



SSW-555: Agile Methods for Software Development

Agile Practice at



Week 11

Instructor: Prof. Lu Xiao

School of Systems and Enterprises

Stevens Institute of Technology

Thanks to Prof. James Rowland for his slides



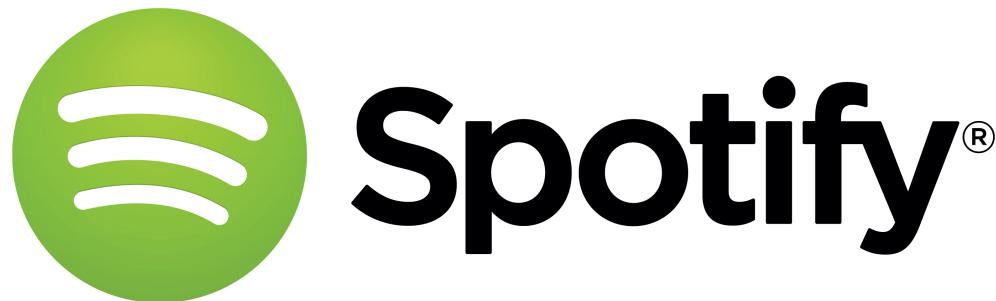


Today's topics

Background on Spotify

Agile practices used at Spotify

Videos by Spotify





Acknowledgements

“Scaling Agile @ Spotify with Tribes, Squads, Chapters, and Guilds”, Kniberg and Ivarsson, 2012.

”Spotify Engineering Culture Part 1-2”,

<https://sit.instructure.com/courses/15619/modules/items/311229>



Spotify: Music Streaming Service

Freemium model

Basic account is free with ads

Premium accounts cost money

History

2006: company founded in Sweden

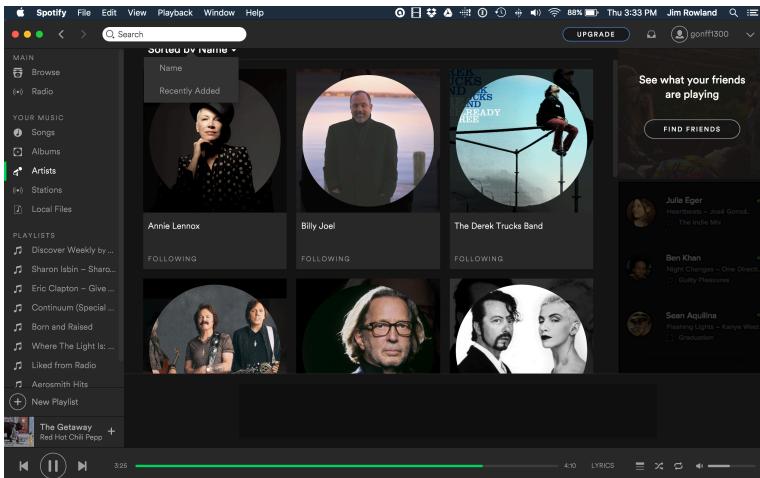
2008: service launched in Europe

2011: launched in US

Platforms

Desktop (Windows, Mac, Linux)

Mobile (iOS, Android)





Agile practices at Spotify

2000+ developers working on the Spotify product (2017)

70+ squads across 5 cities (2015)

Spotify developers **do not** follow a single Agile method

Began with Scrum but found that it “got in the way”

Agile > Scrum

Principles > Practices

Each development group chooses methods that work for them

e.g. Scrum, Kanban, Lean, ...



