

CHICAGO
INTERNATIONAL
SOFTWARE DEVELOPMENT
CONFERENCE 2015

goto;
conference

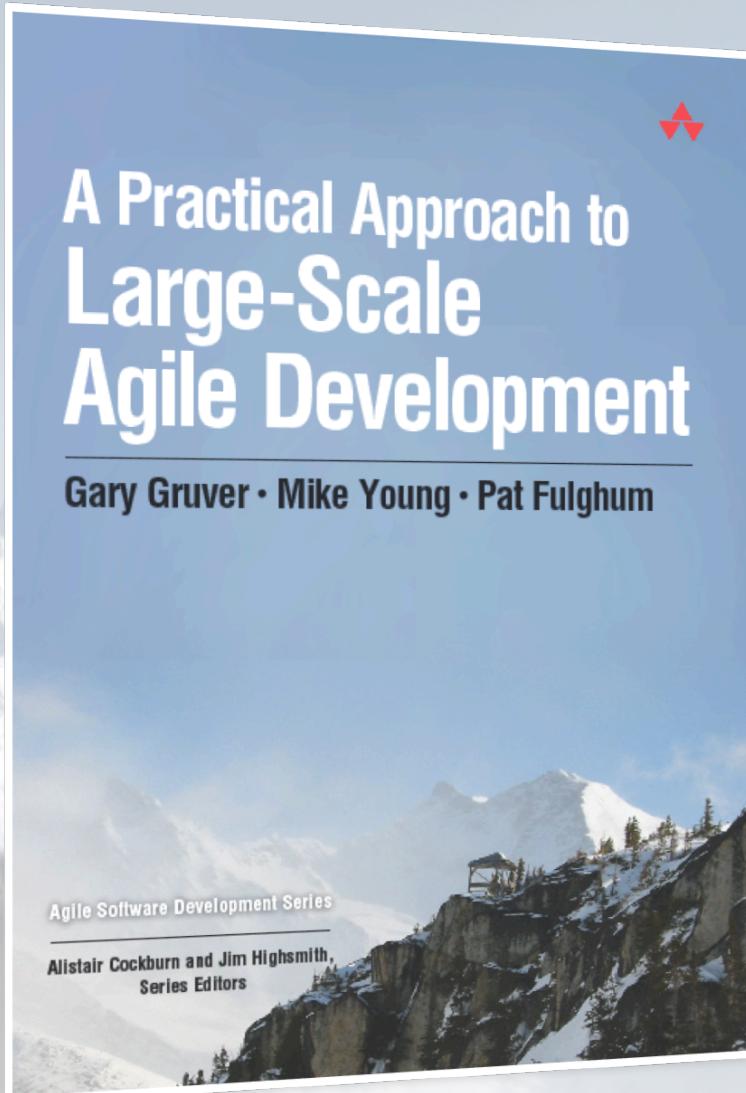
Leading the Transformation "Applying Agile and DevOps Principles at Scale"

Gary Gruver



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Conference: May 11-12 / Workshops: 13-14



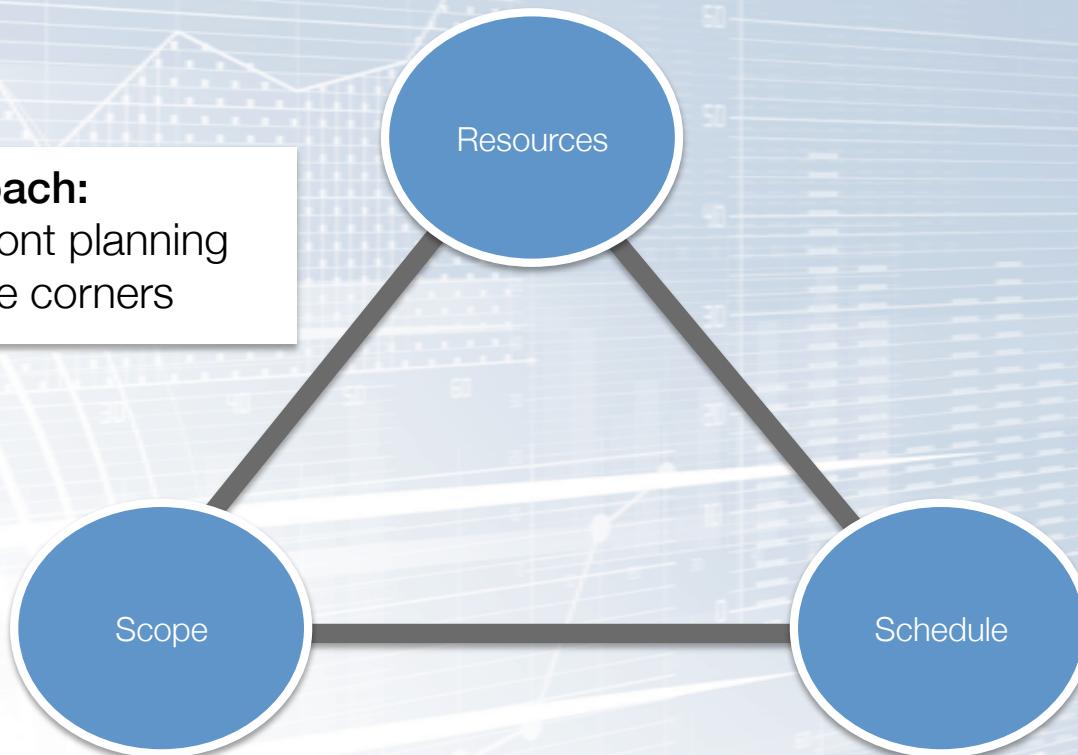
- FW no longer a bottleneck for the business
- Development costs reduced from \$100M/yr. to \$55M/yr.
- 140% increase in the number of products under development
- Capacity for innovation increased from ~5% to ~40%

Waterfall Development Model



Waterfall Approach:

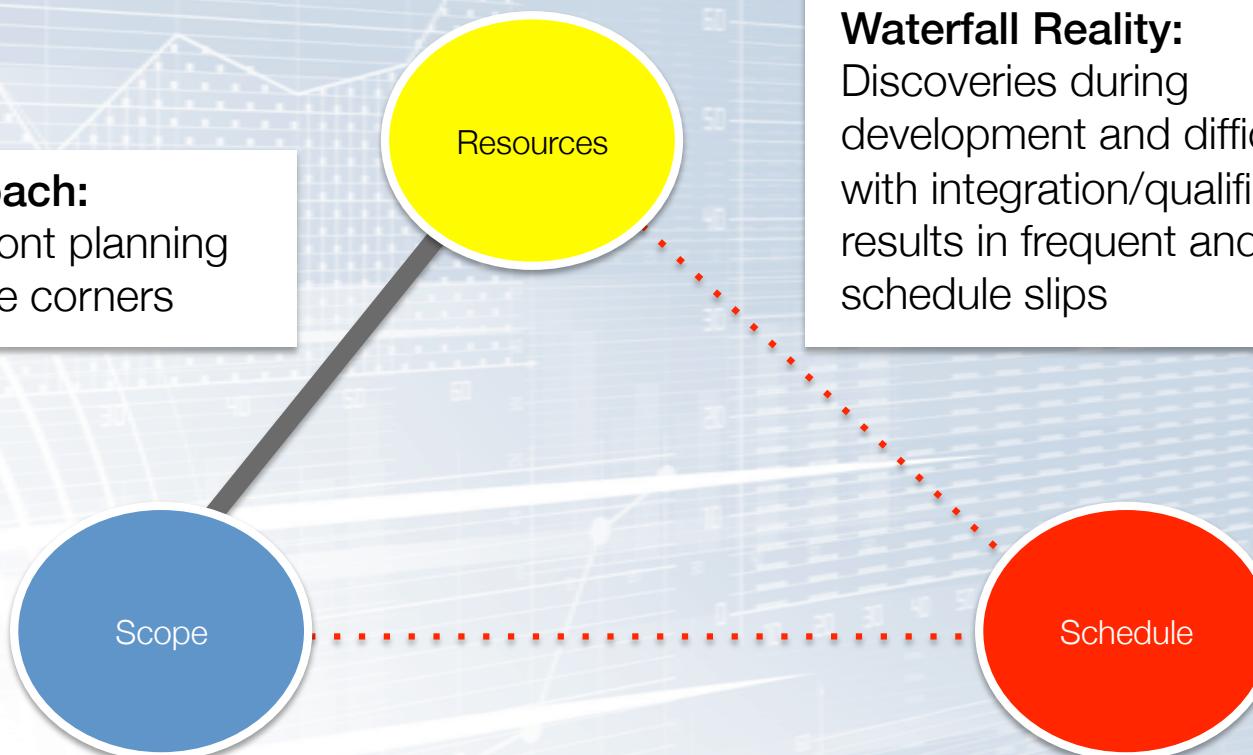
Do enough up front planning
to lock in all three corners



