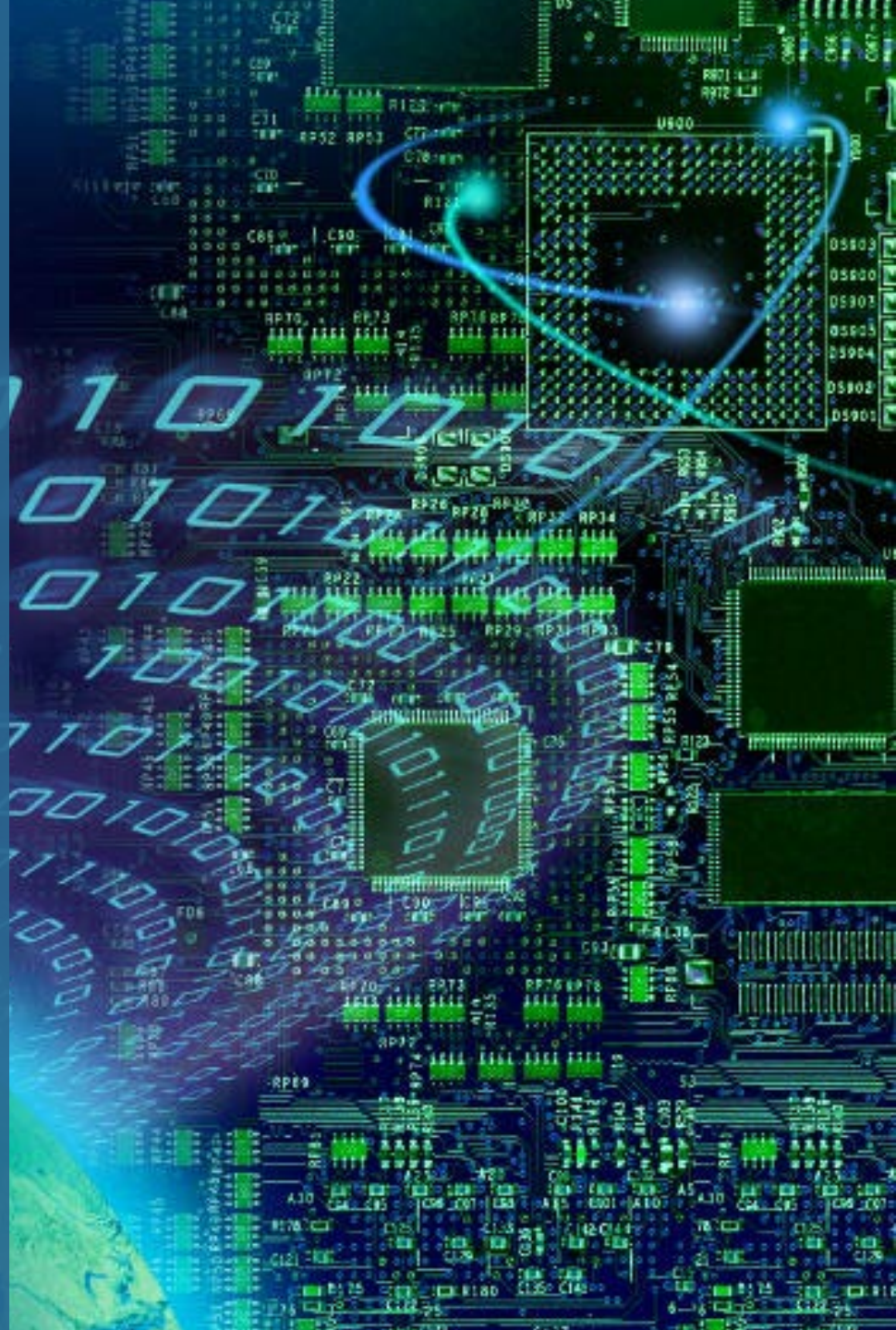
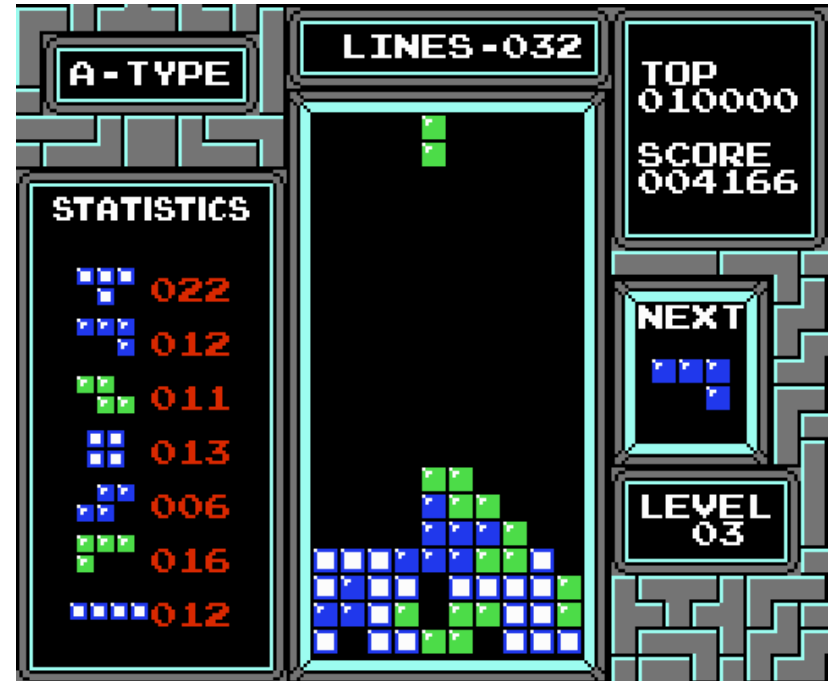
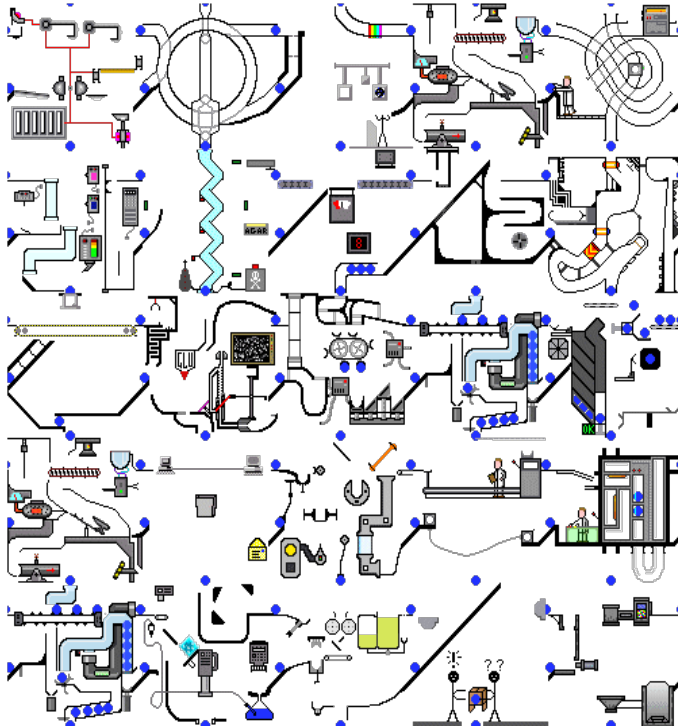