Spotify organizational structure

Squads

Small teams

Tribes

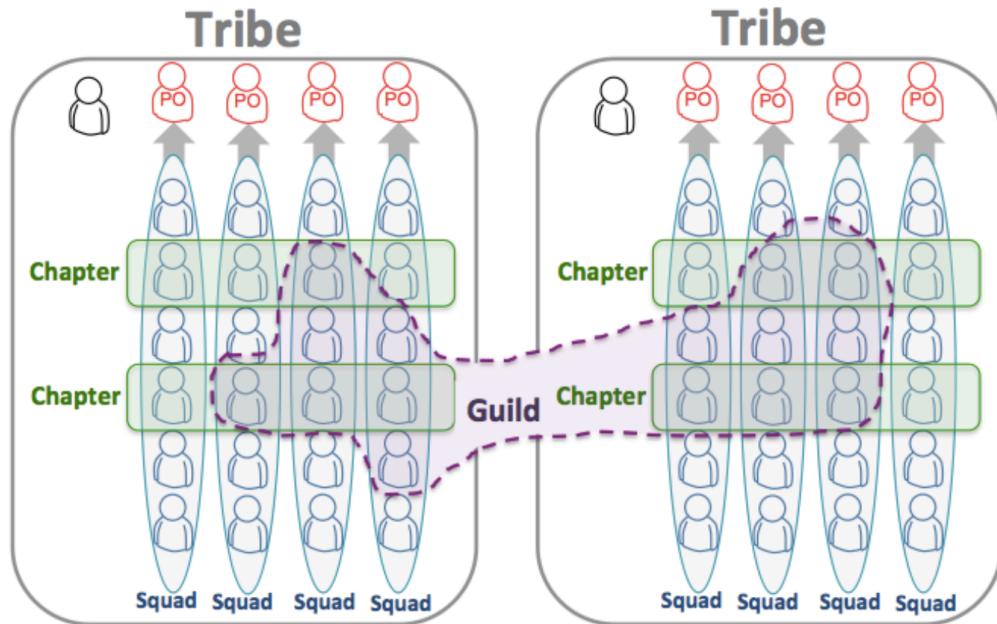
Collections of squads

Chapters

Groups within a tribe that share a specialty or responsibility

Guilds

Cross-tribe communities of interest



Squad

Small, **autonomous**, agile teams

Loosely coupled, but tightly aligned

One long-term mission

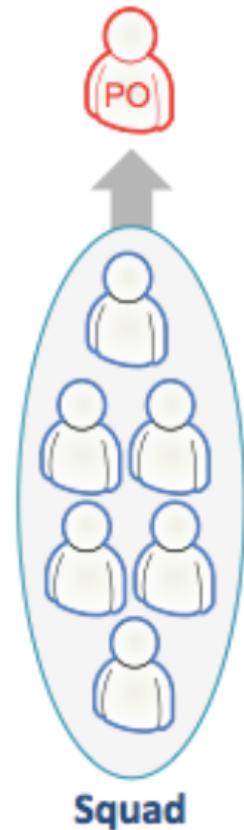
End to end responsibility: develop, test, deploy, maintain...

E.g. IOS client, Android Client, DB backend, ...

Self organizing

Choose their own methods and procedures

Each squad may use a different approach



Squad Roles

No formal leader

Product owner

- Prioritizes work from backlog

- Collaborates with other product owners
to coordinate between squads

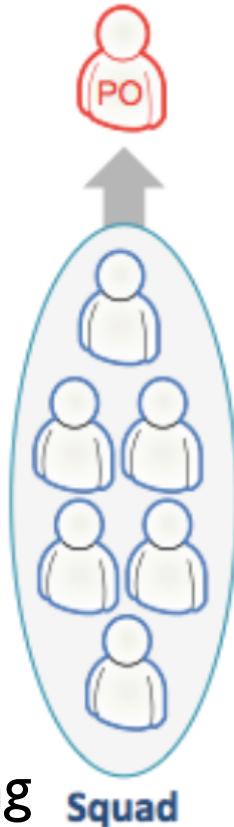
- Squads interact through Product Owners

Agile coach

- Agile coach may work with multiple squads

- Help to run meetings, retrospectives, sprint planning

- Help squads with Agile processes





Quarterly Reflection Survey

Each squad conducts a quarterly survey to reflect on what's working and not working well and the trends

Area	Squad 1	Squad 2	Squad 3	Squad 4	Squad 5
Product owner	Yellow circle with green arrow pointing right	Green circle with red arrow pointing right	Green circle with black arrow pointing right	Yellow circle with black arrow pointing right	Yellow circle with black arrow pointing right
Agile coach	Green circle with green arrow pointing right	Green circle with green arrow pointing right	Green circle with black arrow pointing right	Red circle with green arrow pointing right	Red circle with red arrow pointing left
Influencing work	Yellow circle with green arrow pointing right	Yellow circle with green arrow pointing right	Yellow circle with black arrow pointing right	Green circle with green arrow pointing right	Green circle with green arrow pointing right
Easy to release	Yellow circle with green arrow pointing right	Green circle with green arrow pointing right	Red circle with red arrow pointing left	Red circle with black arrow pointing right	Yellow circle with red arrow pointing left
Process that fits team	Yellow circle with black arrow pointing right	Green circle with green arrow pointing right	Green circle with green arrow pointing right	Green circle with green arrow pointing right	Yellow circle with green arrow pointing right
A mission	Yellow circle with green arrow pointing right	Green circle with red arrow pointing left	Yellow circle with red arrow pointing left	Yellow circle with red arrow pointing left	Green circle with black arrow pointing right
Org. support	Green circle with black arrow pointing right	Green circle	Yellow circle	Yellow circle with black arrow pointing right	Yellow circle

