AWS re:Invent

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Amazon’s DevOps culture

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What we will learn today

- How Amazon builds organizations, processes, and systems that enable rapid innovation and delivery of high-performing digital solutions for its customers
- Lessons learned at Amazon for developing and delivering software
- Amazon’s best practices for building, testing, deploying, and maintaining modern applications
- Q&A throughout

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Lessons learned at Amazon for developing and delivering software



Decompose for agility
(microservices, two-pizza teams)



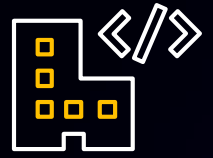
Automate everything



Standardized tools



Belts and suspenders
(governance, templates)



Infrastructure as code

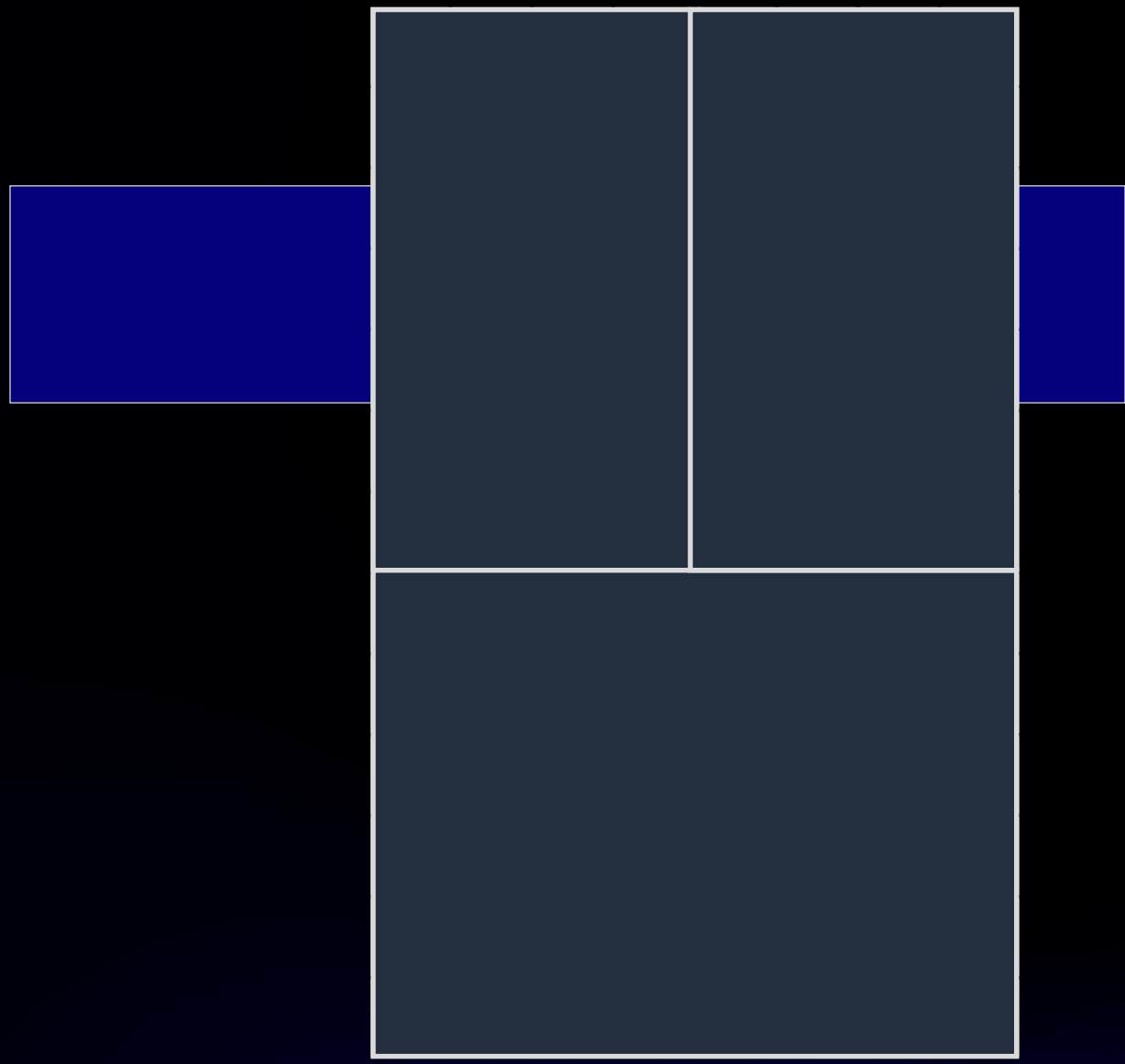
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Decompose for agility

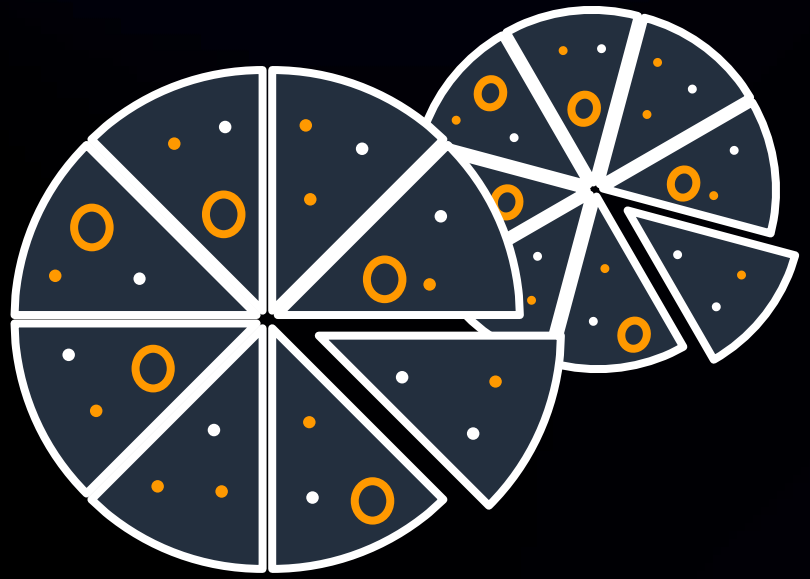
Principles

- Make units as small as possible (primitives)
- Decouple based on scaling factors, not functions
- Each service operates independently
  “Communication is terrible!”
  Jeff Bezos
- APIs (contracts) between services