IT Software Risk: Don't Hesitate - Automate

Dave Norton
Executive Director
Consortium for IT Software Quality

david.norton@it-cisq.org

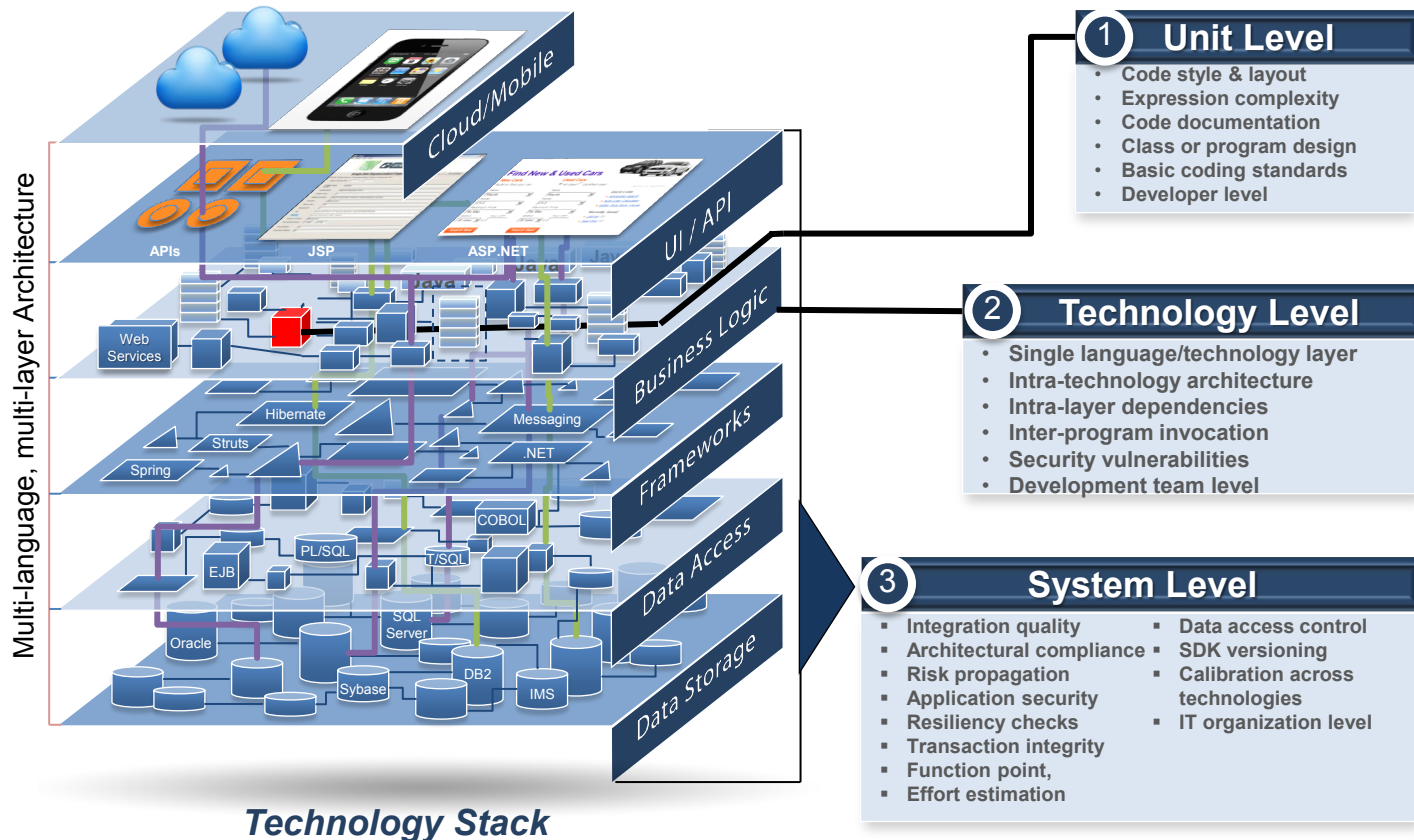


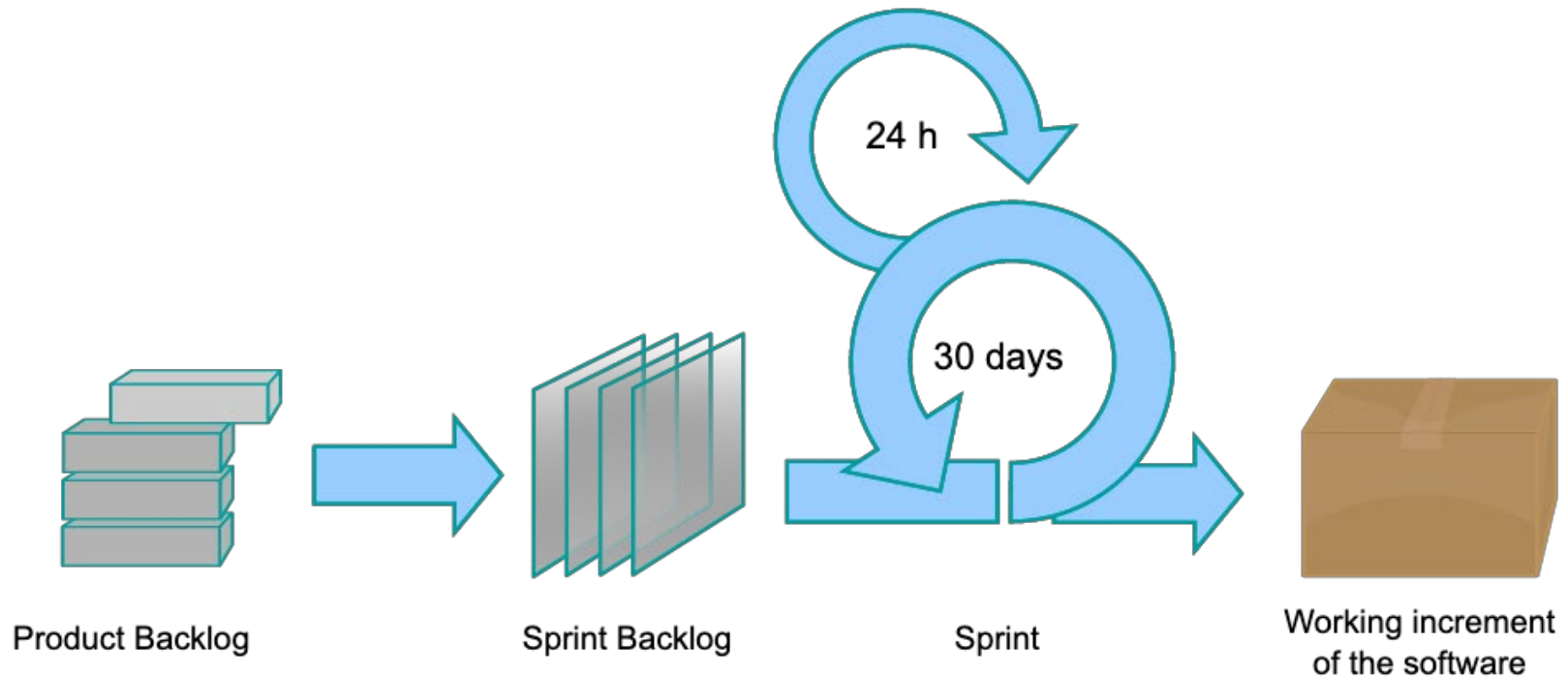


Things are more complex and the pace of change is relentless

- What are the drivers for automation
- How do we introduce more automation
- What role do standards play

- What are the drivers for automation
- How do we introduce more automation
- What role do standards play



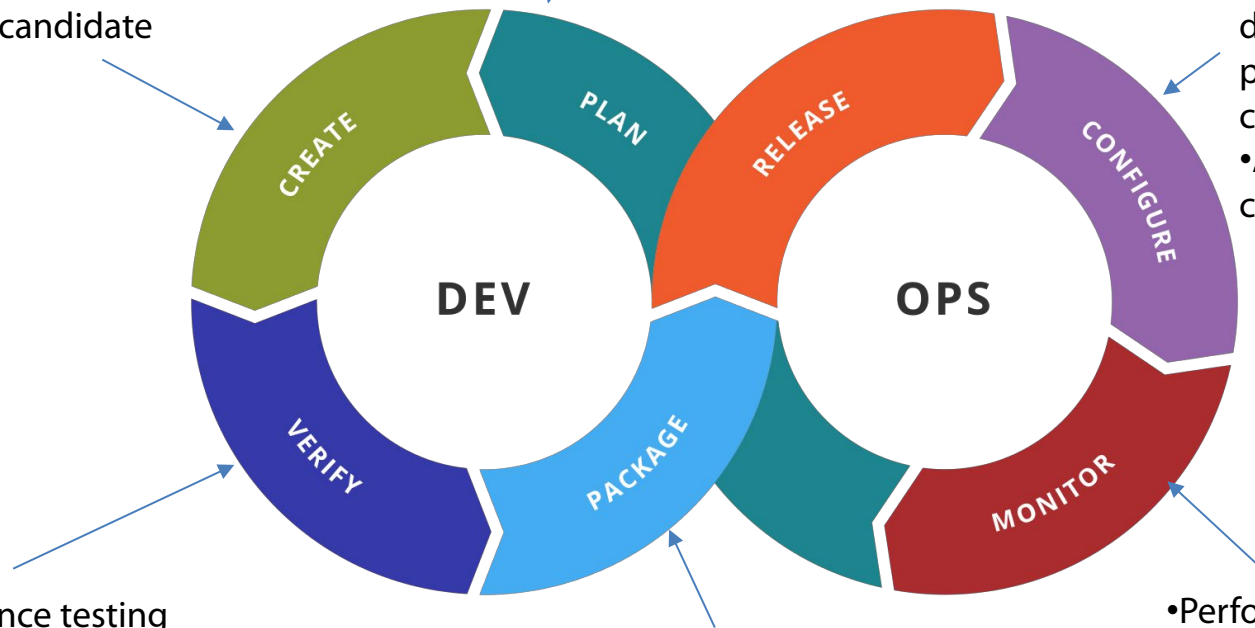


Everyone wants faster time to market,
but few want to hear about the risks

- Design of the software and configuration
- Coding including code quality and performance
- Software build and build performance
- Release candidate

- Production metrics, objects and feedback
- Requirements
- Business metrics
- Update release metrics
- Release plan, timing and business case
- Security policy and requirement

- Infrastructure storage, database and network provisioning and configuring
- Application provision and configuration.

