ESCAPING THE AI SPEED TRAP

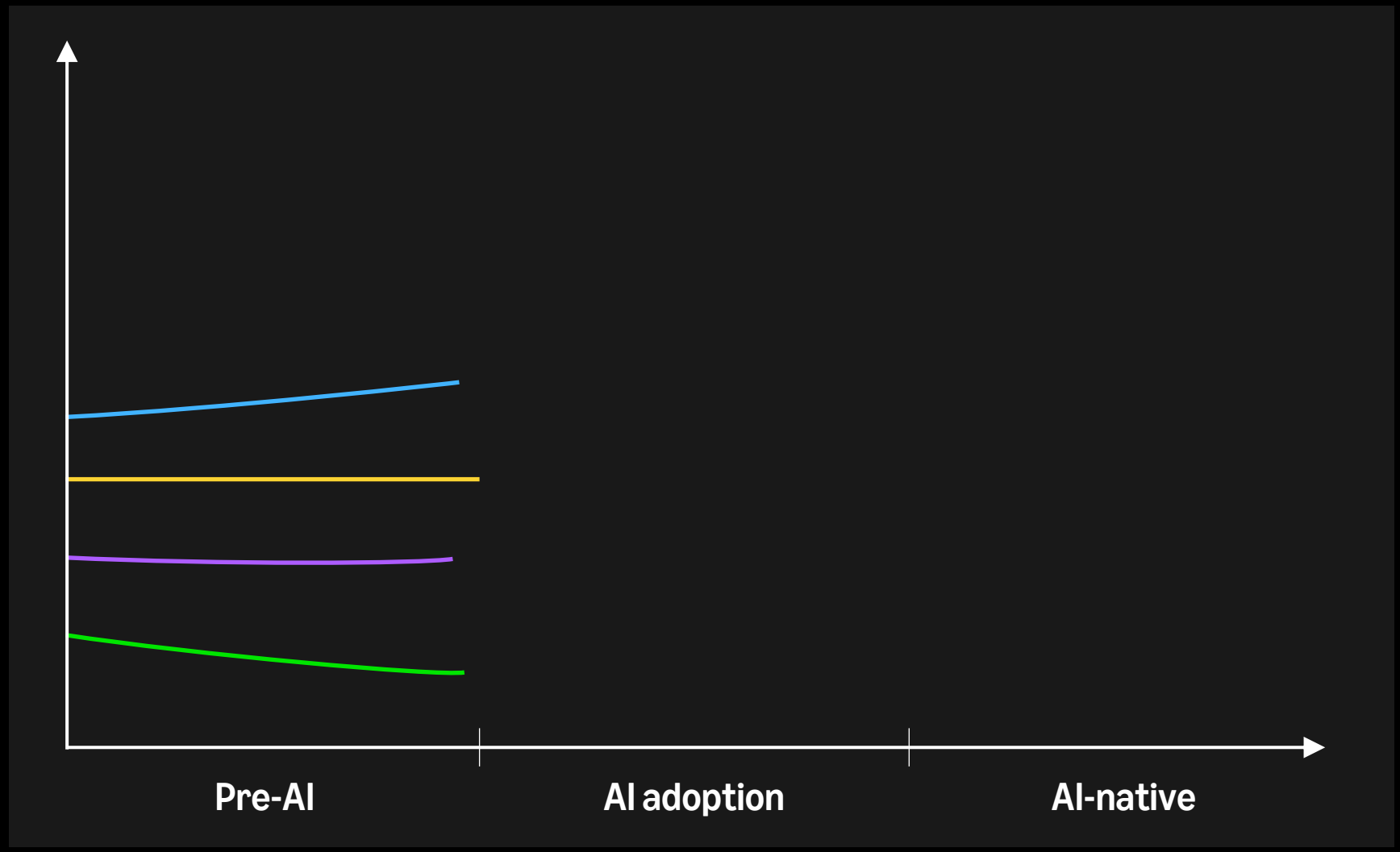
Laura Tacho
Sr Principal Technologist
Developer Experience

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AI usage is not business impact.

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We started here...



COMPLEXITY

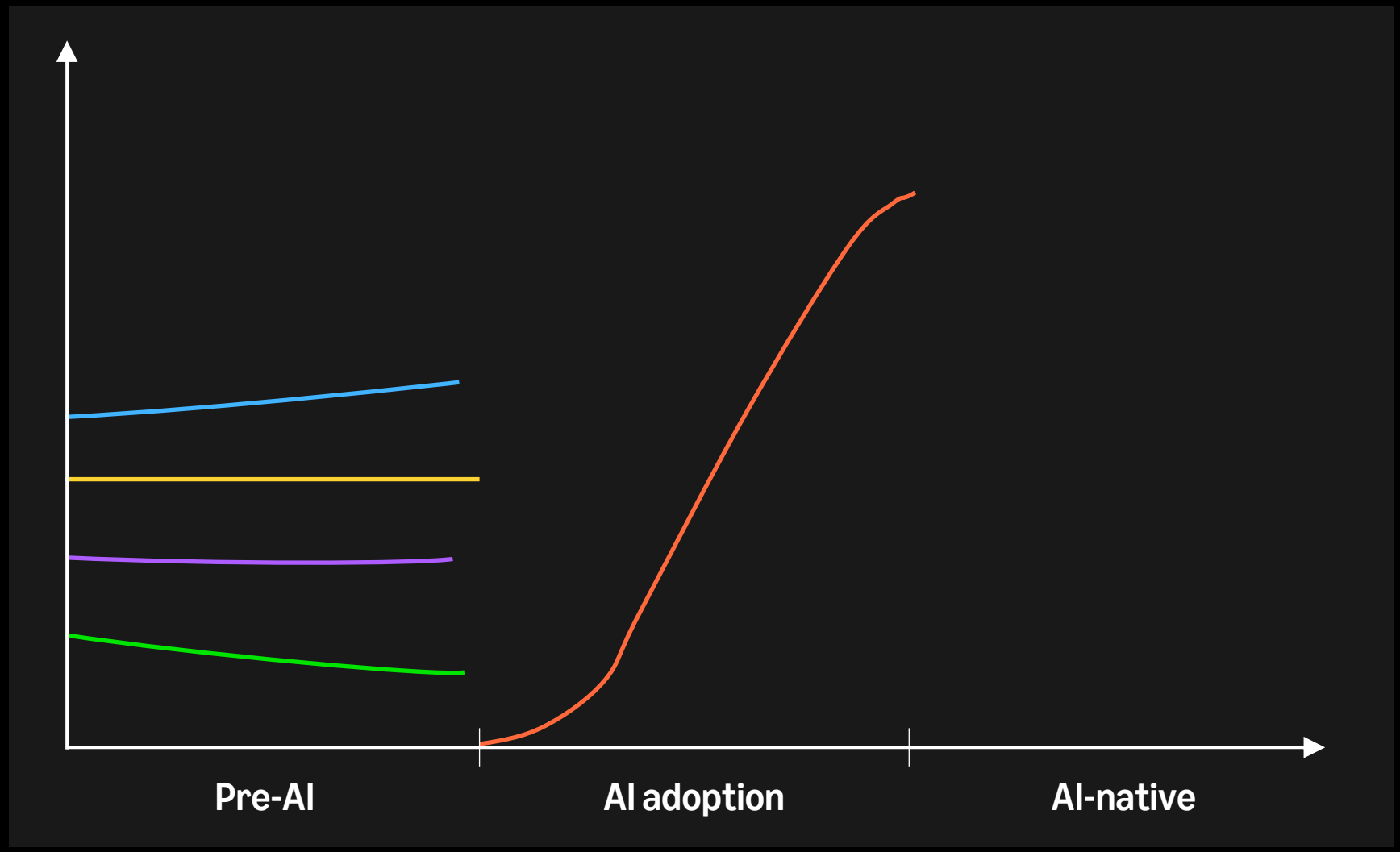
ROI

COST

SPEED

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And worked toward widespread adoption