Tribe

Collection of squads in related areas

$\leq \sim 100$ people

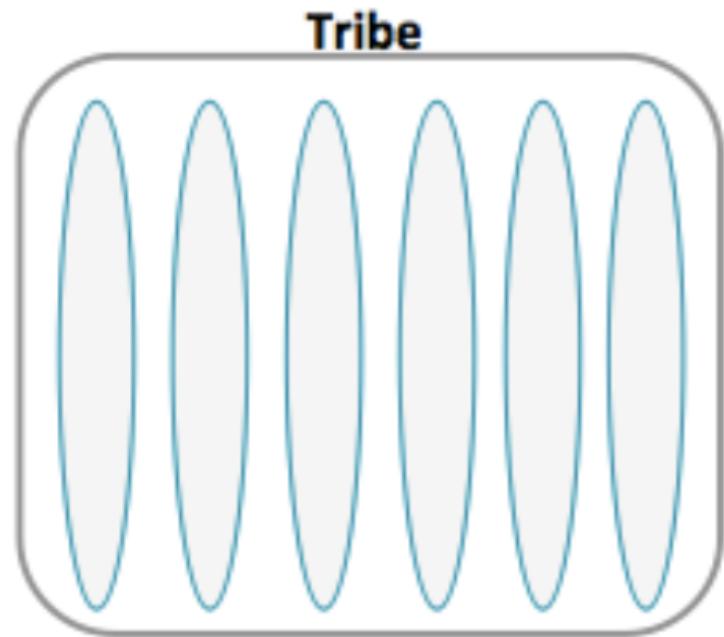
Physically co-located

May have a System Owner

Represents Product Owners across
Tribe

May have a Chief Architect

Responsible for overall architecture
and design across Tribe



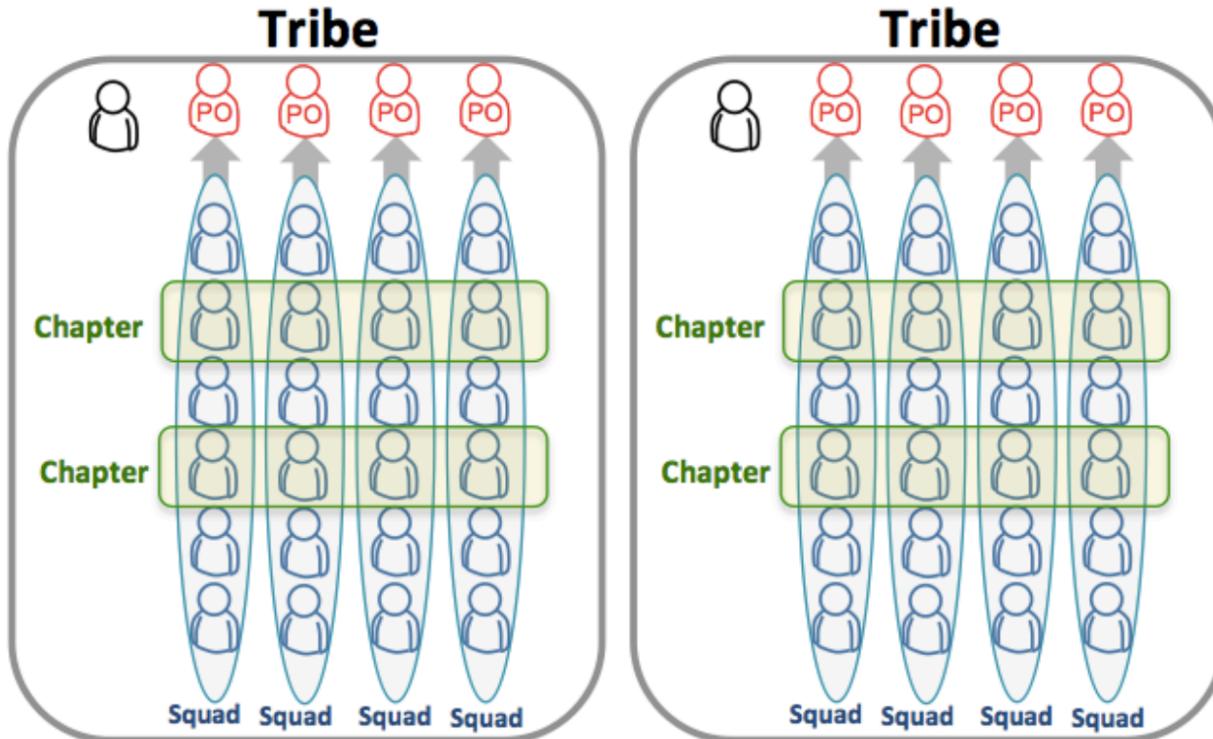
Chapter

Take advantage of economies of scale without loss of autonomy

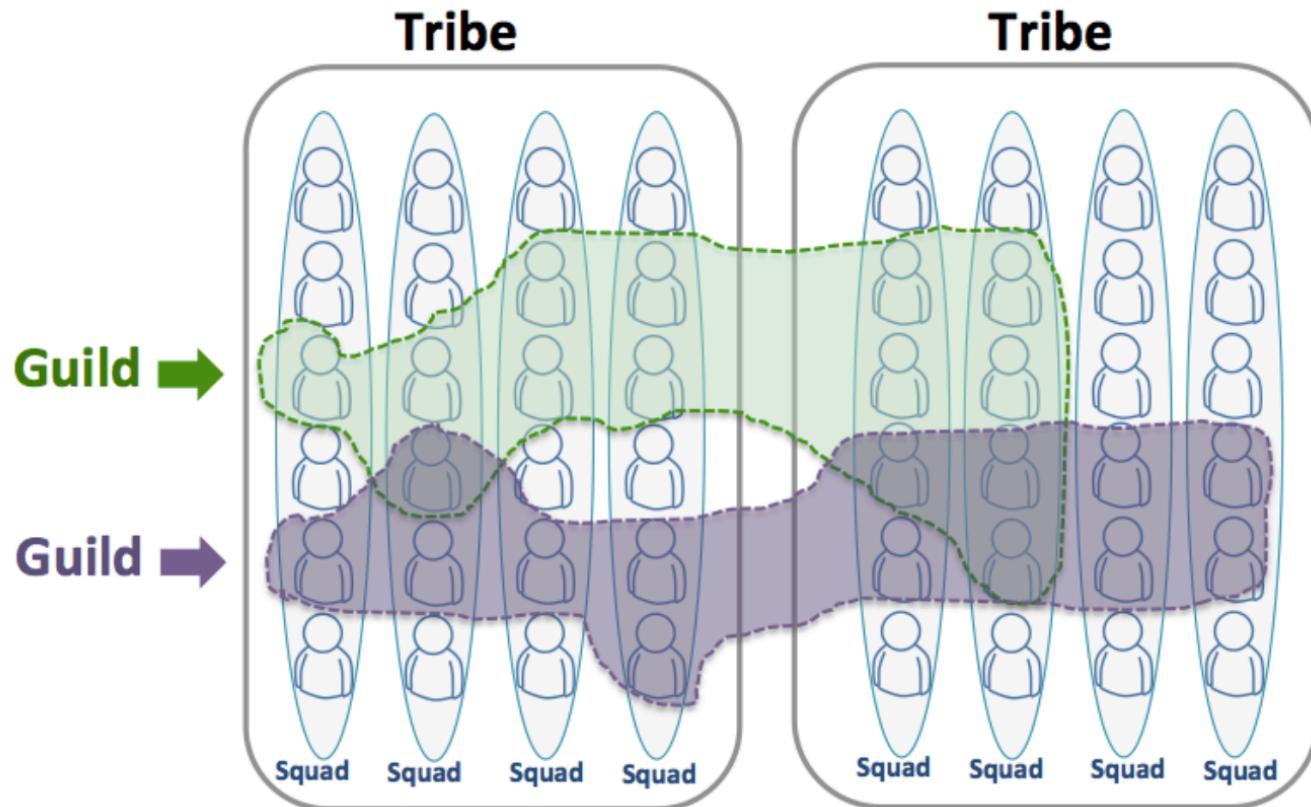
People with similar interests, e.g. testing, databases, etc...

Focus on competencies

Chapter lead is line manager



Guild – Community of Interest



Guild members share a common interest and share information
e.g. database technology, processes, etc.

Birds of a Feather (BOF) groups



System Owner

A large, complex system requires technical oversight to insure technical integrity

Need an overall architecture

Each major system has a System Owner

System Owner coordinates decisions about the system

Owns quality, documentation, technical debt, reliability, scalability, etc.