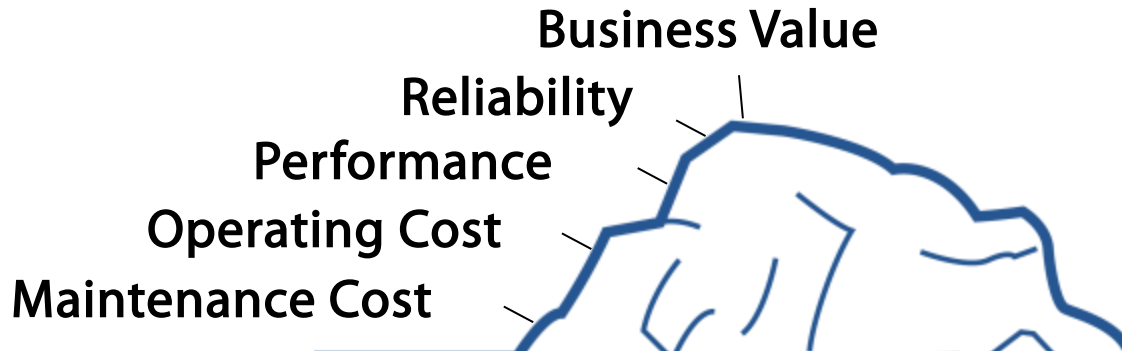


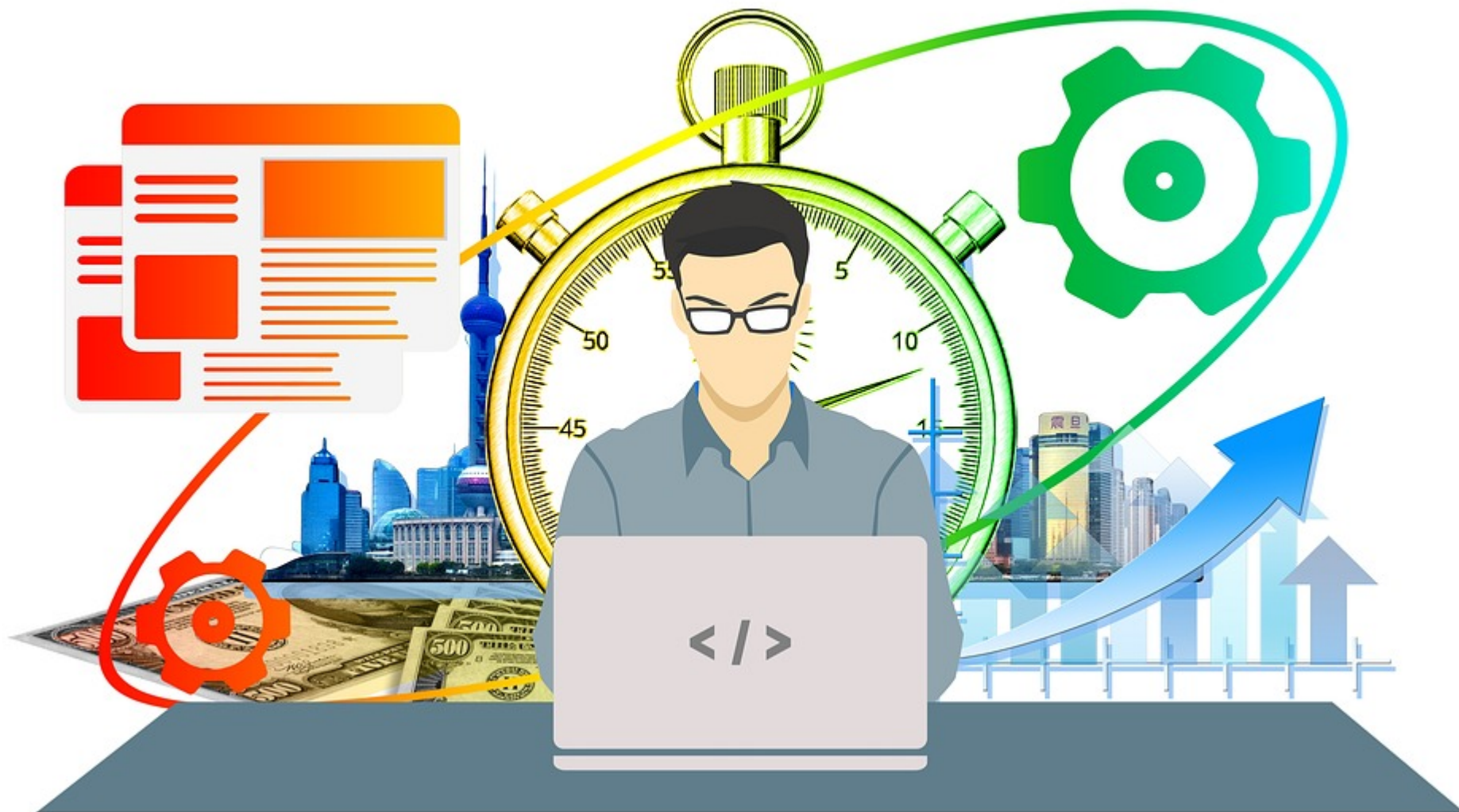
- Acceptance testing
- Regression testing
- Security and vulnerability analysis
- Performance
- Configuration testing

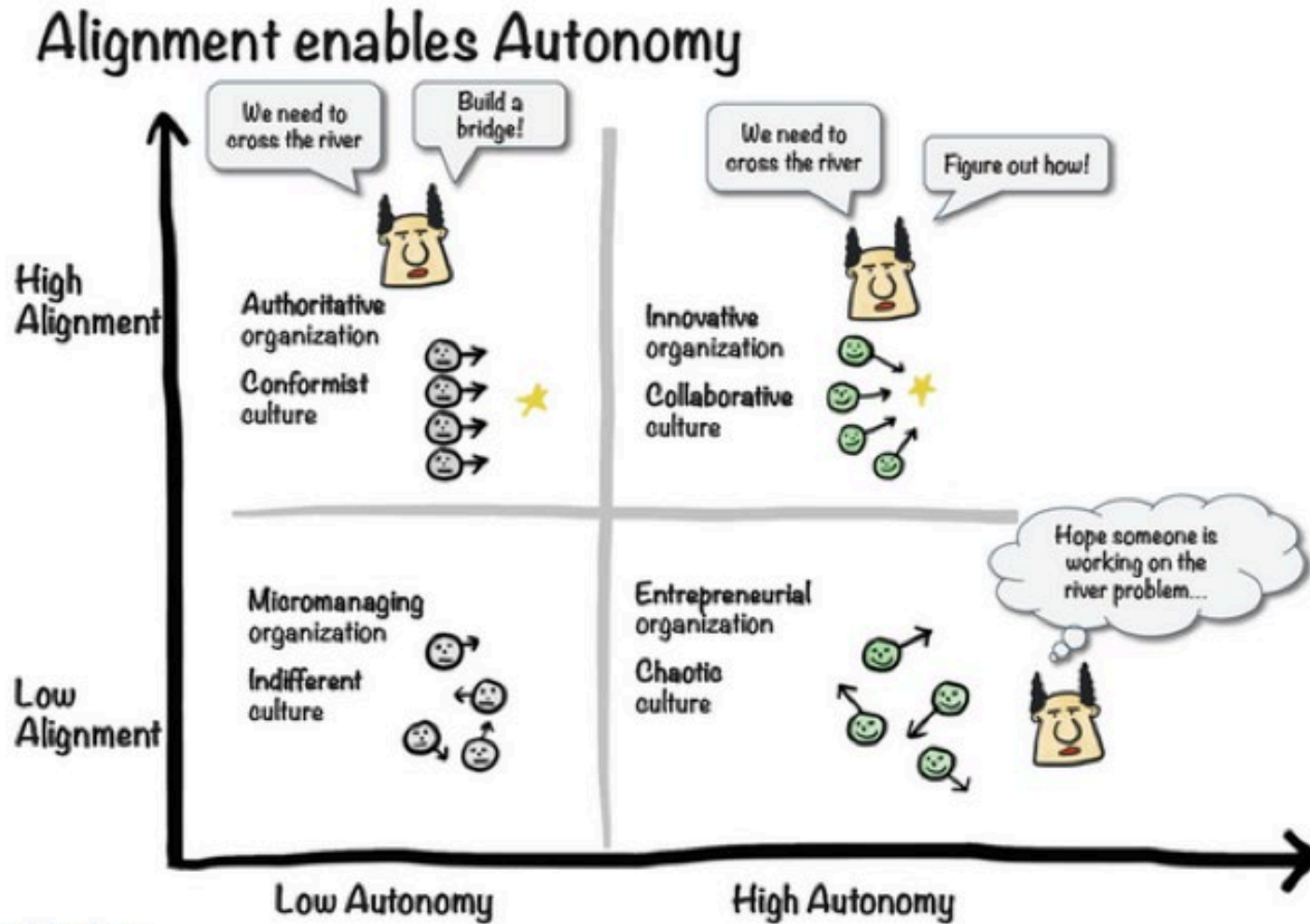
- Approval/preapprovals
- Package configuration
- Triggered releases
- Release staging and holding

