

MONOLITHS TO MICROSERVICES

Sam Newman

Introduction



A T O M I S T

O'REILLY®

Building Microservices

DESIGNING FINE-GRAINED SYSTEMS



Sam Newman



Course Overview

Course Overview

Day One

Course Overview

Day One

What & Why Of Microservices

Course Overview

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What & Why Of Microservices

Planning A Transition

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Splitting stateless and stateful
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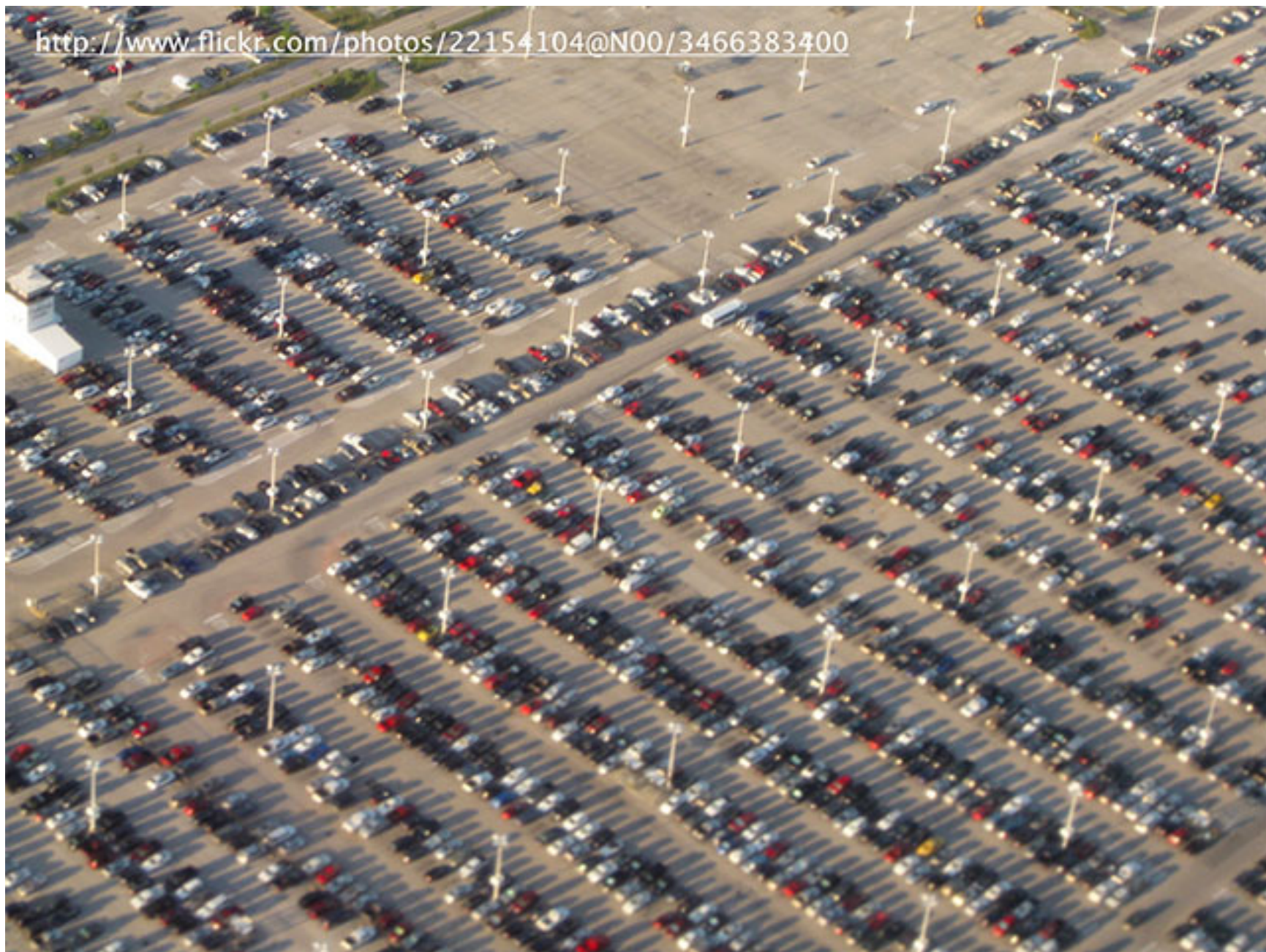
Build & Deployment

