

# **CONTINUOUS DELIVERY & DEVOPS**

## **WEEK 2**

### **THE SCIENCE & ECONOMICS OF TESTING**

Alex Cowan

# THE SCIENCE OF TESTING

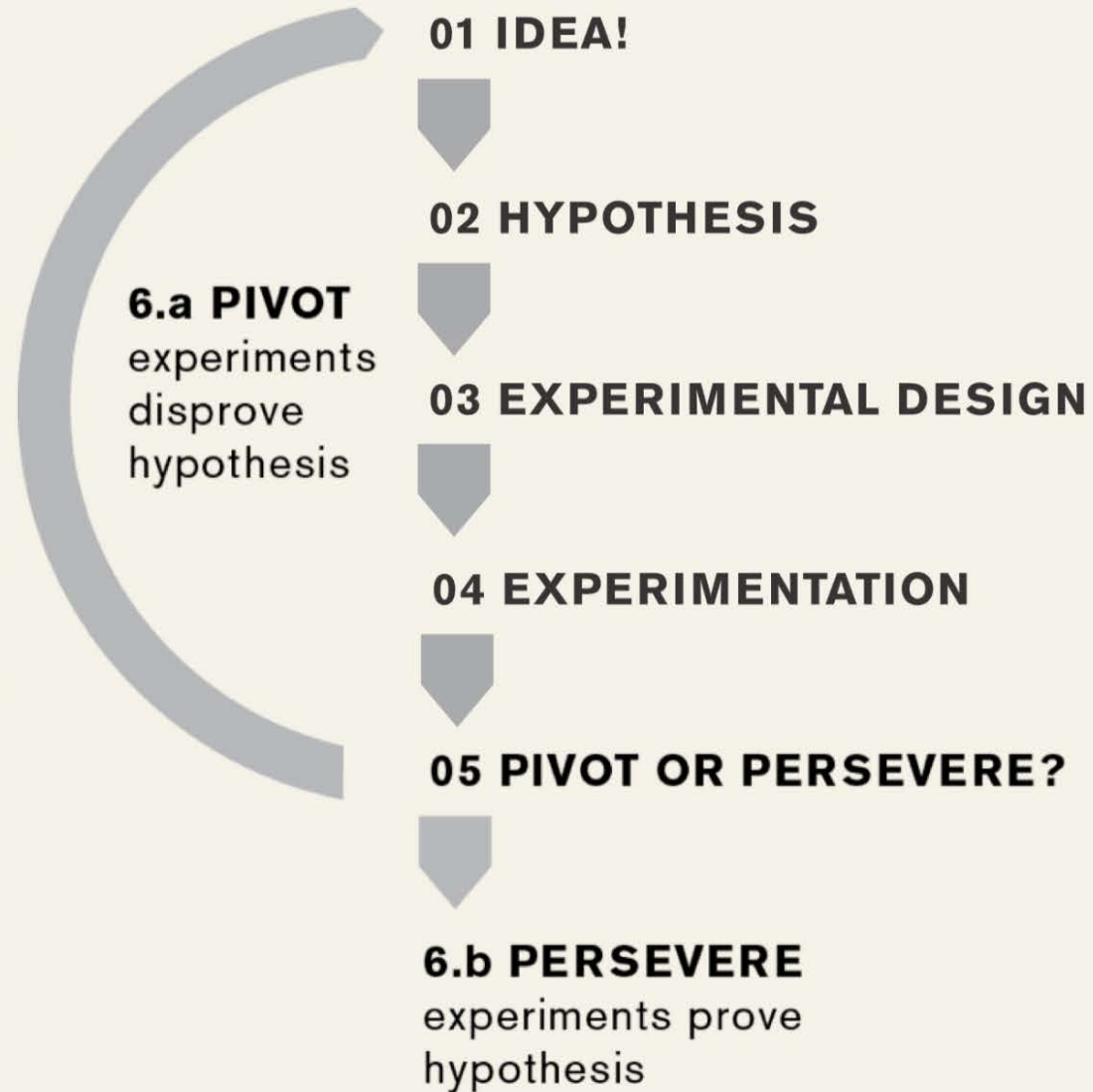
Do I have a basis to think this idea is worth testing?

What exactly do we want to have happen and how will we know if it does/doesn't?

What are the right test investments?

Are we running this test in the right way at the right times?