- Performance of IT infrastructure
- End-user response and experience
- Production metrics and statistics
- Application monitoring

Increasing Technical Debt







Autonomy at Spotify — by Henrik Kniberg



Hope is not a strategy

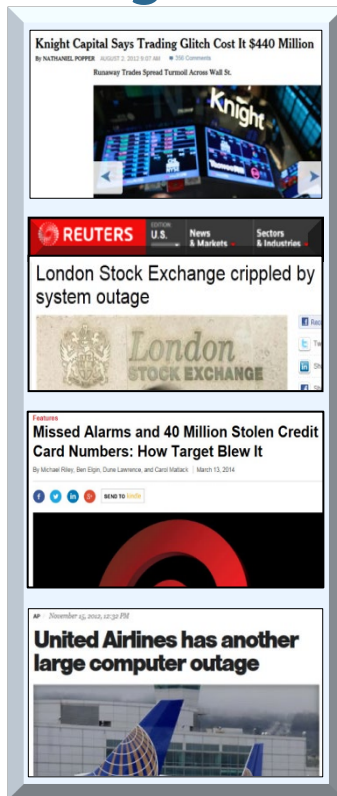
Quality

Productivity

Security

Cost

Nine Digit Defects

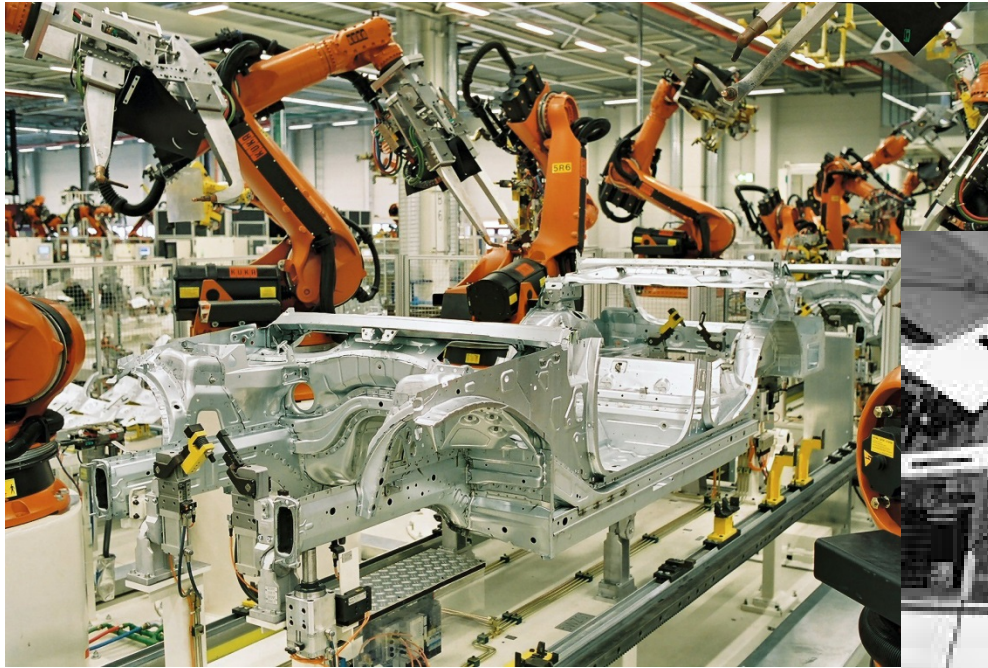


Now affect



Accountable for





As industry's mature they automate, from robots to fly-by-wire

- What are the drivers for automation
- **How do we introduce more automation**
- What role do standards play



- Don't expect everyone to like automation, some people just like doing it the hard way
- Incentivize the behavior you want for the individual and team.
- Have agreed metrics and KPI linked to automation.
- Show results