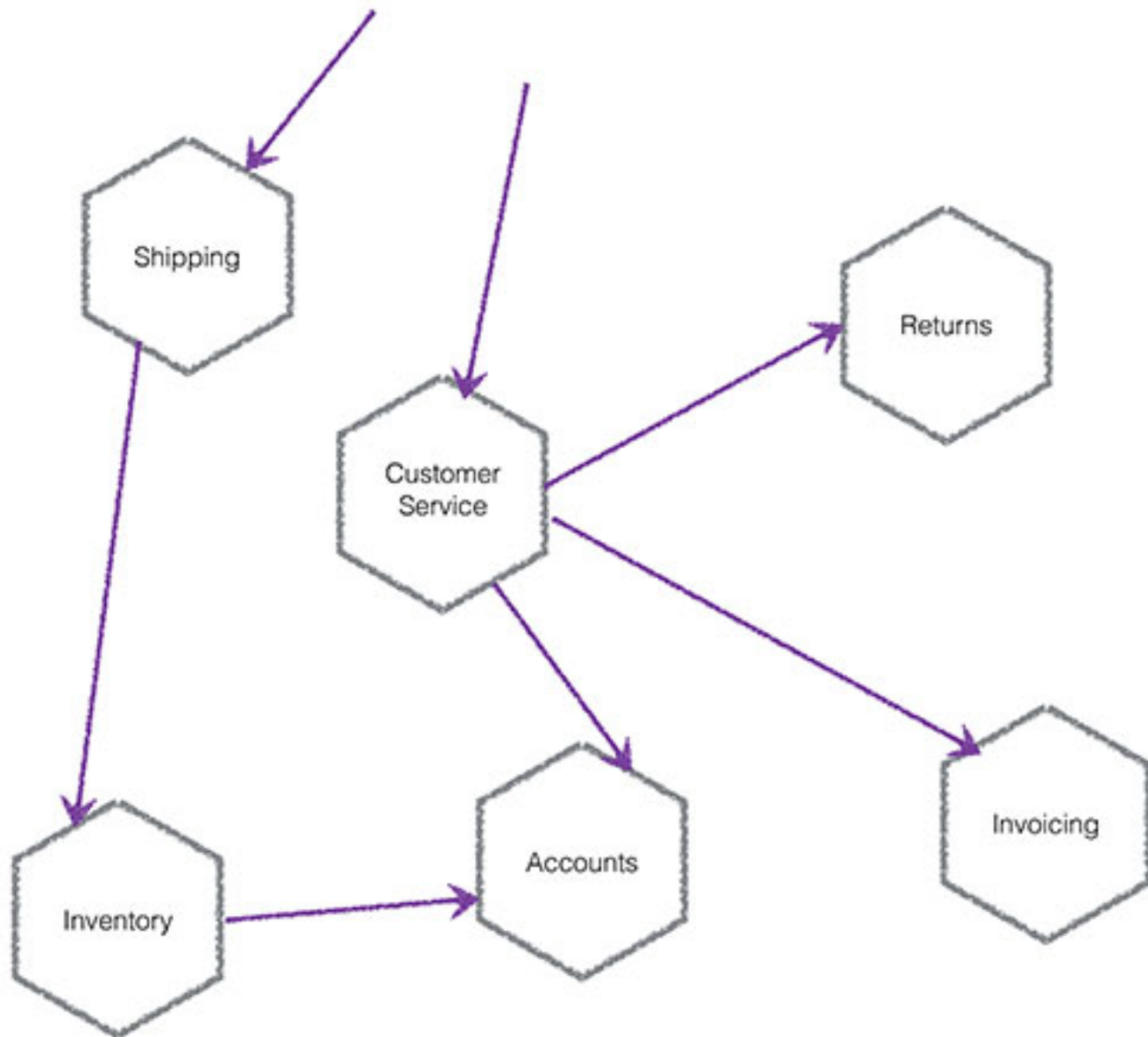
Monitoring



<http://www.flickr.com/photos/55255903@N07/6835060992>

<http://www.flickr.com/photos/22154104@N00/3466383400>



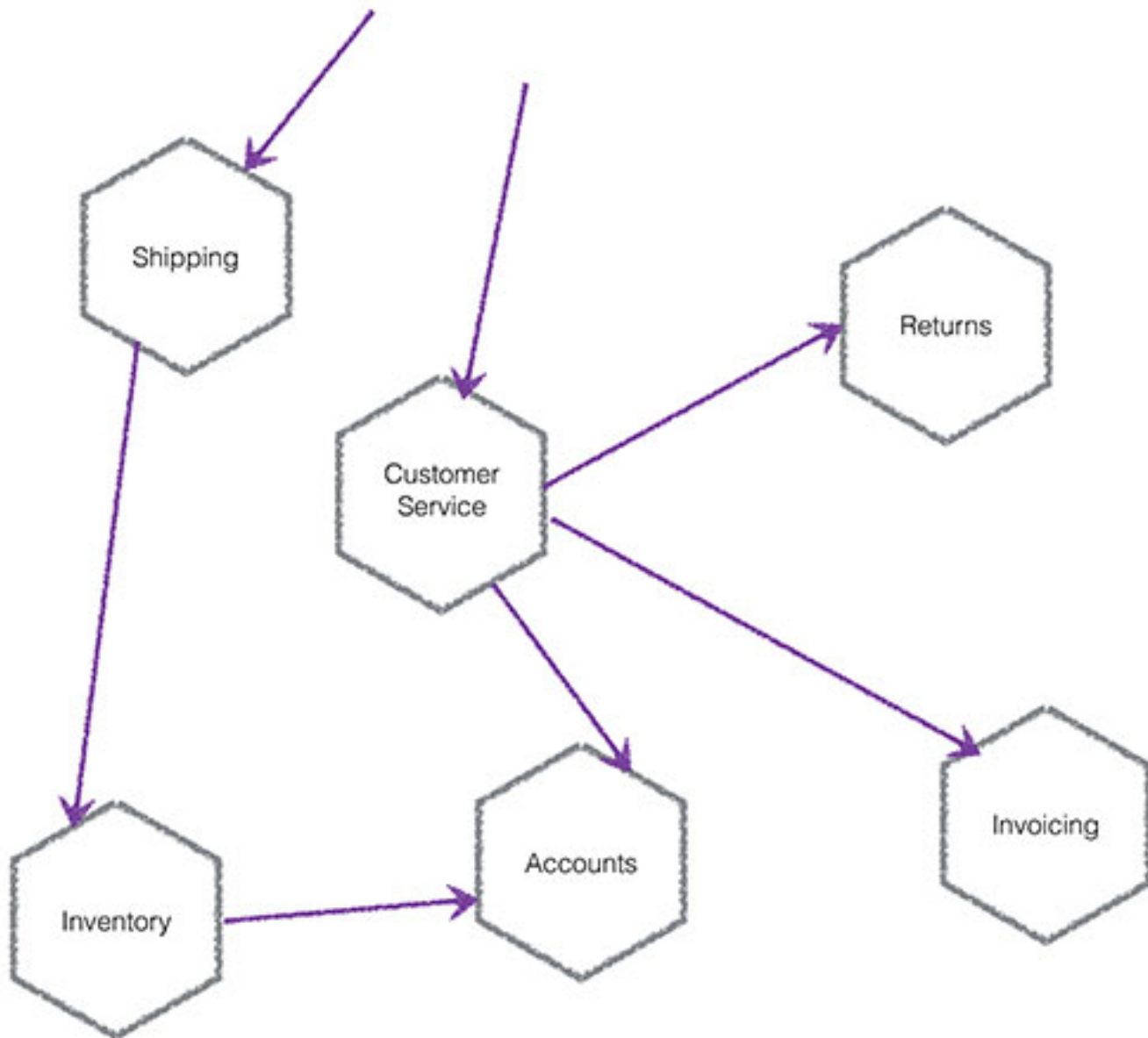




Small?

Independently Deployable?

Business Domain?



Technology?

And SOA?



Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it.
Through this work we have come to value:


Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.



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Extreme Programming *Explained*

EMBRACE CHANGE

KENT BECK
WITH CYNTHIA ANDRES
Foreword by Erich Gamma

Second Edition

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See us, like the others, for ourselves, for others, for the future.

the SCRUM SOFTWARE DEVELOPMENT PROCESS

INPUTS FROM CUSTOMERS,
TEAM, MANAGERS & EXEC.



PRODUCT OWNER



THE TEAM



PRODUCT
BACKLOG



SPRINT
PLANNING
MEETING



SPRINT
BACKLOG



1-4 week
SPRINT

Sprint end date and team
deliverable do not change



SPRINT MASTER



DAILY STAND-UP
MEETING



SPRINT REVIEW



FINISHED WORK



SPRINT
RETROSPECTIVE

Extreme Programming Explained

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Why Use Them?