Waterfall Development Model

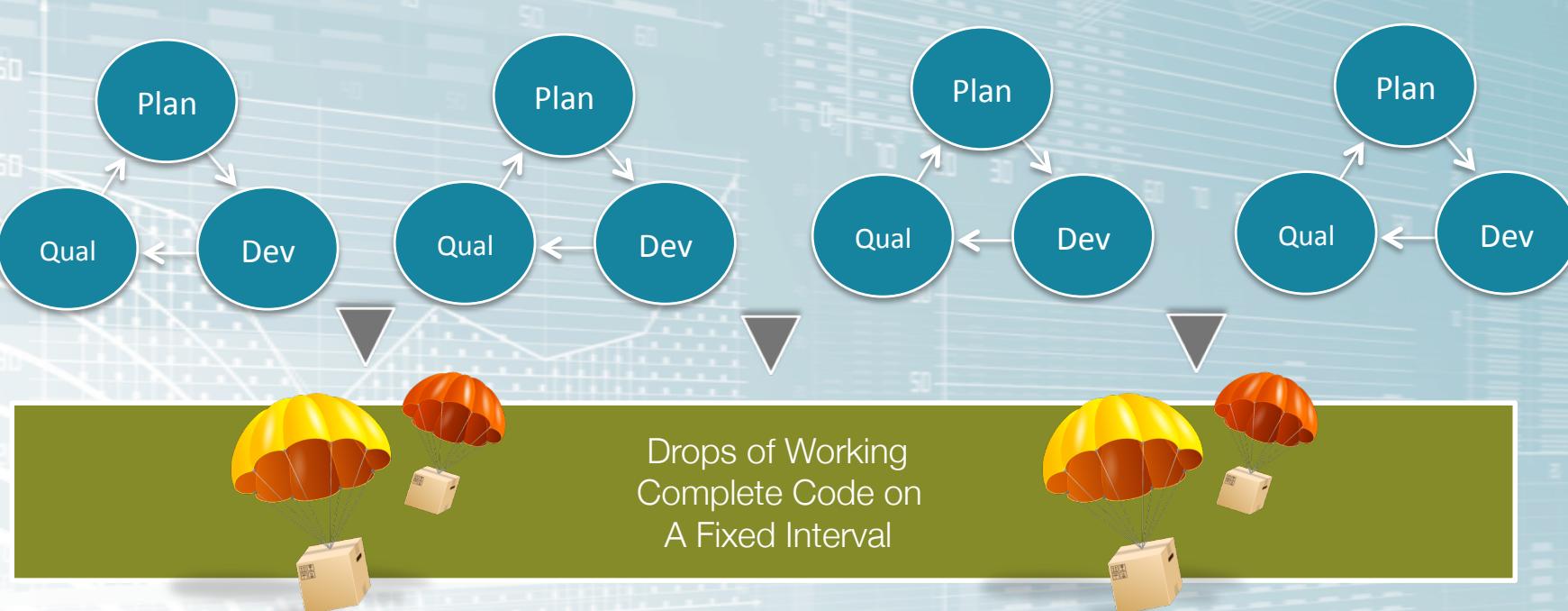


Waterfall Approach:
Do enough up front planning
to lock in all three corners



Waterfall Reality:
Discoveries during
development and difficulties
with integration/qualification
results in frequent and costly
schedule slips

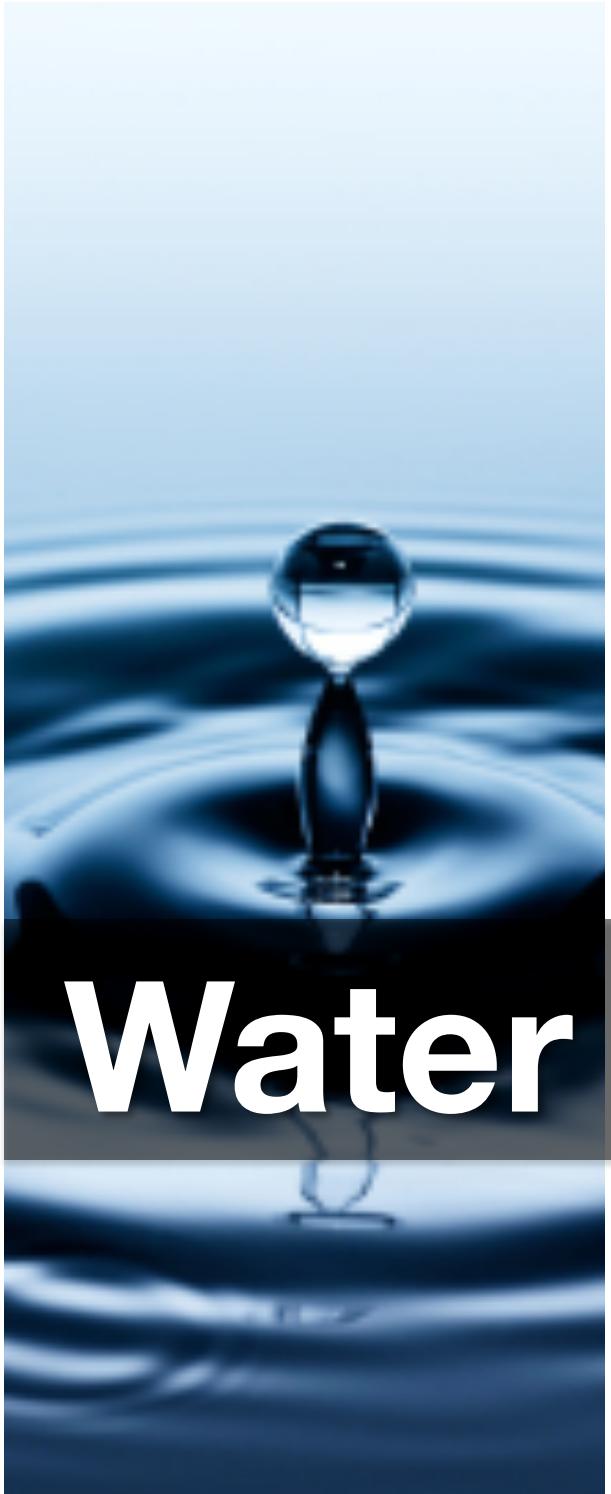
Agile Development Model



- Fully qualified code drops on a fixed schedule
- Frequent small integrations
- Short planning and development cycles
- Delivering to a well prioritized product backlog



