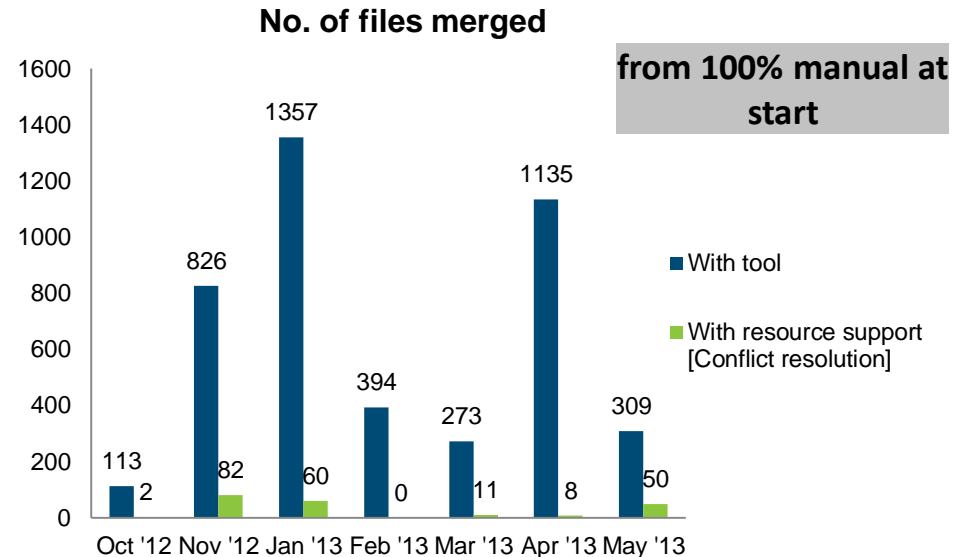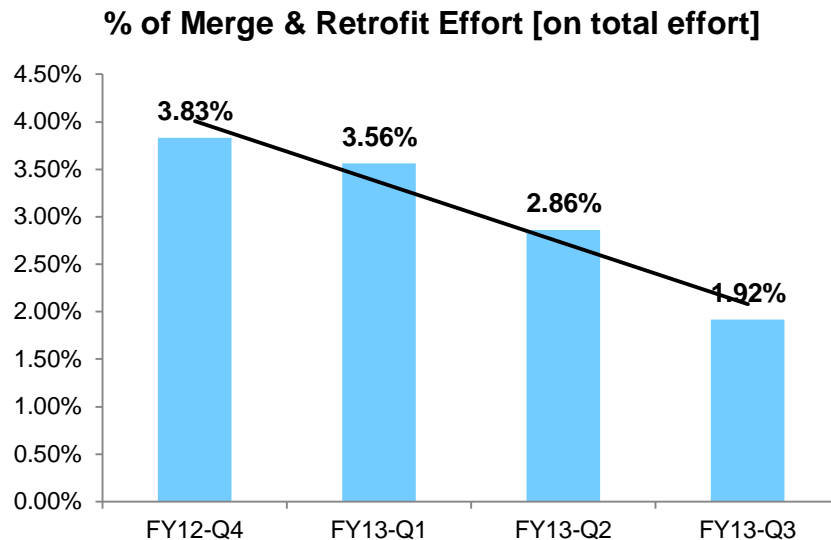**New World**

318 Trivial Merges   **91 Auto Merges**   **119 Assisted Merges**

We did get the results we were hoping for

Our merges took way too long (~2 weeks) and took too much effort

% of Merge & Retrofit Effort [on total effort]

- FY12-Q4: 3.83%
- FY13-Q1: 3.56%
- FY13-Q2: 2.86%
- FY13-Q3: 1.92%

No. of files merged

from 100% manual at start

With tool

With resource support [Conflict resolution]

- Oct '12: 113 / 2
- Nov '12: 826 / 82
- Jan '13: 1357 / 60
- Feb '13: 394 / 0
- Mar '13: 273 / 11
- Apr '13: 1135 / 8
- May '13: 309 / 50