Autonomy

Autonomy

Go Faster

Autonomy

Go Faster

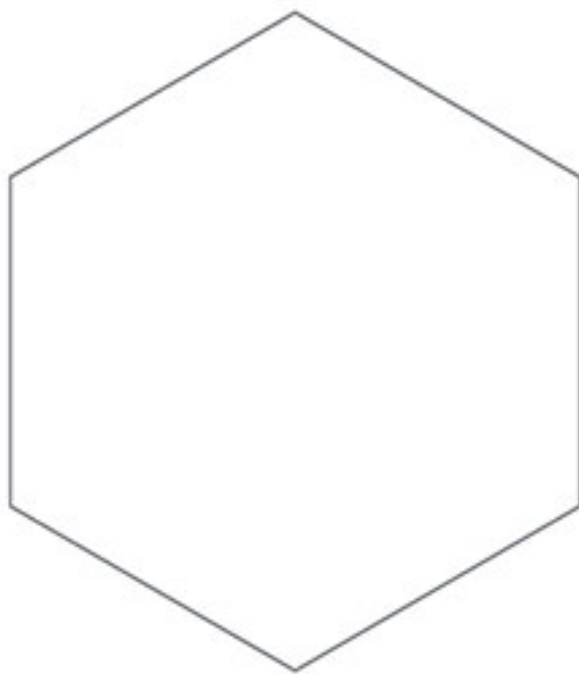
Scale Teams

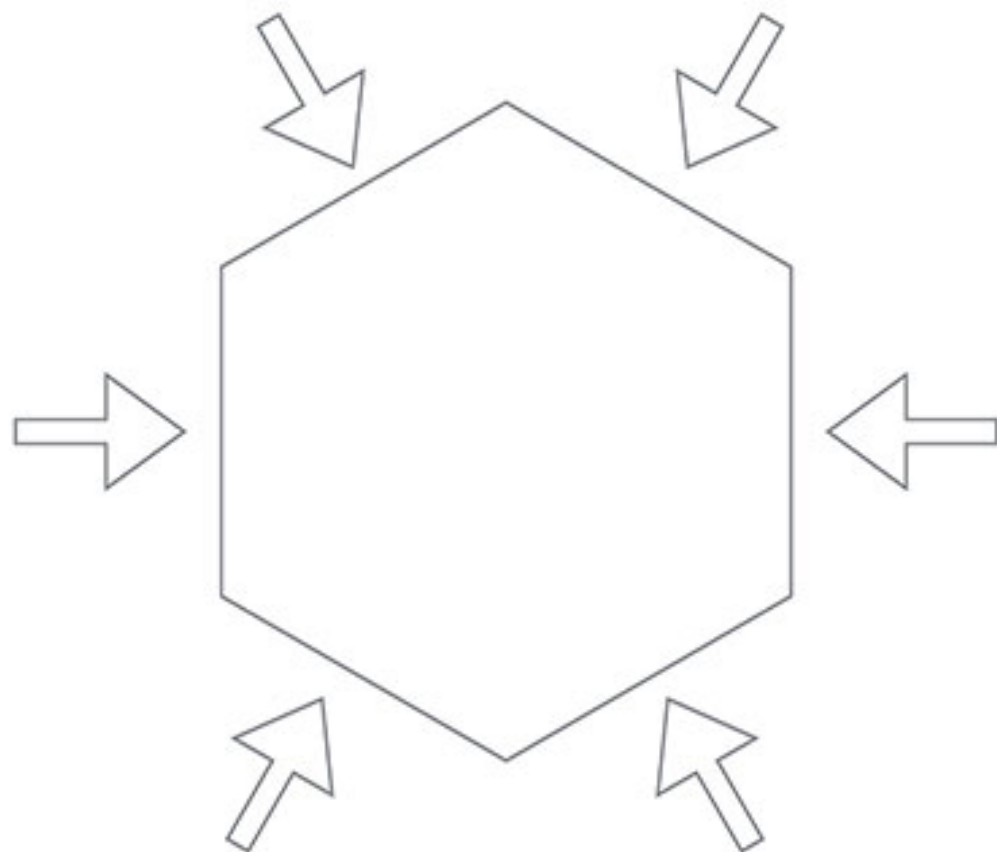
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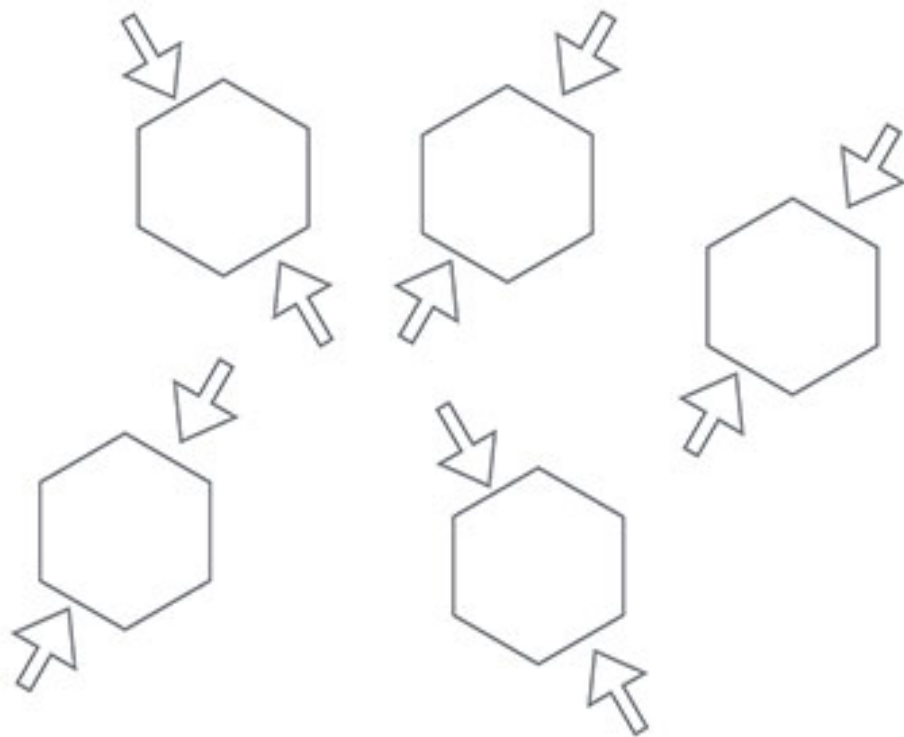
Go Faster