**'Pivot or persevere?'**



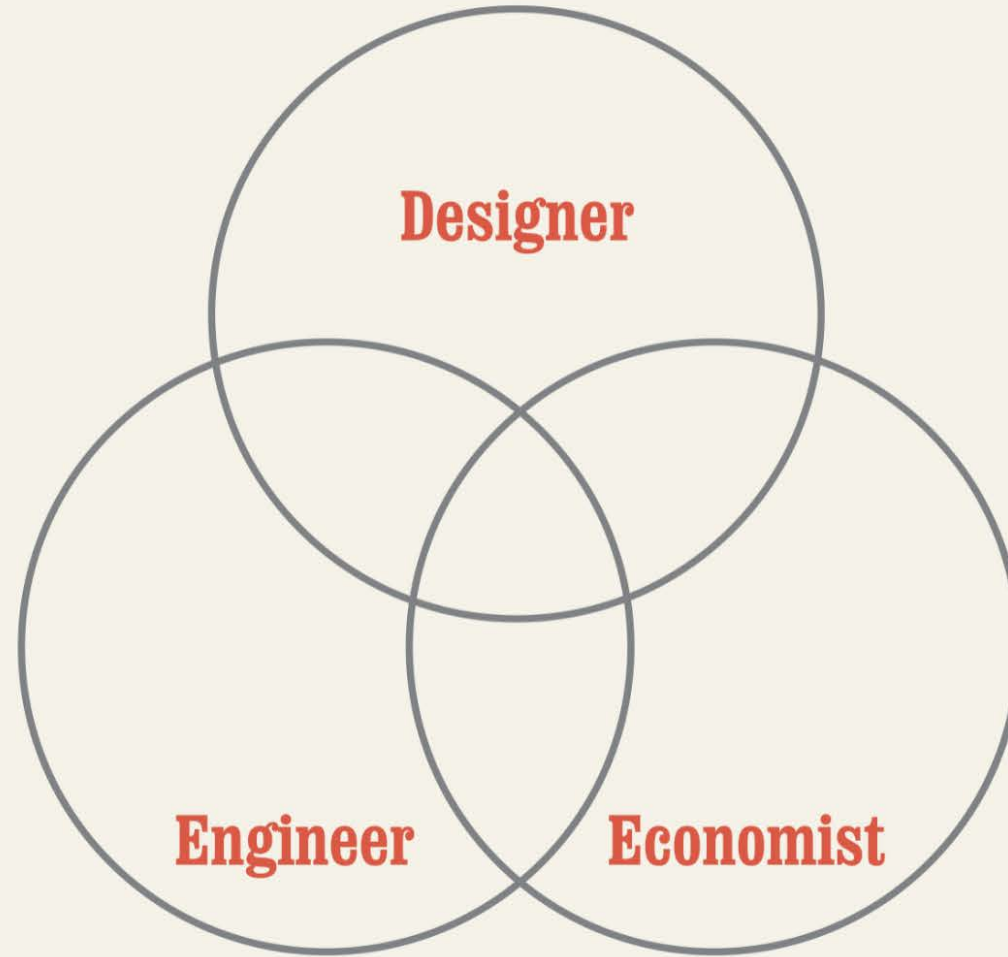
# THE GIVEN-WHEN-THEN PATTERN

'As Ted the Technician, I want to create an account so I can try out the system.'

"Given [a circumstance],  
When [the user does something]  
Then [expected change in state]"

"Given [Ted does not have an account],  
and [he is on the sign-up form]  
When [he enters his email]  
and [he enters his password]  
and [he confirms his password]  
and [he submits the form]  
Then [an account is created on Firebase]  
and [the navigation shows an option to 'Log Out']  
and [the login window is no longer visible]."