The result: 2 weeks -> 3 days

Traceability and our ability to cherry-pick
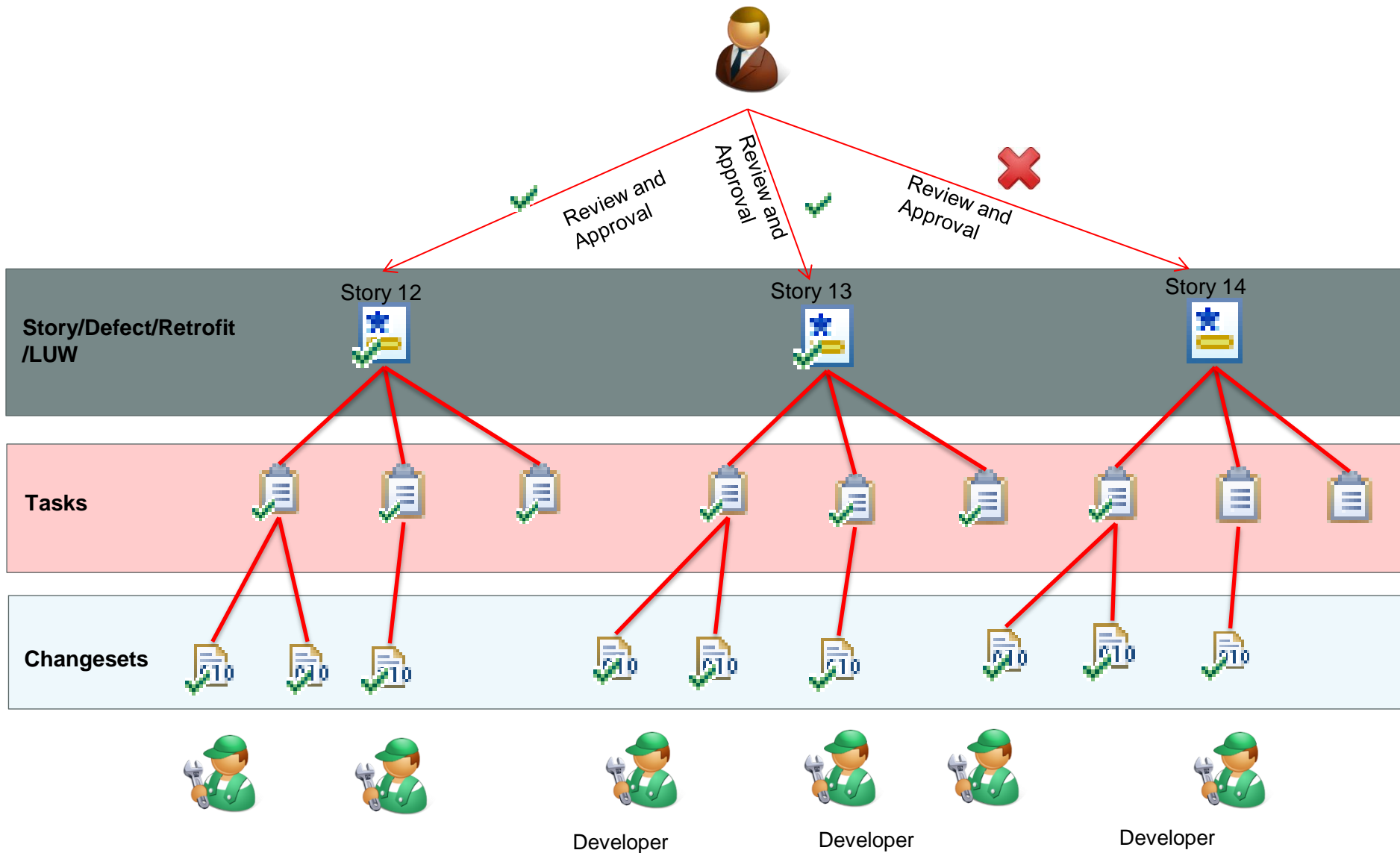