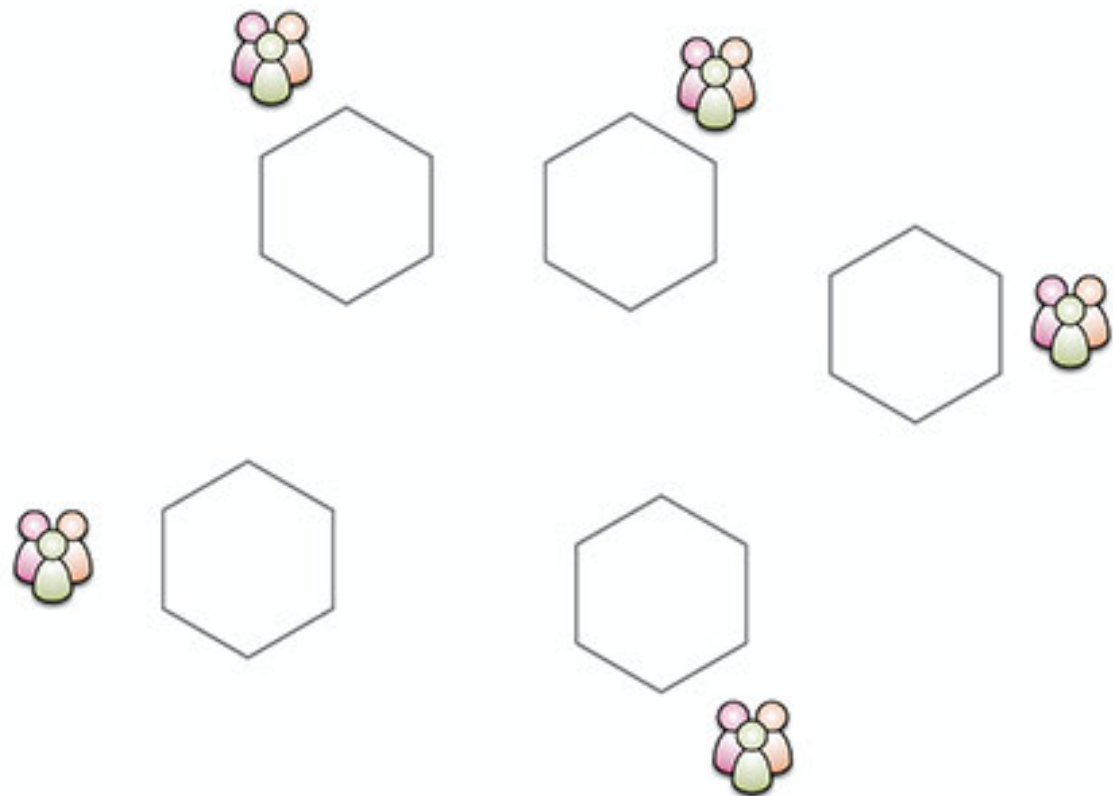
Scale Teams

Empowerment









And Perhaps...

And Perhaps...

New Technology

And Perhaps...

New Technology

Security

And Perhaps...

New Technology

Security

Scale Application

What Are The Problems?

COGNITIVE OVERLOAD

Based on a model from Adrian Cockcroft:

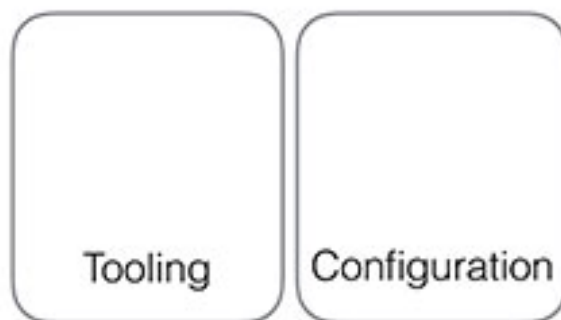
<http://www.slideshare.net/adriancockcroft/evolution-of-microservices-craft-conference>