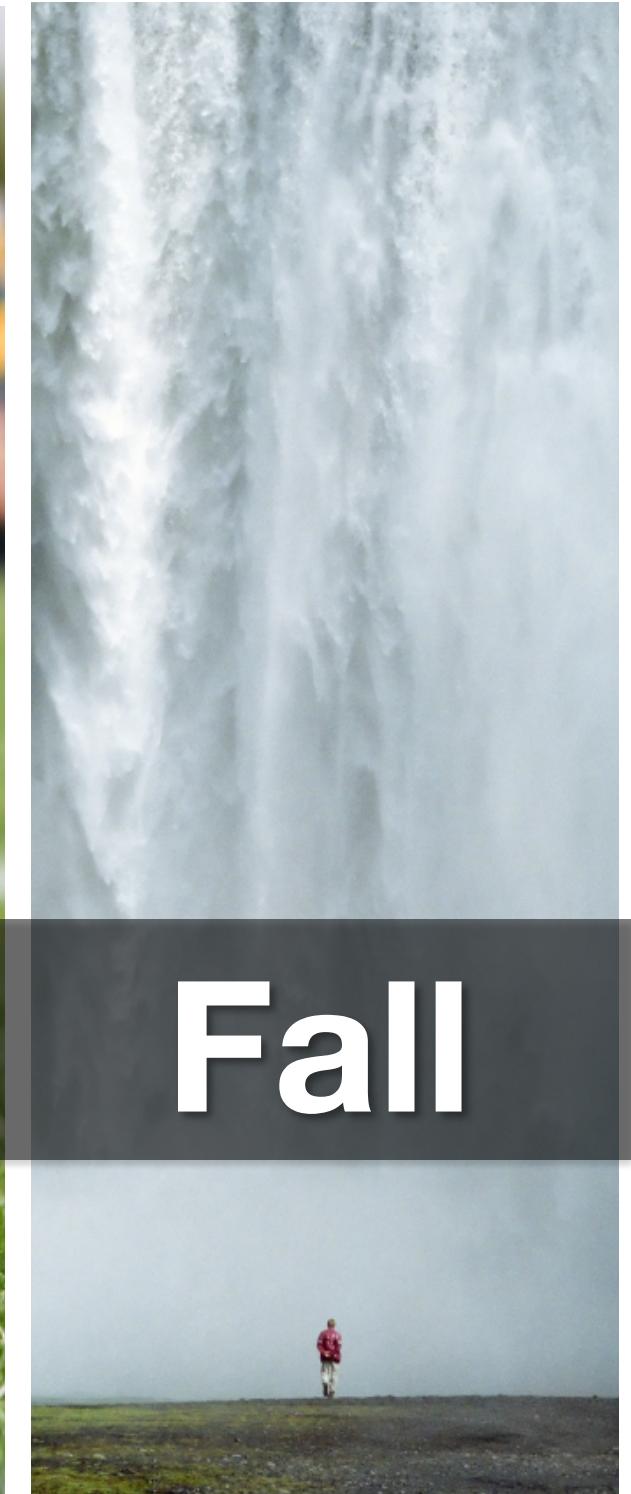
Scrum ≠ Agile



Water

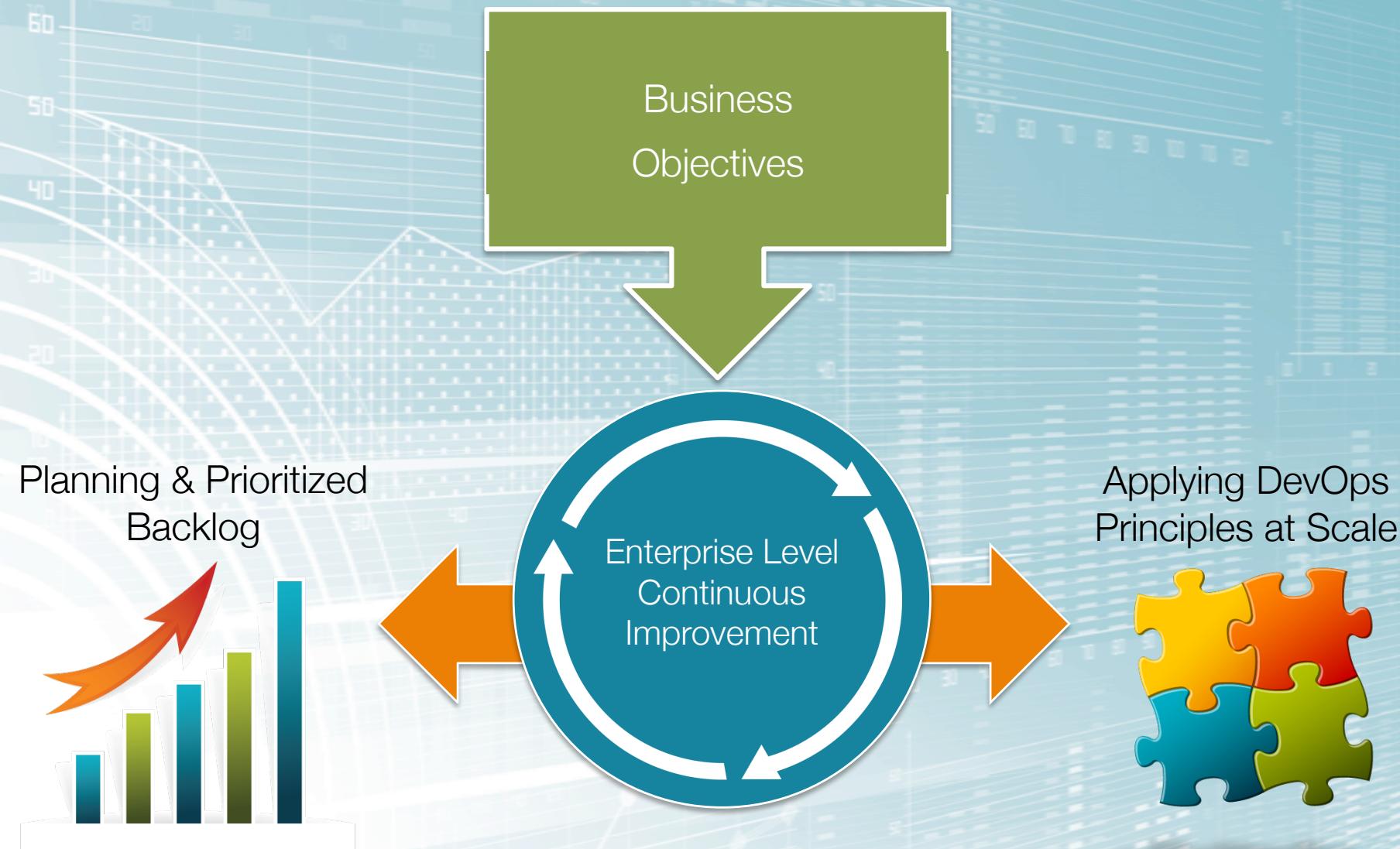


Scrum



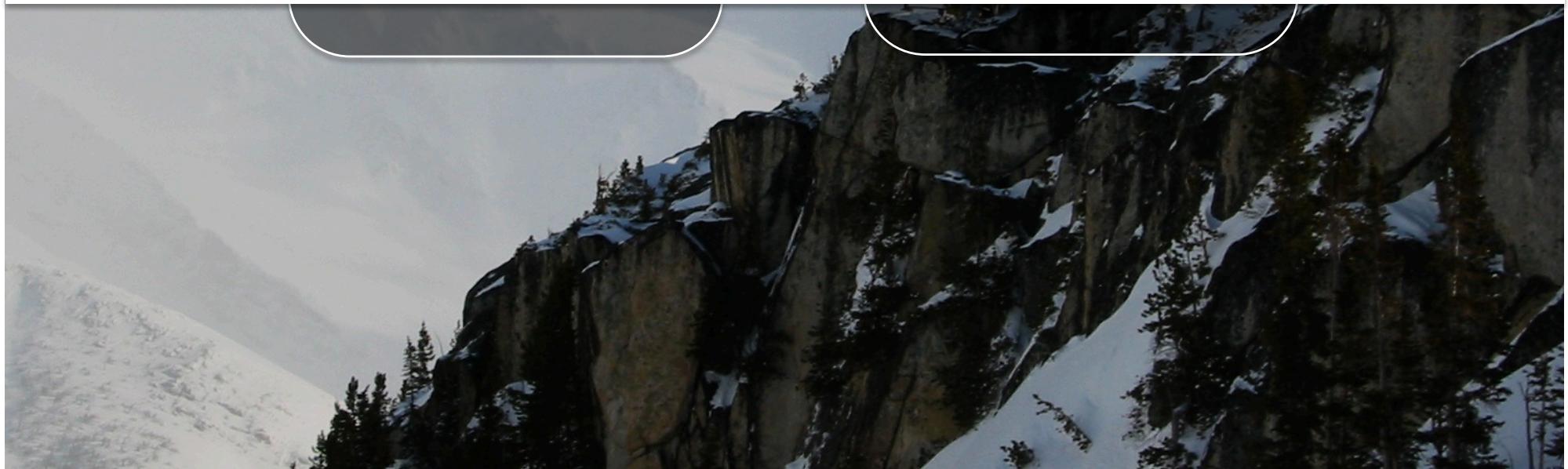
Fall

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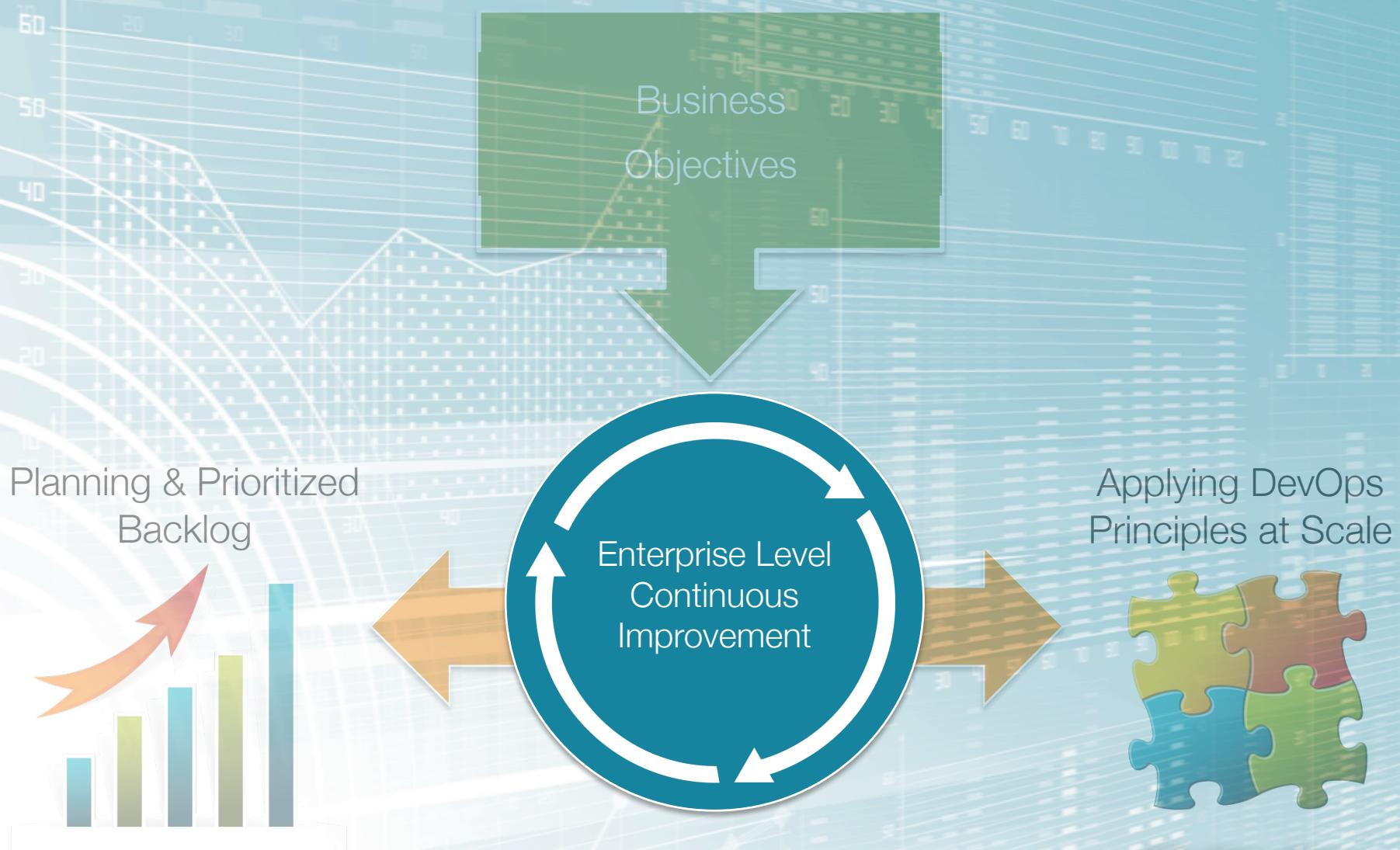


Business Objectives (Don't “Do Agile”)

Either automate, eliminate, or engineer out the drivers that aren't key to the value prop



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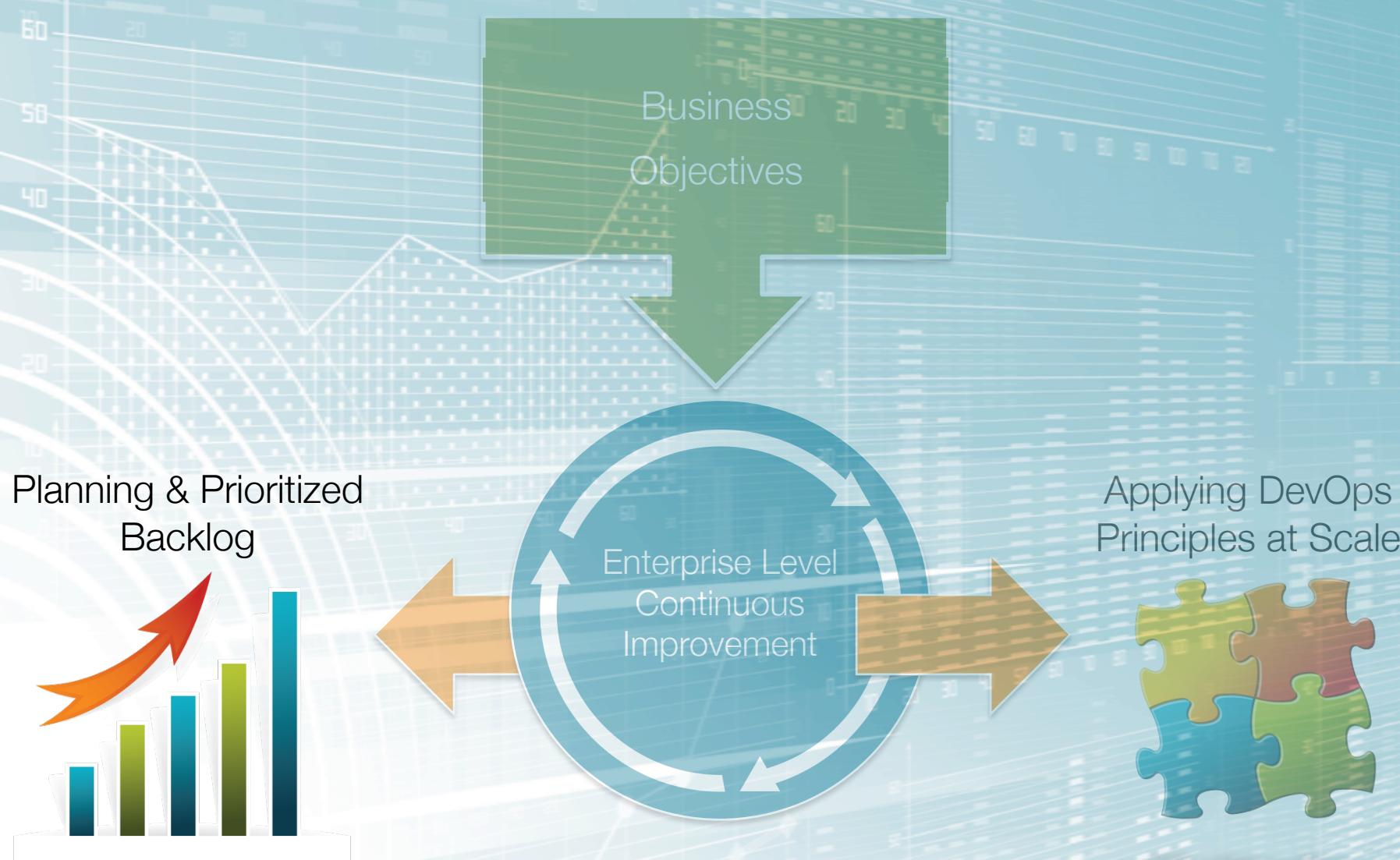
Enterprise Level Continuous Improvement