COMPLEXITY

ROI

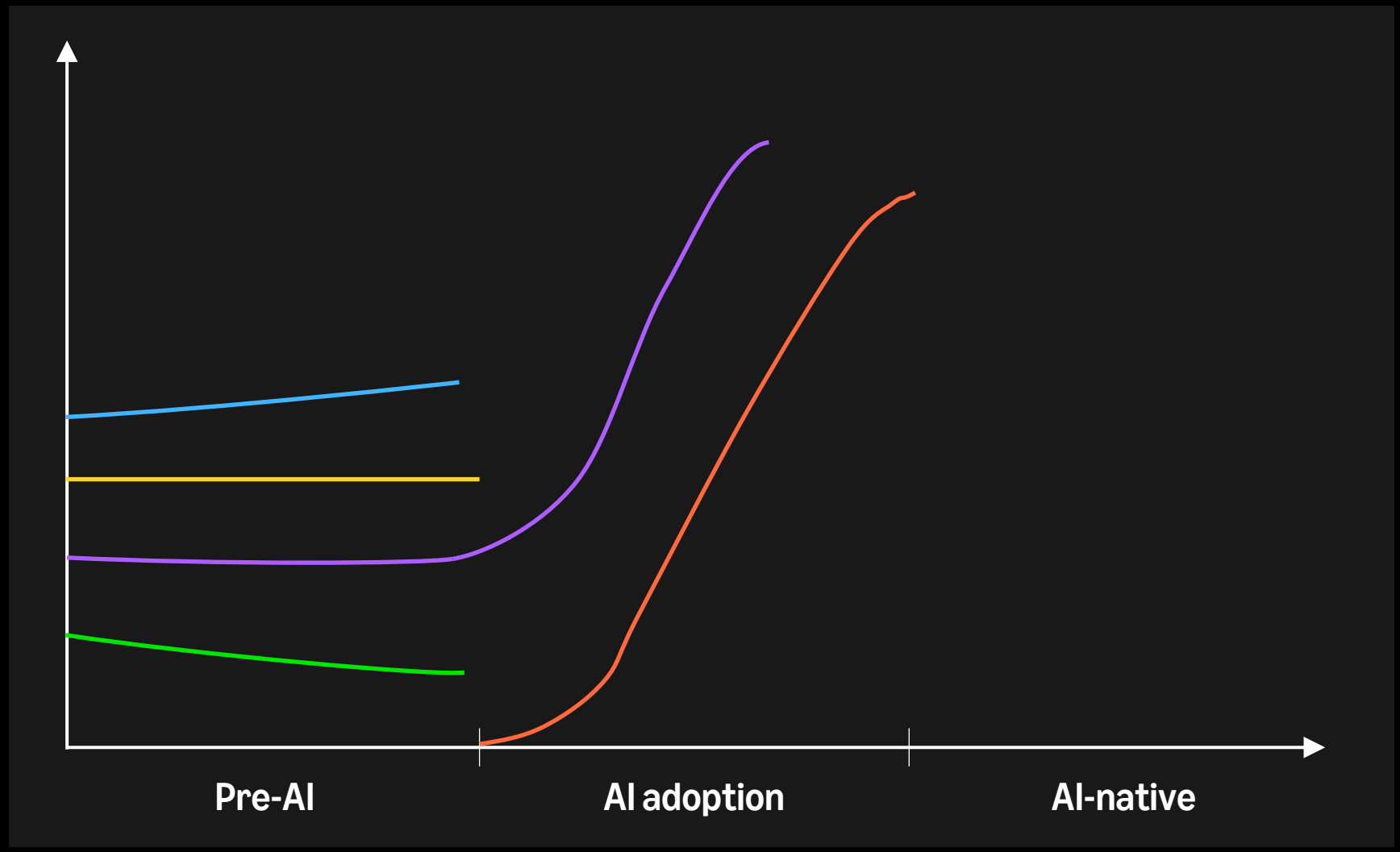
COST

SPEED

AI USAGE

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As usage rose, so did cost



COMPLEXITY

ROI

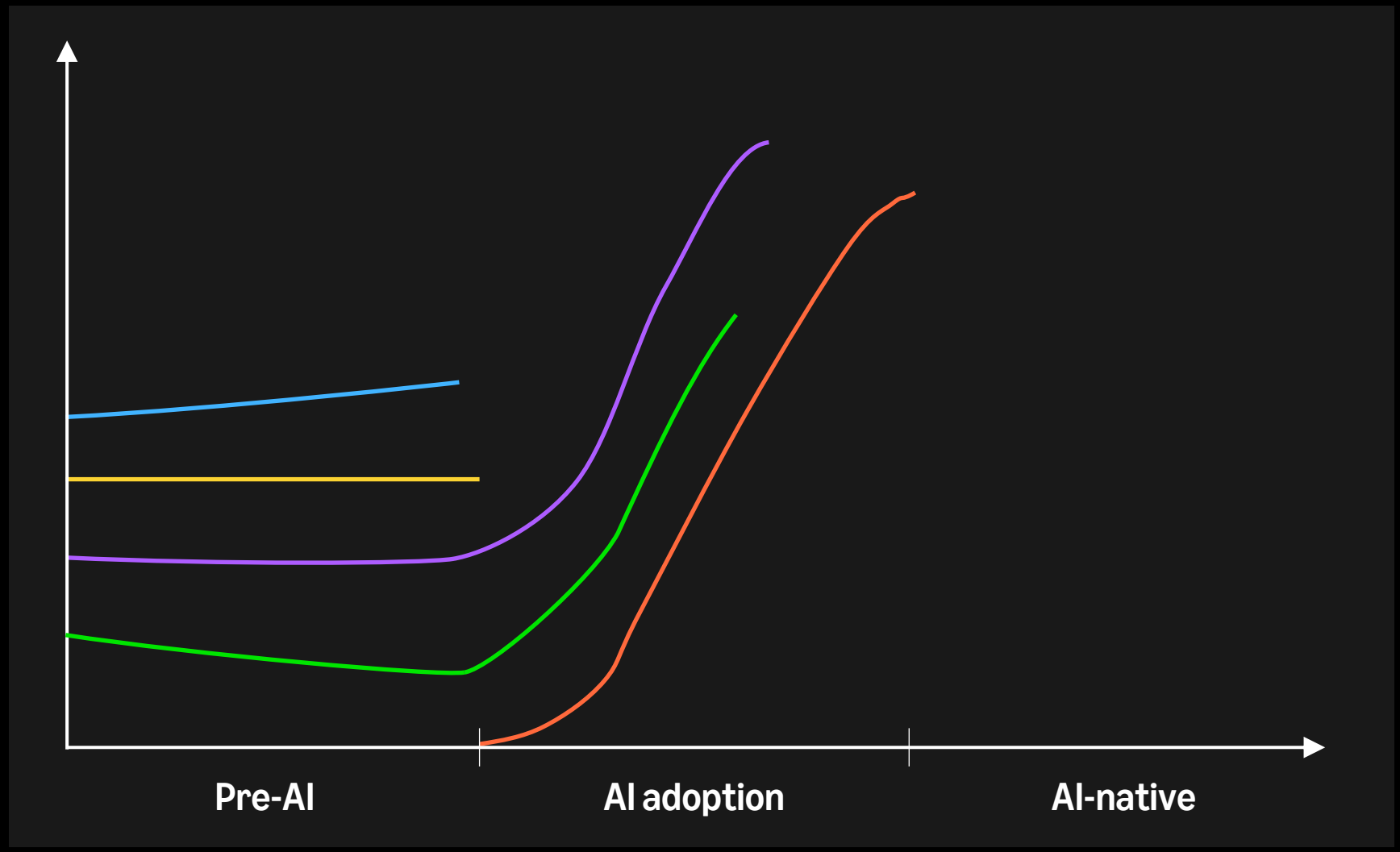
COST

SPEED

AI USAGE

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Developers write more code, faster



COMPLEXITY

ROI

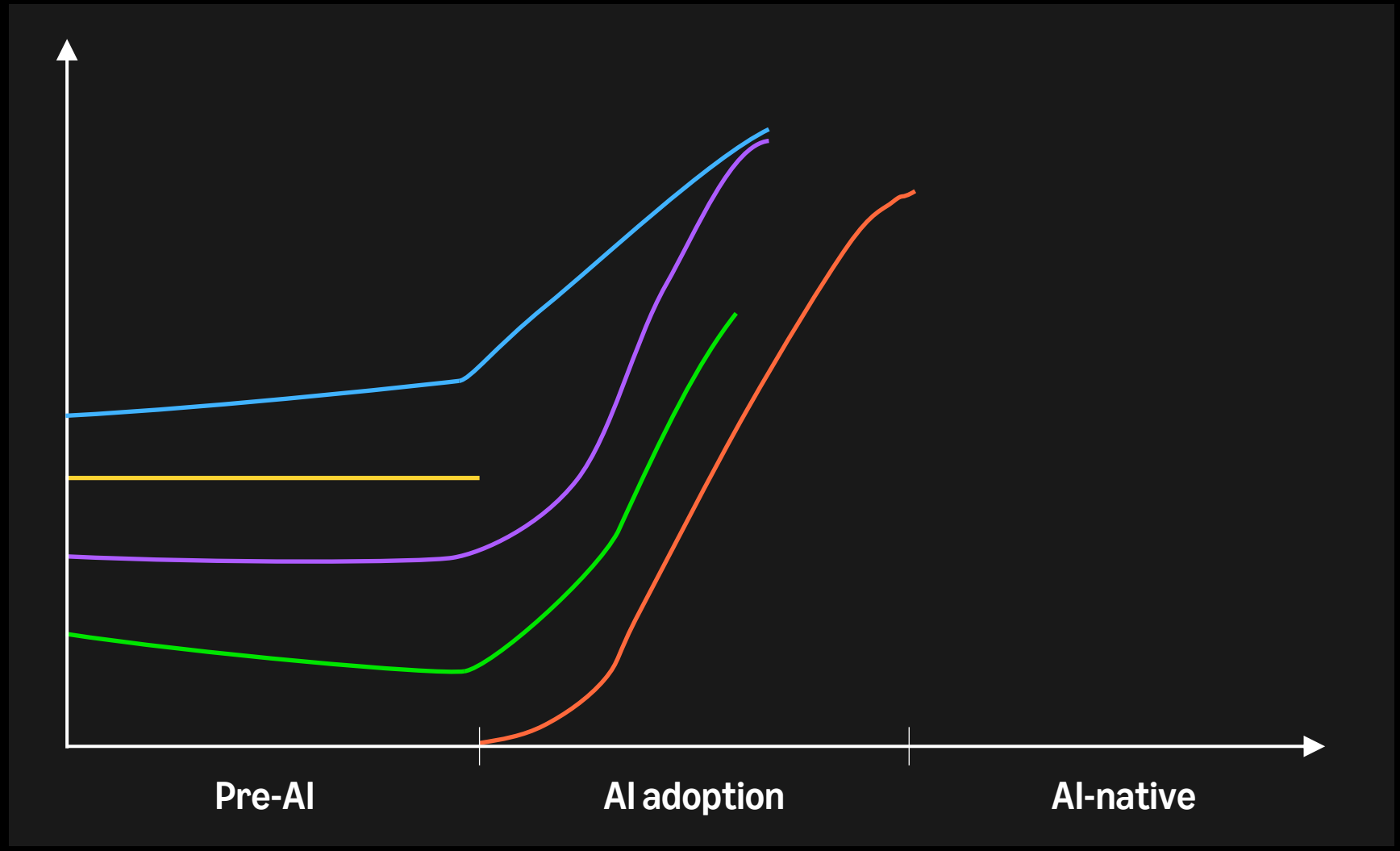
COST

SPEED

AI USAGE

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Complexity also increases



COMPLEXITY

ROI

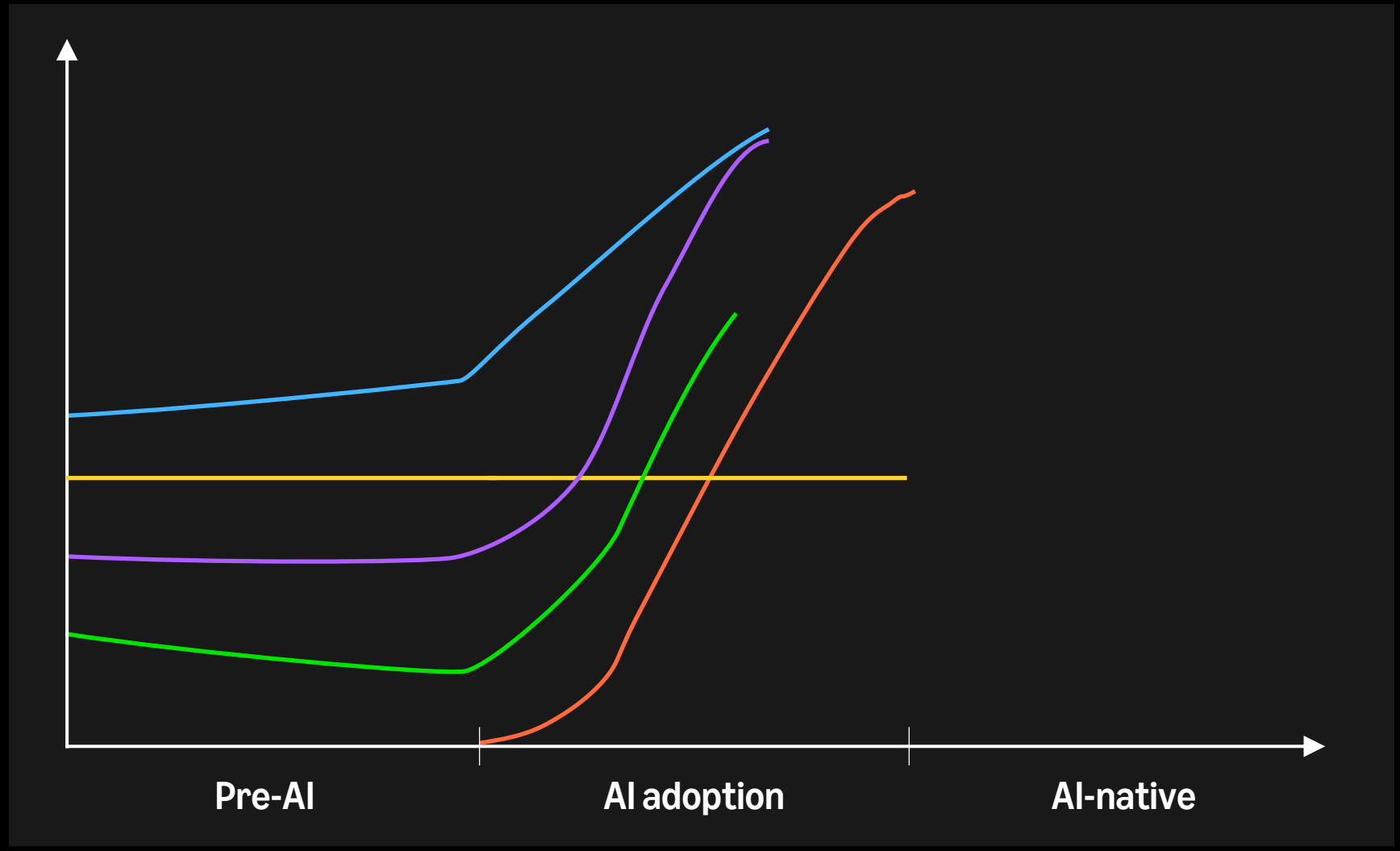
COST

SPEED

AI USAGE

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ROI isn’t scaling with usage and speed