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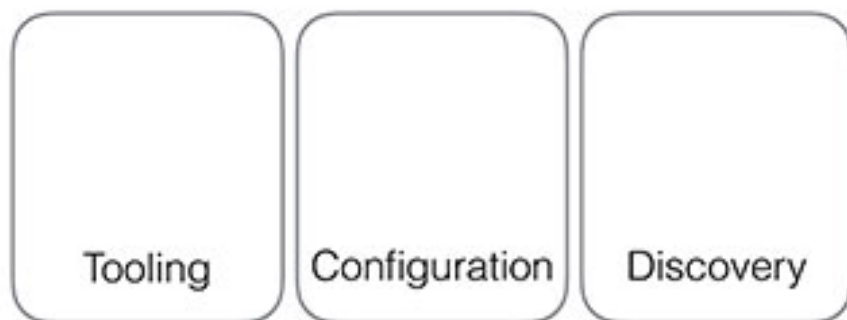
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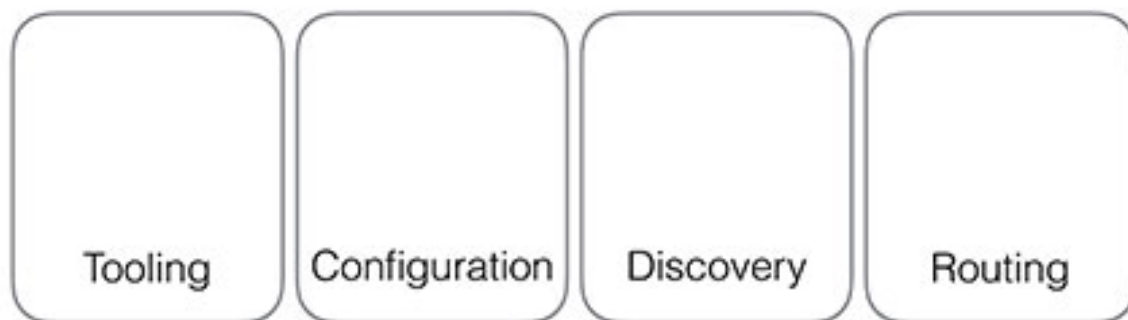
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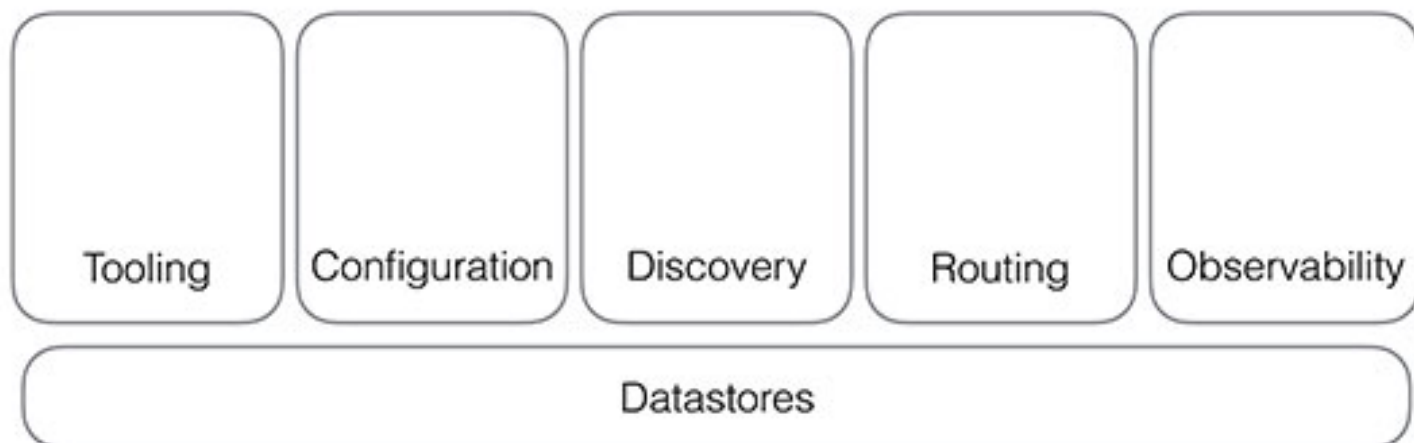