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Getting (re)organized



“Two-pizza” teams

- Own a service
- Minimizes social constraints (Conway’s law)
- Autonomy to make decisions

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Teams own everything

- Planning
- Security
- Performance
- Scalability
- Deployment
- Operation
- Bugs
- Documentation
- Testing . . .



How can one team do all of this?

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Modern applications

Today we have modern applications



- Use independently scalable microservices (serverless, containers, etc.)
- Connect through APIs
- Deliver updates continuously
- Adapt quickly to change
- Scale globally
- Are fault tolerant
- Carefully manage state and persistence
- Have security built in

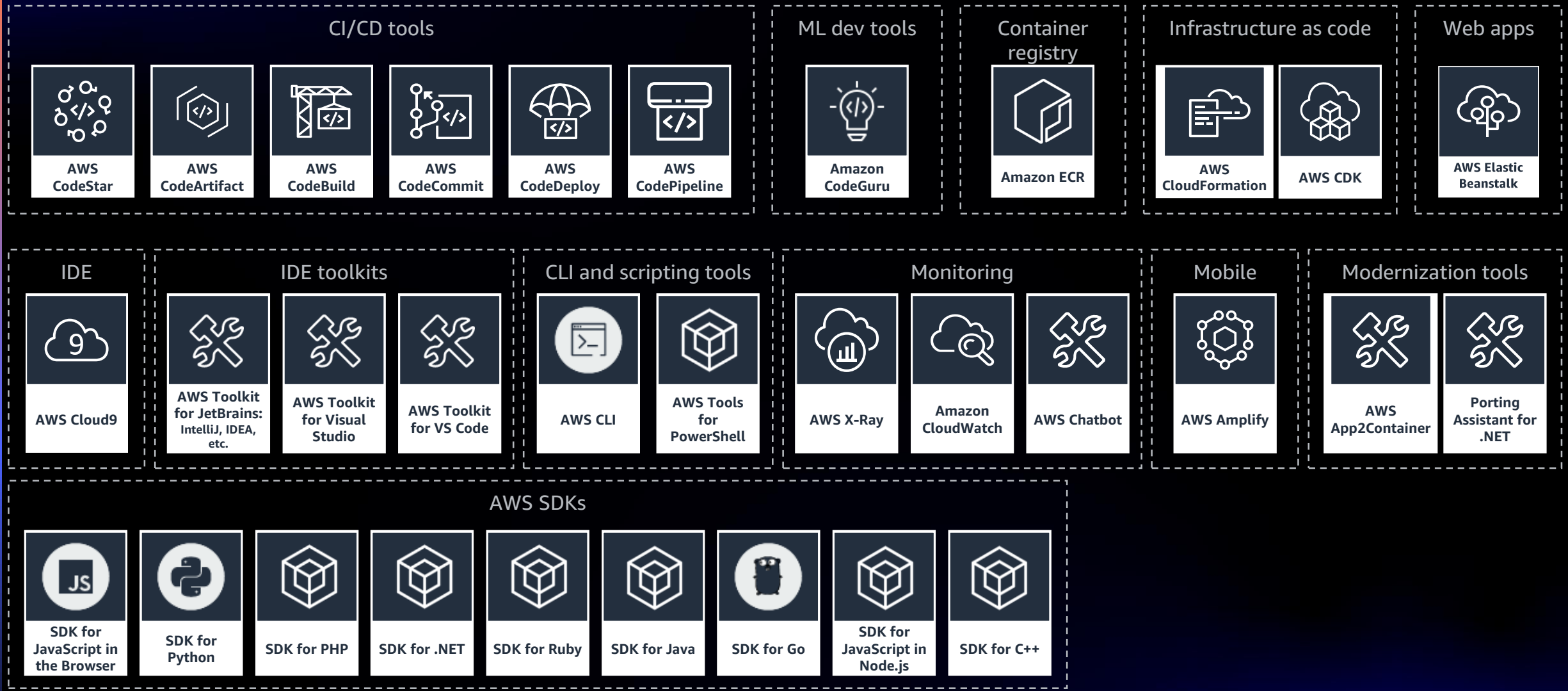
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Measuring success

Business metrics	Operational metrics	Input goals	Enablement
Growth	Errors	Features	Principal reviews
Usage	Throttling	Use cases	Security training
Feedback	Failed deployments	Performance	Ops training
	Performance		

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AWS Developer Tools portfolio has a tool for most jobs



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I want my organization to build modern applications – where do I get started?

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I want to move from a monolith to a microservices architecture – where do I begin?

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How do I maintain security and compliance in my production CI/CD pipelines while giving my developers the ability to innovate and be agile in their development environments?

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How do I restructure my teams for building modern applications?

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Thank you!

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