# MAKING GOOD TEST INVESTMENTS



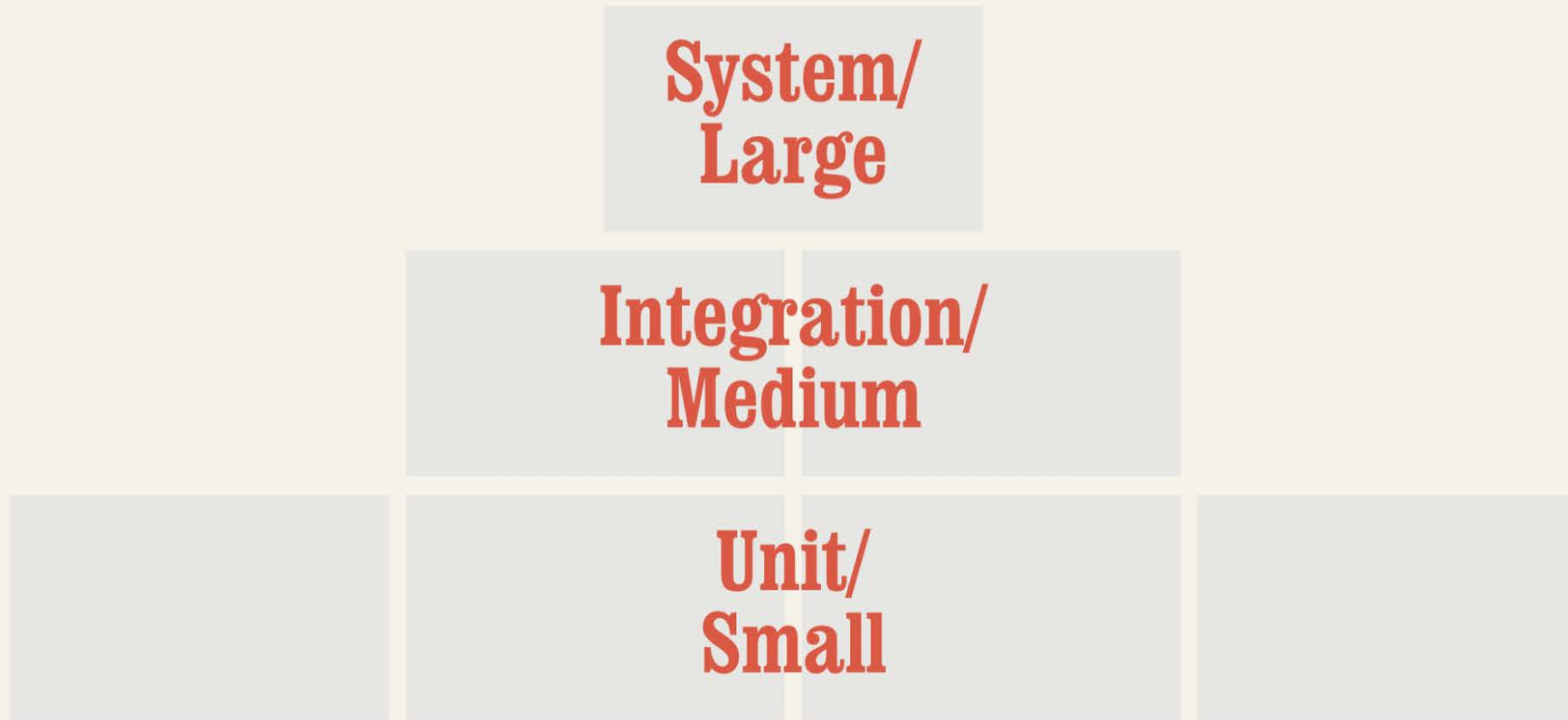
# **CONTINUOUS DELIVERY & DEVOPS**

## **WEEK 2**

### **HOW MANY TESTS?**

Alex Cowan

# THE TEST STACK



# **CONTINUOUS DELIVERY & DEVOPS**

## **WEEK 2**

### **INTRODUCTION TO OUR SAMPLE APP**

Alex Cowan



# ENTERPRISE: HVAC IN A HURRY

With a little more information, I could be a lot more prepared when I arrive at jobs.

Customers hate repeating what they told dispatch.

I get paid for jobs.



**Trent the Technician**

I spend my day working on a jigsaw puzzle whose parts are constantly shifting.

It could be so much better, but it's not easy.



**Danielle the Dispatcher**

I have a million things to do.

I just want the HVAC fixed and not have to explain a huge bill.



**Frida the Facilities Manager**

## PROBLEM AREA

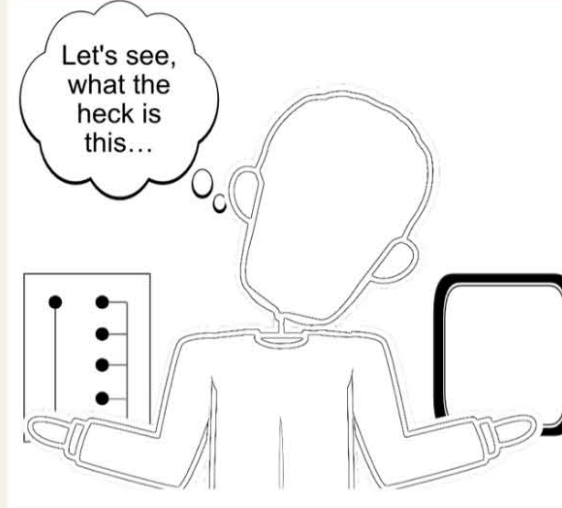
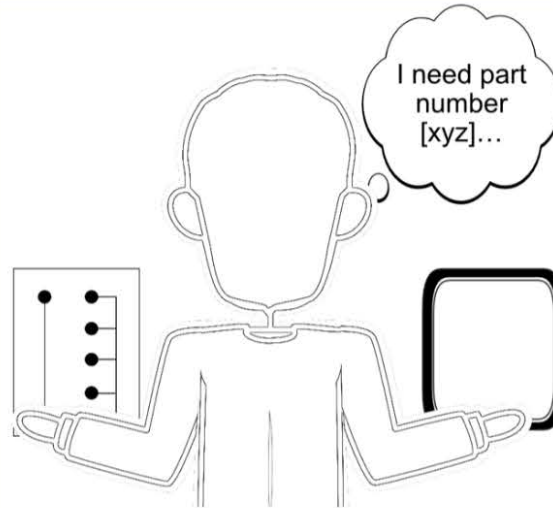
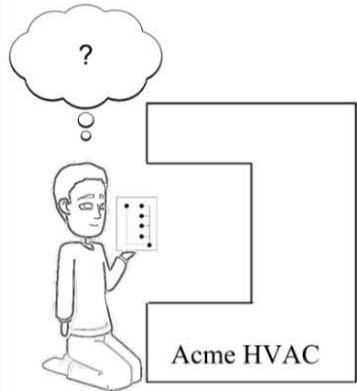
**Problem:** Operating a HVAC systems consistently and at the lowest possible cost is complex and takes practice. Most facilities managers don't have the time or training.