COMPLEXITY

ROI

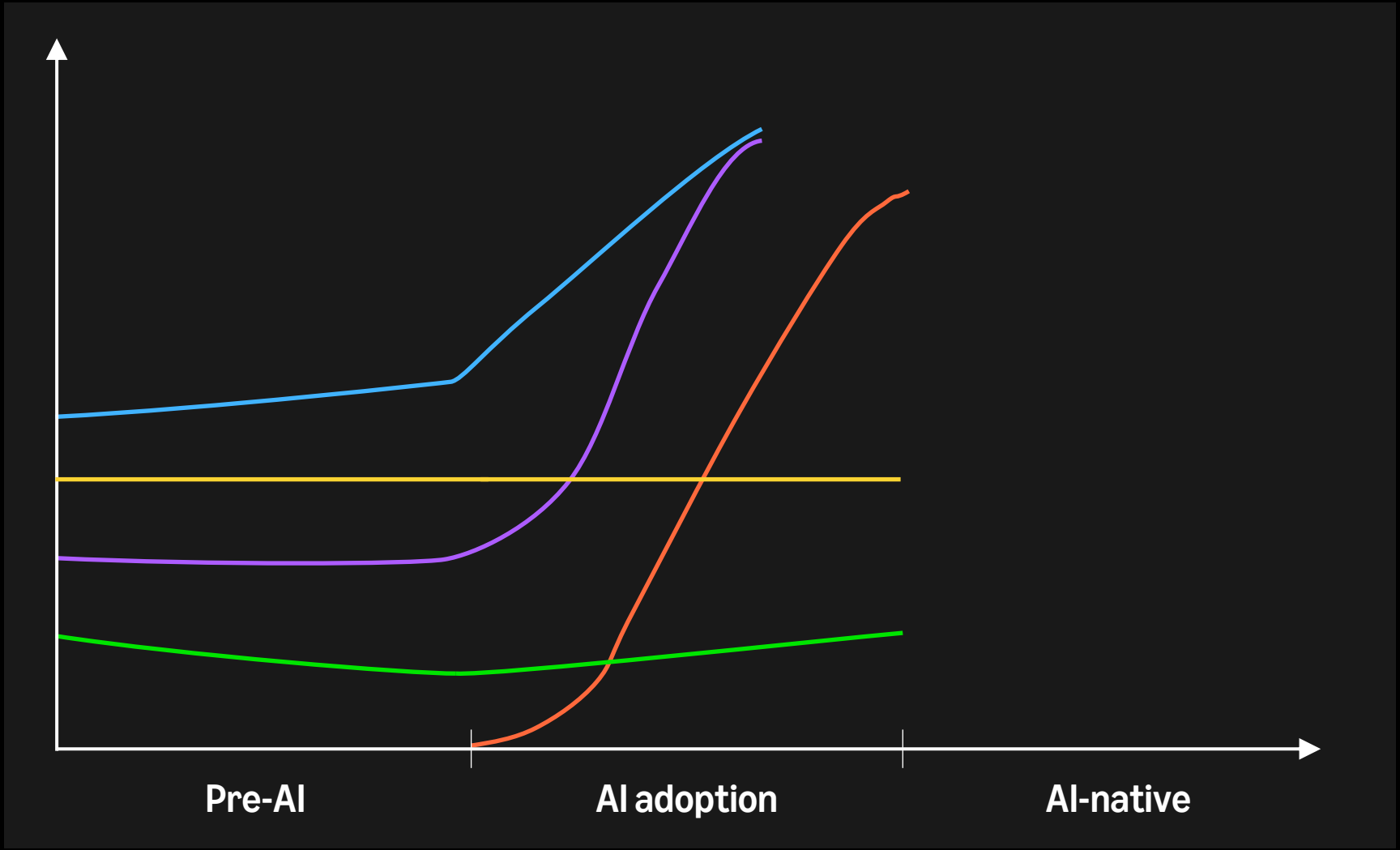
COST

SPEED

AI USAGE

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Orgs aren’t moving faster



COMPLEXITY

ROI

COST

SPEED

AI USAGE

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The AI speed trap

25.5x

MORE LINES OF CODE
after adopting AI

1.3x

MORE RELEASES
after adopting AI

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Demirer, Musolff, Yang. *Writing Code vs. Shipping Code: Productivity Effects Across Generations of AI Coding Tools.* 2026.

The AI speed trap

Development gets faster, but the business doesn’t

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The AI speed trap

01

Measuring the wrong things

02

Moving bottlenecks, or creating new ones

03

Focusing on speed and cost instead of value created

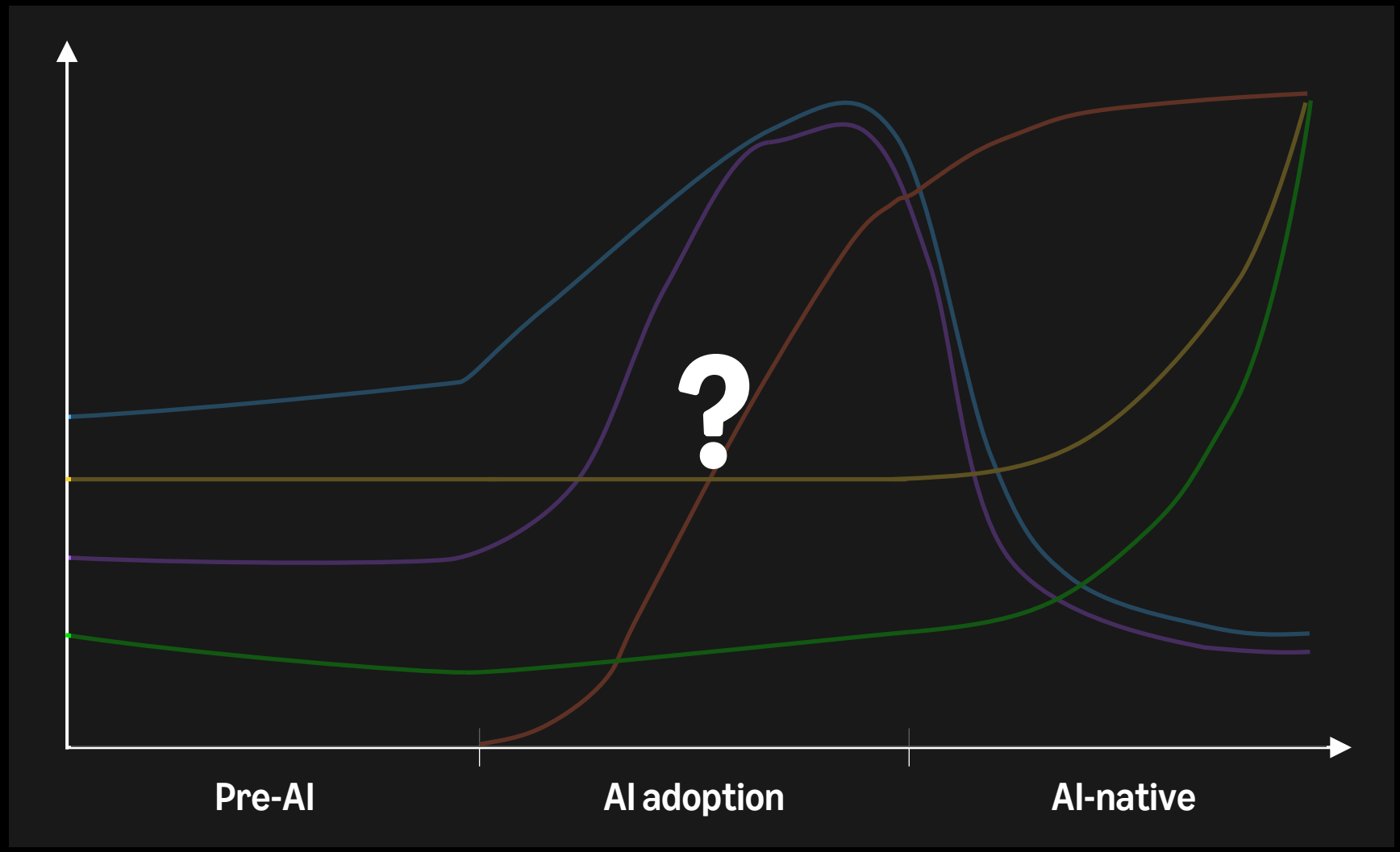
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Escaping the speed trap

Measurement is strategy

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Most leaders don’t know how they are performing



COMPLEXITY

ROI

COST

SPEED

AI USAGE

aws

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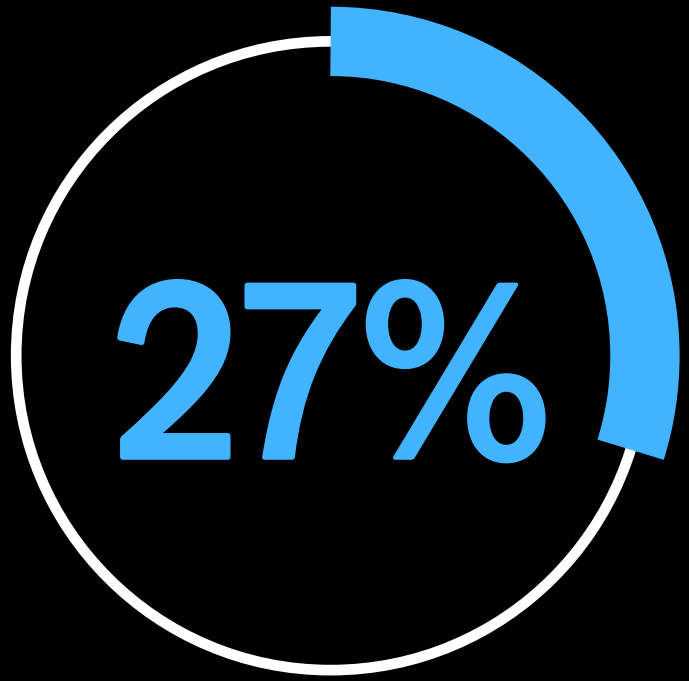




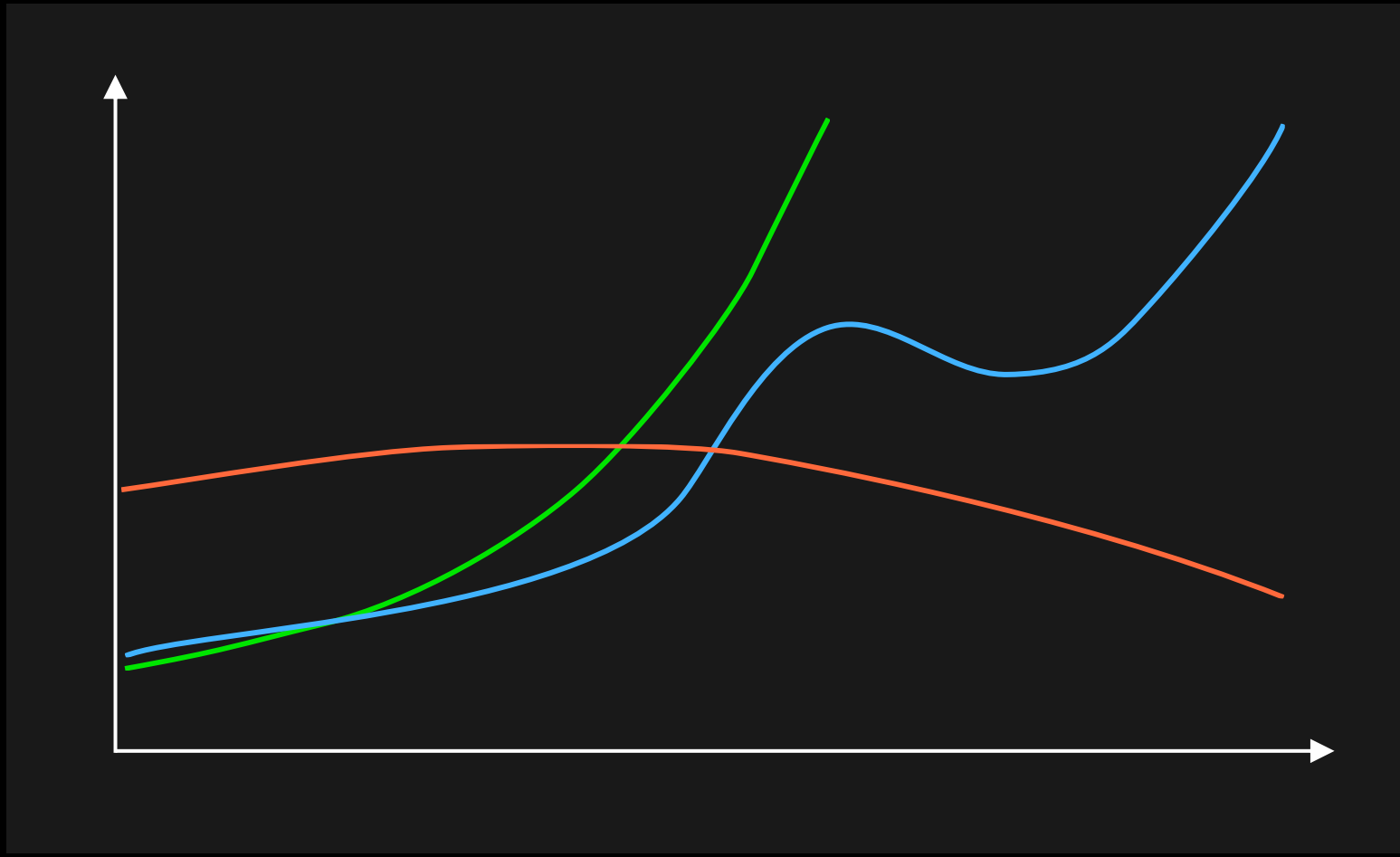
of leaders don’t think they have the right metrics