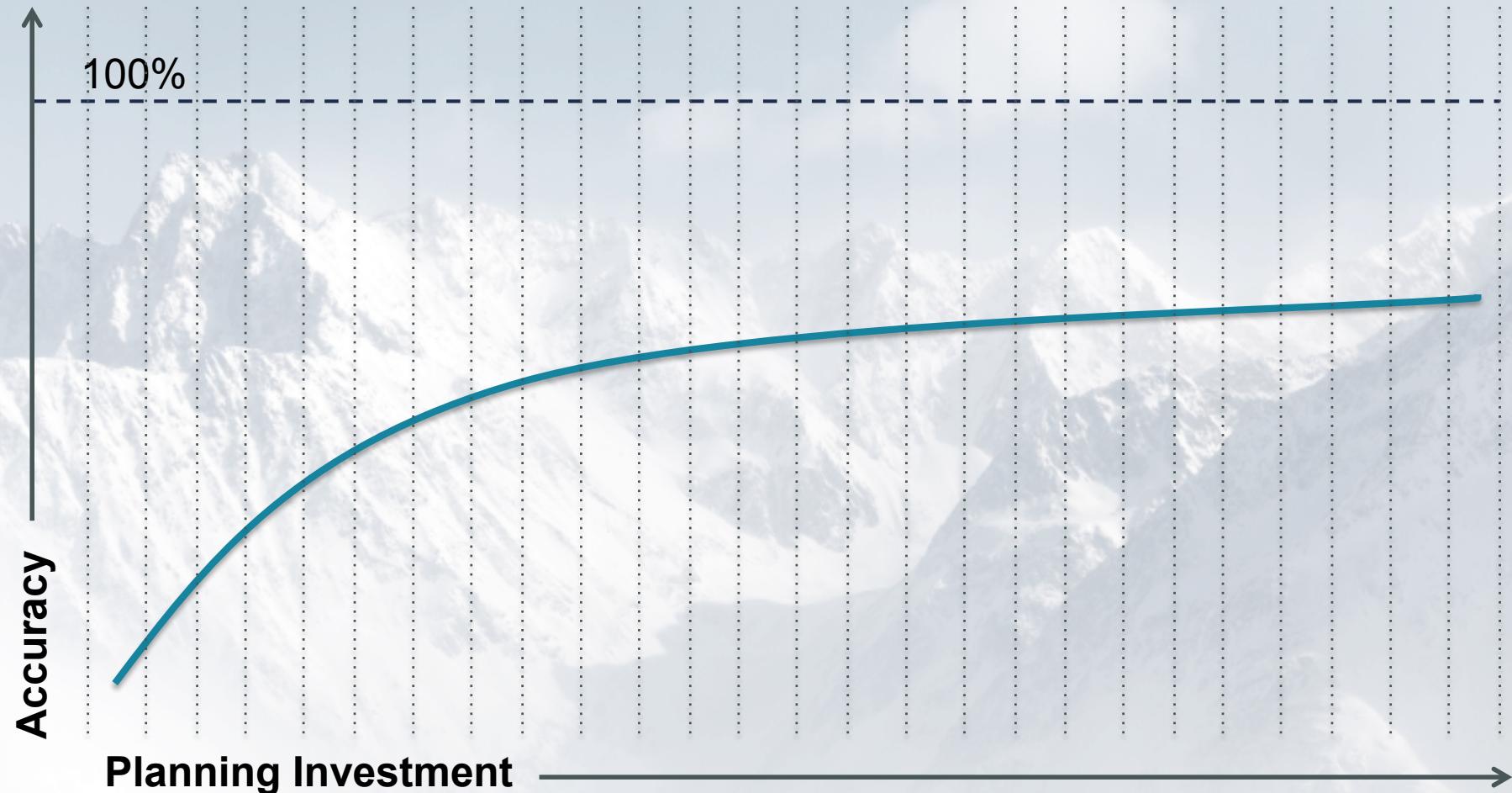
MM30 Objectives

Rank	Theme	Exit Criteria
0	Quality	- P1 open < 1wk - CAT 100% pass - L2 24hr response - Tests for CAT escapes
1	1 st Bit Release on new Arch for WinXP scanner	A) Final P1 defects fixed 2 remaining. B) Duration error rate per 10K: 0.3 (sim), 0.35 (emul), 0.4 (product)
2	Ensuring common code stability on WinCE & the CE products supported	A) Customer accept level (CAT) tests 100% passing on CE B) test coverage appropriate for CE added to L1 (Terrese) C) All L2 pillars 98% pass – w/ coverage for high-value Product turn-on reqts for the CE products D) L4emu test pillars – LLFW (Arch), copy/PDL (Brian), PD (Hugh) E) Garnet L3 CAT in place with at least L4 CAT equivalence
3	Supporting the product reqs for the MIPS based products on CE	A) Calibration dependencies (Kimberly/Brian/Ted/Steve / Matt F) B) Print for an hour at speed to finisher with stapling (all) C) Copy for an hour at speed 35ppm (40ppm is at speed) D) Enter/exit powersave (Steve / Mike) Approved to push out to MM31 E) Mfg test suite exec on Coral emulator with FIM support (Terrese) F) Automated FIM – no bash prompt (Steve) Approved to push to MM31
4	Start porting CE code to ARM	A) Build single ARM system (Terrese) Feasibility proven. 2 DLL's to re-compile. B) High-level analysis of FW performance on ARM (Pat) Lowered priority.
5	Fleet Integr plan	Align on content for Coral/Garnet “slivers” of end-to-end agile test in ES. Overall plan in place. Need sliver details or will just deliver same as to PTO's.
BONUS	1 st ARM/CE product - End-to-end boot, print, copy	

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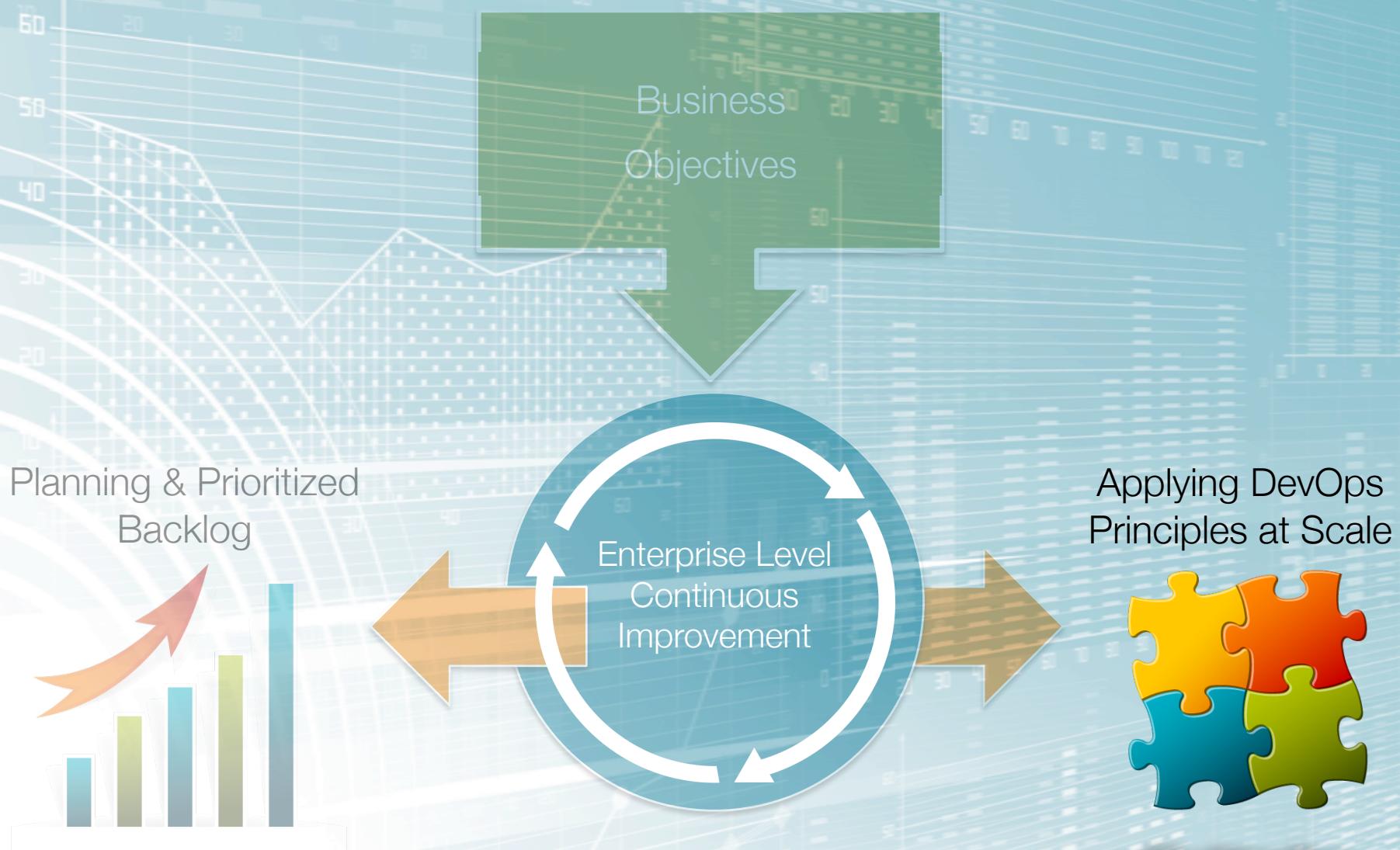
Long Term Predictability for SW Schedules





One of the biggest challenges with Agile Planning at the enterprise level is getting the organization to accept the uncertainty in SW development and appreciate the flexibility and opportunity.