**Alternative:** Fix systems as they break with whoever is available.

**Value Proposition:** A systematic, best practice approach to maximizing uptime and minimizing cost and management overhead.

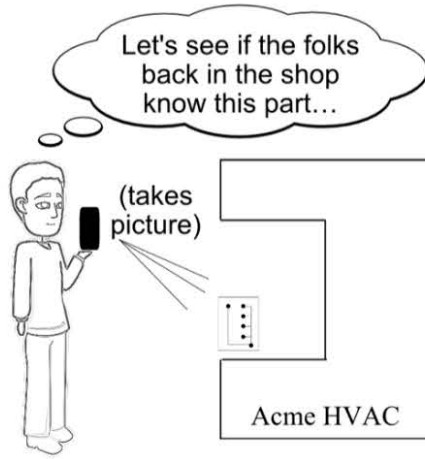


# OUR TARGET EXPERIENCE



## EPIC USER STORY

**'As Ted the HVAC technician, I want to identify a part that needs replacing so I can decide my next steps.'**



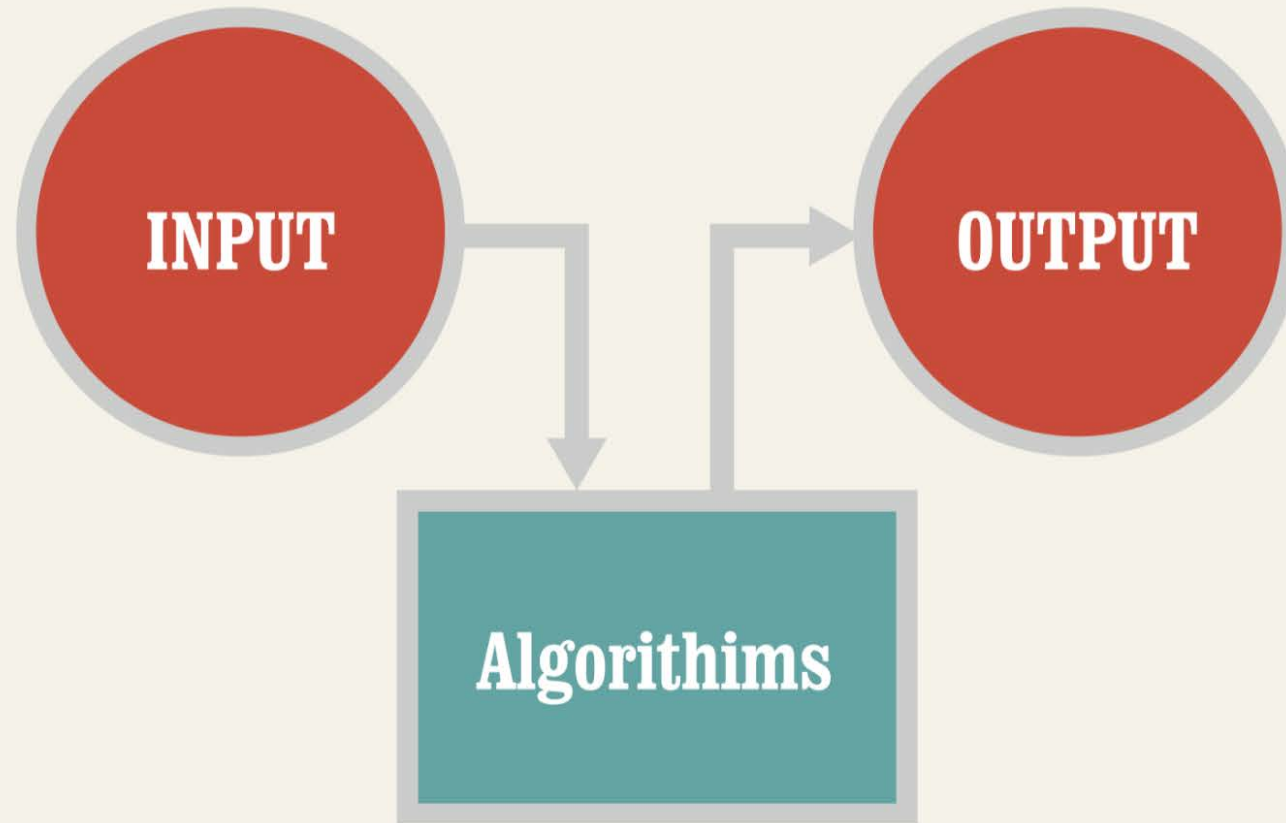
## CASE STUDY

[\*\*http://bit.ly/firebase-case\*\*](http://bit.ly/firebase-case)