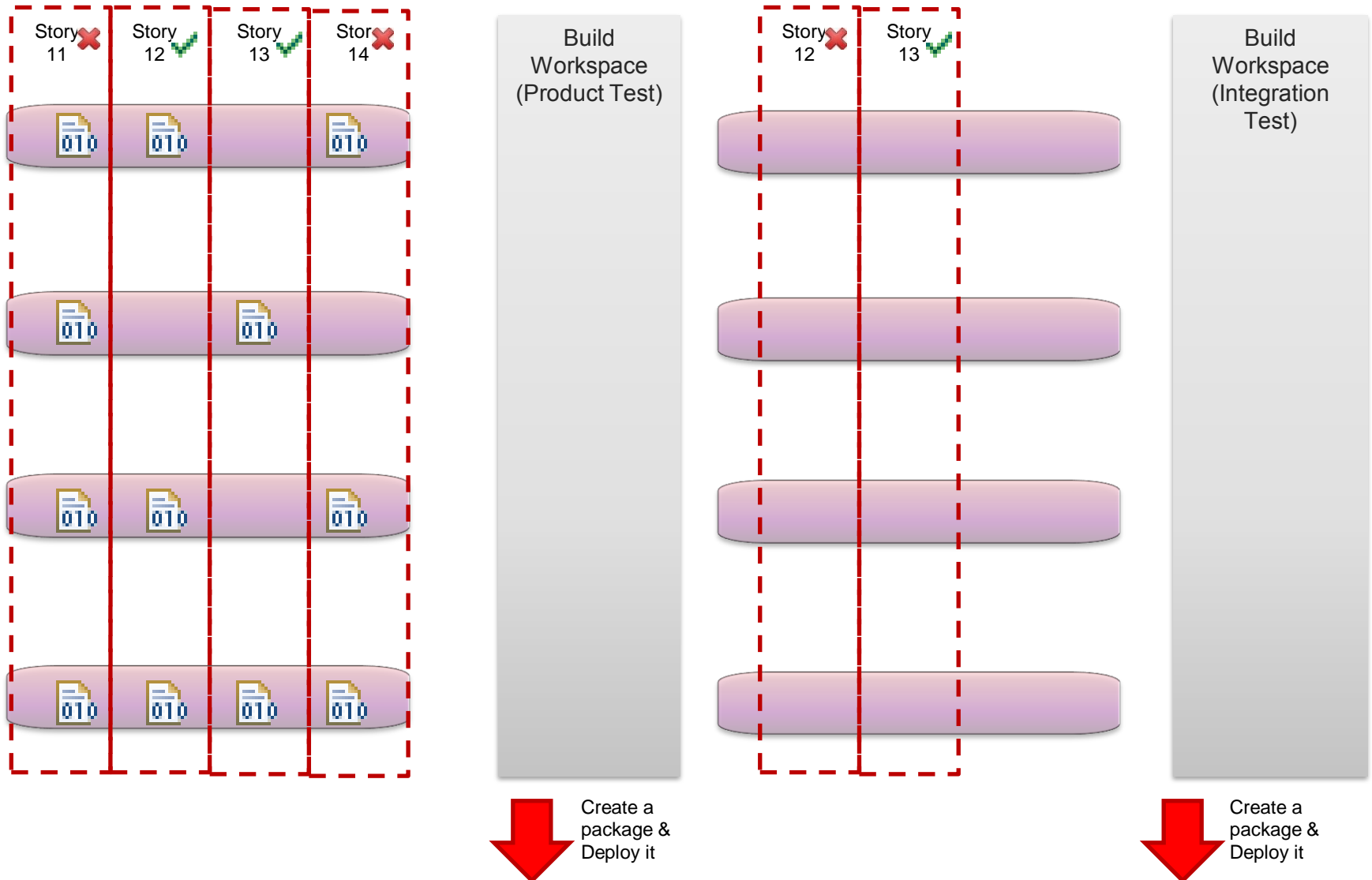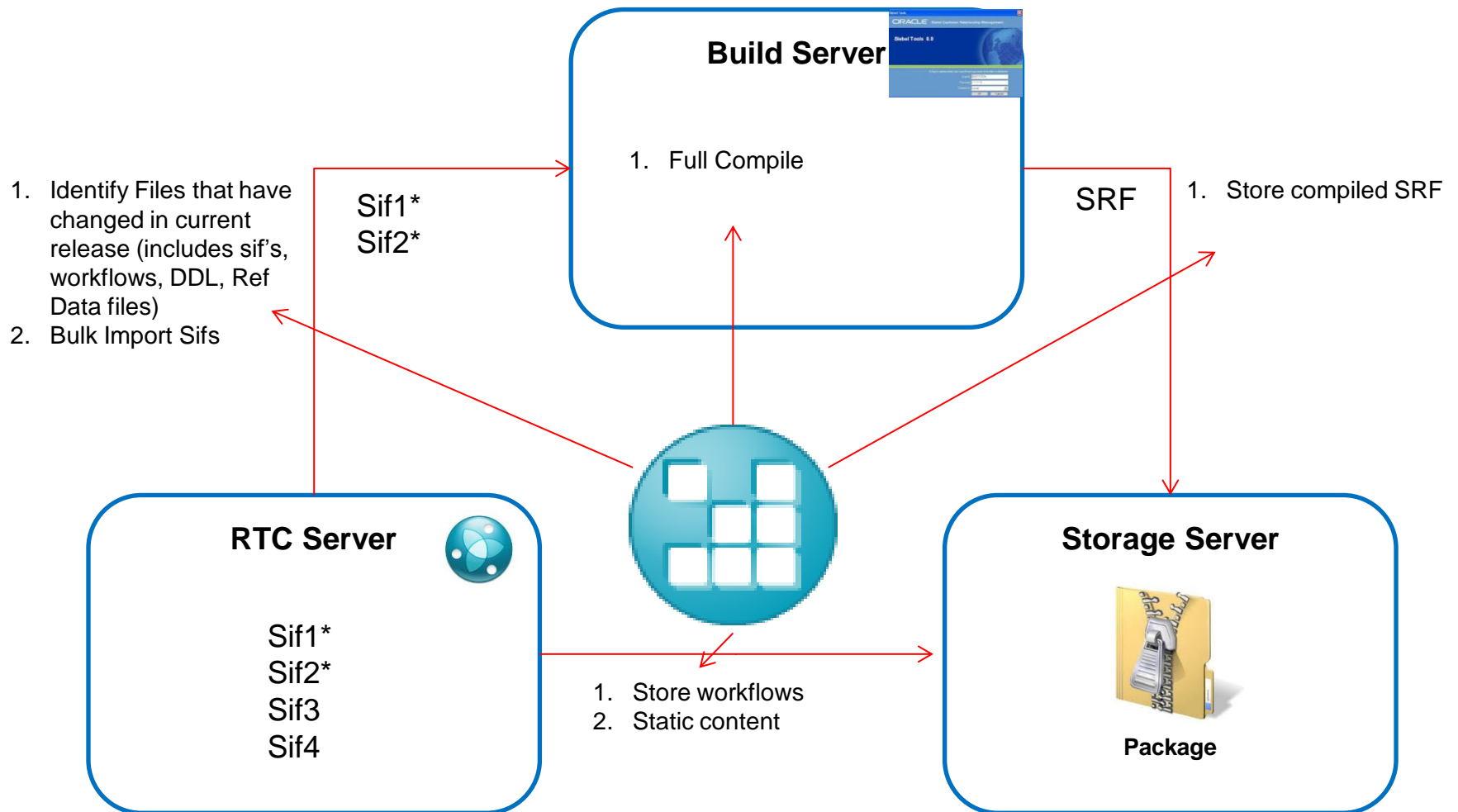
Traceability and our ability to cherry-pick