**Standards
Definition**

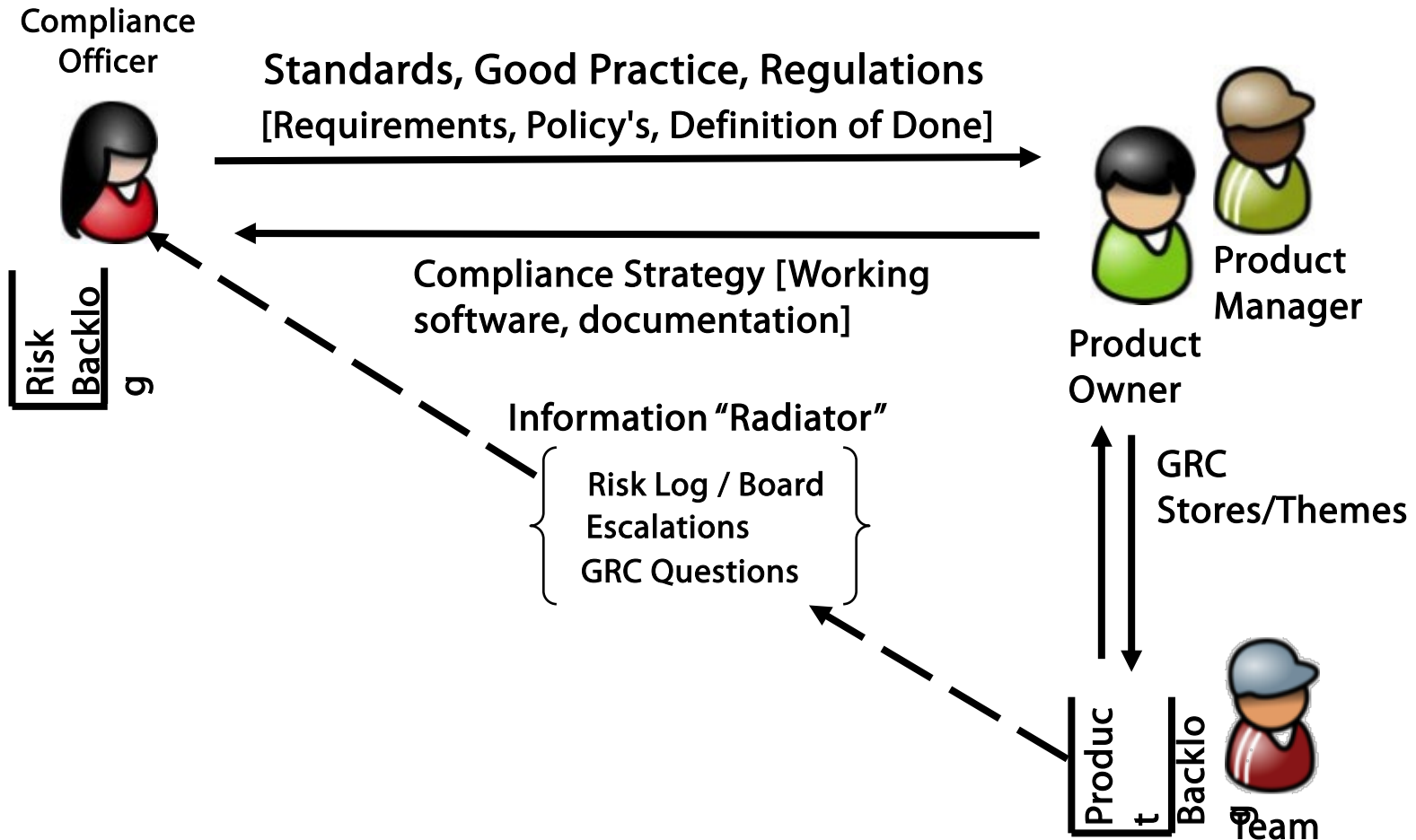
Process Design



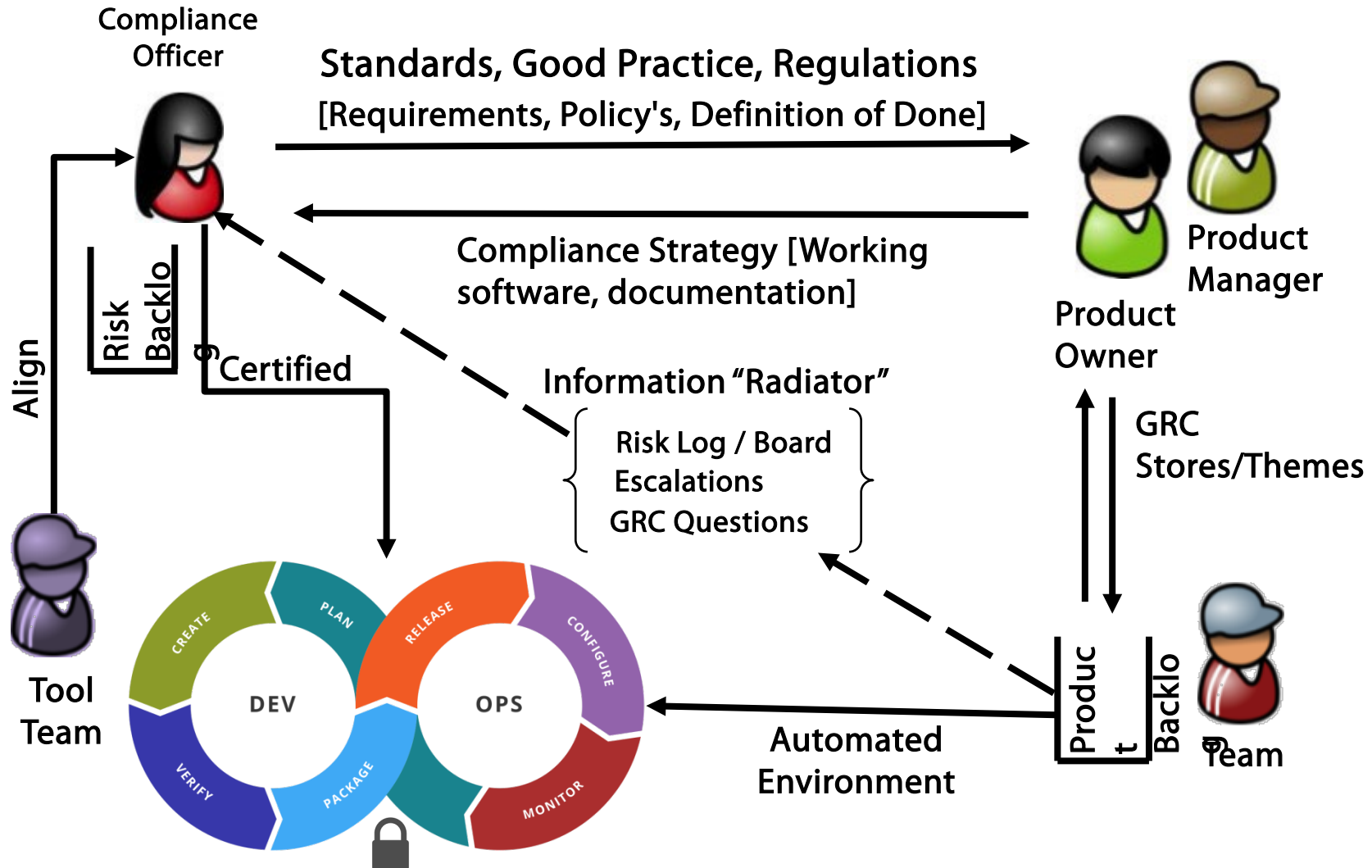
Scripting

**Toolchain
Integration**

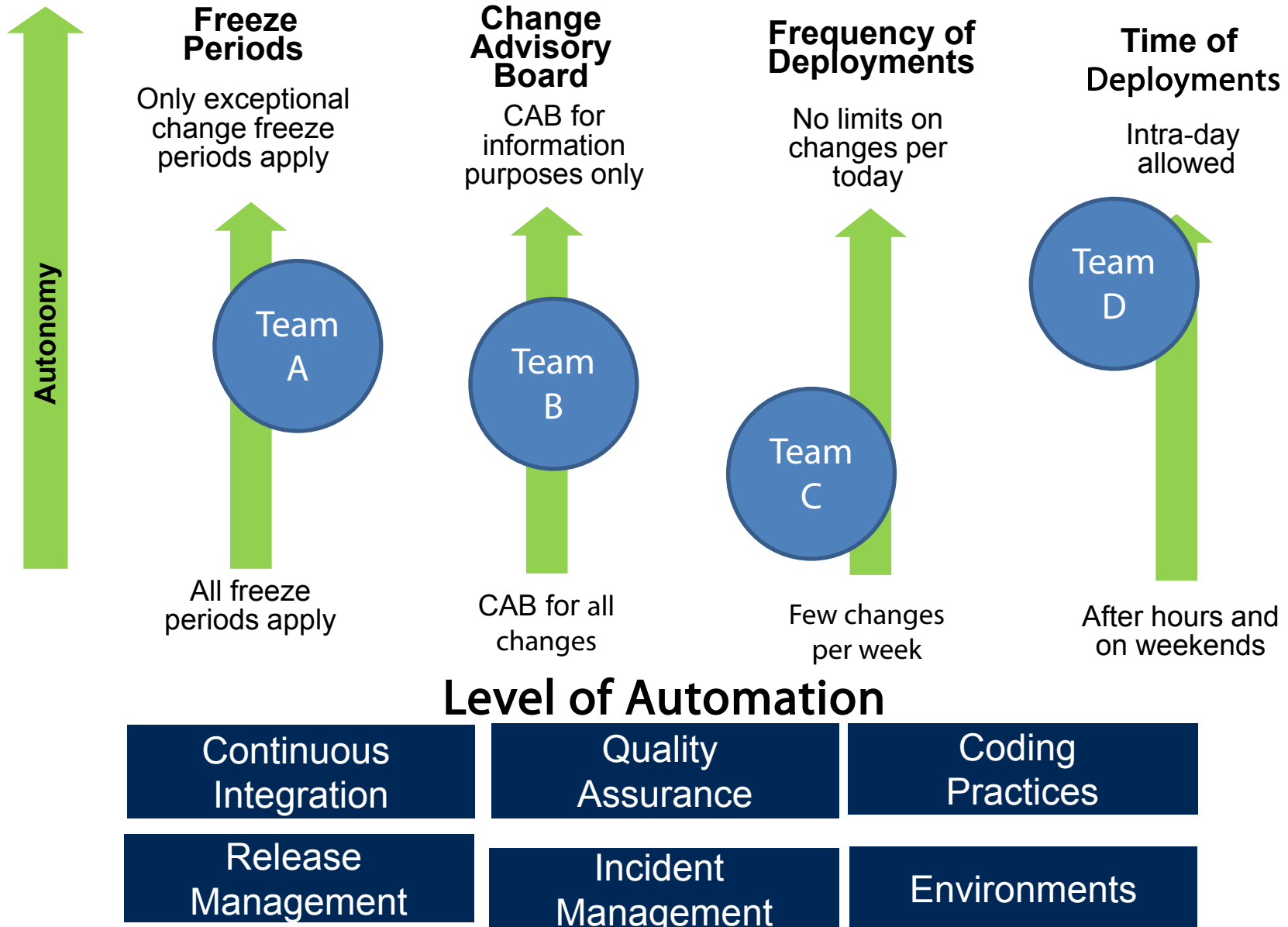
Obtain Commitment From The Team



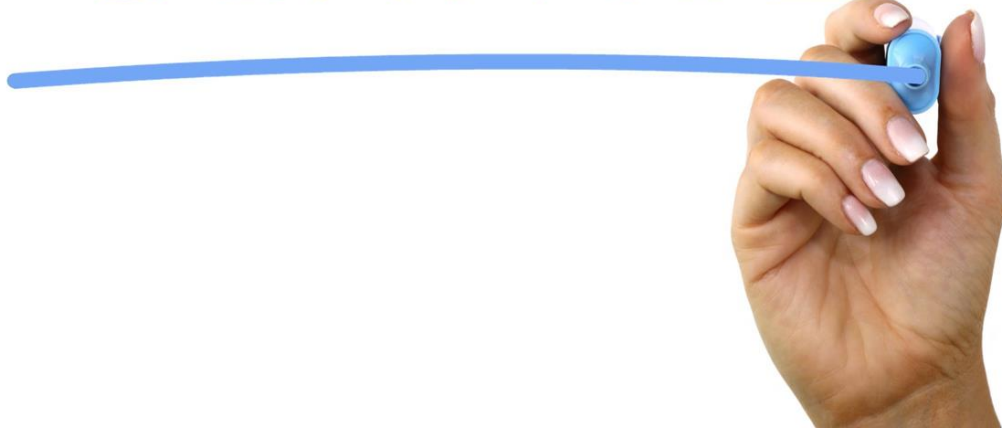
Certify The Environment, Don't Assume



Gamify - Link Automation to Autonomy



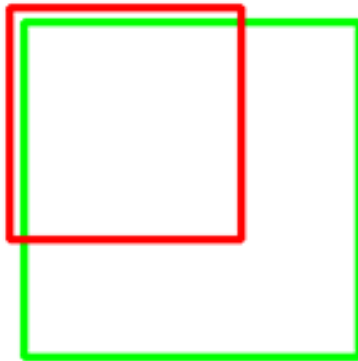
BOTTOM-UP
CONTROL



- Communities of Practice
- Toolchain Consistency
- Tools Register
- Automation Best Practice

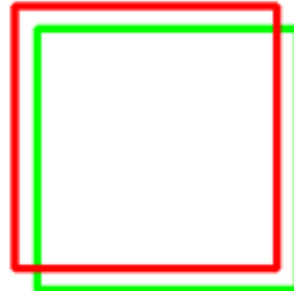
- Feature throughput
- Lead-time/Cycle-time
- IT Downtime
- Business Downtime
- Percentage of task automated
- Refactoring rate and cost