Part time responsibility along with development



Chief Architect

Responsible for high-level architecture across multiple systems

Review new development for integrity and alignment

Offers advice – squad is ultimately responsible

Summary of organizational structure

Squads

Focus on product delivery and quality

Tribes

Lightweight matrix

Chapter

Competency area

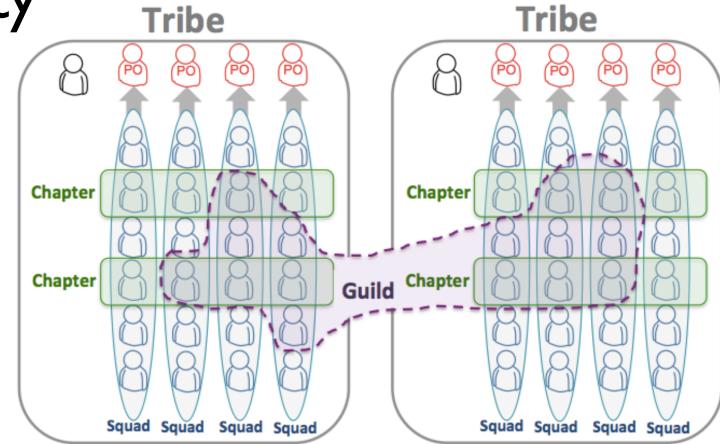
E.g. Agile Methods, web development, ...

Chapter Leader is the line manager

Guild

Lightweight community of interest across the company

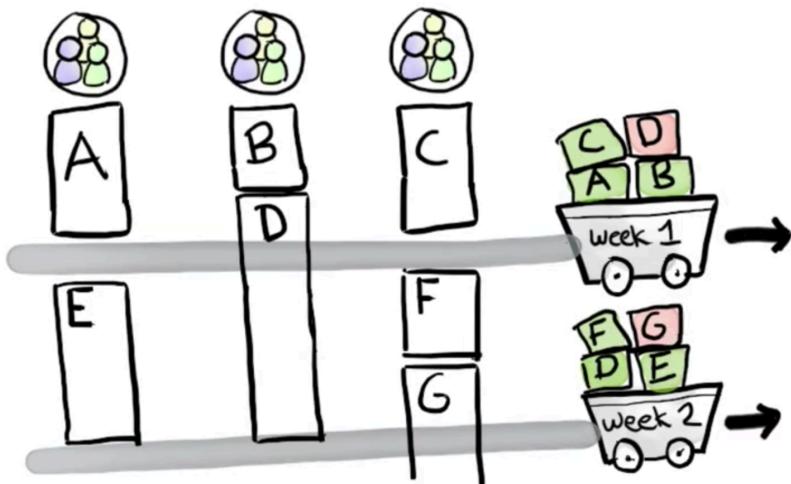
Flexible membership



Release Management at Spotify

(Agile Enterprise Transition with Scrum and Kanban)

Release Trains + Feature Toggles



“Think it, build it, ship it, tweak it”