An Example IKEA manual: The Siebel Build Process

Build Server

1. Full Compile

1. Identify Files that have changed in current release (includes sif's, workflows, DDL, Ref Data files)
2. Bulk Import Sifs

Sif1*
Sif2*

SRF

1. Store compiled SRF

RTC Server

Sif1*
Sif2*
Sif3
Sif4

Storage Server

1. Store workflows
2. Static content

Package

An Example IKEA manual: Siebel Deployment

Target Server

SRF/Workflow deployment
1. Lock Siebel Project
2. SIF import
    a) Bulk import of Sifs
3. Workflows
    a) Import Workflows
    b) Deploy Workflows
    c) Activate Workflows
4. Stop Server
5. Deploy DDL
6. SRF deploy
    a) Install new SRF
   b) Generate Browser script
7. Start Server

Ref Data Deployment
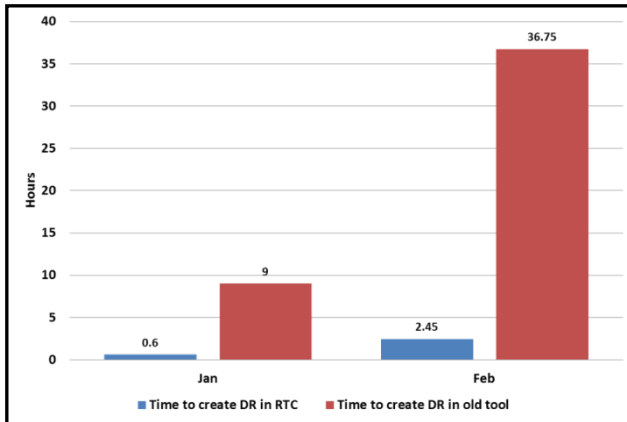
Storage Server

Package

Sif1
Sif2
WF1
WF2

All is good then with Systems of Record?!?
…This is where it comes undone (so far…)

While we made lots of progress, there are still a few work in progress item

- Unit test automation
- Unsupported activities or no API
- Performance
- Configuration Management skills – the curse of the configurators
- Common Objects
- Operations – the last mile…

Some thoughts on the usual adoption curve
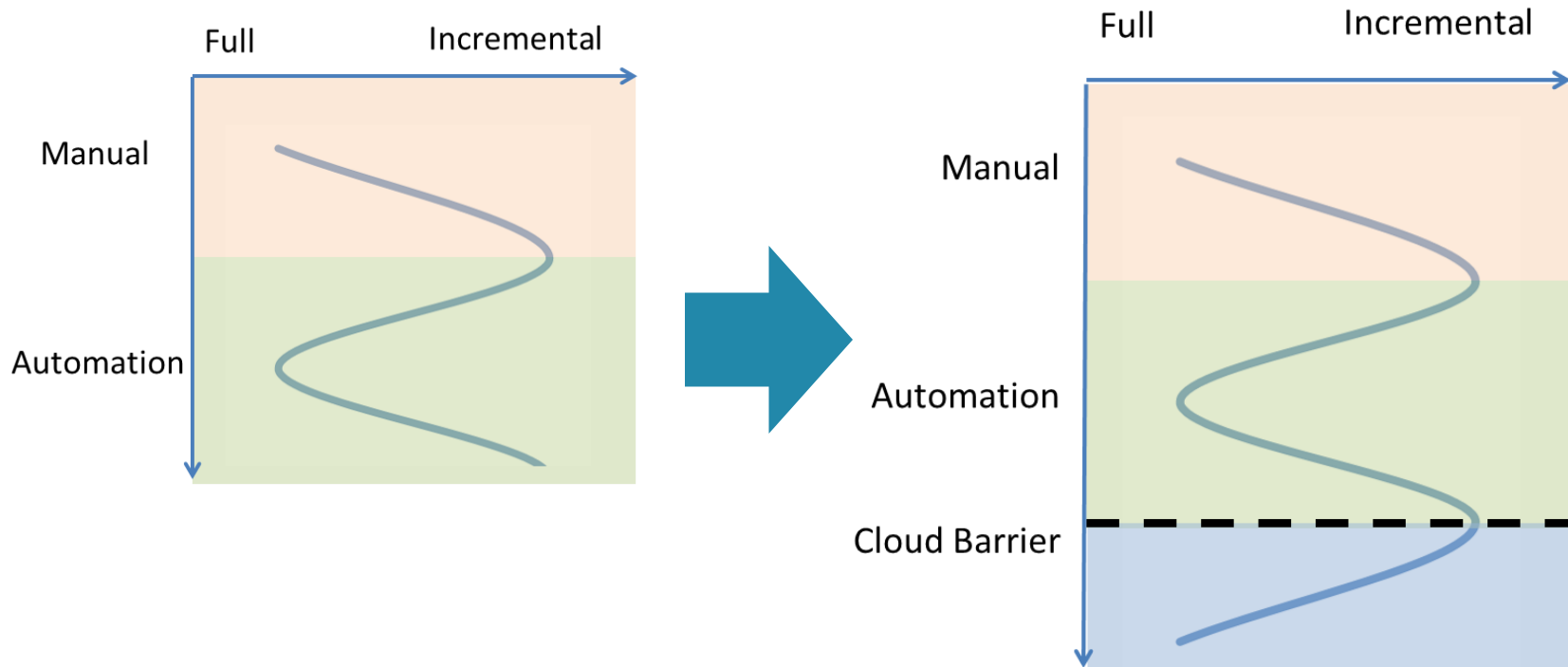
The search for the right tooling