Source: Atlassian’s State of DevEx Report, 2026

One-dimensional metrics are traps



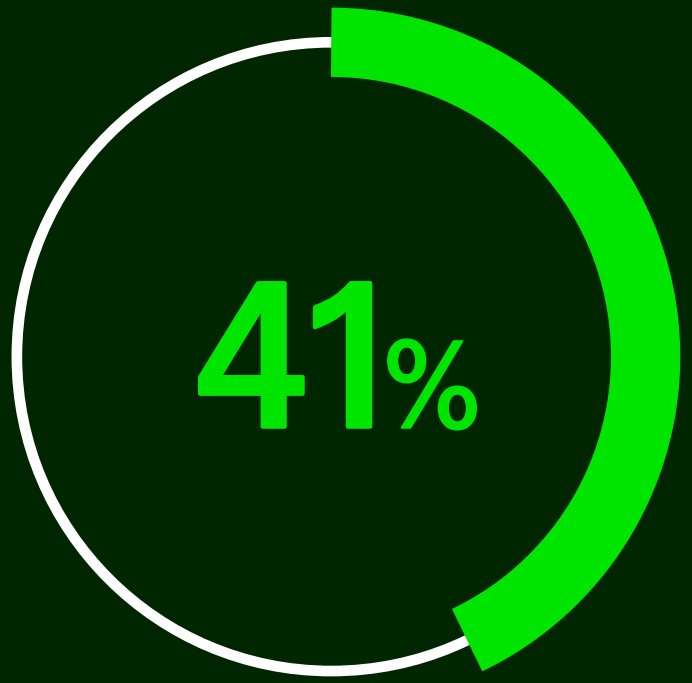
AI-GENERATED CODE



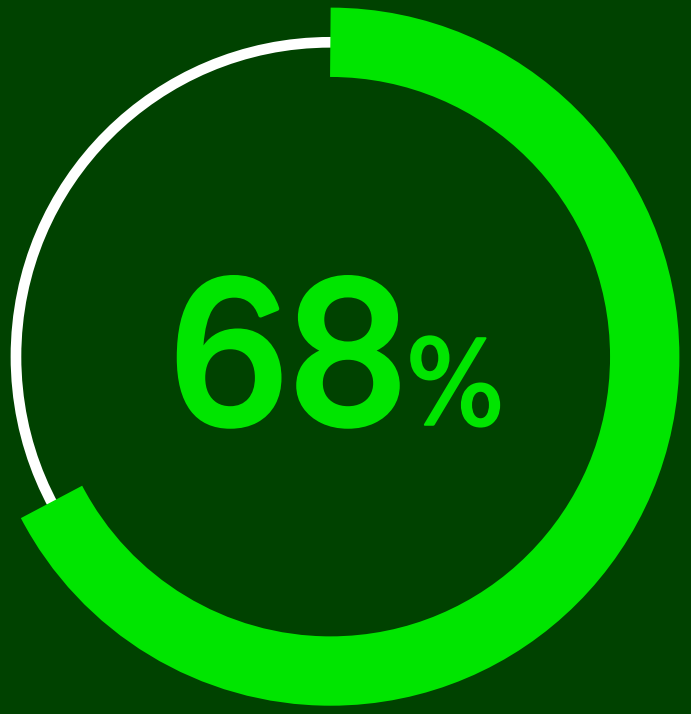
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GOODHART'S LAW:

When a measure becomes a target, it is no longer a good measure.



of devs use AI more than necessary



of devs believe usage doesn't reflect value

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Source: Faros

Metrics must distinguish outcomes from AI activity

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Avoid Goodhart's Law

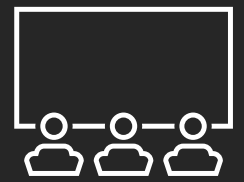
P



Purpose

Is there a goal, or is it just easy to measure?

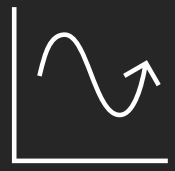
A



Audience

Who is looking at these metrics?

C



Cadence

How often are they being collected and reviewed?

T



Tension

Are tradeoffs visible? Does it tell me what not to do?

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Measuring development efficiency (C-Suite, monthly)



Throughput

PRs/engineer (aggregate)



Time to Market

Lead time from idea to customer



Quality

Defects, rework



Innovation Rate

of experiments, net new work



Developer Experience

Ease of development, friction



Cost

Total AI cost, cost per change

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Change the PACT, change the metrics

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Measuring AI's impact on code review (devs, weekly)



Throughput

PR volume and frequency



PR Wait Time

Time to 1st review, time to close



Quality

Defects, rework



Comment Density

of comments per change or cycle



Developer Experience

Ease of development, friction



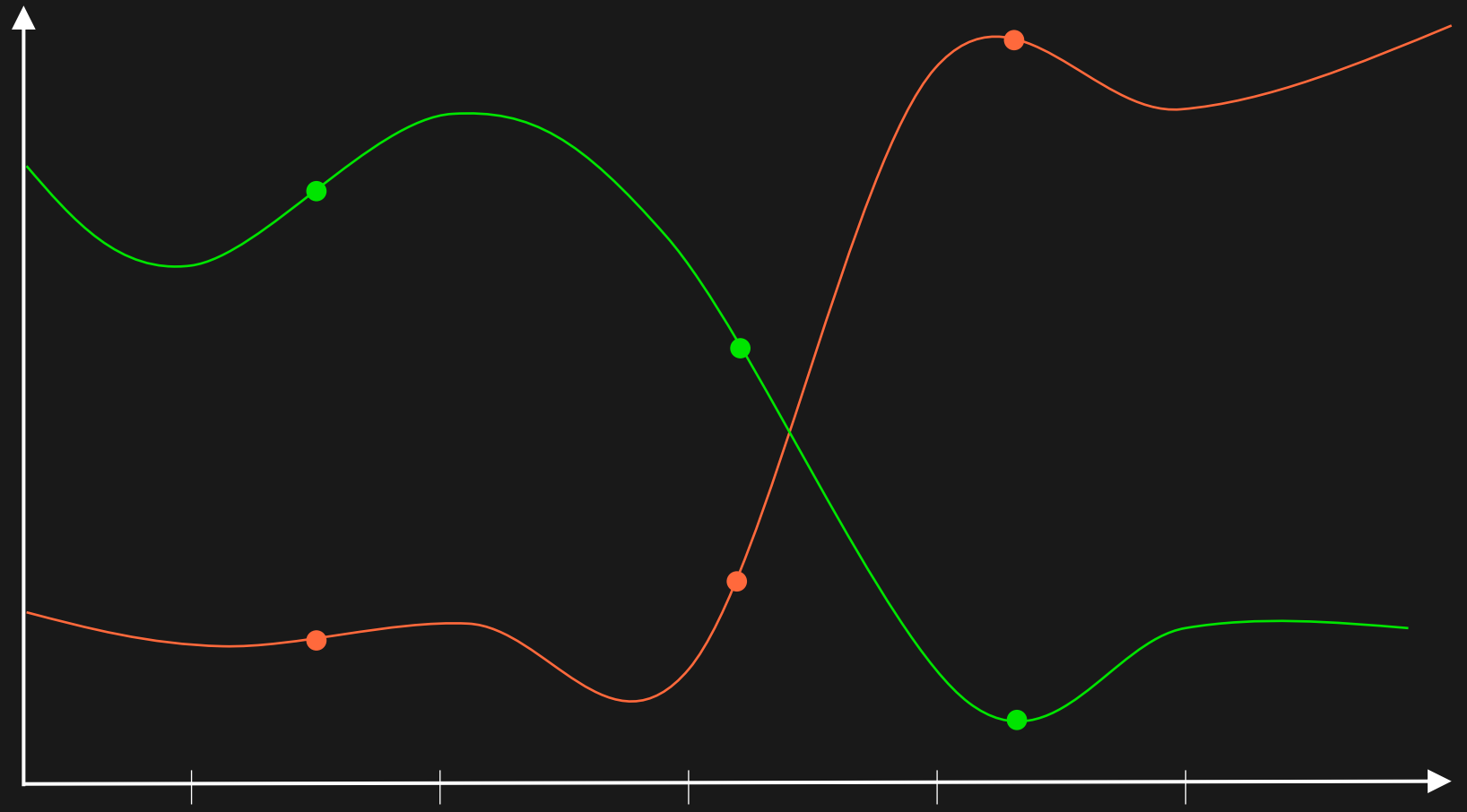
Cost

Total AI cost, cost per change

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Measure for change.

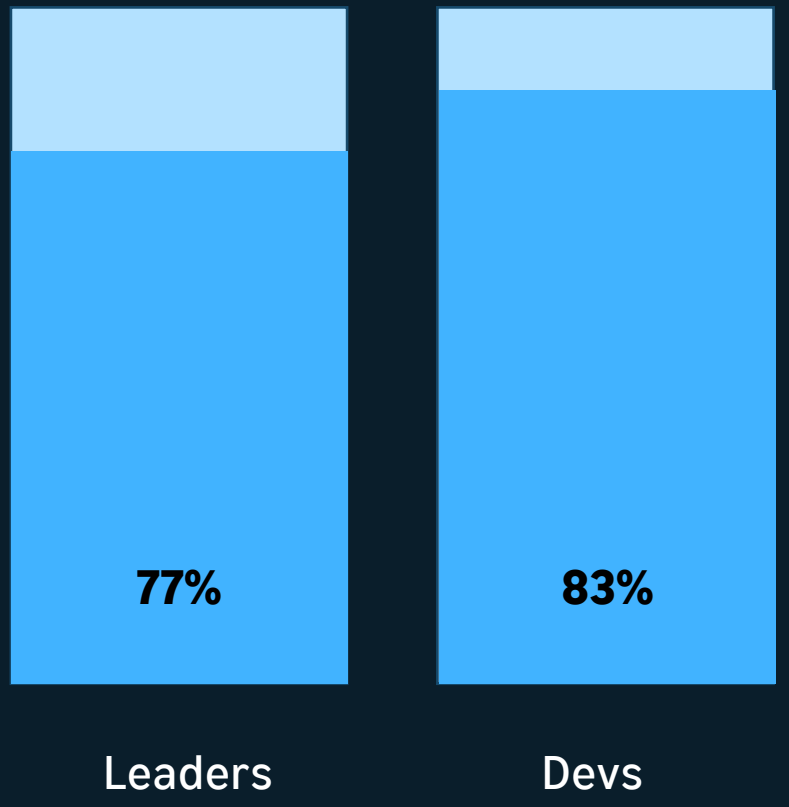


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AI strategy is missing

Leaders and devs don’t believe their companies have a clear AI strategy…

or it is not communicated well.



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Source: Atlassian’s State of DevEx Report, 2026

Escaping the speed trap

Measurement is strategy

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Want to participate in original research on AI's impact within the LeadDev community?



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Escaping the speed trap

Don’t just move the bottleneck

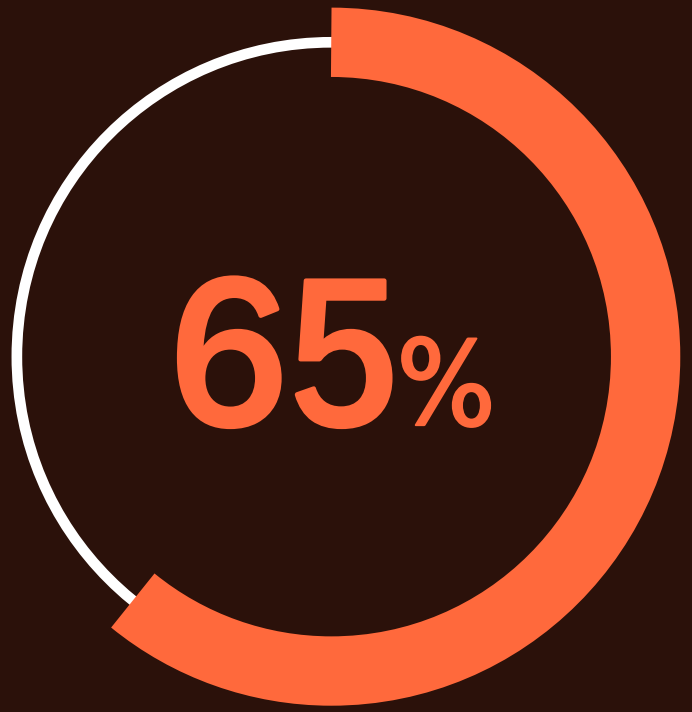
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In 2026, only 26% of developers reported saving 10+ hours a week with AI, down from 68% in 2025.

