

Continuous integration for BI

Speaker

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#566 | PARMA 2016

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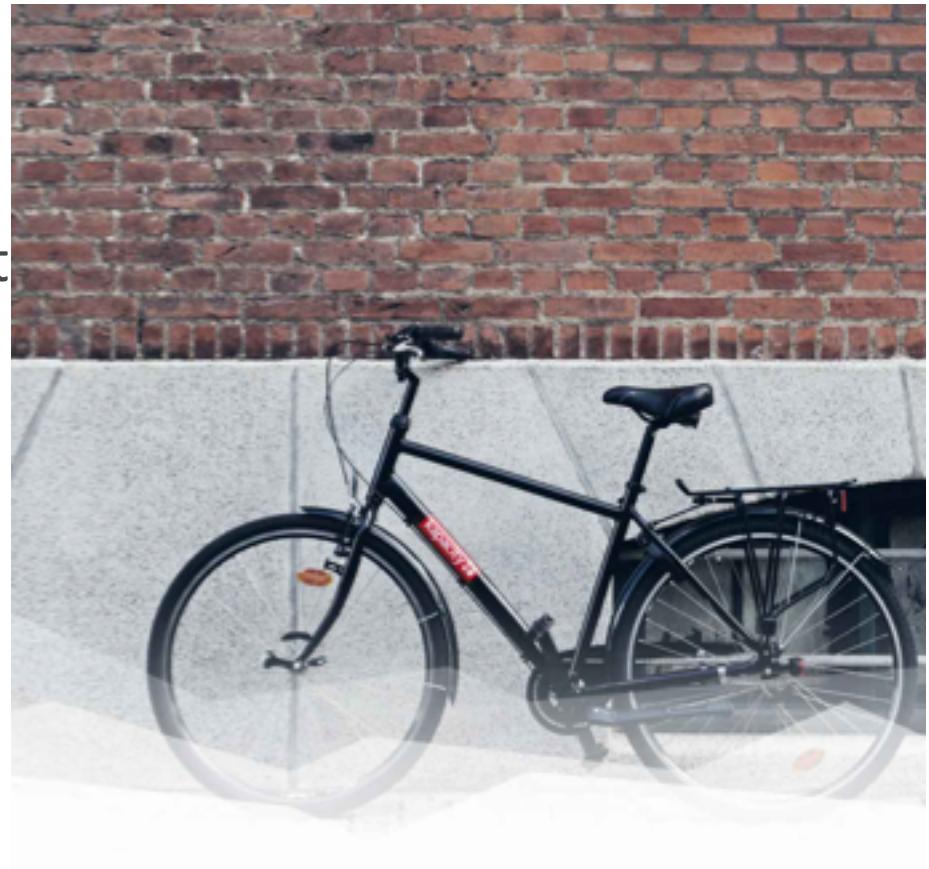
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COMMUNICATION



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Who am I?

- Bent Nissen Pedersen,
Hamburg
 - Business Analytics Architect
Kapacity
-  @SQLBent
- bnp@kapacity.dk
 - BI for 8 years
 - www.biblog.eu



Agile BI System

- Automated Testing
- Continuous Integration
- Currently no Agile-friendly ETL tools
- User self-development areas
- Multi-location teams
- Burn-up charts for progress monitoring
- Project overview

12 Agile Principles – Process

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Working software is the primary measure of progress.

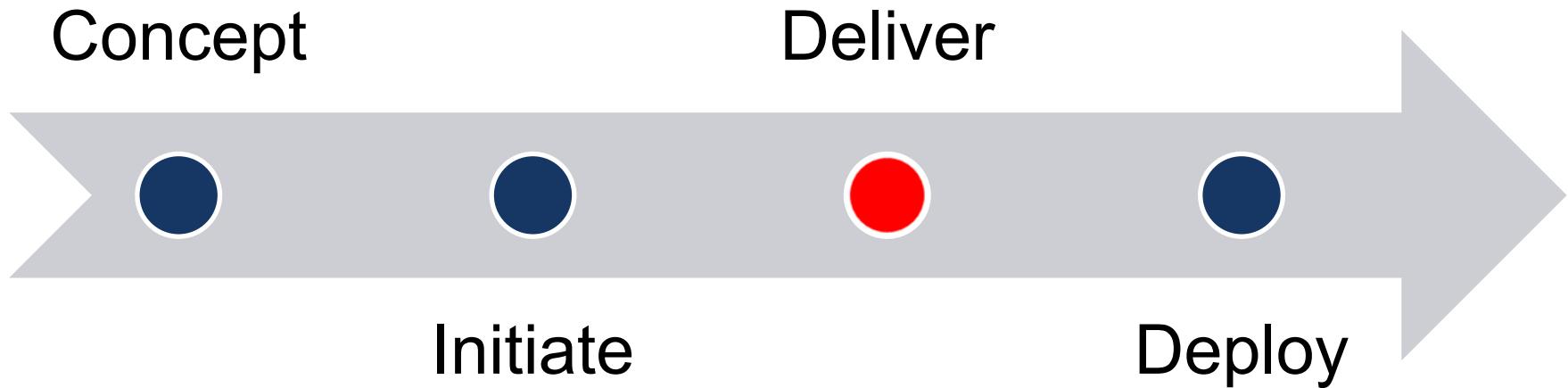
12 Agile Principles - People

5. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
6. Business people and developers must work together daily throughout the project.
7. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
8. The most efficient and effective method of conveying information is face-to-face conversation.