# OUR TOPOLOGY



# THE FUNCTION



## SAMPLE CODE

[\*\*http://bit.ly/sample-app\*\*](http://bit.ly/sample-app)



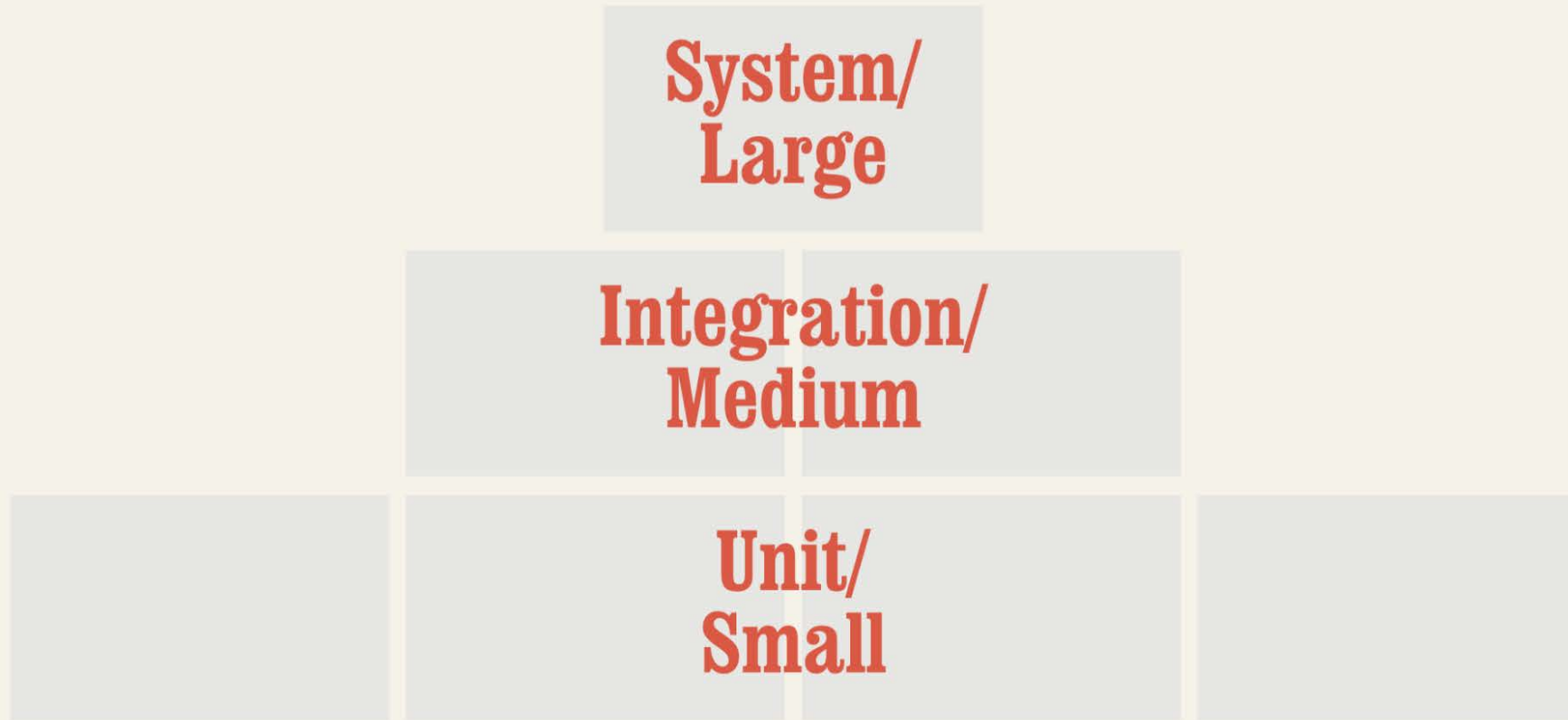
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### **THE SMALL/UNIT TEST**