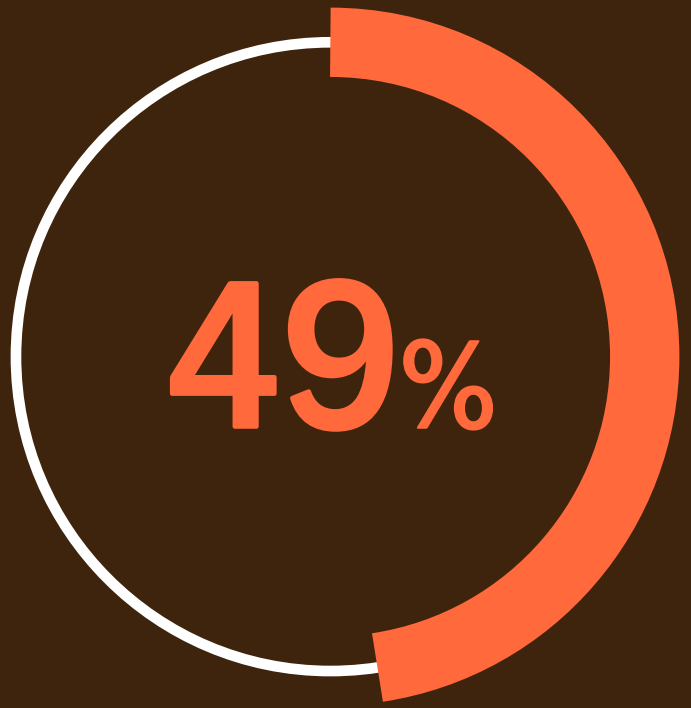
Source: Atlassian State of DevEx Report 2026

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AI-native overhead



of devs spend time correcting AI work that missed the original intent



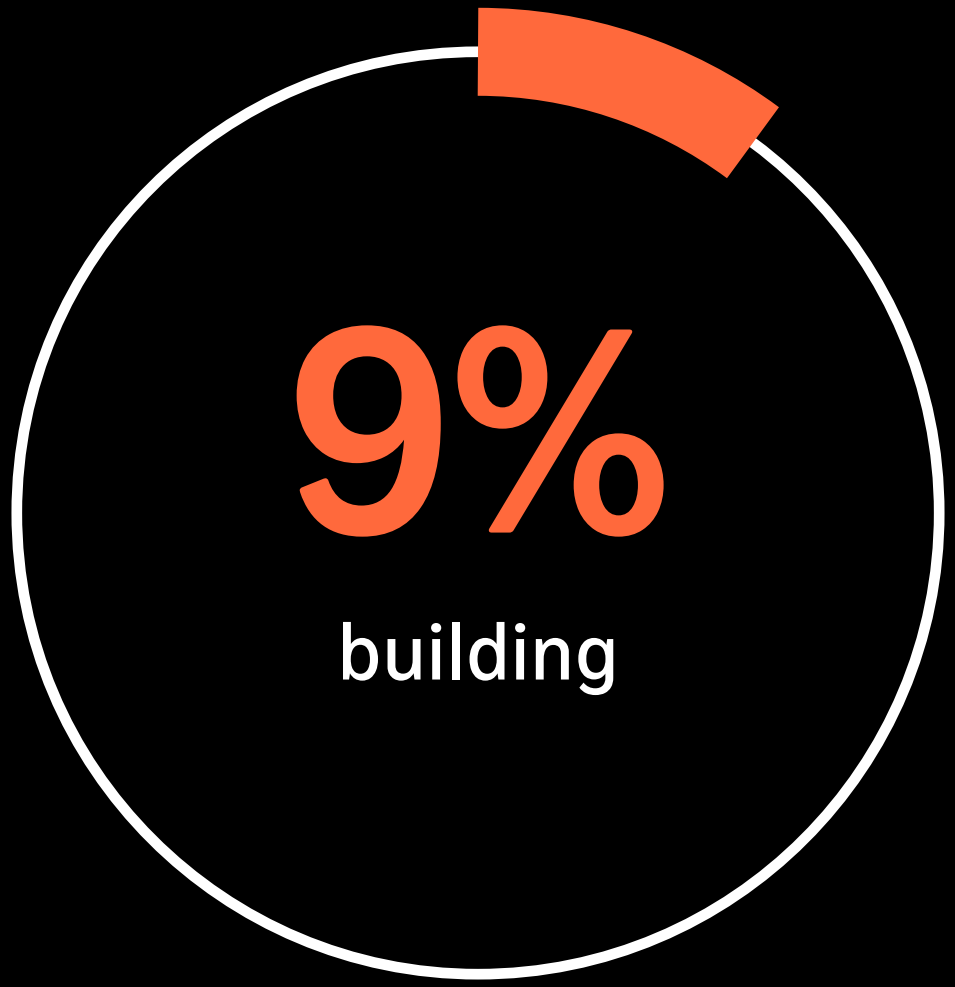
of devs spend 4+ hours/week managing AI tools

Source: Atlassian State of DevEx Report 2026

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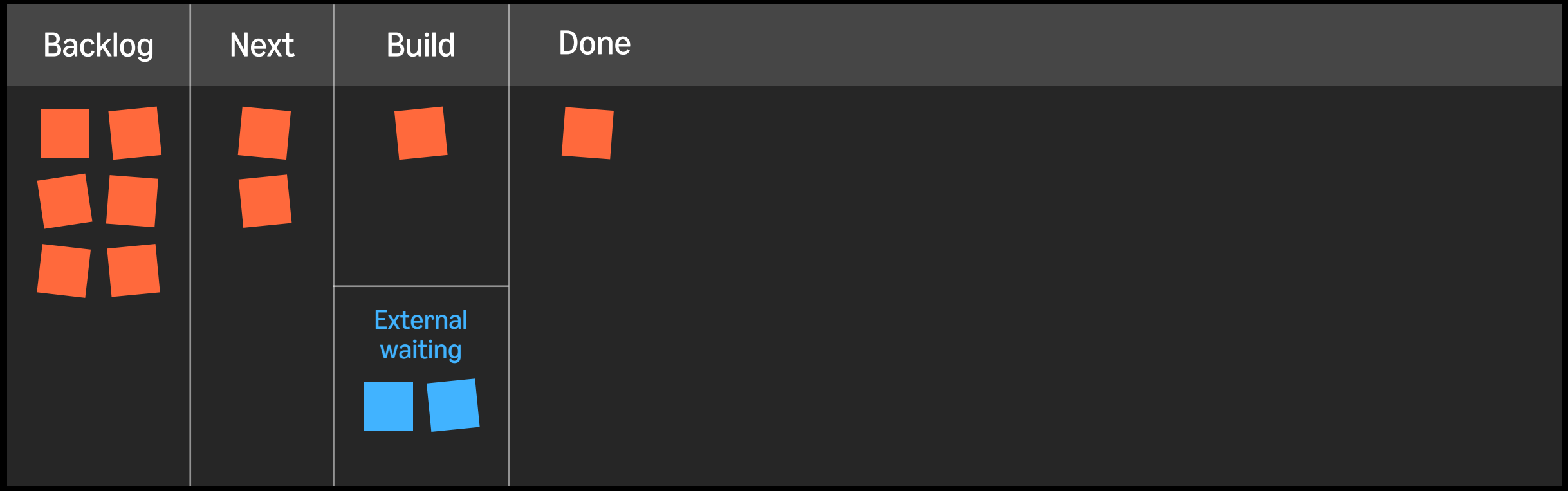
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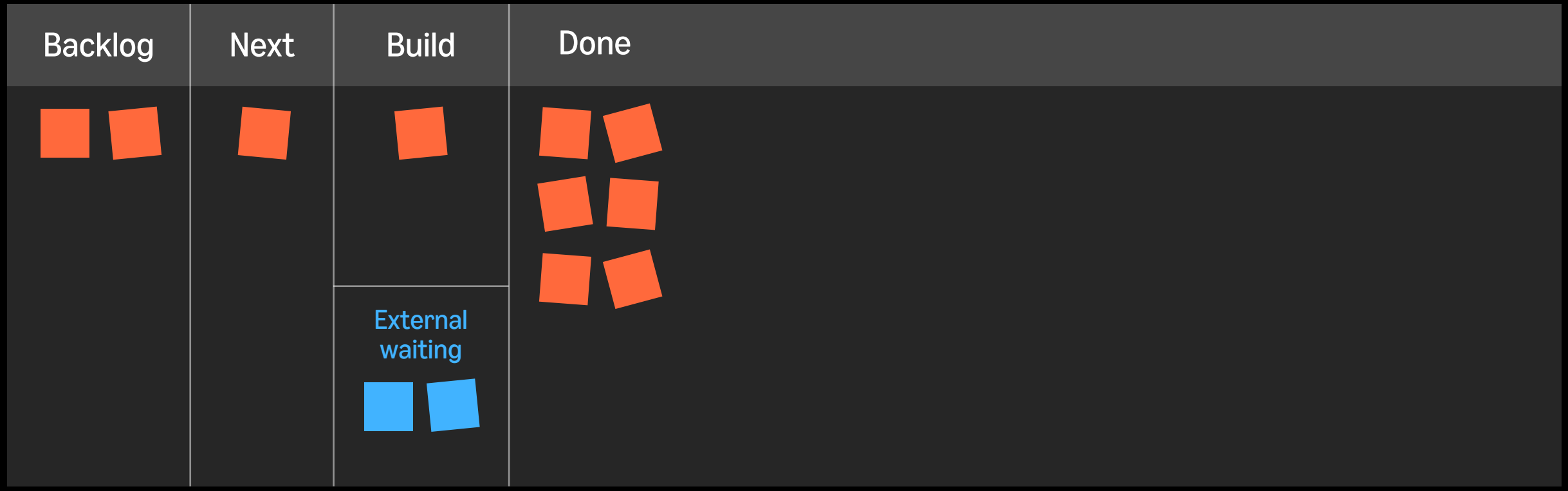
Typical agile SDLC before AI



LEAD TIME: 02 WEEKS

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The AI-native SDLC



LEAD TIME: 02 DAYS

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AI helps developers work faster



Task throughput per developer



Epics completed per developer

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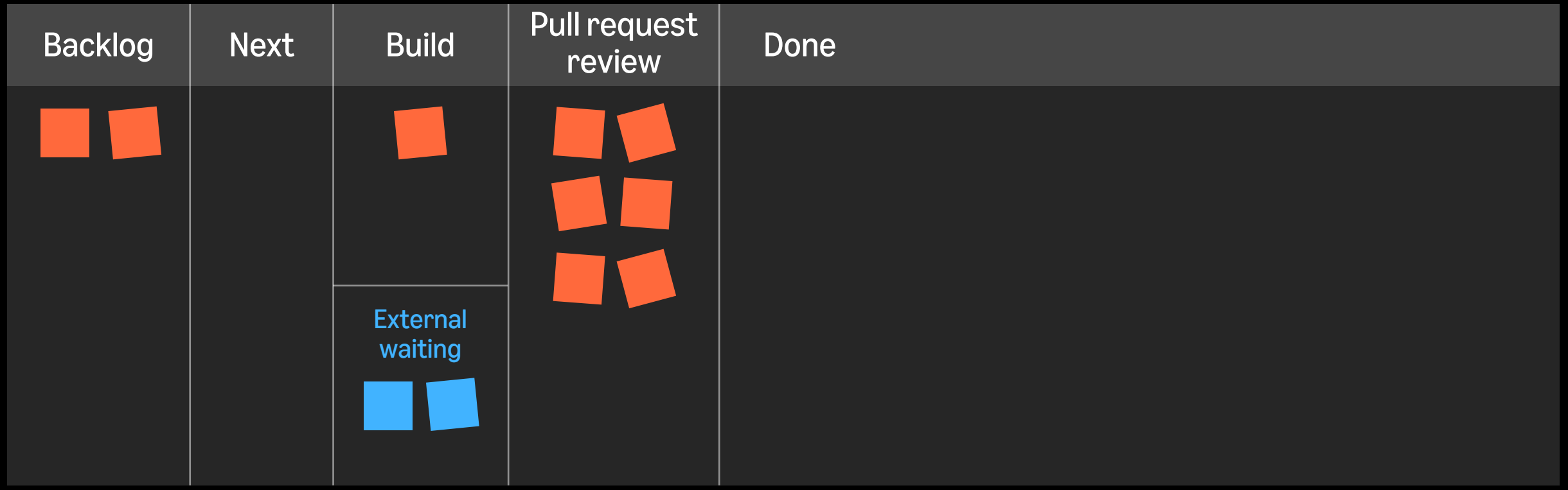
Source: Faros

AI serves as a powerful amplifier in software development. It magnifies the strengths of high-performing organizations and the dysfunctions of struggling ones.