12 Agile Principles - Framework

8. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour.
10. Continuous attention to technical excellence and good design enhances agility.
11. Simplicity--the art of maximizing the amount of work not done--is essential.
12. The best architectures, requirements, and designs emerge from self-organizing teams.

You have to focus your effort correct



What people say about Agile

For Agile:

- Increases delivery speed
- Decreases wasted effort
- Deals with change
- Fewer costly failures
- More value delivered, faster and earlier

Against Agile

- No documentation
- Lots of re-work
- No time for architecture or design
- Cowboy delivery
- No “Big Picture”
- Makes mistakes due to lack of planning
- Doesn’t work in BI

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Four key stages

1. Source Control
2. Continuous integration
3. Automated testing
4. Automated deployment

Get your project under control

- Use version control for all code (including tests)
- Commit early, commit often
- Use tools
- Train people
- Build often

Continuous Integration

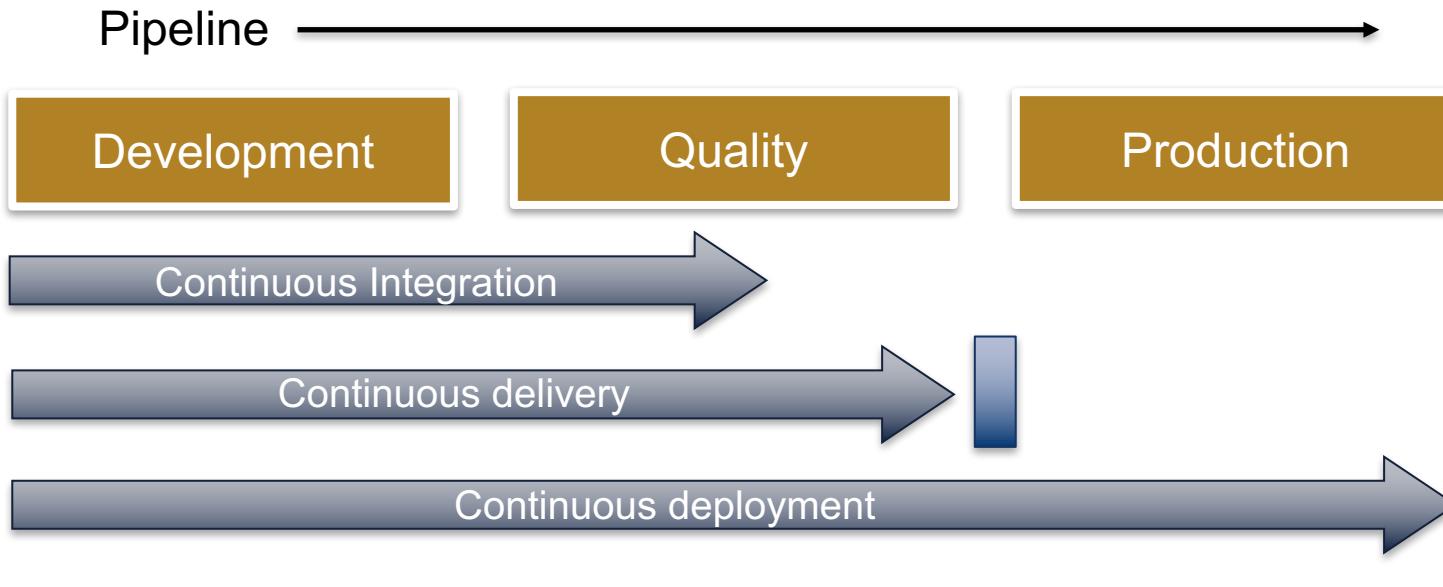
Requires

- Repository
- Build automation

Delivers

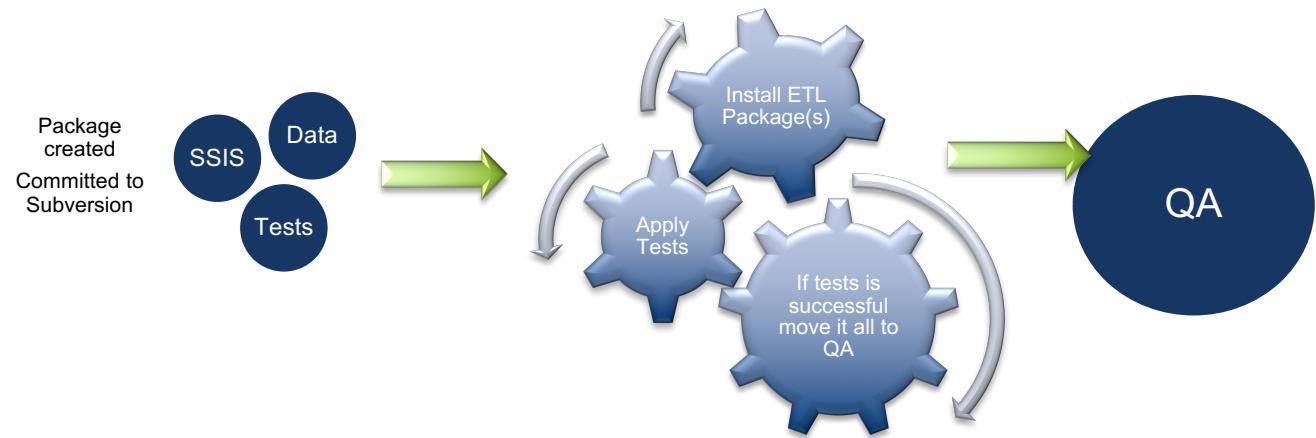
- Functional testing
- Delivery testing

Continuous Delivery

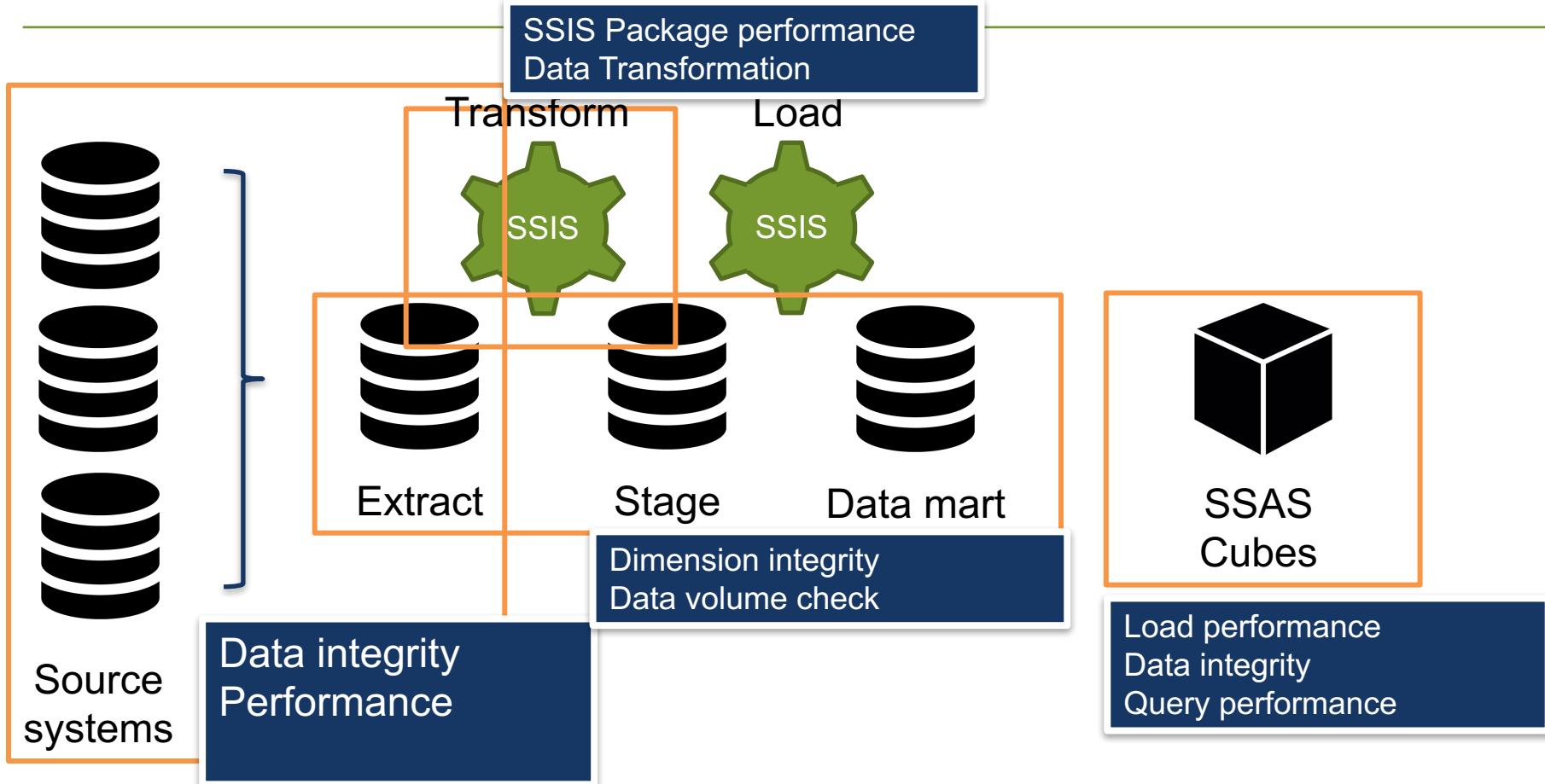


Details of the Auto Testing

1. Database changes, SSIS Packages and SSAS models is maintained and checked into to VS Team Services
2. Team Services is used to monitor Subversion and initiates whenever changes are detected.
3. Build is initiated comprising installation of new ETL package(s)
4. If the build succeeds the deployment is started to ensure that the latest version is available on the test environment.
5. Test is run to ensure that everything performs and works as expected
6. Test result is loaded



Where to focus your test



Continuous delivery

Continuous delivery  Continuous deployment

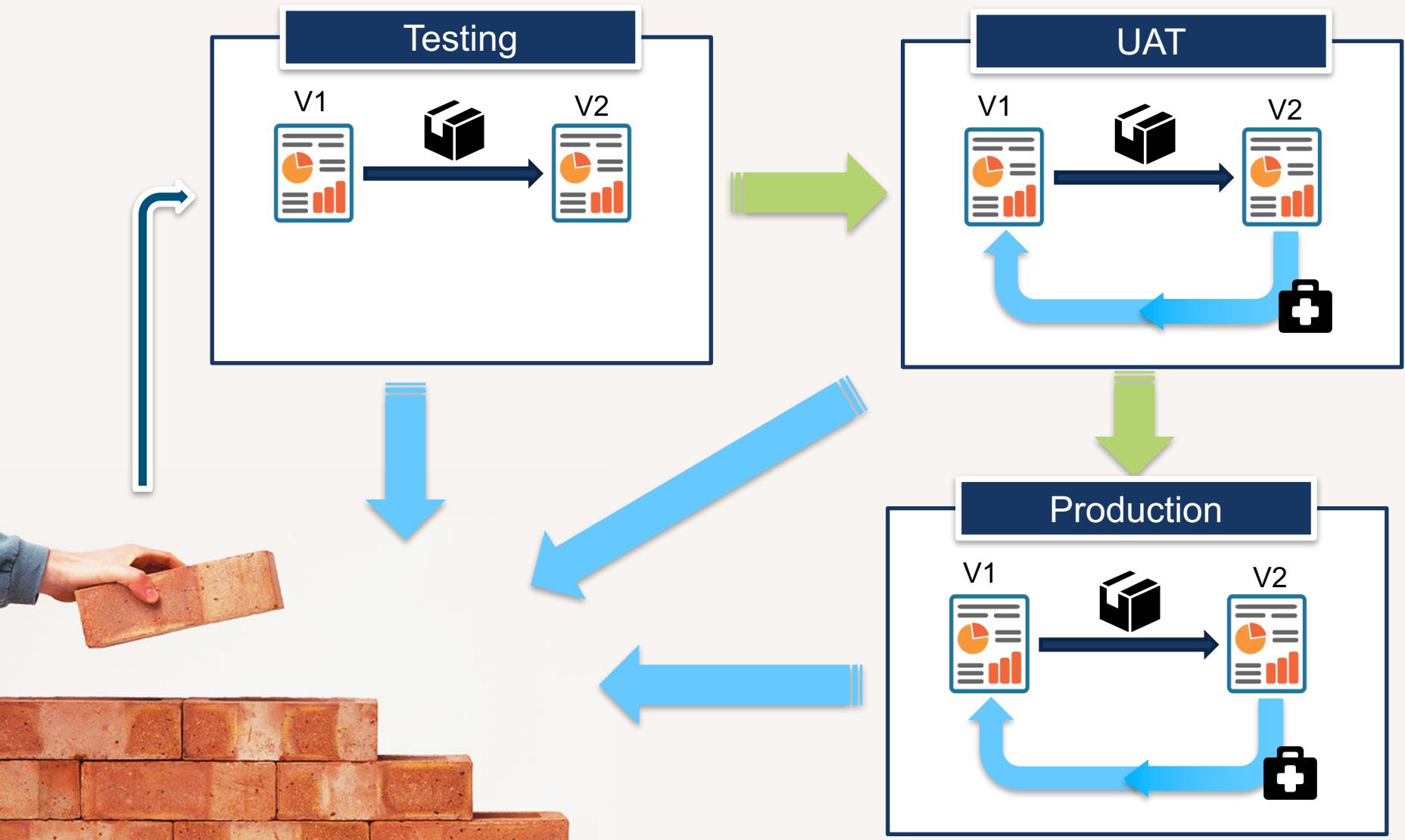
Continuous delivery basically indicates that you have to make sure that your work and databases are always **production-ready**.



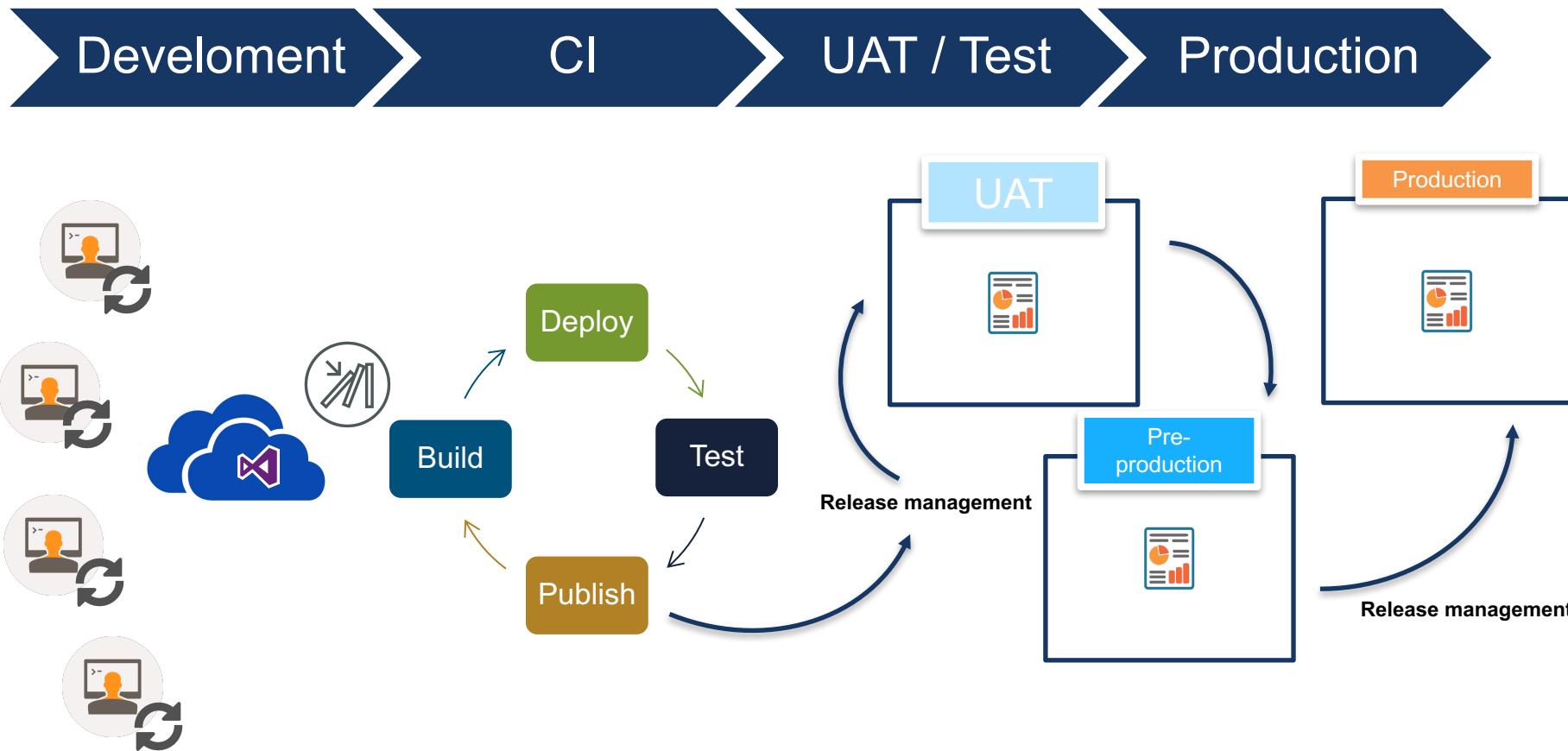
KEEP CALM
AND
BE PREPARED
FOR
MURPHY'S LAW

... So Plan for things to go wrong

Deployment



Continuous delivery for BI



Which tools am i going to focus on today?