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Business Objectives for Applying DevOps at Scale

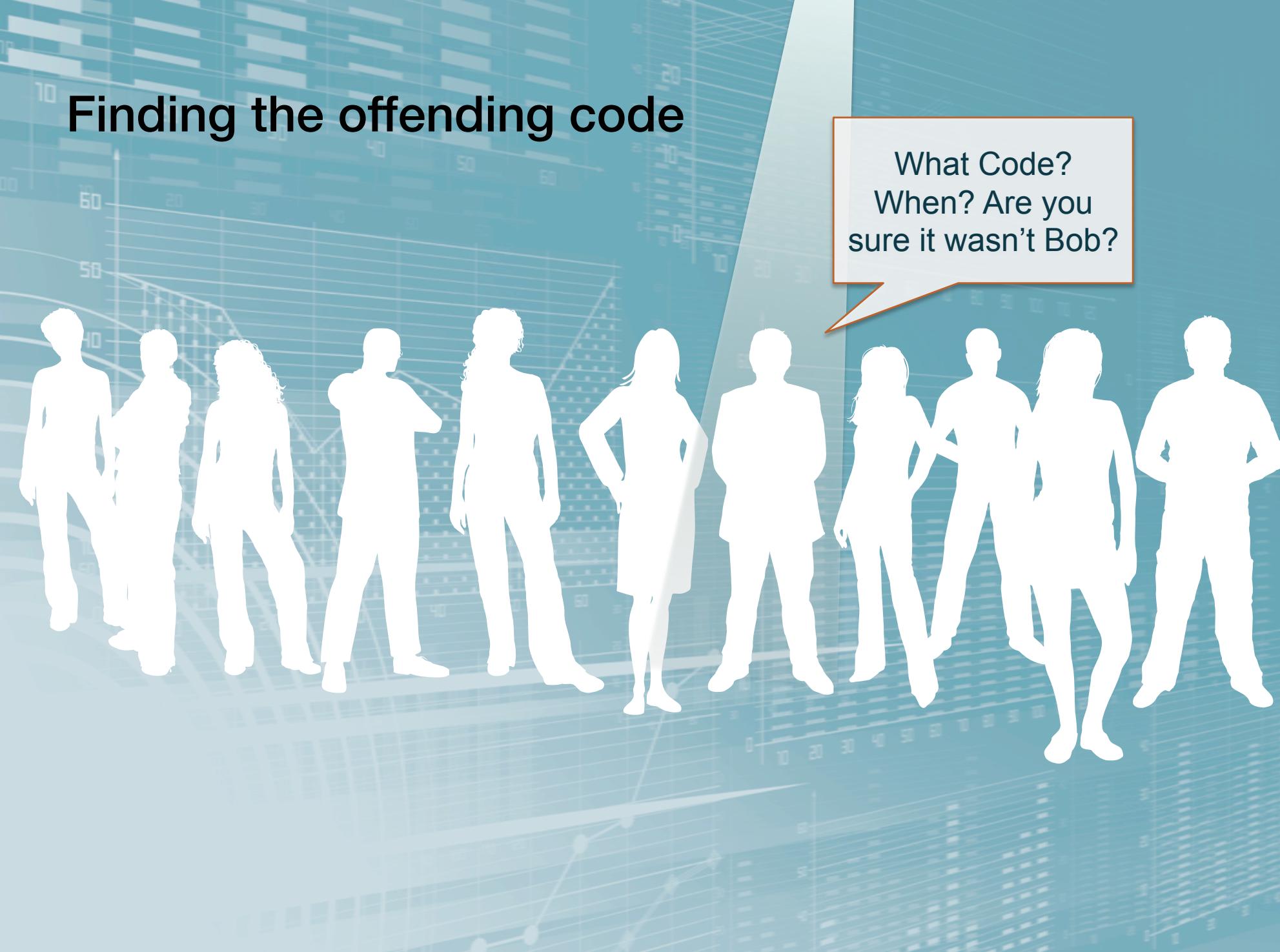
Increase the quality and frequency of feedback

Testing in an Operational like environment as close to dev. as possible

Reduce the time and resources between release branch & production

Improve deployment repeatability/env. stability

Finding the offending code



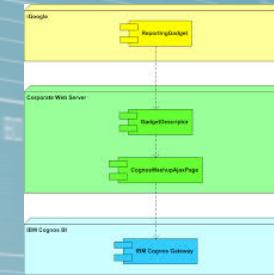
What Code?
When? Are you
sure it wasn't Bob?

Developing on Trunk



Understanding the impact of Architecture

- Clean Architectures enable small fast moving Agile teams to develop, qualify, and deploy code independently
- Tightly coupled legacy architectures require carefully designed deployment pipelines to manage large complex Enterprise systems



