



AI READINESS · VALUE STREAM REFERENCE ARCHITECTURE

If *Accelerate* Were Written Today

How the 24 capabilities that drive software delivery performance change when AI joins the team — and how a Value Stream Reference Architecture makes the change happen.

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~6 min read

Accelerate (Forsgren, Humble and Kim, 2018) identified 24 capabilities that predict how quickly and reliably organizations deliver software. They were written for human teams. AI changes the economics underneath them: producing code, tests and documentation becomes cheap, so the constraint moves to review, verification, integration, context and decision rights — in other words, to **how work and responsibility flow between teams**.

The capabilities don't go away. Most get more important, many get reframed, and a few new ones appear.

This is consistent with DORA's finding that AI acts as an **amplifier**: it magnifies whatever is already true of an organization. Strong capabilities compound. Weak ones — large batches, slow review, tangled ownership, saturated teams — fail faster and at greater volume. So the useful question isn't "which AI tool?" but "which capabilities are we amplifying, and does our structure let them flow?"

How to read the table

Each capability is tagged **INTENSIFIES** (same practice, higher stakes at AI speed) or **REFRAMED** (the practice itself changes meaning). Six **NEW** capabilities follow the table.

CONTINUOUS DELIVERY		
01 Version control	REFRAMED	Prompts, agent instructions, context files and evals are versioned with the code. It becomes the safety net for machine-speed change.
02 Deployment automation	INTENSIFIES	Pipelines must absorb a much higher volume of change without manual gates.
03 Continuous integration	INTENSIFIES	Integration frequency rises with AI output; slow builds and queues become the visible choke point.



CONTINUOUS DELIVERY

04 Trunk-based development	INTENSIFIES	Short-lived branches are the main defense against large, hard-to-review AI-generated divergence.
05 Test automation	REFRAMED	Tests become the specification and verification oracle for generated code; evals extend the idea to AI behavior.
06 Test data management	REFRAMED	Agents need safe, representative, synthetic data — and production data must be kept out of prompts.
07 Shift left on security	INTENSIFIES	Automated scanning, dependency and provenance checks on every AI-authored change.
08 Continuous delivery	INTENSIFIES	Always-releasable only works if the “verification tax” is automated rather than paid by reviewers.

ARCHITECTURE

09 Loosely coupled architecture	REFRAMED	Clear bounded contexts let humans and agents work with limited context. Tangled systems defeat both.
10 Empowered teams	REFRAMED	Teams now also decide what to delegate to agents, with human accountability made explicit.

PRODUCT AND PROCESS

11 Customer feedback	INTENSIFIES	When building is cheap, learning is scarce. Feedback loops decide what is worth building.
12 Visible value stream	REFRAMED	Speeding up one stage just moves the queue. A stream-level view shows where it lands.
13 Working in small batches	INTENSIFIES	AI makes large batches effortless and dangerous. This becomes the most important discipline.
14 Team experimentation	INTENSIFIES	Cheap prototypes enable more experiments, and more need for guardrails on what reaches production.

LEAN MANAGEMENT AND MONITORING

15 Lightweight change approval	REFRAMED	Per-diff human review doesn't scale. Shift to automated policy and risk-tiered review.
16 Monitoring	REFRAMED	Extends to agent actions, cost and output quality, not just system health.
17 Proactive notification	INTENSIFIES	Faster change means faster failure. Owners must hear before customers do.
18 WIP limits	REFRAMED	Apply to agent-generated work in flight, including pull requests waiting for review.



LEAN MANAGEMENT AND MONITORING

19 **Visual management** **REFRAMED** Human and agent work appear on the same board, with the same flow metrics.

CULTURE

20 **Generative culture** **INTENSIFIES** Psychological safety to surface AI failures openly rather than hiding “shadow AI” use.

21 **Learning culture** **REFRAMED** Learning how to direct, verify and critique AI output, with protected time to do it.

22 **Collaboration among teams** **REFRAMED** Includes team-to-agent and agent-to-agent interaction, each with an explicit interaction mode.

23 **Job satisfaction** **REFRAMED** Meaningful work shifts from typing to judgment. Avoid trading toil for review drudgery.

24 **Transformational leadership** **INTENSIFIES** Leaders set the AI stance, fund the adoption dip, and fix structure rather than just buying tools.

Six capabilities the original list didn’t need

DORA’s own AI research points in the same direction, adding items such as a clear AI stance, accessible internal data and a quality internal platform. Taken together with the table above, we’d add:

NEW A clear, communicated AI stance What is encouraged, what is off-limits, and who is accountable — so people stop guessing.	NEW AI-accessible internal knowledge Docs, decisions and code conventions that agents can actually use: context engineering as a team capability.
NEW Evaluation and verification practice Systematic ways to check AI output for correctness, security and architectural fit.	NEW Explicit delegation and decision rights Which decisions agents may make, which need a human, and who owns the outcome.
NEW A quality internal platform Paved paths so agents produce consistent, governed output rather than hundreds of near-duplicates.	NEW Cognitive-load-aware team structure Knowing which teams have headroom for more throughput — and which are already at capacity.



Where VSRA comes in

Nearly every capability above depends on how teams are bounded and how they interact: who owns what, what flows through whom, and who carries which load. That is what a Value Stream Reference Architecture models. Treating the organization as a graph of typed teams and interactions, VSRA acts as a lever in four ways.

1 Find where AI volume will pile up

VSRA's Impediment measure highlights the central, heavily depended-on teams most likely to become bottlenecks. AI-generated output arrives there first, which is why review and approval queues are where gains stall.

2 See who has headroom

The Effort dimension — a proxy for cognitive load built from each team's interaction patterns — shows which teams are already stretched. They shouldn't get more throughput before their load is addressed.

3 Design the interactions on purpose

Loose coupling, platform paths and cross-team collaboration are interaction modes on the edges of the graph: facilitation, collaboration or as-a-service. VSRA lets you test candidate structures, including agents as participants, and see the ripple effects on neighboring teams before you reorganize.

4 Turn structure into agent behavior

Because the graph captures boundaries and relationships, it can inform the guidance agents work under — for example, how a stream-aligned team's agent should consume a platform team's services without platform complexity leaking into its own work. This is an area of active exploration at Valustra.

A note on rigor. VSRA and its FINE dimensions (Flow, Impediments, Needs, Effort) are a structural, comparative reasoning tool. They help you ask better questions about an organization's design and compare alternatives; they are not live performance metrics or a validated measure of team output.

The takeaway

The 24 capabilities still describe high-performing delivery. AI raises the stakes on every one of them, and it exposes any structure that can't carry the extra volume. Before scaling AI, understand your value streams, the load on your teams and the interactions between them. **The tools are ready. The question is whether the structure is.**

SOURCES

Forsgren, Humble and Kim, *Accelerate: The Science of Lean Software and DevOps* (2018) • DORA, *State of AI-assisted Software Development* (2025) and *The ROI of AI-assisted Software Development* (2026) • Skelton and Pais, *Team Topologies* (2019)

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