

24 Capabilities to Drive Improvement

CONTINUOUS DELIVERY CAPABILITIES

1. Version control
2. Deployment automation
3. Continuous integration
4. Trunk-based development
5. Test automation
6. Test data management
7. Shift left on security (put first, make easy)
8. Continuous delivery (CD)

ARCHITECTURE CAPABILITIES

9. Loosely coupled architecture
10. Empowered teams

PRODUCT AND PROCESS CAPABILITIES

11. Customer feedback
12. Value stream
13. Working in small batches
14. Team experimentation

LEAN MANAGEMENT AND MONITORING CAPABILITIES

15. Change approval processes (lightweight, not external)
16. Monitoring
17. Proactive notification
18. WIP limits (limit work-in-progress)
19. Visualizing work (public Kanban boards)

CULTURAL CAPABILITIES

20. Westrum organizational culture (Generative)
21. Supporting learning
22. Collaboration among teams
23. Job satisfaction
24. Transformational leadership

Delivery Performance Measures

Delivery lead time
Deployment frequency
Time to restore service
Change fail rate.

Continuous Delivery

1. Build quality in
2. Work in small batches
3. Computers perform repetitive tasks; people solve problems
4. Relentlessly pursue continuous improvement
5. Everyone is responsible

High performance is possible with all kinds of systems, provided that systems—and the teams that build and maintain them—are **loosely coupled**.

It's worth noting that an **experimental** approach to product development is highly correlated with the technical practices that contribute to continuous delivery.

WIP limits on their own do not strongly predict delivery performance. It's only when they're combined with the use of **visual displays** and have a **feedback** loop from production **monitoring** tools back to delivery teams or the business that we see a strong effect.

Generative Culture

An organizational culture that values cooperation, experimentation, risk-to-failure, and mission-focus.