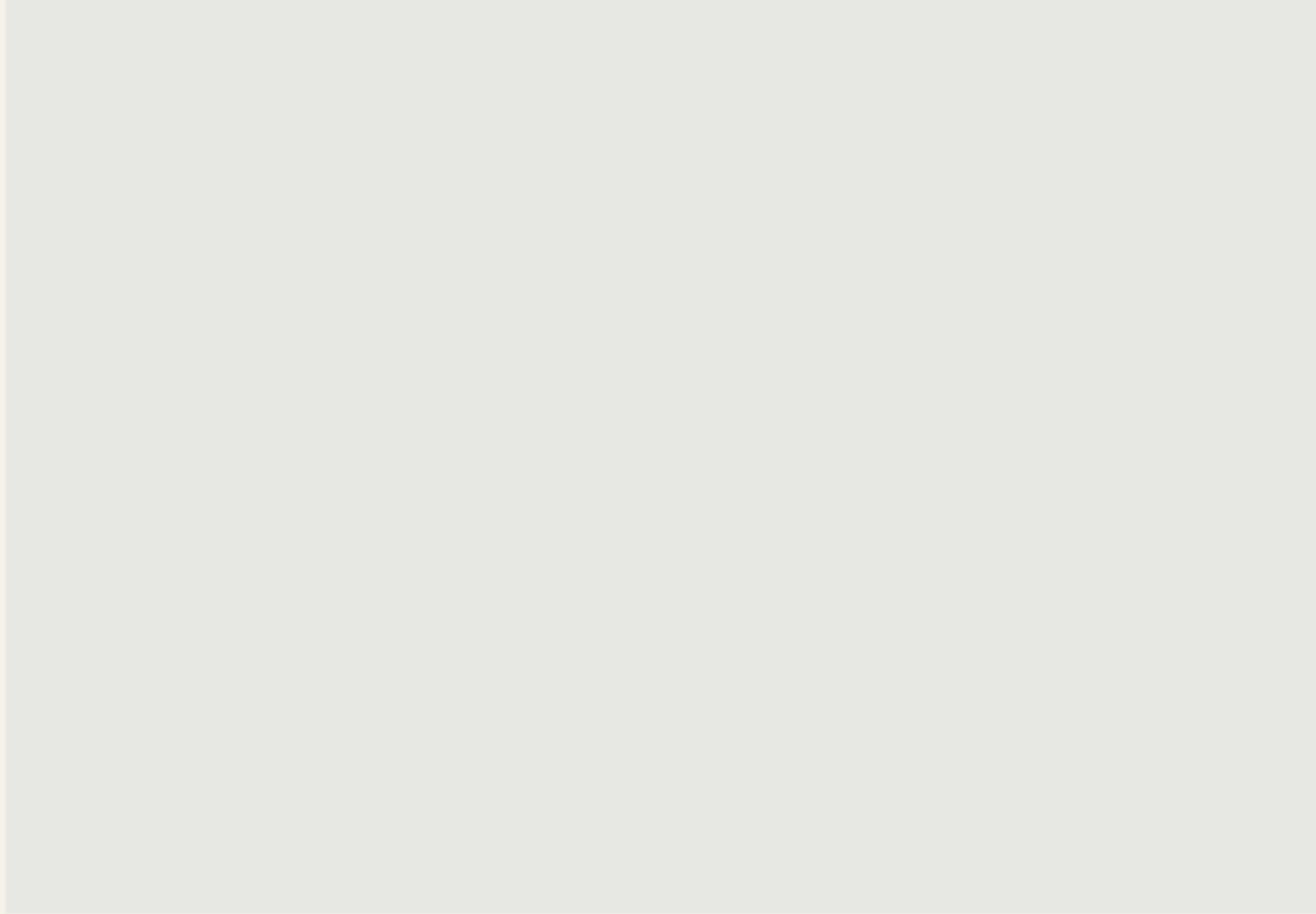
Alex Cowan

# THE TEST STACK



# TOOLS

# COVERAGE



# WHAT'S HARD? WHAT GOES WRONG?



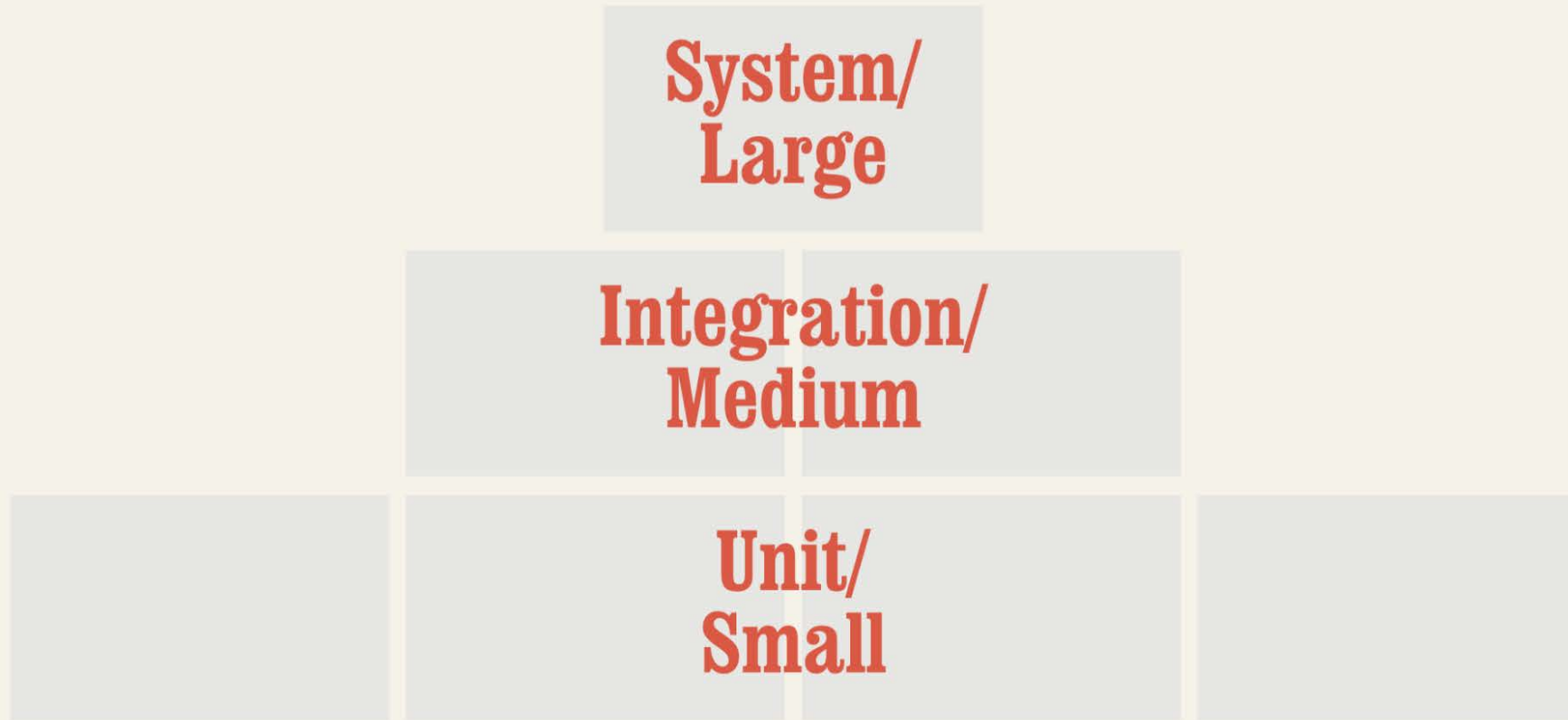
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### **THE MEDIUM/INTEGRATION TEST**