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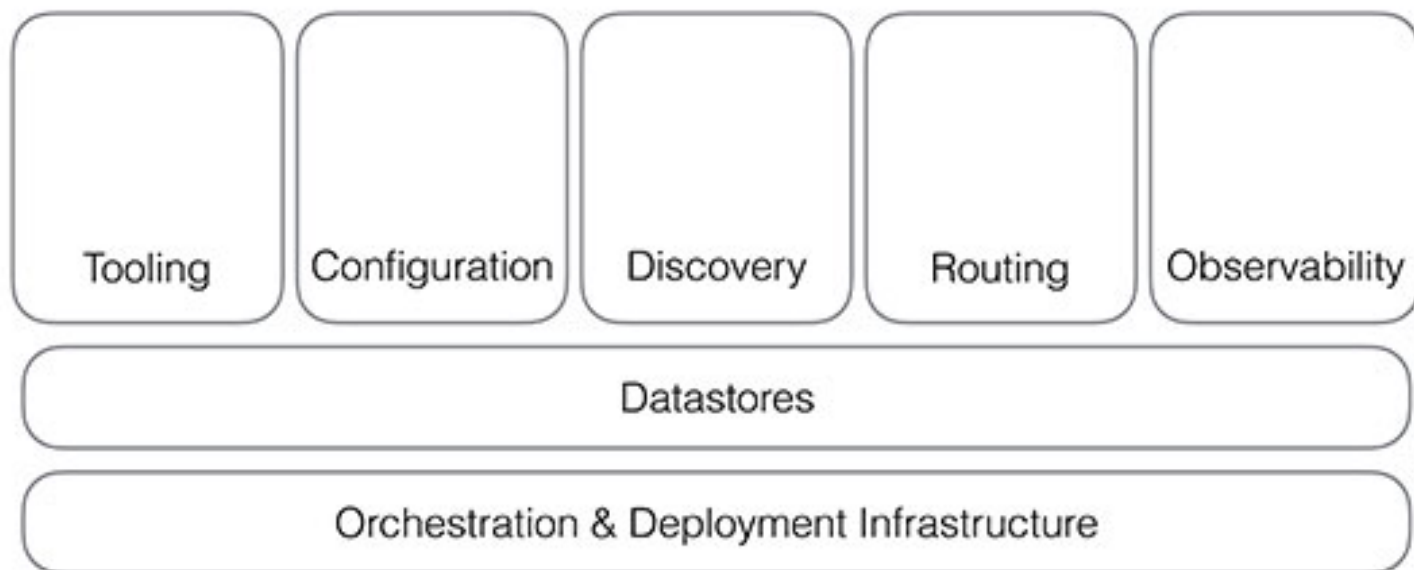
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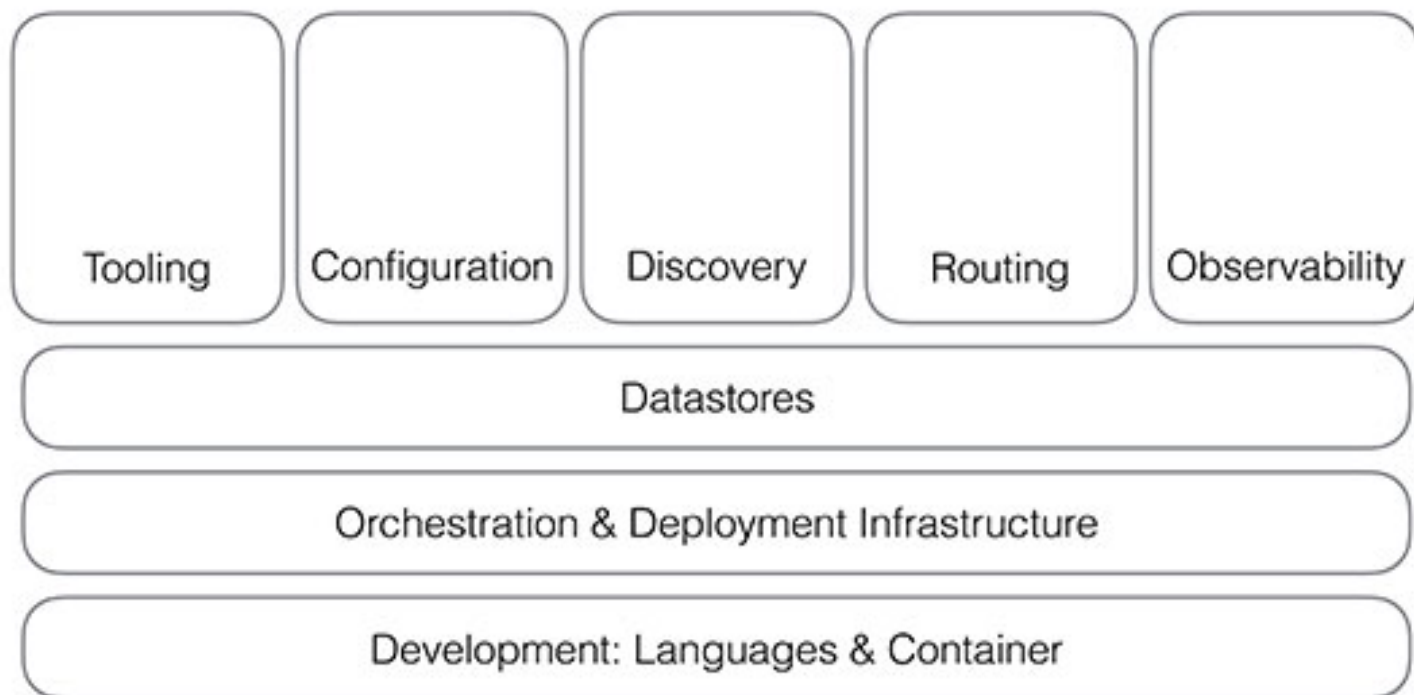
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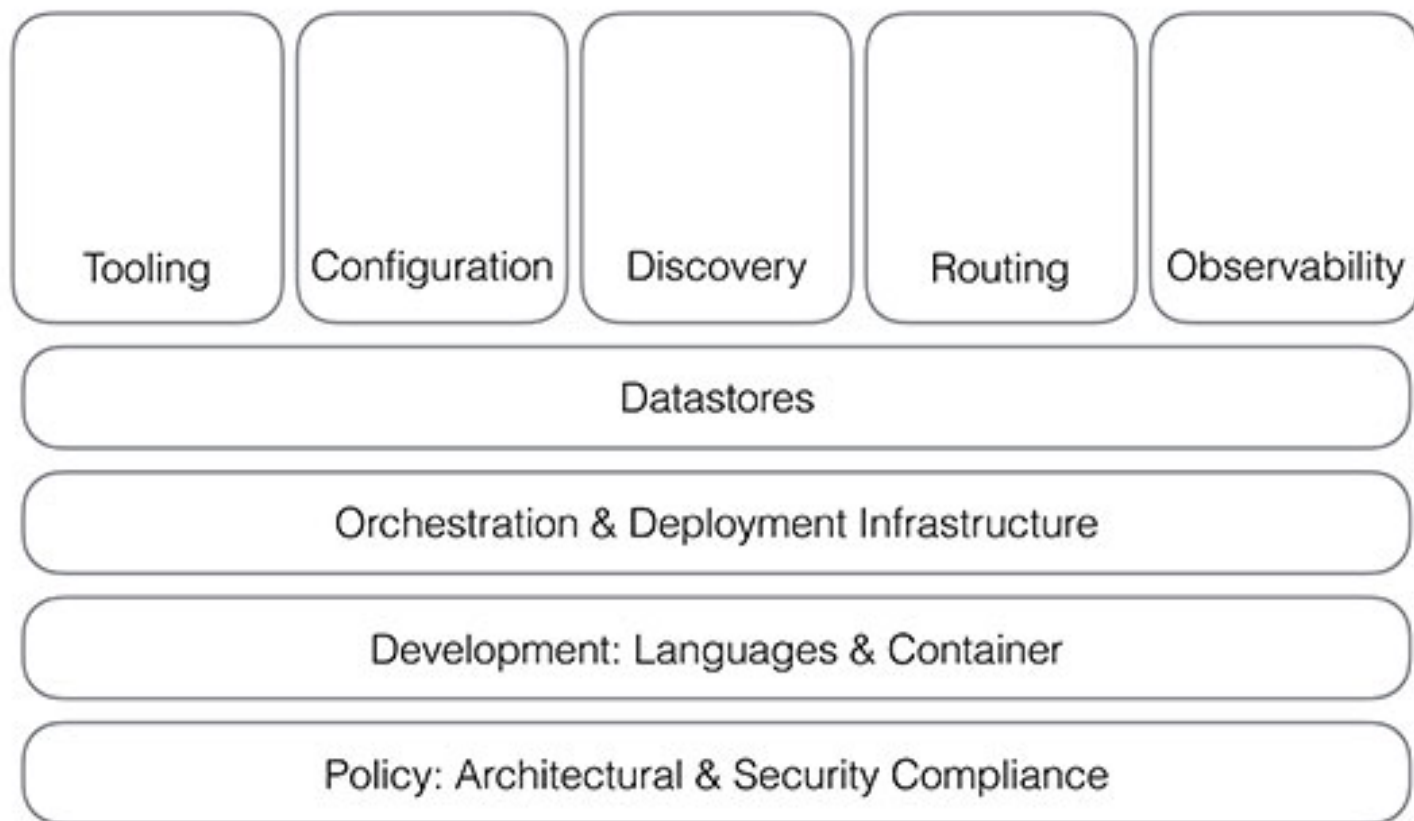
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Distributed Systems

Distributed Systems

Transactions

Distributed Systems

Transactions

CAP!

Distributed Systems

Transactions

CAP!

Monitoring

Distributed Systems

Transactions

CAP!

Monitoring

Testing

Investment In New Tooling

Co-ordination

Knowing where to start

What does good look like

How to manage a transition