IoU: 0.4034



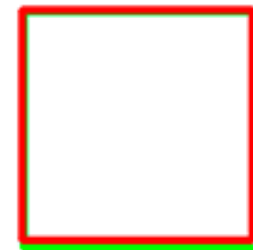
Poor

IoU: 0.7330

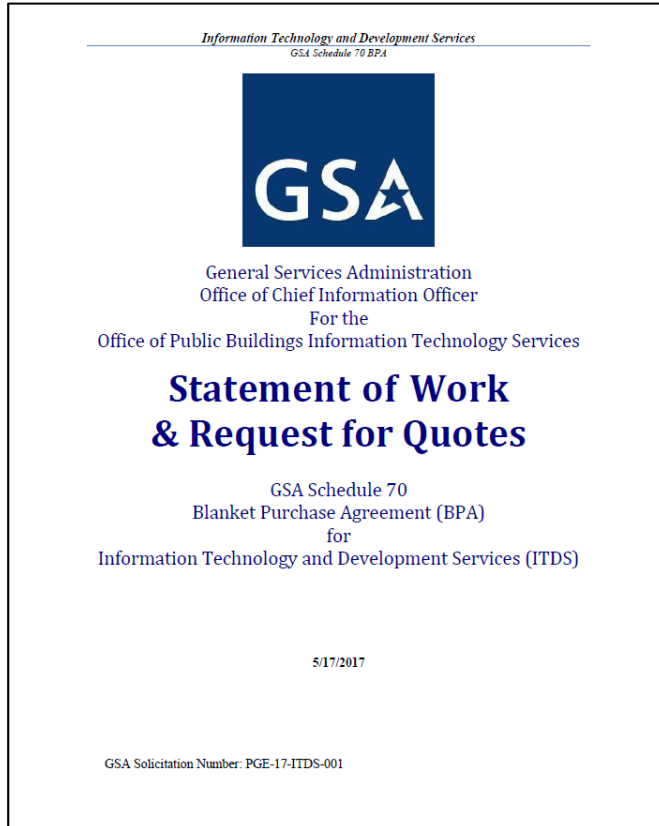


Good

IoU: 0.9264



Excellent



CISQ has been referenced by the U.S. General Services Administration (GSA), formally citing CISQ requirements in a Information Technology (IT) statement of work from the Office of the CIO for the Office of Public Buildings. GSA is an independent agency of the U.S. government that supports general services of Federal agencies.

See page 21, section 5.9 in GSA's document, Schedule 70 Blank Purchase Agreement for IT and Development Services...

"PB-ITS (Project Based IT Services) is seeking to establish code quality standards for its existing code base, as well as new development tasks. As an emerging standard, PB-ITS references the Consortium for IT Software Quality (CISQ) for guidance on how to measure, evaluate and improve software."



- What are the drivers for automation
- How do we introduce more automation
- **What role do standards play**



We built this city, we built this city on rock an' roll

We Need Standards We Can Implement

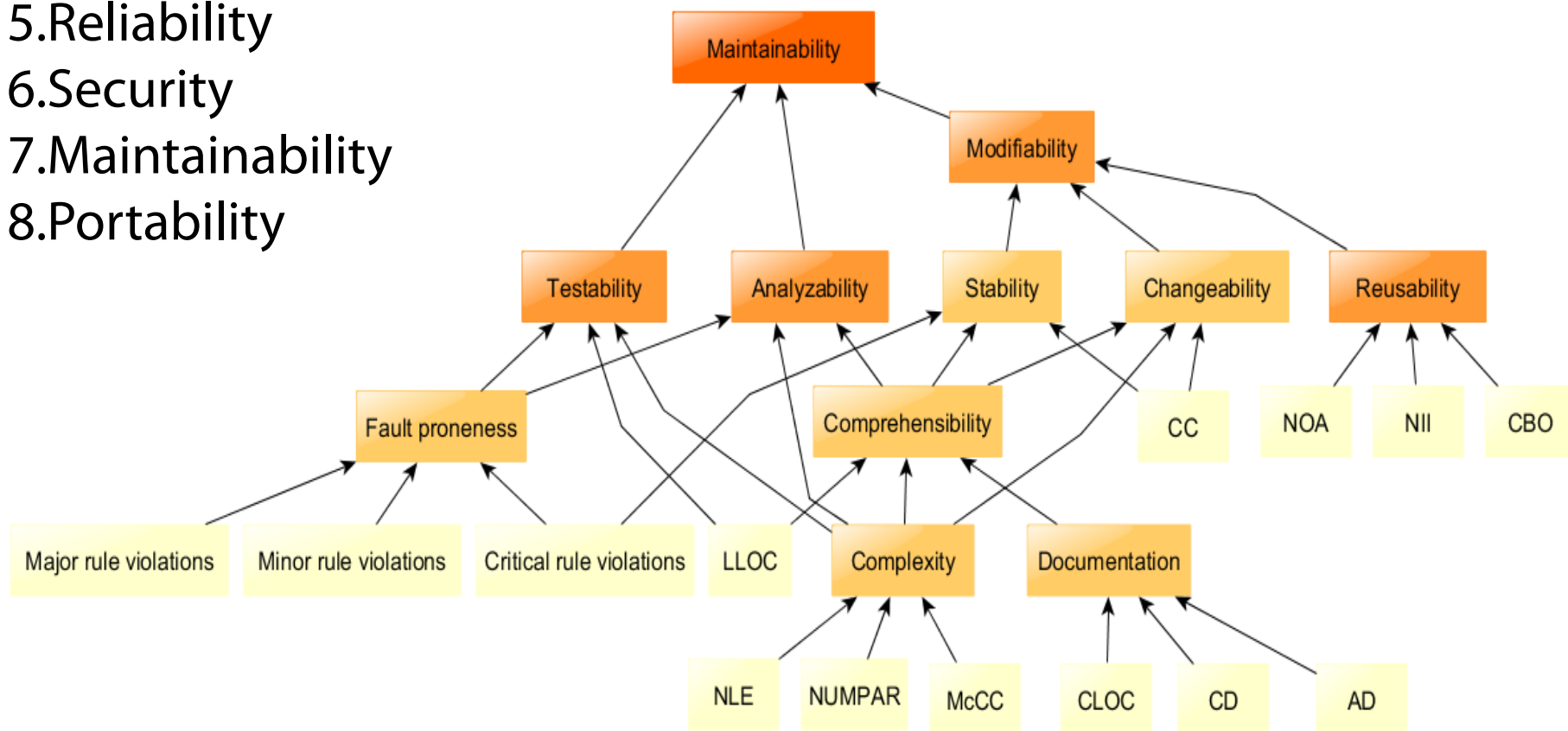


We built this city, we can't roll

On, ISO 25010

an'

1. Functional Suitability
2. Performance Efficiency
3. Compatibility
4. Usability
5. Reliability
6. Security
7. Maintainability
8. Portability



We have to deal with the risk link - people.





As a greater portion of mission, business, and safety critical functionality is committed to software-intensive systems, these systems become one of, if not the largest source of risk to enterprises and their customers. Since corporate executives are ultimately responsible for managing this risk, we establish the following principles to govern system development and deployment.

1. Engineering discipline in product and process
2. Quality assurance to risk tolerance thresholds
3. Traceable properties of system components
4. Proactive defense of the system and its data
5. Resilient and safe operations

Over 2000 individual members from large software-intensive organizations:

