



5 Plumbing Tips For A **Smart** Pipeline

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<https://continuity.world/gallery>

cloud
bees.



Agenda

- ❑ Digital Transformation
- ❑ Continuous Nothing to Continuous Everything
- ❑ 5 Plumbing Tips for a Smart Pipeline



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CloudBees Suite: Catalyst for Digital Transformation



CloudBees
CodeShip



CloudBees
DevOptics

We're Building the World's First End-to-End Continuous Software Delivery System



Machine Learning for DevOps

Survey Results

CIOs Cutting Through the Hype and Delivering Real Value from Machine Learning

52%

ML is part of Digital Transformation

87%

Getting value from accuracy of decisions

C-Suite believes AI/ML can offer substantial value in terms of **accuracy** and **rapidity** of decision-making, which will lead to improved **profitability** for the company



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- ❑ Digital Transformation
- ❑ **Continuous Nothing to Continuous Everything**
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Continuous Nothing! Sign-offs and Handoffs.





Journey: Continuous Something -> Everything



Source: CloudBees, Inc.

[eBook: The Guardrails for Continuous Everything](#)



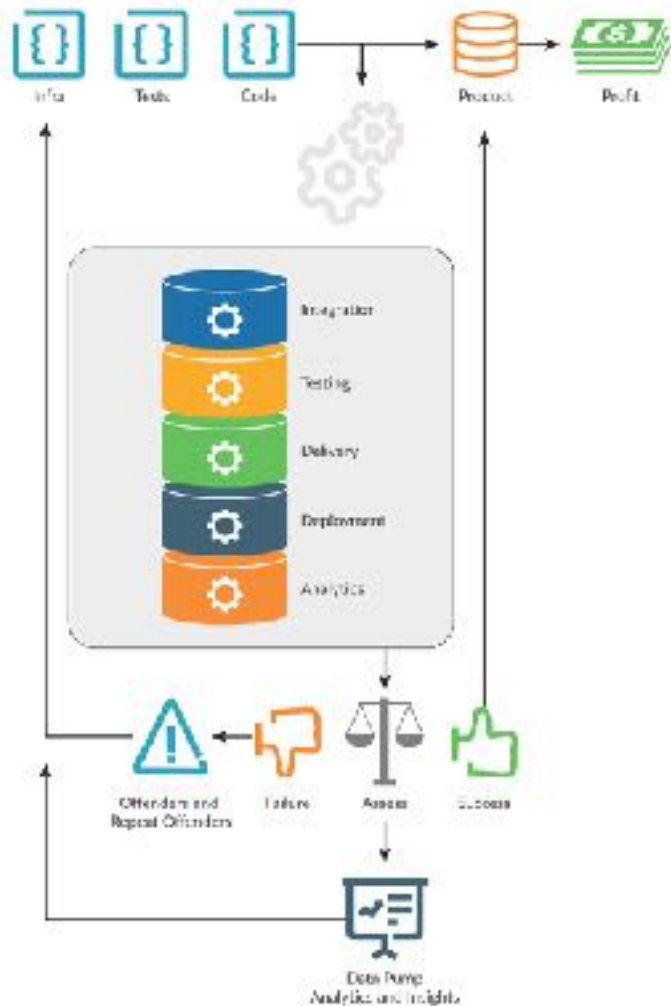
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- ❑ Continuous Nothing to Continuous Everything
- ❑ **5 Plumbing Tips for a Smart Pipeline**

1/5 : Design Self-Governing Pipelines!

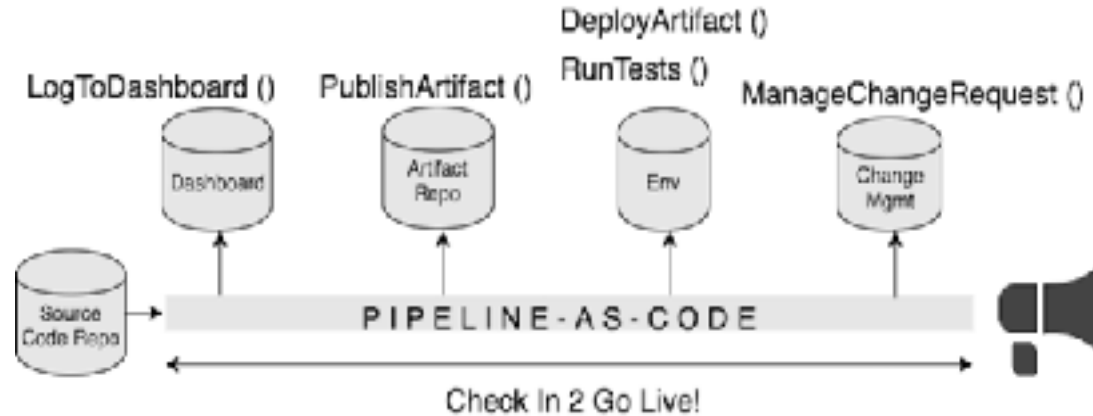
Transition from a manually configured rules-based engine

- ❑ Correlate data from the ecosystem
 - ❑ Trend # of dependencies (tech) vs. FeatureLeadTime (biz)
 - ❑ Trend # of integrations (tech) vs. Time2Code (biz)
- ❑ Anti-patterns - intentional or inadvertent
 - ❑ Tests and pipelines that always pass!
 - ❑ Tests that never fail!
 - ❑ Repeat offenders
 - ❑ TestCycleTime-> Pipeline duration->Time2Market (biz)
- ❑ Feed back into the development process





2/5 : Use Services Arch and ACL (Anti-corruption Layer)



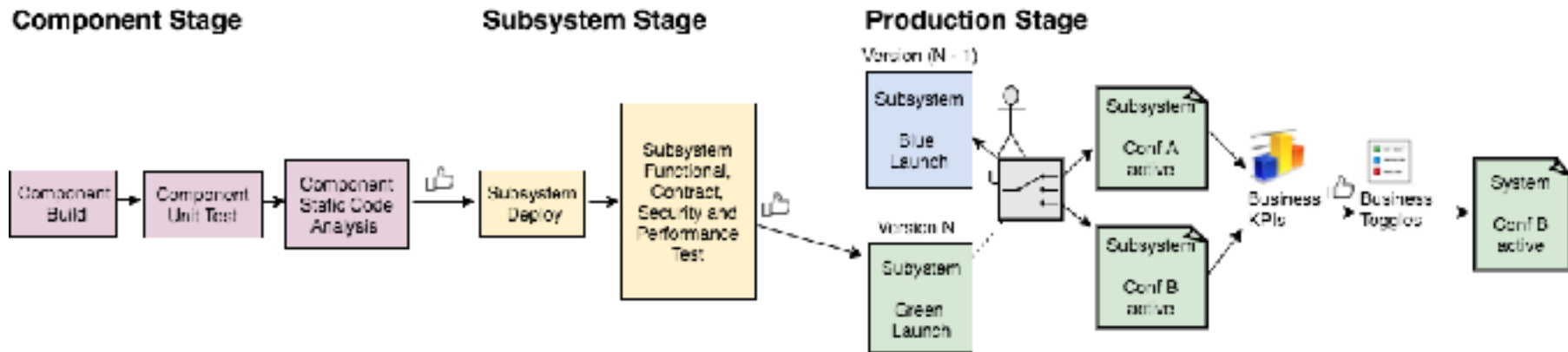
- ❑ SplitInputData () - How BIG is BIG data. Version control vs. data storage.
- ❑ TrainModel () - Build vs. Buy. OSS vs. commercial. Black-box vs. configurable.
- ❑ CrossValidate () - Talent? Data Science vs. Big data vs. Software engineering.



3/5 : Cross-validate Asynchronously. Test for Accuracy.

- ❑ Split input BIG data (K) into mutually exclusive training (K - 1) and test (1) sets
- ❑ Train on (K - 1) and test on 1
- ❑ Repeat K times with a different test slice

Integrate with the **fast-feedback** pipeline through a **circuit-breaker**





4/5 : Death By A Thousand Alerts

- ❑ Manual thresholds have high signal-to-noise ratio
 - ❑ Trend code coverage & production issues
 - ❑ Trend speed & quality
- ❑ Correlation and causation of alerts lower MTTR
 - ❑ Cluster related incidents
 - ❑ Identify root-cause vs. symptom
- ❑ Use past failures as labeled training data to predict future failures
 - ❑ Design auto responders. Proactive vs. reactive
- ❑ Prioritize alerts. Every alert can't be a P0 and S0!
 - ❑ Has statistical significance?



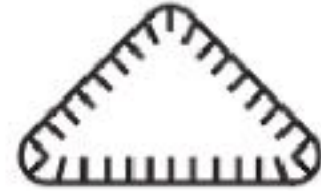
5 : Tie Business KPIs to Continuous Learning



Business Value
per Sprint



Stability Index = function
of (check in to go live,
of escaped defects,
customer delight)



Code Quality Index =
function of (cyclomatic
complexity, code duplication,
unit test coverage)

- ❑ Trend stability index vs. code quality index
- ❑ Weighted index



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Thank you!

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Serious read **** Fun read