Source: The ROI of AI-Assisted Software Development,.2026.

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More time is spent on pull requests



LEAD TIME: 02 WEEKS

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The new integration hell



Average pull request size

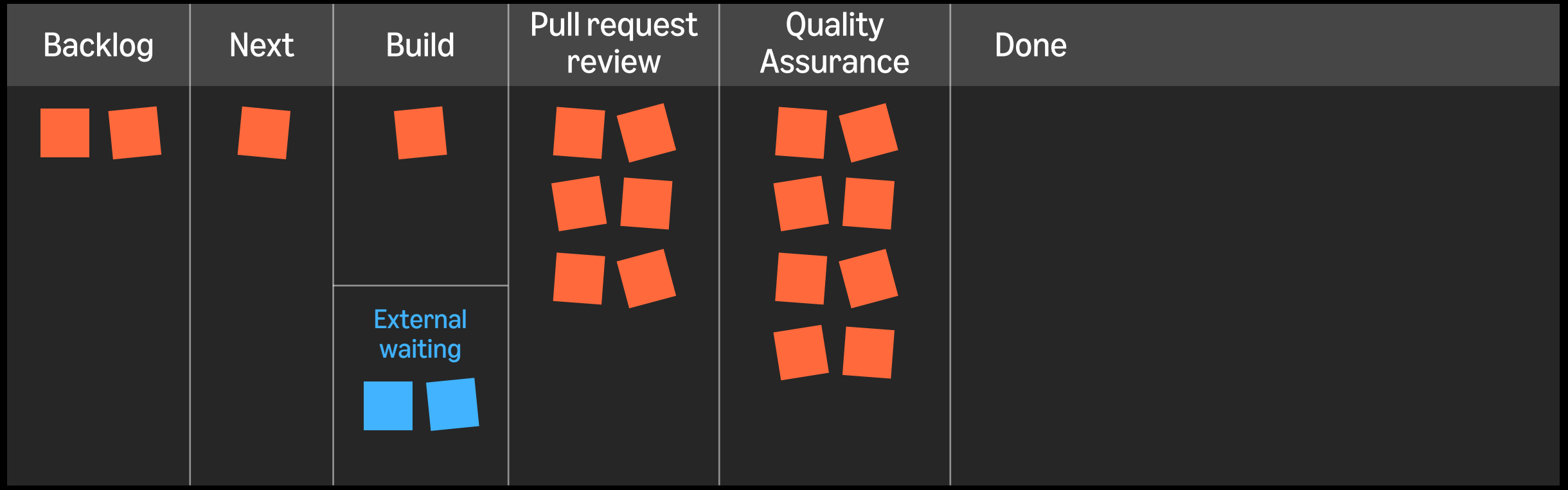


median time in pull request review

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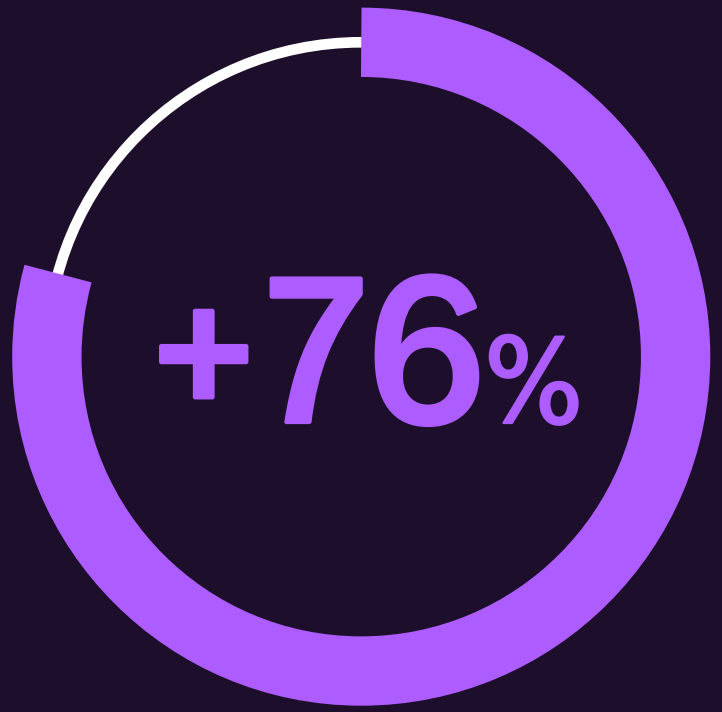
Source: Faros

The bottleneck has just moved

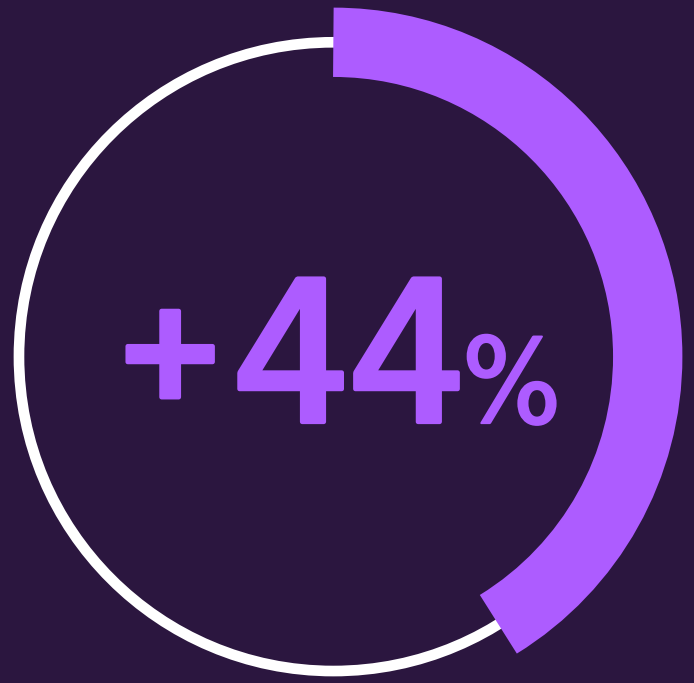


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Code review processes can't keep up



PRs are merged with no review at all



bugs per pull request

Source: Faros

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Increasing instability



Incidents per pull request

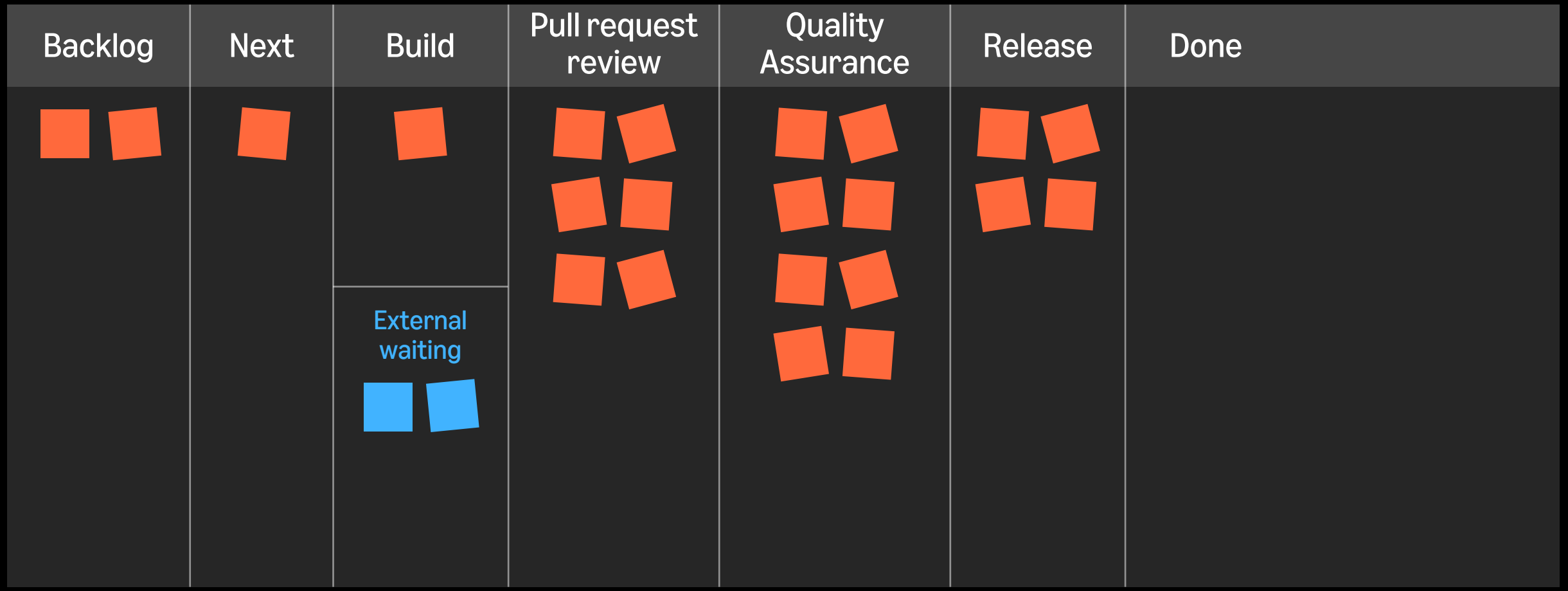


Monthly incidents

Source: Faros

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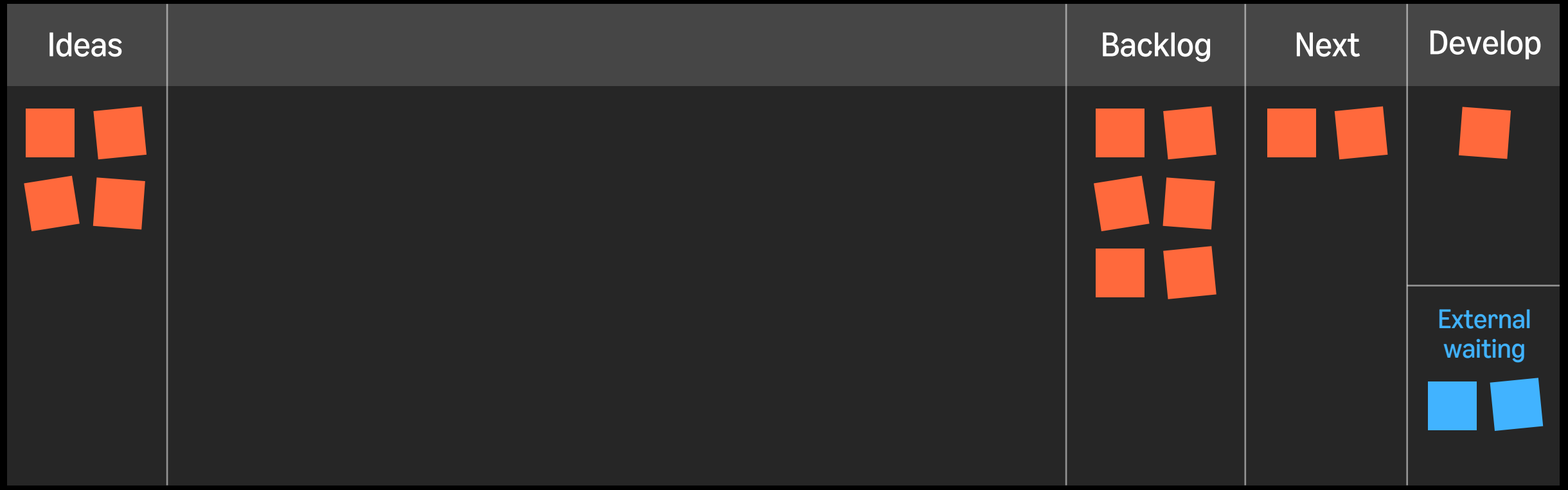
Paradox: higher throughput leads to higher lead time



LEAD TIME: 12 WEEKS

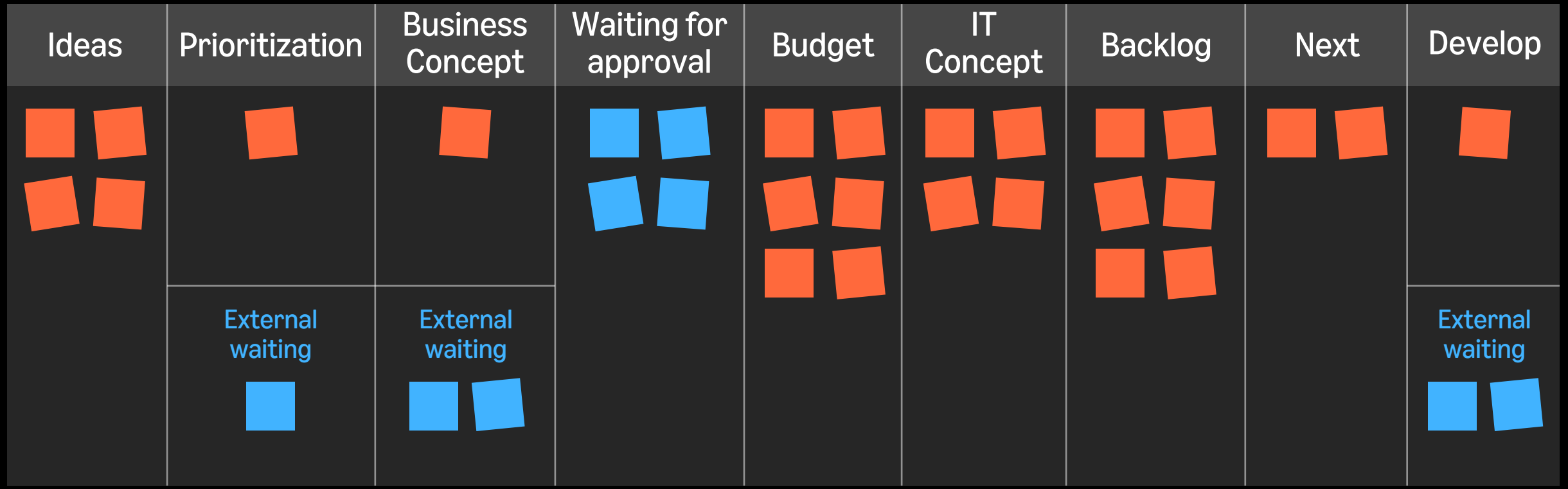
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What’s happening upstream?