Focus on frequent releases with user feedback to choose best alternative

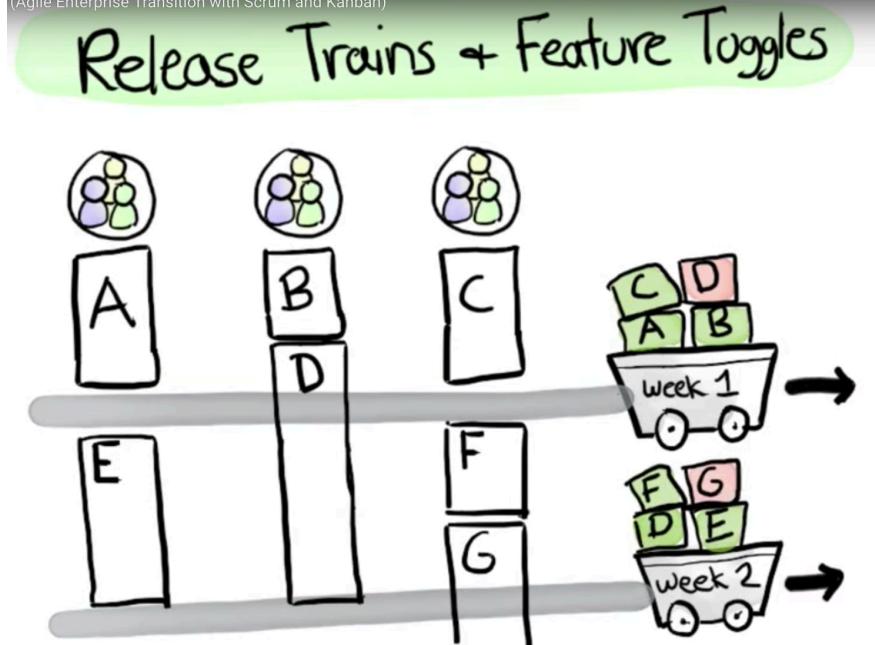
Weekly releases to production

Release early and often

Source: https://www.youtube.com/watch?v=Mpsn3Wal_4k

Release Management at Spotify

(Agile Enterprise Transition with Scrum and Kanban)



Source: https://www.youtube.com/watch?v=Mpsn3Wal_4k

Agile Release Trains

Each squad makes their own releases without central control

All complete features and some incomplete features

Incomplete features are not visible to users through **Feature Toggles**

Identifies integration issues early

New features are rolled out to few users at a time until proven

Limited blast radius

Practices at Spotify

Agile Release Trains

Visualize progress, e.g. Kanban

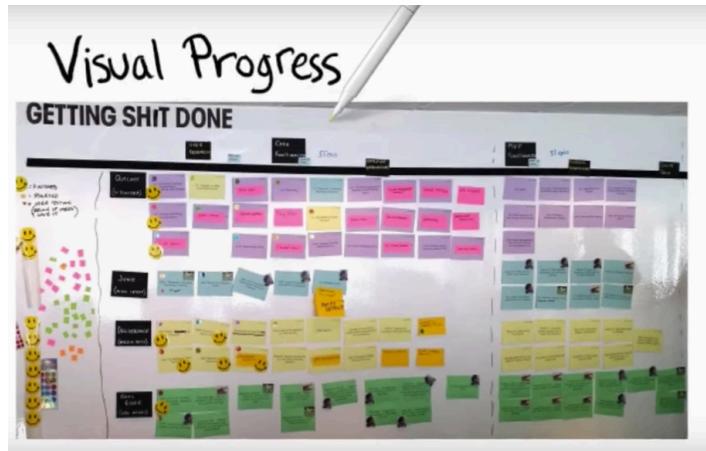
Weekly demos/Story Telling

Daily sync (stand up meetings)

Break big projects into small projects with frequent releases

Boot camp

Hack Time



Spotify Strategies

Emphasis on culture

“Healthy Culture heals Broken Process”

Eliminate waste

Balance between chaos and bureaucracy

Emphasis on innovation

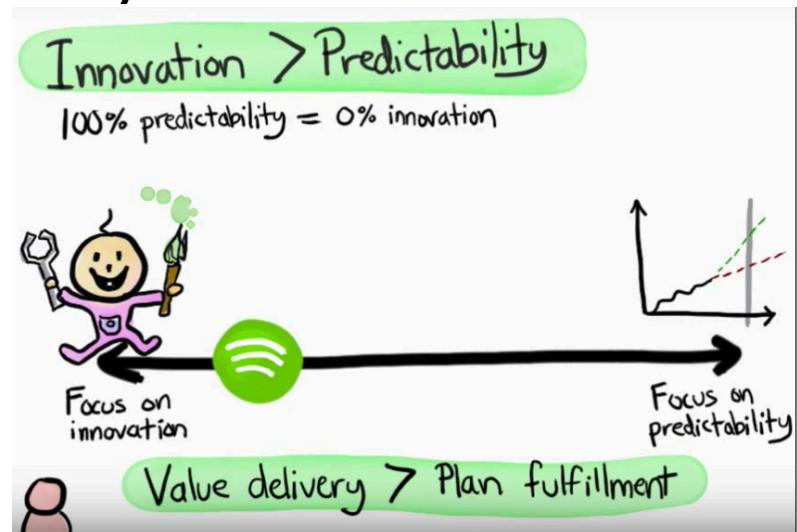
Trade innovation for predictability

Experiment-friendly culture

Limited Blast Radius of failure

Gradual rollout with feature toggles

Fail Fast, Learn Fast, Improve Fast



Spotify Videos

"Spotify Engineering Culture Part 1"

<https://www.youtube.com/watch?v=4GK1NDTWbkY>



"Spotify Engineering Culture Part 2"

<https://www.youtube.com/watch?v=X3rGdmotjDc>

Questions?