Ensuring the architecture/build system is ready

Comp A v2

Comp B v1

Comp C v2

Comp D v2

Comp E v2

Comp F v2

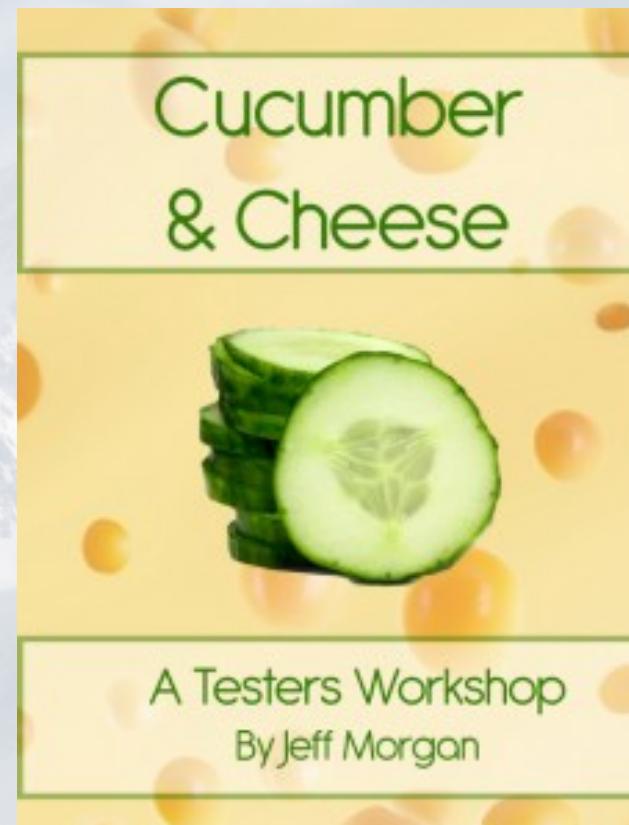
Automated system test architecture

- Component based approach to the automated test architecture

Data Magic

Page Objects

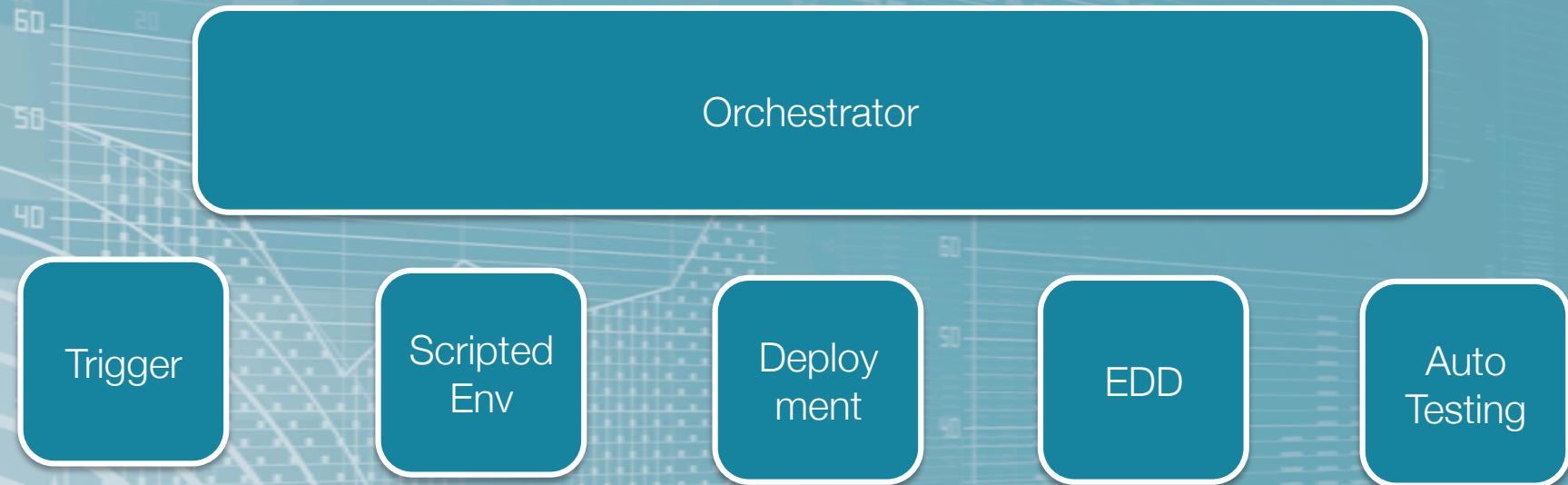
Navigation



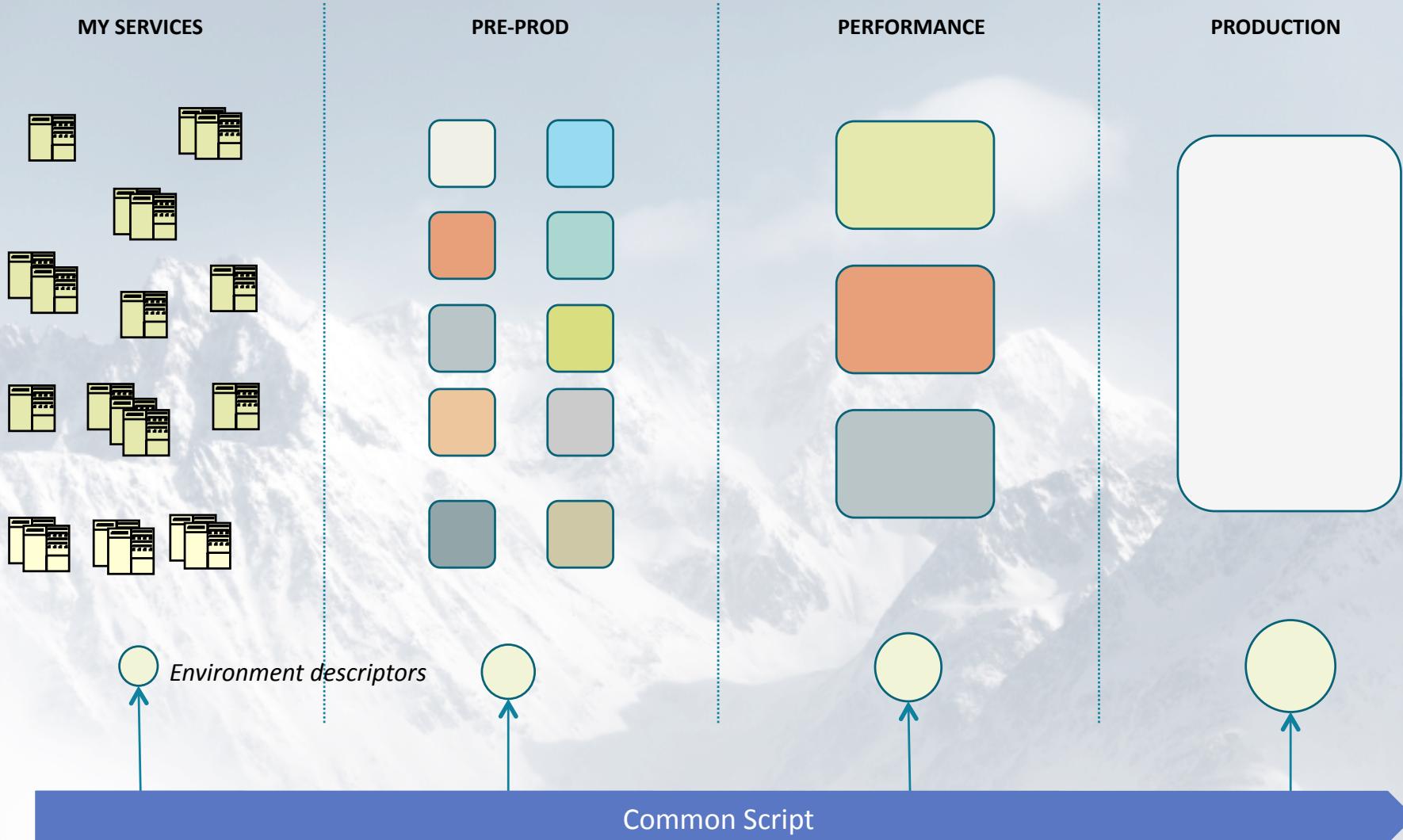
Cucumber
& Cheese

A Testers Workshop
By Jeff Morgan

CD - Picking the Right Tool for the Job

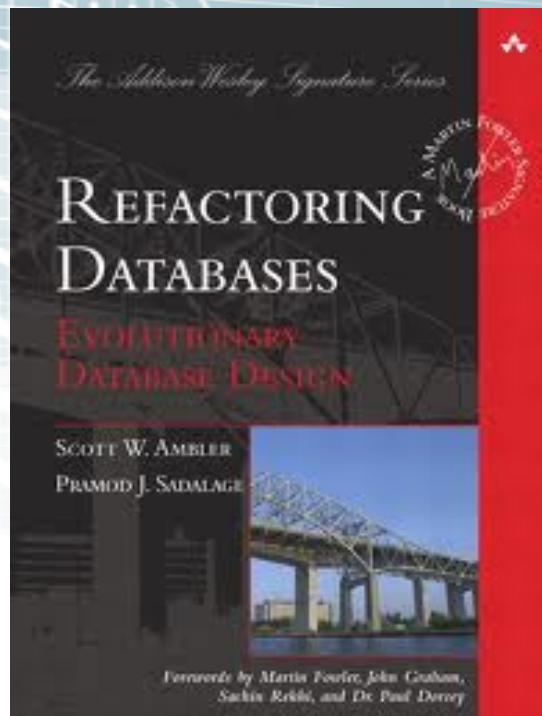


Scripting Environments - Variances



Evolutionary Database

- Add deprecate
- Lazy Instantiation

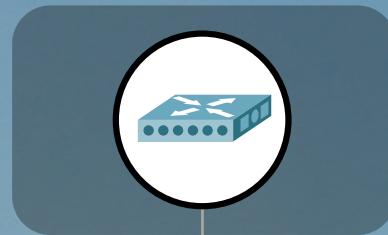


- Don't alter or Modify
- It is like crossing the beams

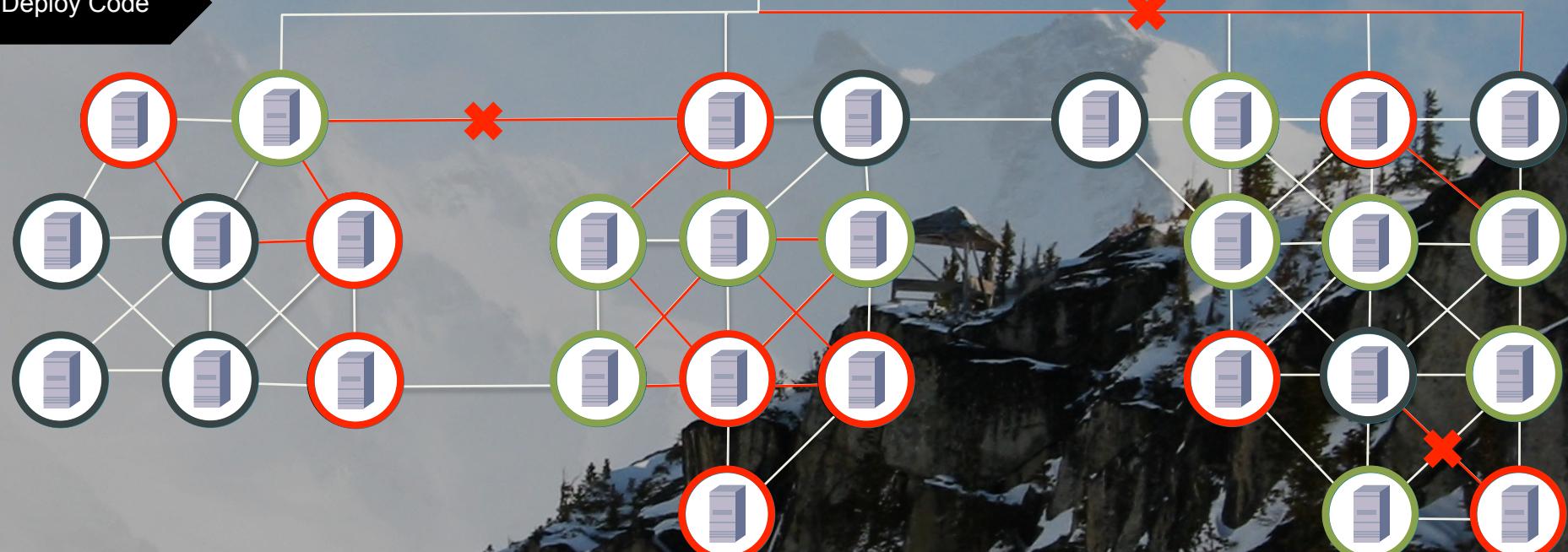


Finding the offending component quickly improves productivity

1: Configure Servers/Routing Device



2: Deploy Code



3: Run a System Test

?? ?? ?? ?? ?? ?? ?? ?? ?? ??

Finding the offending component quickly improves productivity

1: Configure Servers/Routing
Device and Validate Data



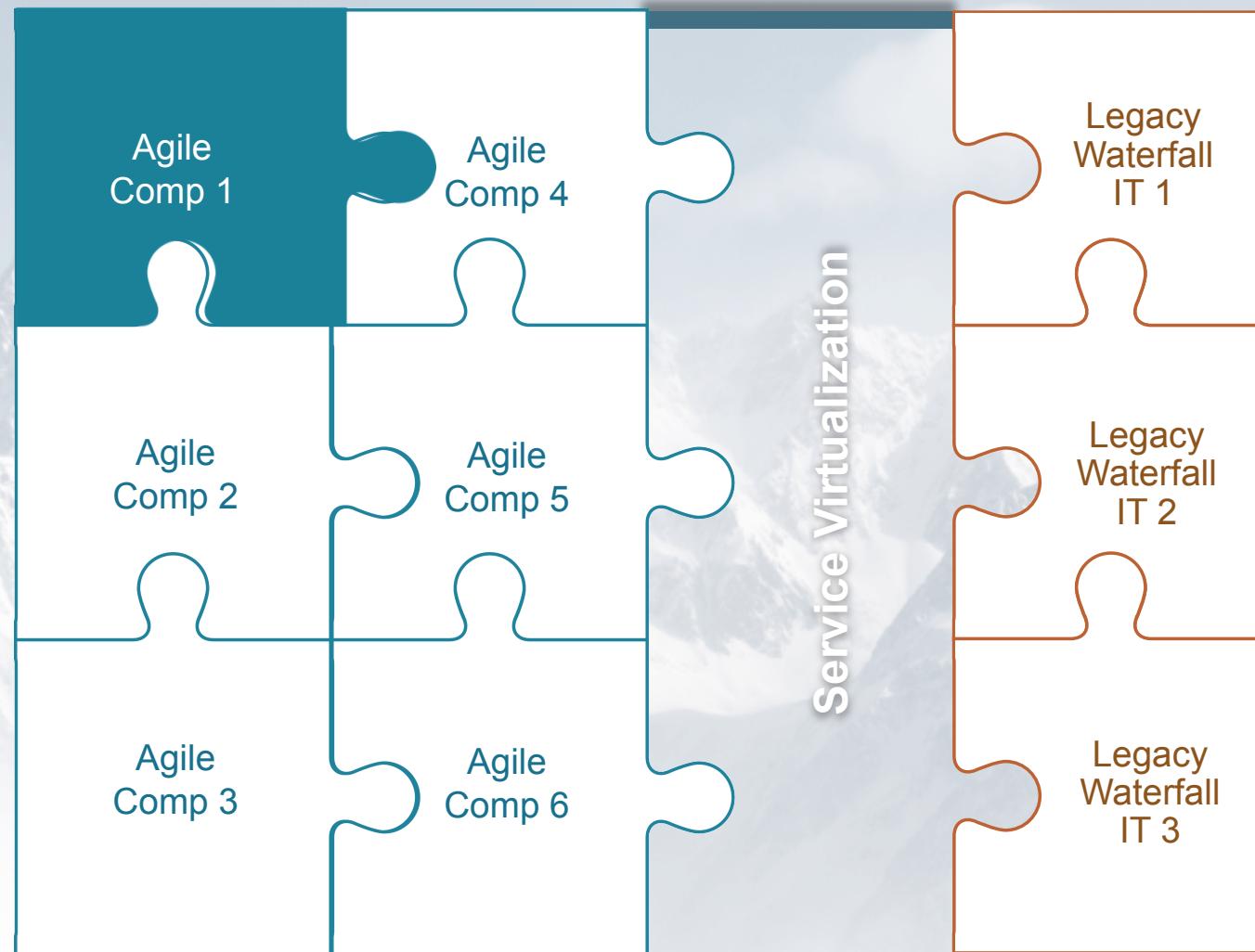
2: Deploy Code & Validate
Successful Deployment