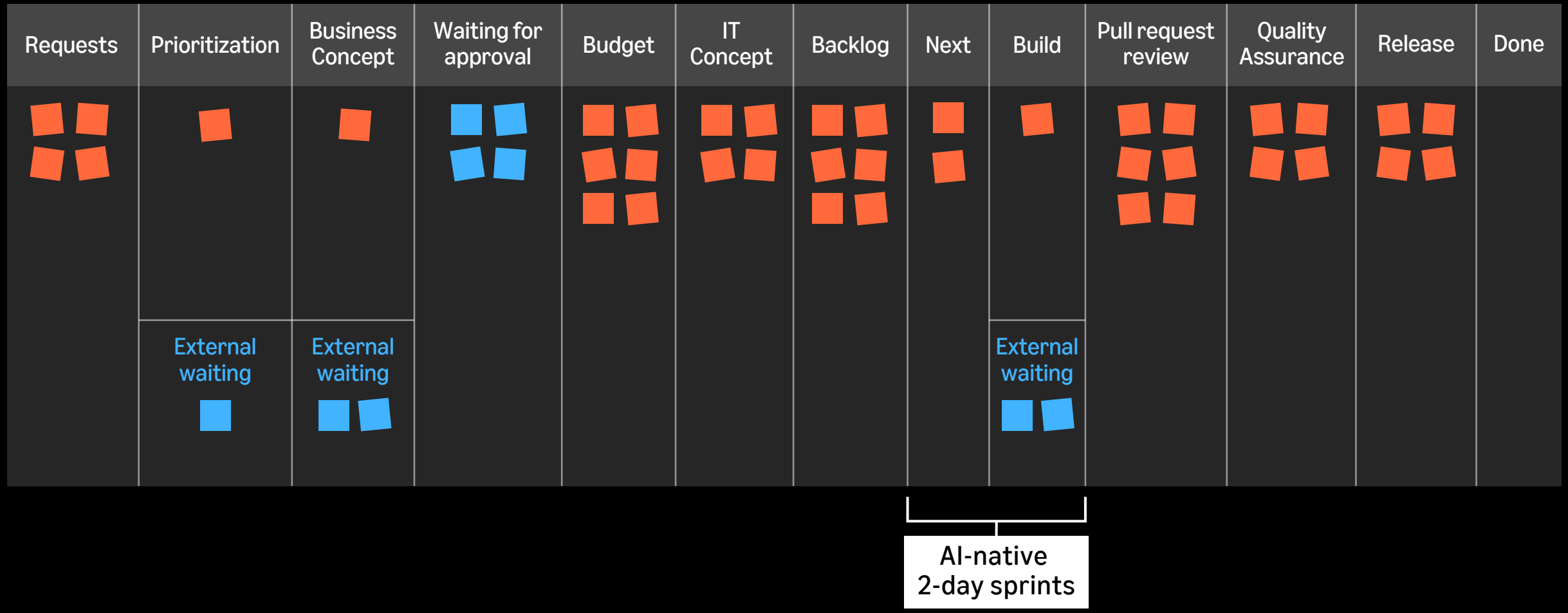
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The bureaucracy-native SDLC



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Don’t get trapped by local optimisation



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“A bad system will beat a good person every time.

W. EDWARDS DEMING
ECONOMIST AND BUSINESS THEORIST



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Escaping the speed trap

Focus on value

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Calculating ROI

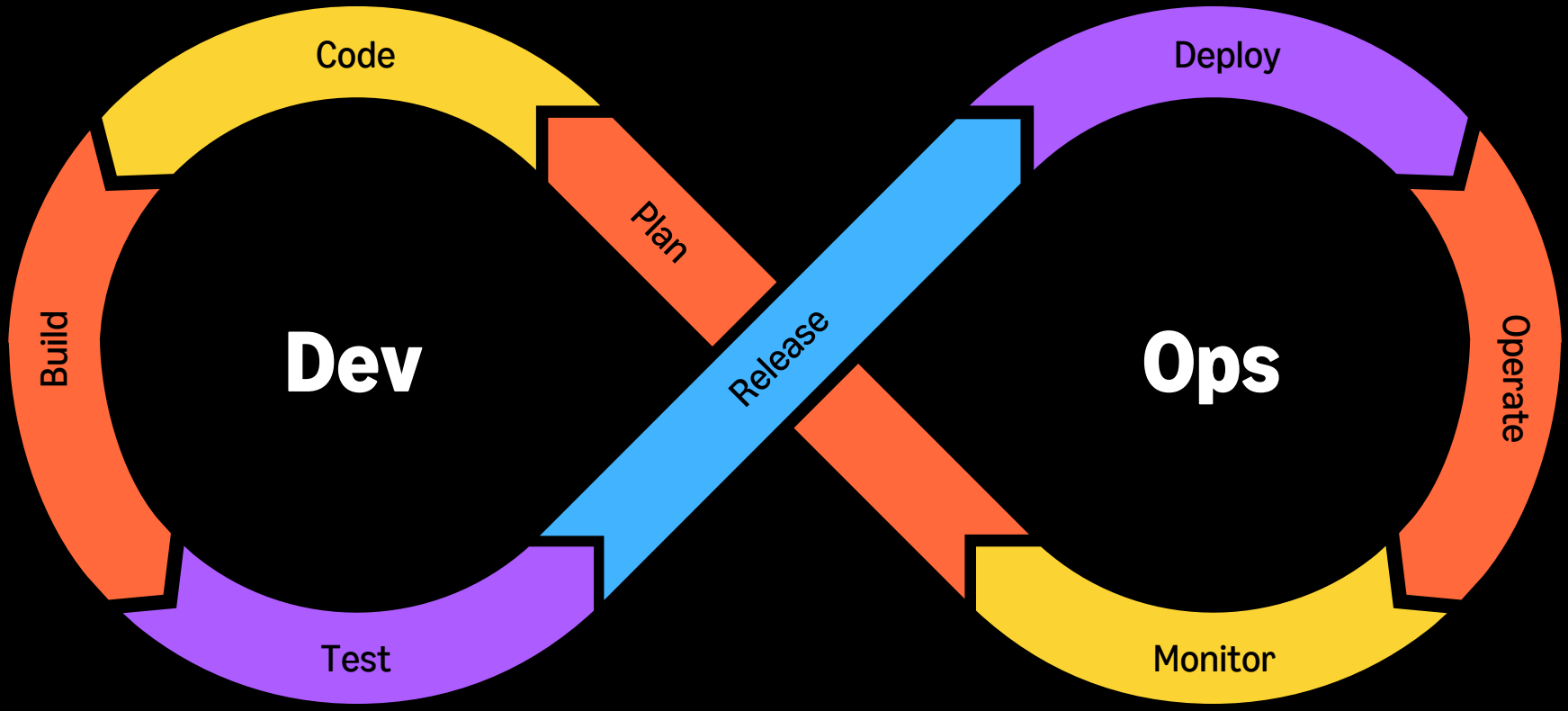
$$\frac{\text{NET PROFIT}}{\text{COST OF INVESTMENT}}$$

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Swap cost center thinking for profit center thinking