There is not one "right" tooling solution

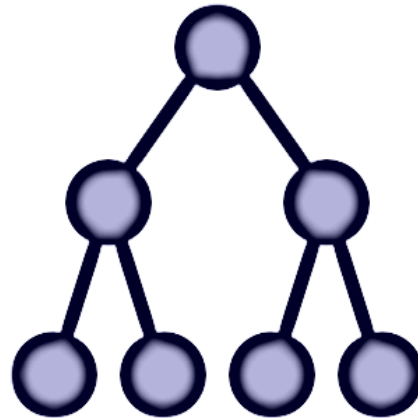Technology Mix

Skills
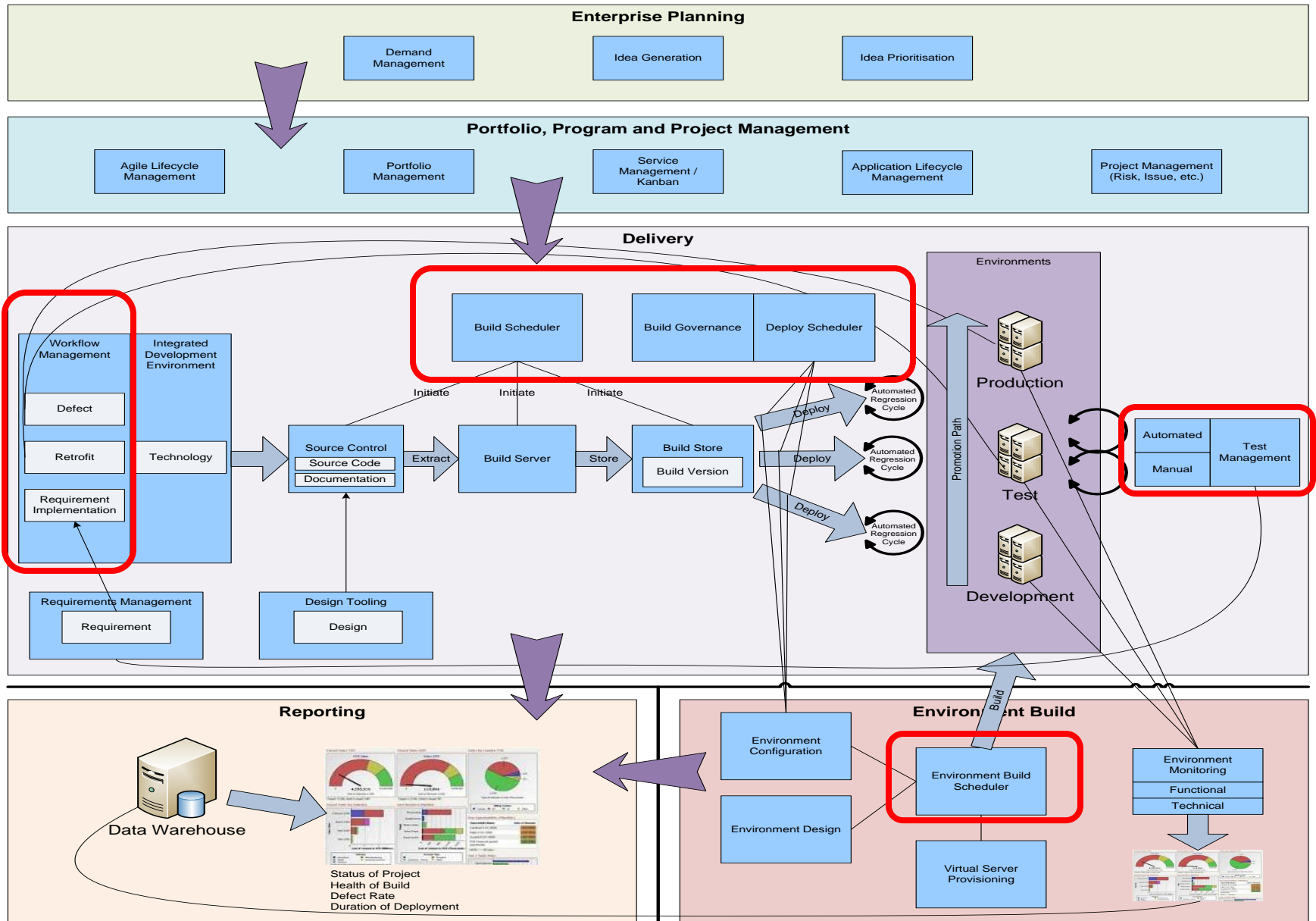

Existing Licenses

Need for Support

But at some level you need to integrate

Mirco's more detailed Reference Model

Further References

Read more on DevOps

- Accenture's DevOps offering and reference material:
  - http://www.accenture.com/devops
- Mirco's blogs:
  - http://notafactoryanymore.com
  - http://notafactoryanymore.com/2015/01/09/the-winding-road-to-devops-maturity/
  - http://notafactoryanymore.com/2015/01/28/how-to-support-multi-speed-it-with-devops-and-agile/
  - http://notafactoryanymore.com/2015/03/26/what-computer-games-can-teach-us-about-maturity-models-choose-your-own-devops-adventure/