3: Run a System Test

Code Validated

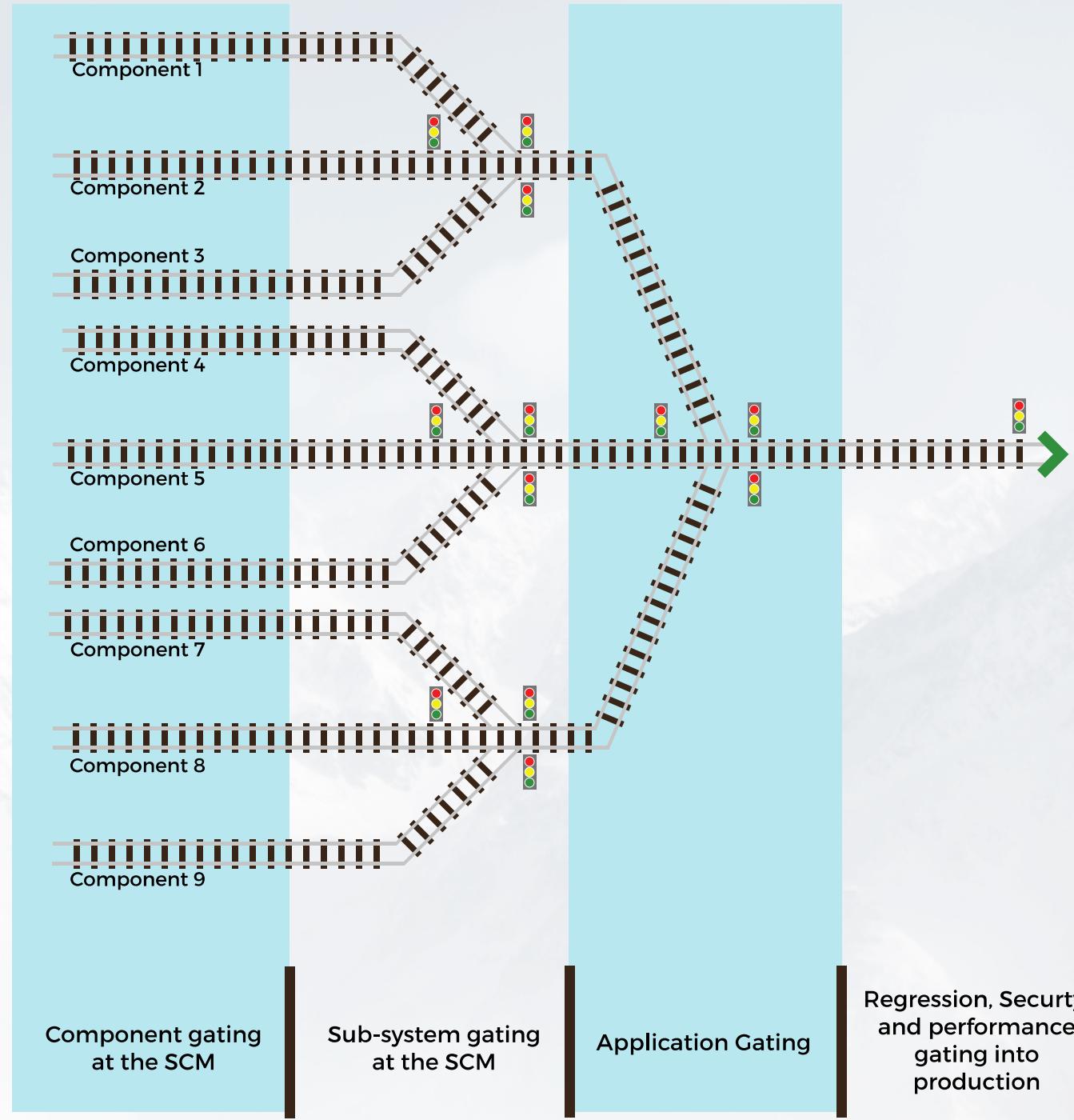
Building up a Large SW System



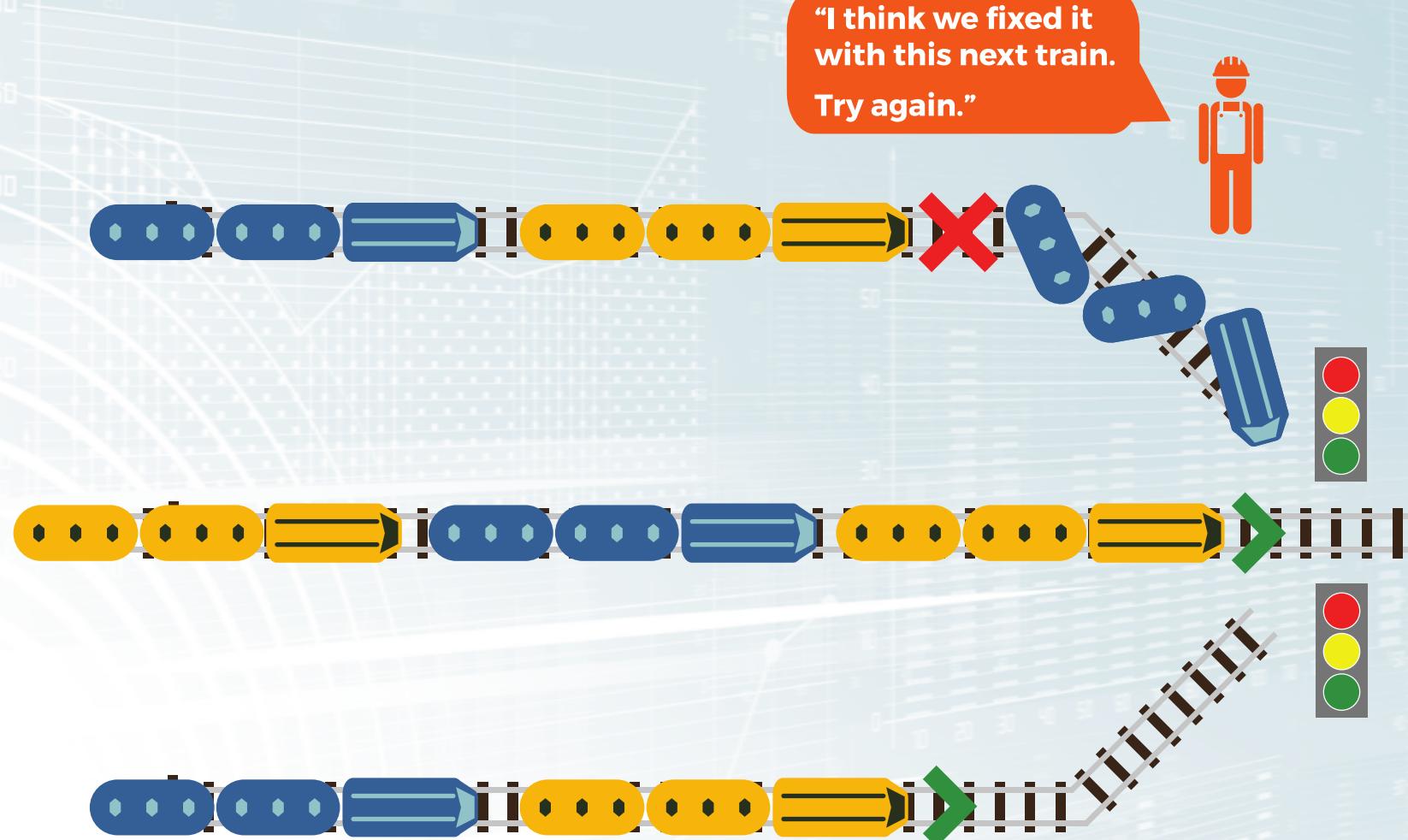
Auto-revert/Gated Commits



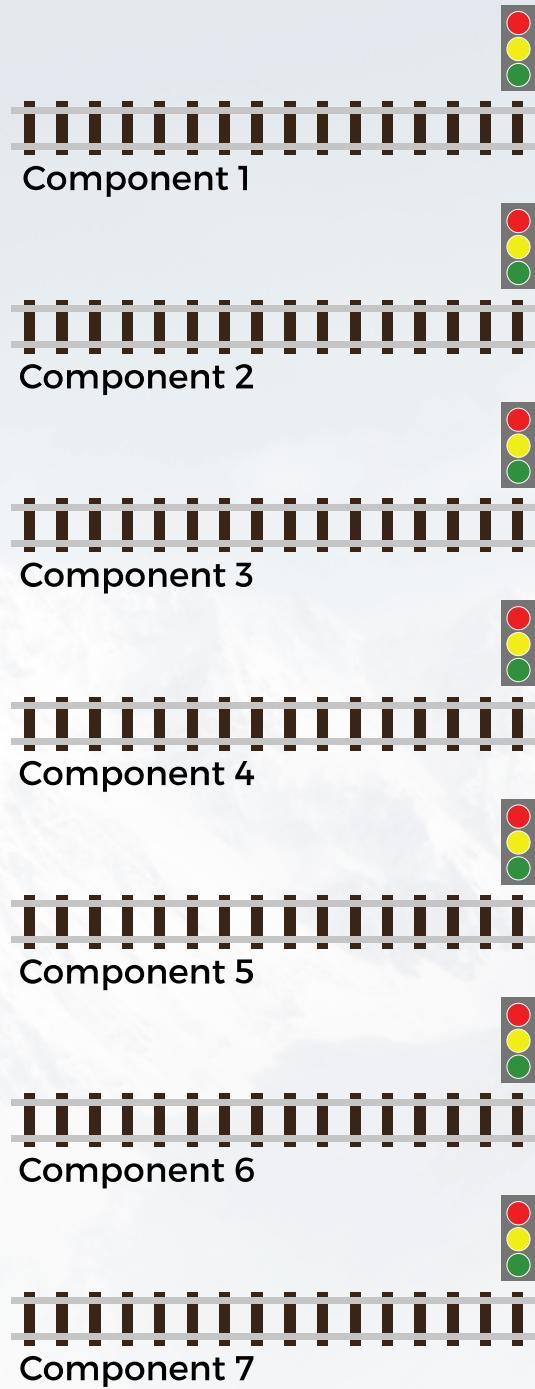
Building Up the Enterprise System



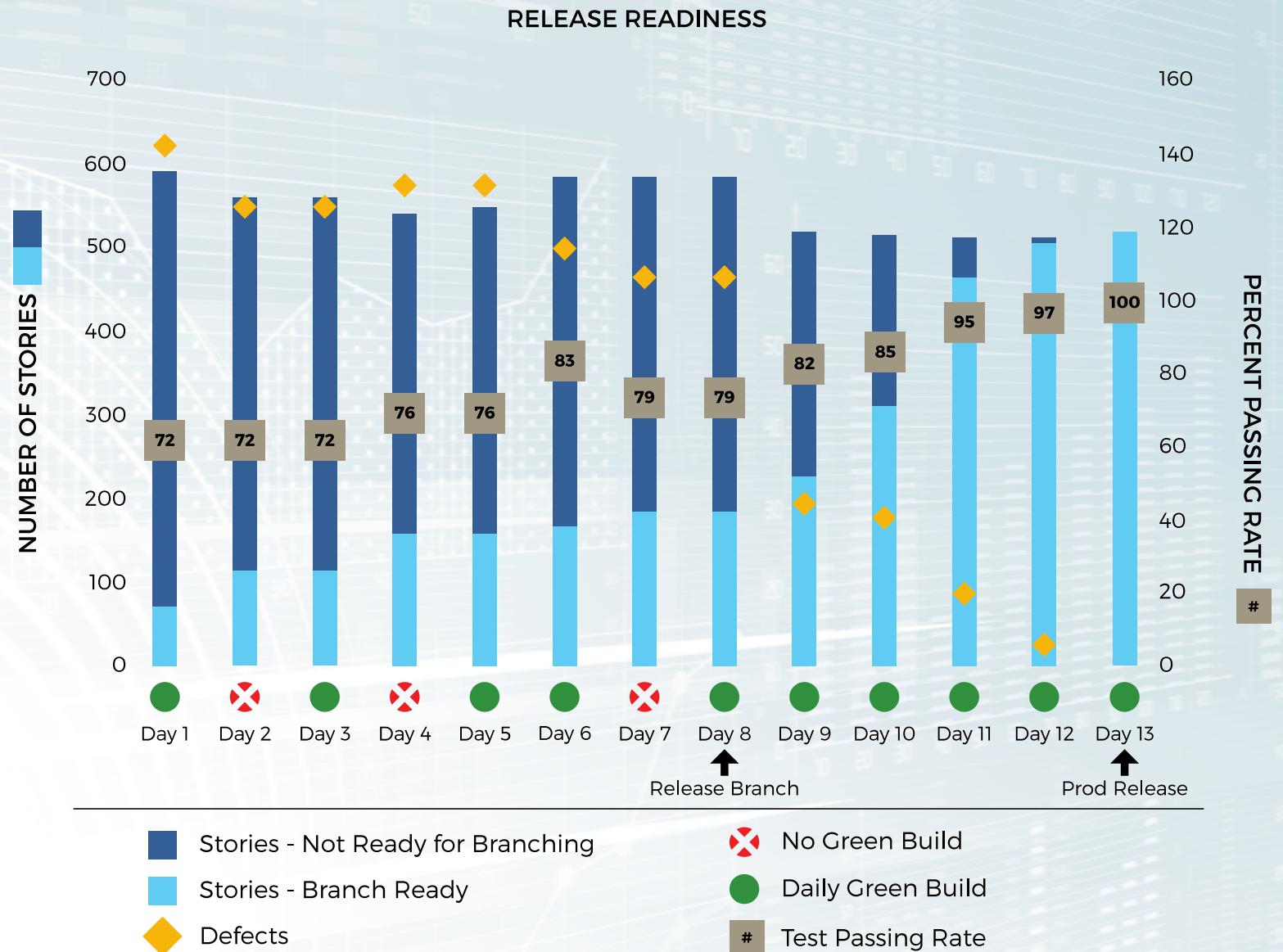
Application Gating



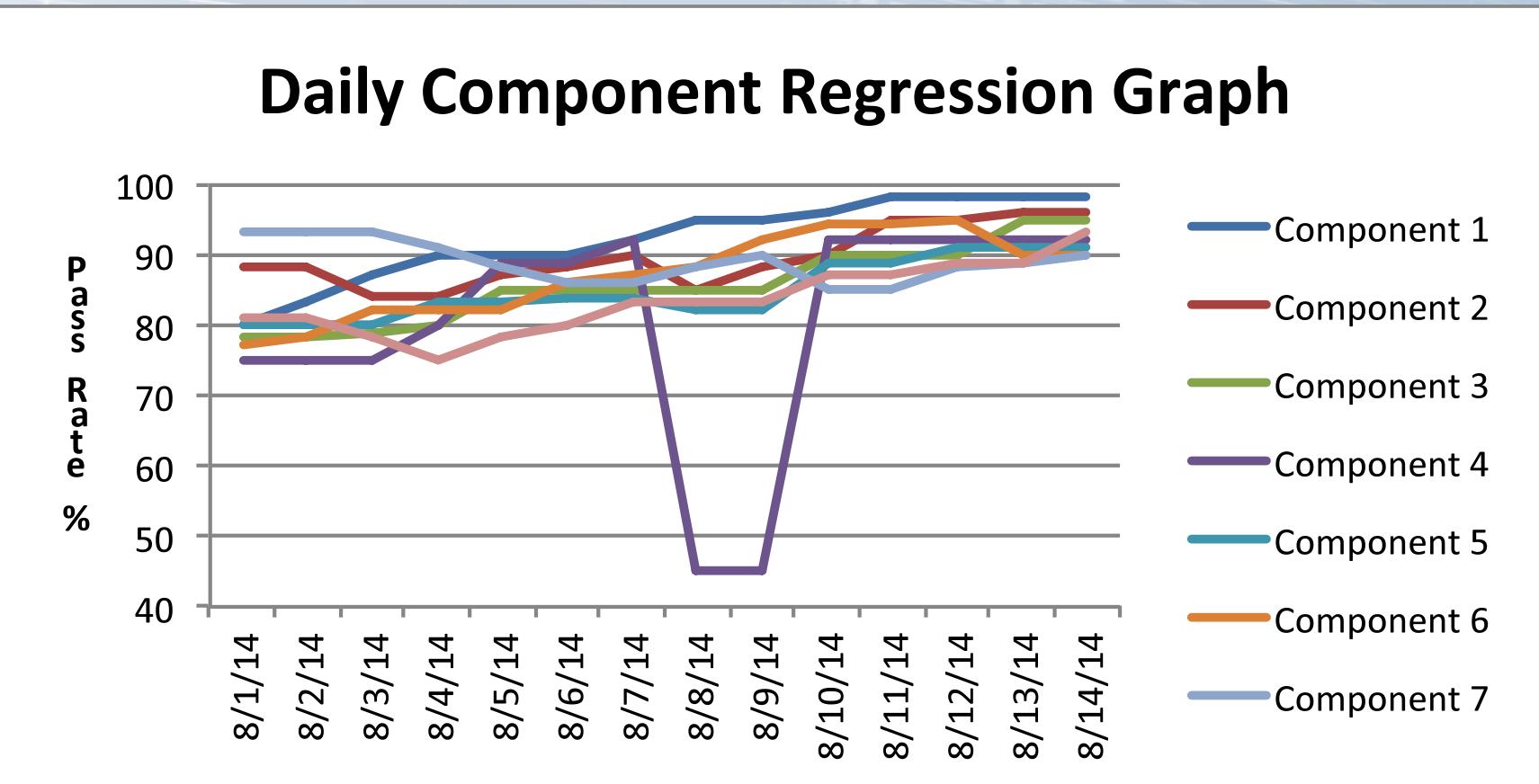
Loosely Coupled Architecture Deployment Pipeline



Understanding the Work



Farming the Build Acceptance tests



Shifting the Culture

- Getting developers to ensure every check-in to trunk is stable in a production like environment as job #1.
- Getting development and operation teams using common tools and environments so they share common objectives.
- Getting the entire organization to agree that the definition of done at the release branch.
- Embrace the unique characteristics of software and design a planning process that takes advantage of its flexibility.

"If you want to understand how to lead a Continuous Delivery or DevOps transformation in your company, there's no better book than this. Concise, practical, and based on hard-won executive experience, this book is essential reading for every IT executive." —Jez Humble, VP, Chef

Gary Gruver and Tommy Mouser

LEADING THE TRANSFORMATION

Applying Agile and DevOps
Principles at Scale

foreword by Gene Kim

IT Revolution

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Questions?

*Please remember to evaluate via the GOTO
Guide App*



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