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The SDLC

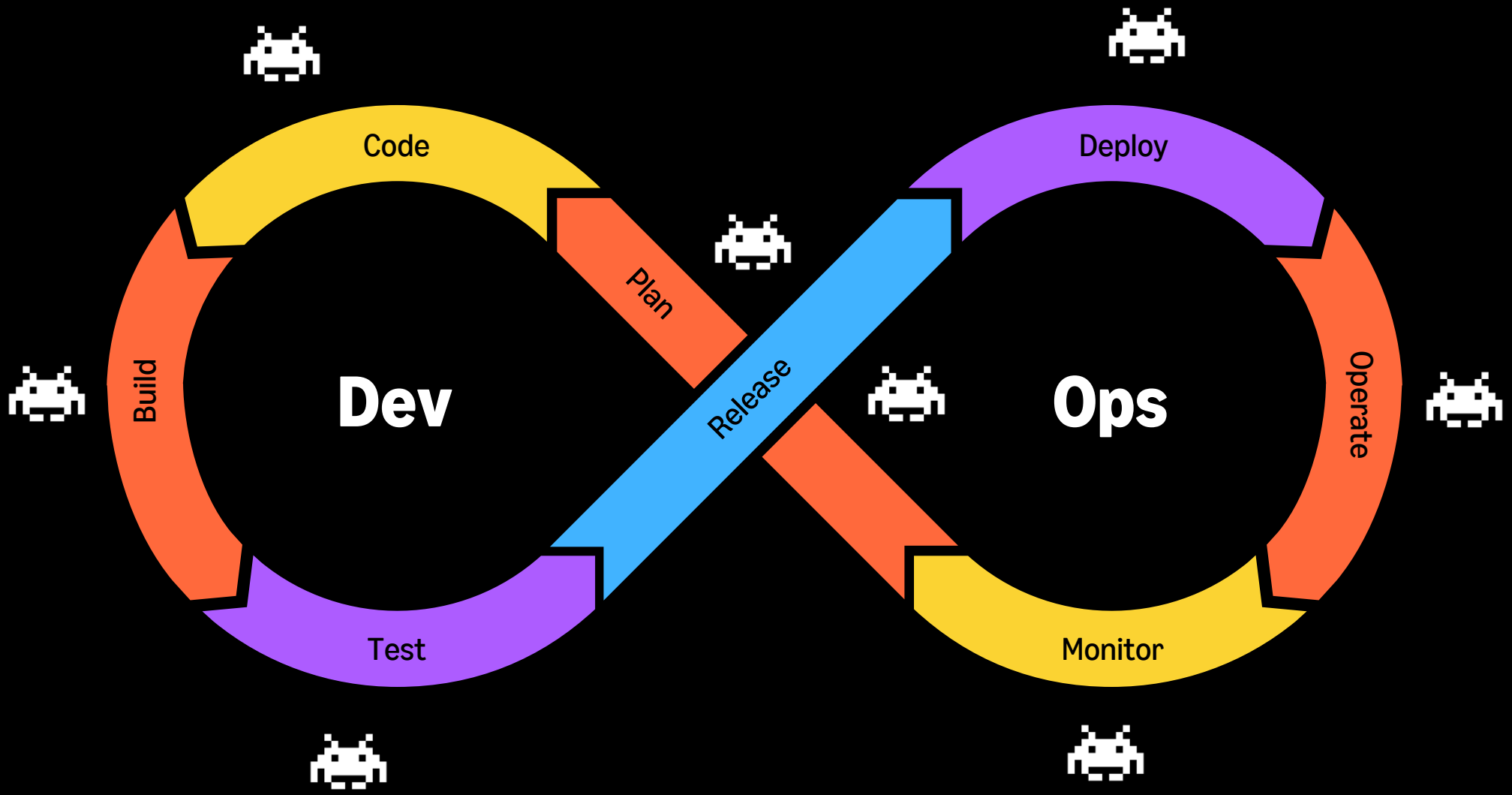


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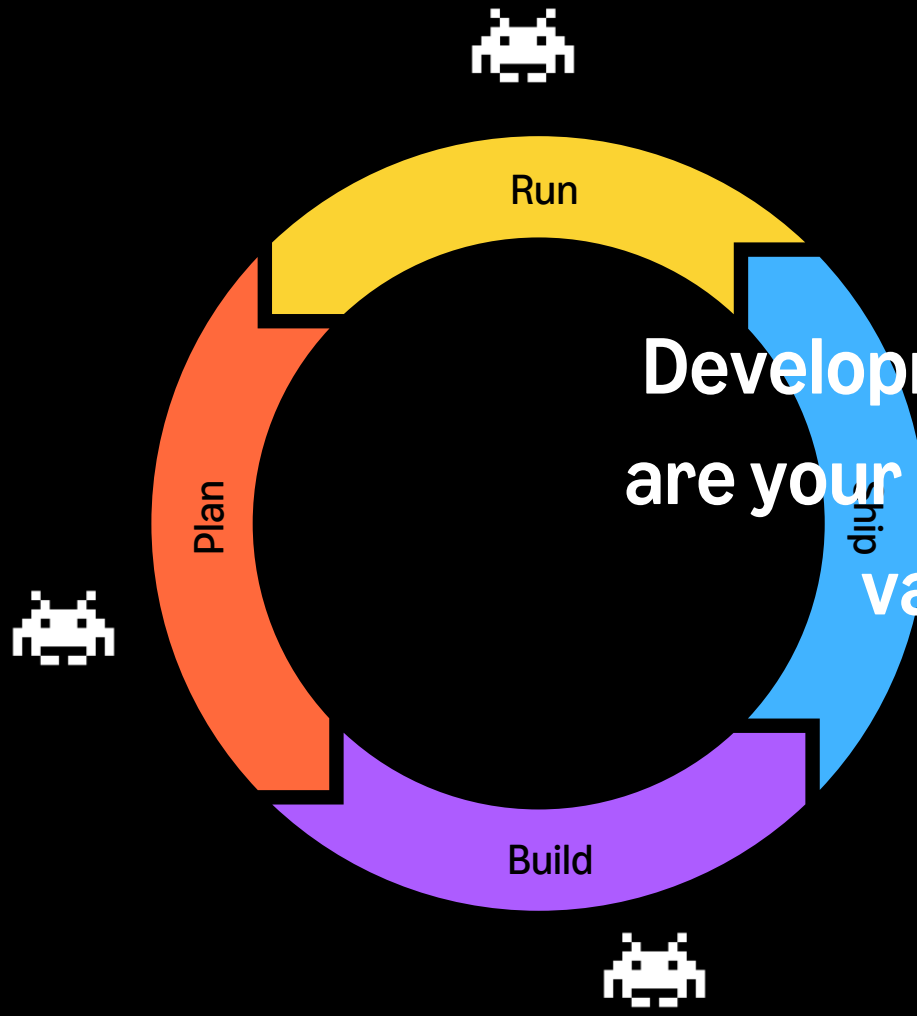
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The AI-DLC



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Feature Factory



Development is faster, but are your customers getting value faster?

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Is everyone else developing using software factories?

<5%

of PRs opened autonomously by AI agents

42%

of PRs have agent involvement (not autonomous authorship)

Sources: Faros; Jellyfish

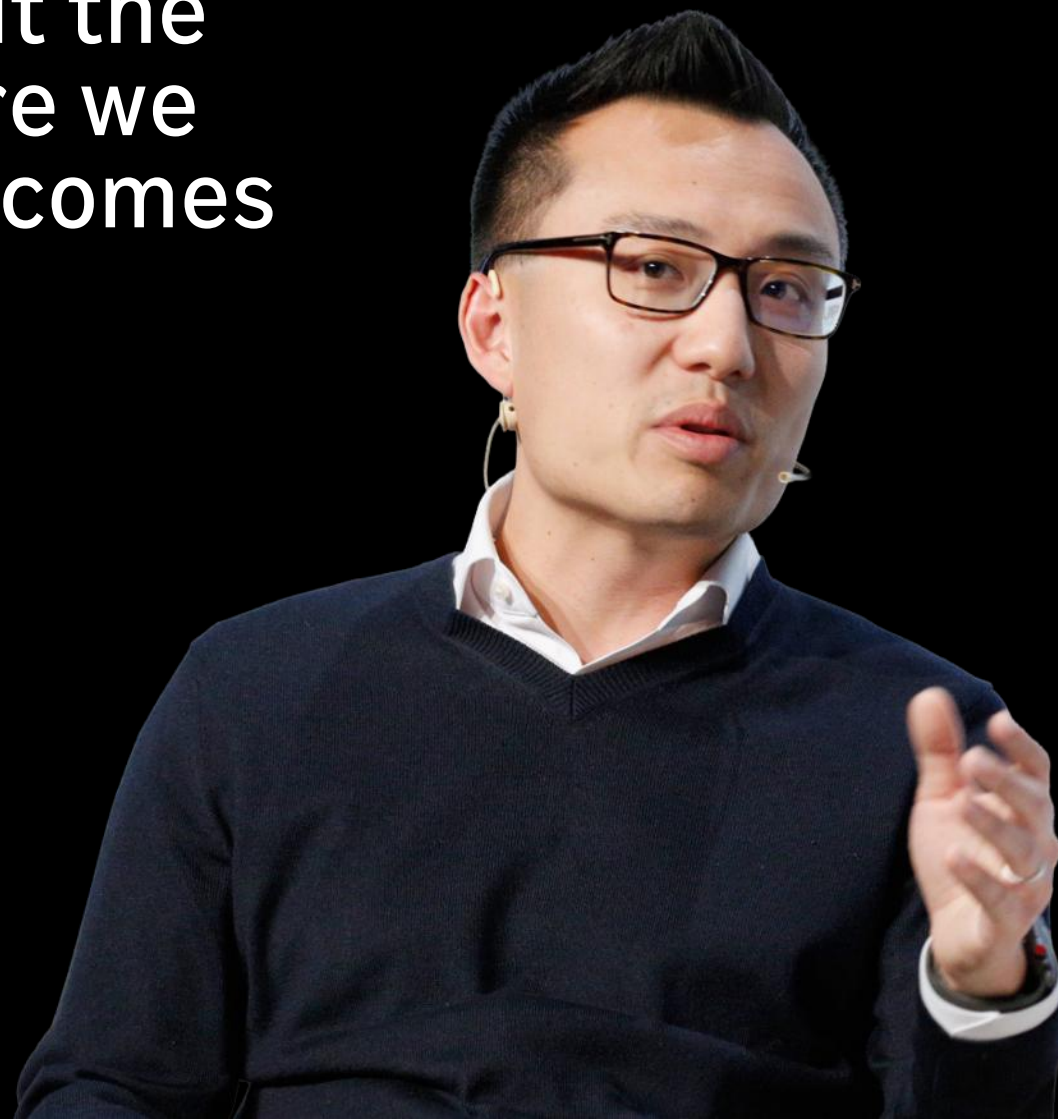
aws

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“We're shipping more code, but the ultimate question I have is: are we actually delivering better outcomes for customers?”

TONY XU

CEO DOORDASH



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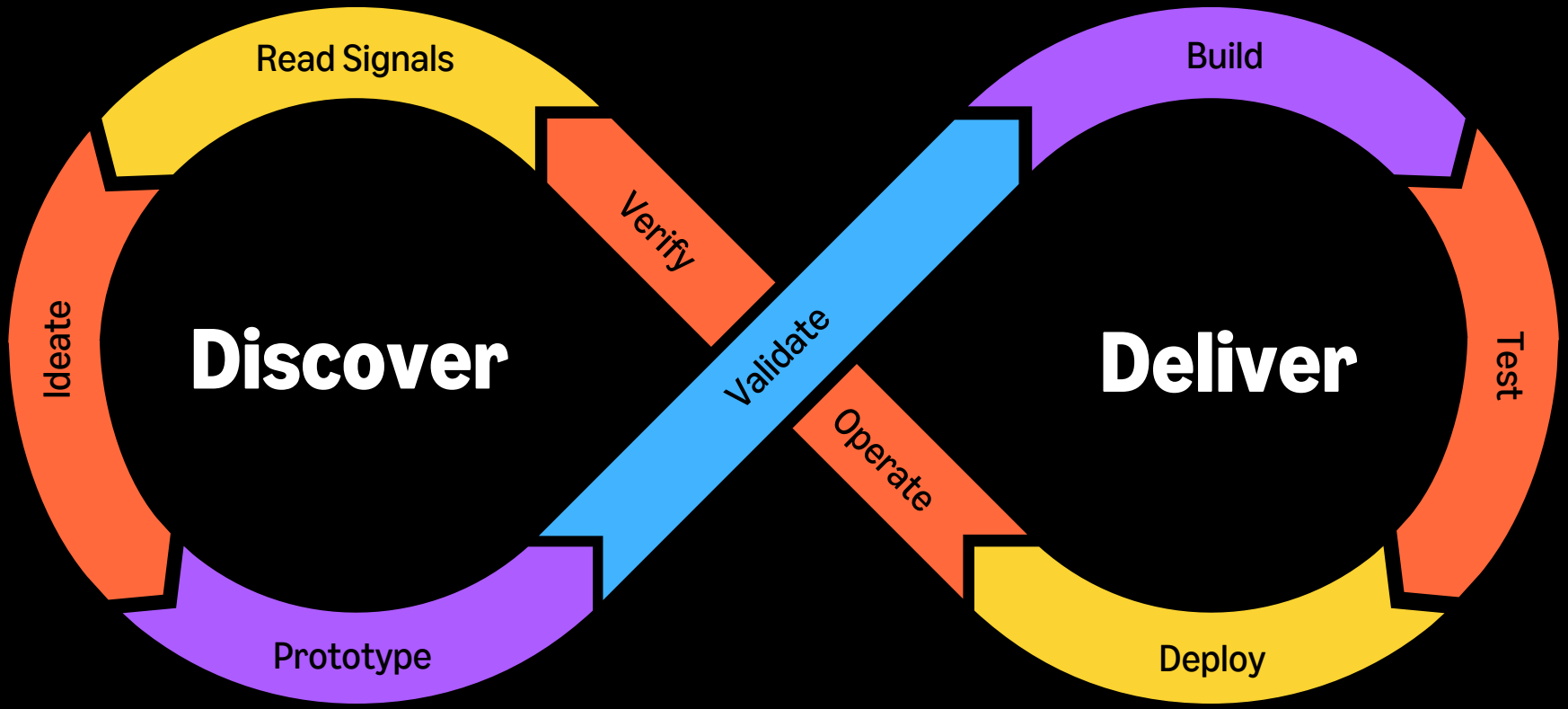
AI-driven Innovation Loop

AI discovery track

Building the right things

AI delivery track

Building the things right



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Hypothesis-driven development

We believe that <doing this thing>

Will result in <this outcome>

We'll know we have succeeded when <we see a measurable signal>

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We should *also* be good stewards of our AI budgets.

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Cost control and inference attribution are parts of a clearly communicated strategy.

Cost observability in and of itself is a cost control mechanism.

50%

of devs reporting a clear strategy said they had visibility into cost control

11%

of devs with no formal strategy had insight into costs

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Source: Atlassian State of DevEx Report 2026

Layer these six cost control levers

Prompt Caching

Reuses static prompt prefixes; cache reads cost 90% less.

Semantic Caching

Returns cached answers for similar queries before reaching the model.

Intelligent Model Routing

Sends each request to the least expensive model that passes evals and hits quality bars.

Batch Inference

Runs similar or non-real-time workloads asynchronously at up to 50% discount.

Model Customization

Smaller trained models, up to 75% cheaper per call.

RAG token optimization

Sends fewer, more relevant retrieved chunks to the model.

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The gap between the median and the frontier is widening.

Source: Faros

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The gap between devs and leaders is also widening



of developers say leaders don’t understand their problems

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Source: Atlassian’s State of DevEx Report, 2026

Escaping the AI speed trap

01

Communicate strategy effectively

Use PACT to ensure your metrics are correct

Measure AI's real impact, not just activity

02

Don't just move the bottlenecks

Improve the system, not just code authoring

03

Don't become a feature factory

Ensure your customer is part if your SDLC

Form hypotheses and test them with small bets

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Is your company in the AI speed trap?

How can you tell?

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