SSIS

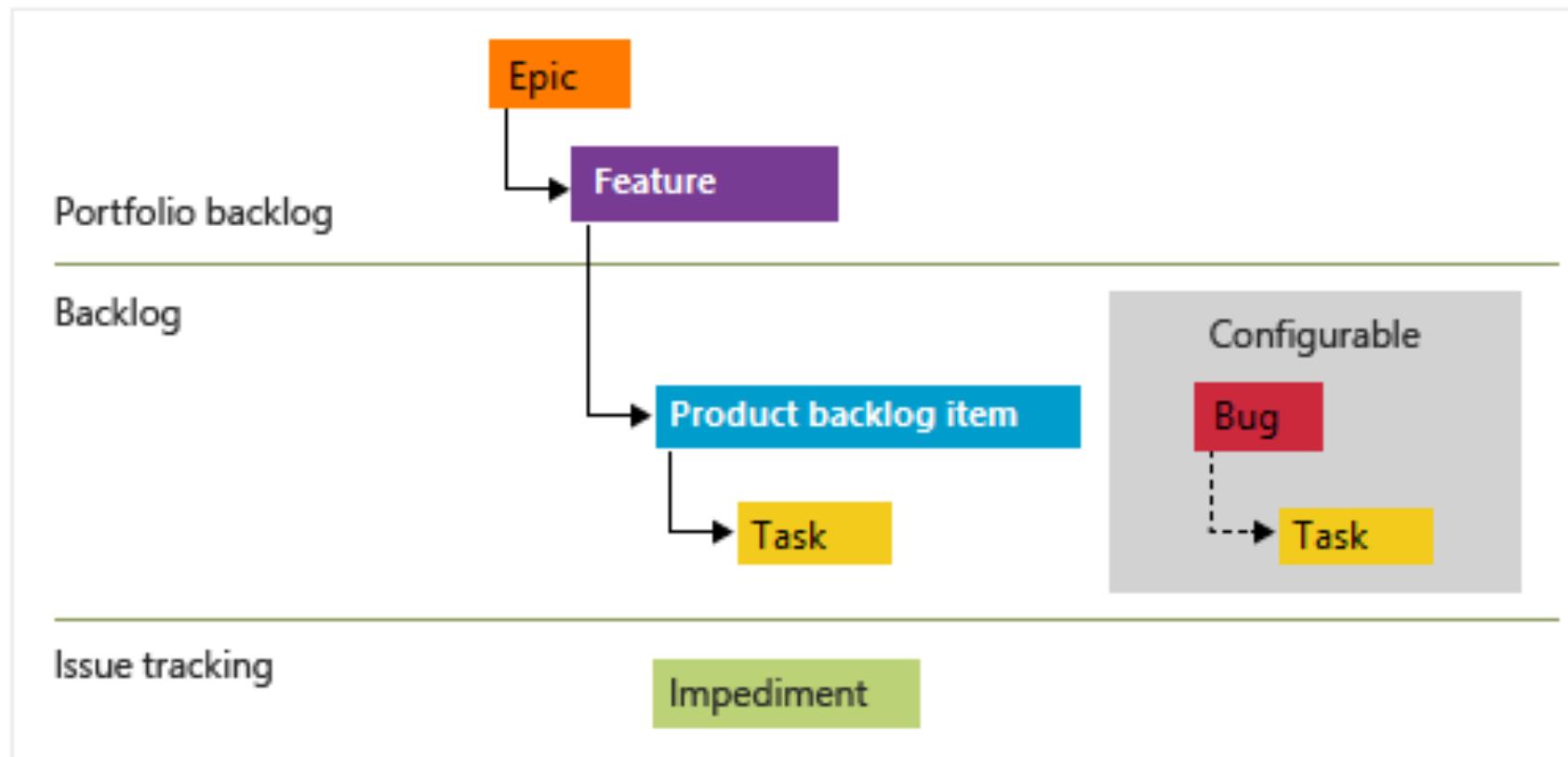
SQL

SSAS

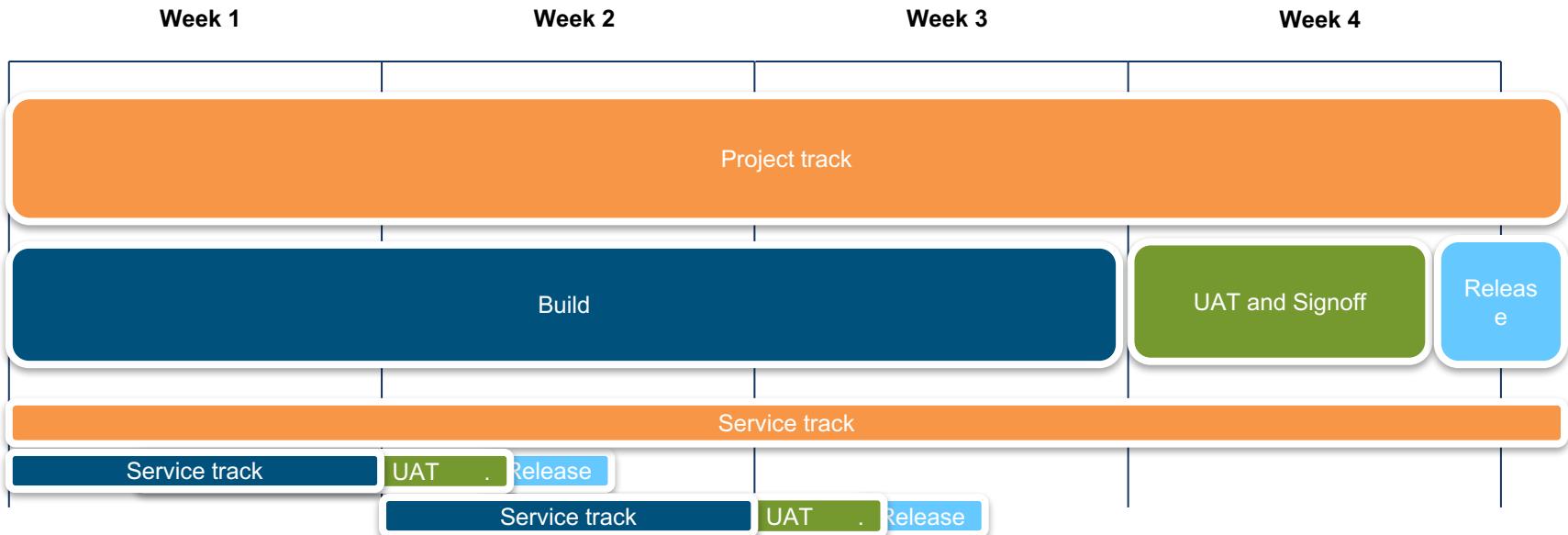
How to handle your release

- BI Project often contain changes to both database, SSIS, SSAS and reporting
- You cannot release one without the other
- The order of execution and deployment is important
- Configuring your SQL Jobs to run correctly is key
- Limiting datasets for testing will save you great time

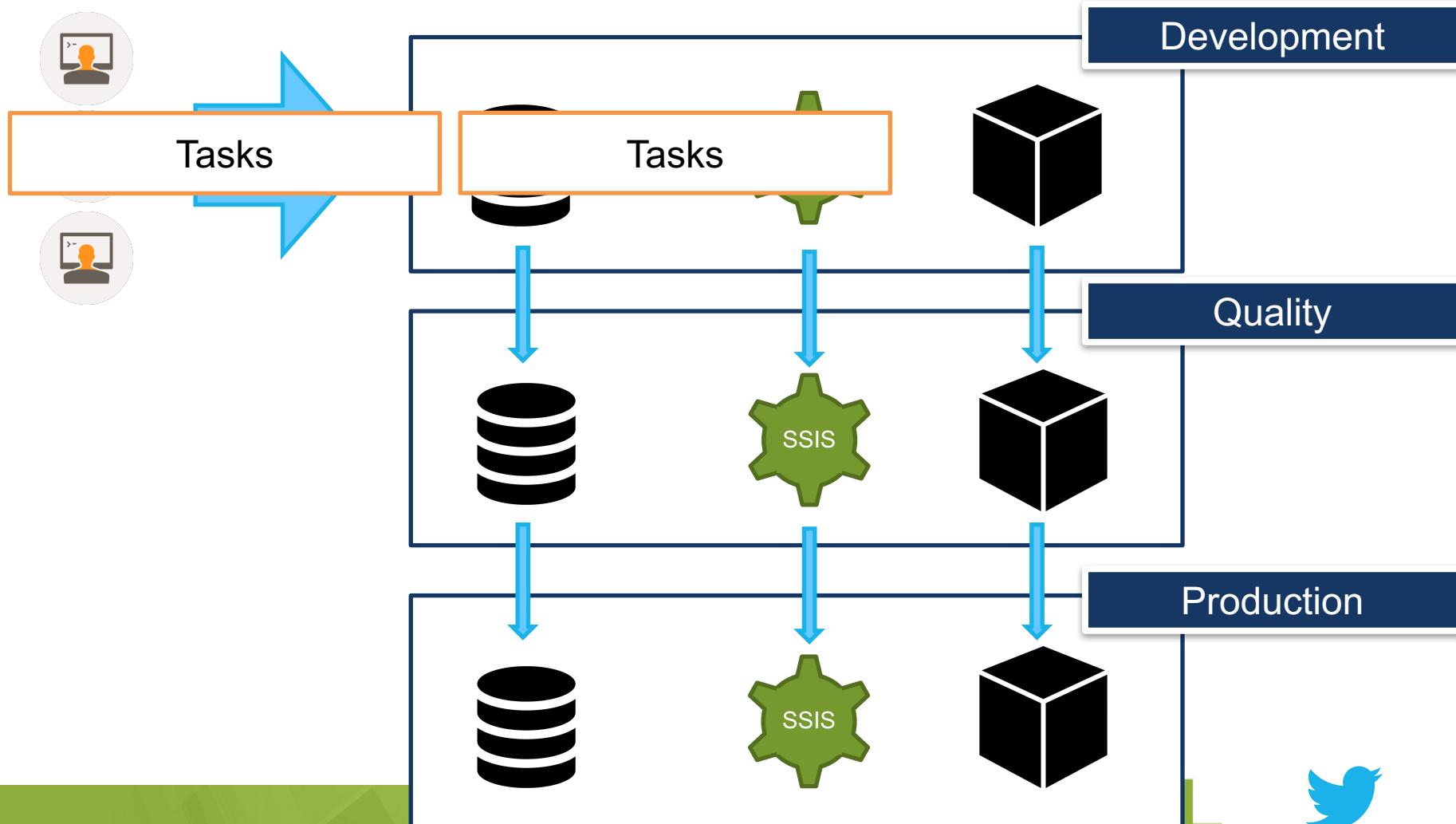
How you could be working Team Services



Example on real-life setup with BI

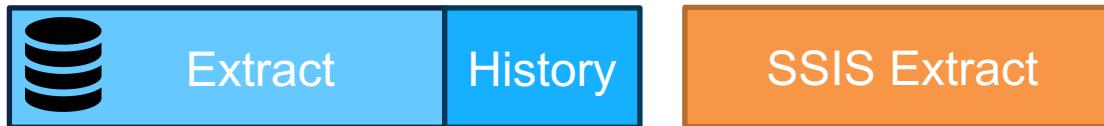


How you could be working with work

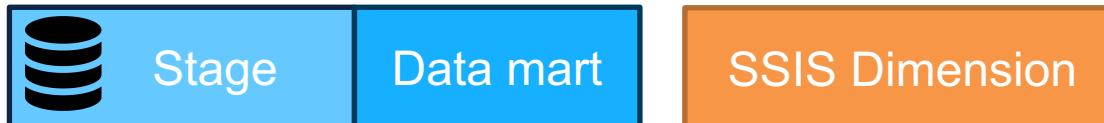


How to split your solution

Extract



Dimensions



Solution 1



Solution 2



Solution n



Database Deployments in CI

Complete deployment

- Fast
- Partial build validation
- Functional validation
- No artifact

Incremental deployment

- Longer
- Harder
- Complete build validation
- Generates artifact

Tips for Agile BI

- Remember iteration 0
- Model the details just in time
- Focus on **usage** and **adoption**
- Organize your work by requirements in priority order
- Ensure **active** stakeholder participation
- Take an evolutionary approach
- **Never stop testing**
- Include operations and support already in the QA phase
- Stick to your standards

Traps in Agile BI

- Not all developers like doing testing!
- Need an Iteration 0 to set up architecture and platform first.
- It's all or nothing
- Documentation of the business logic has to be done

Dont start getting sloppy

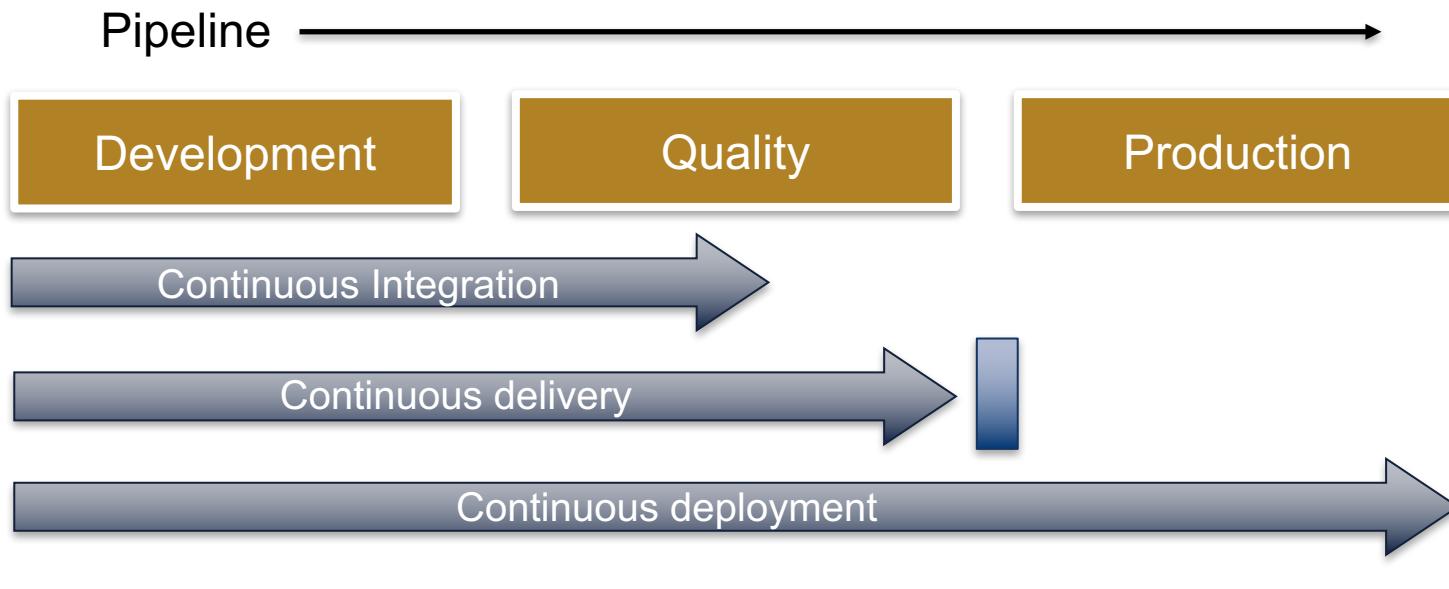
- Last-minute hotfix
- Manual emergency fixes
- Unknown changes

DEMO

November 26°, 2016



Continuous Delivery



Q&A

Questions?

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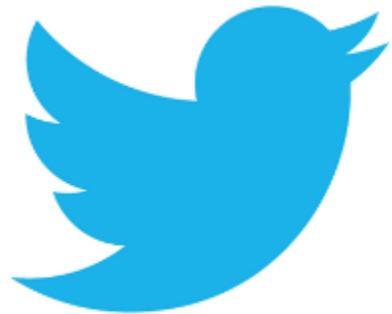


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Remember to give your feedback



Title: Continuous integration



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THANKS!

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