Alex Cowan

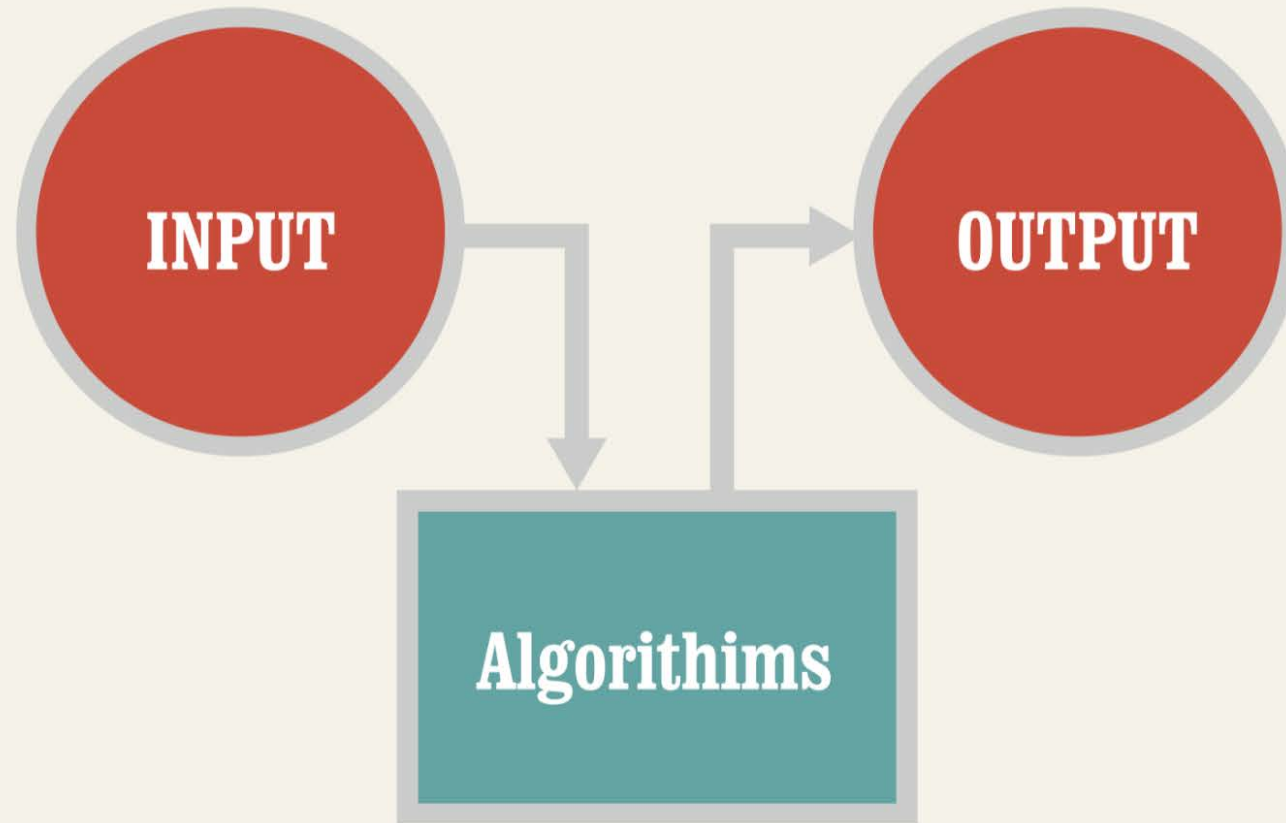
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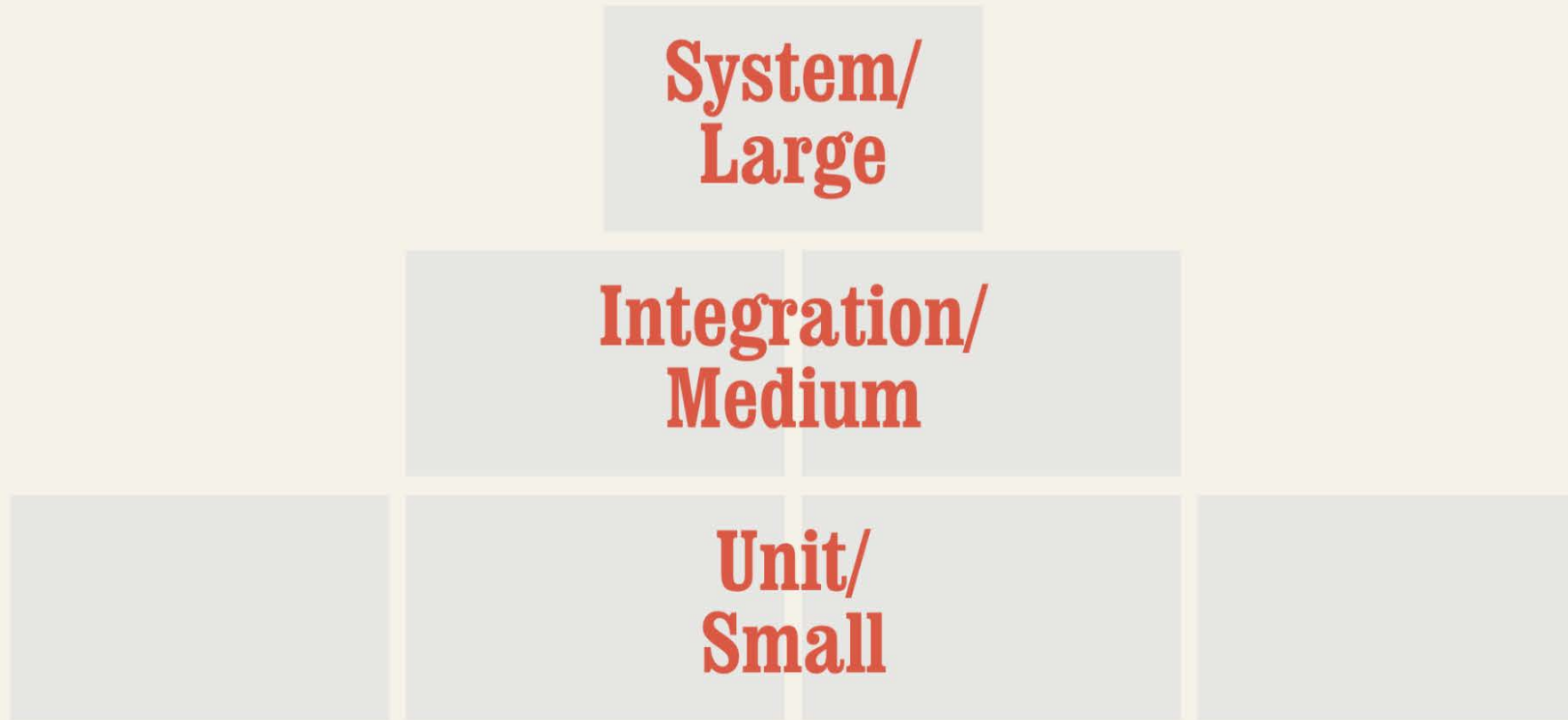
# OUR TOPOLOGY



# THE FUNCTION



# THE TEST STACK





# TOOLS

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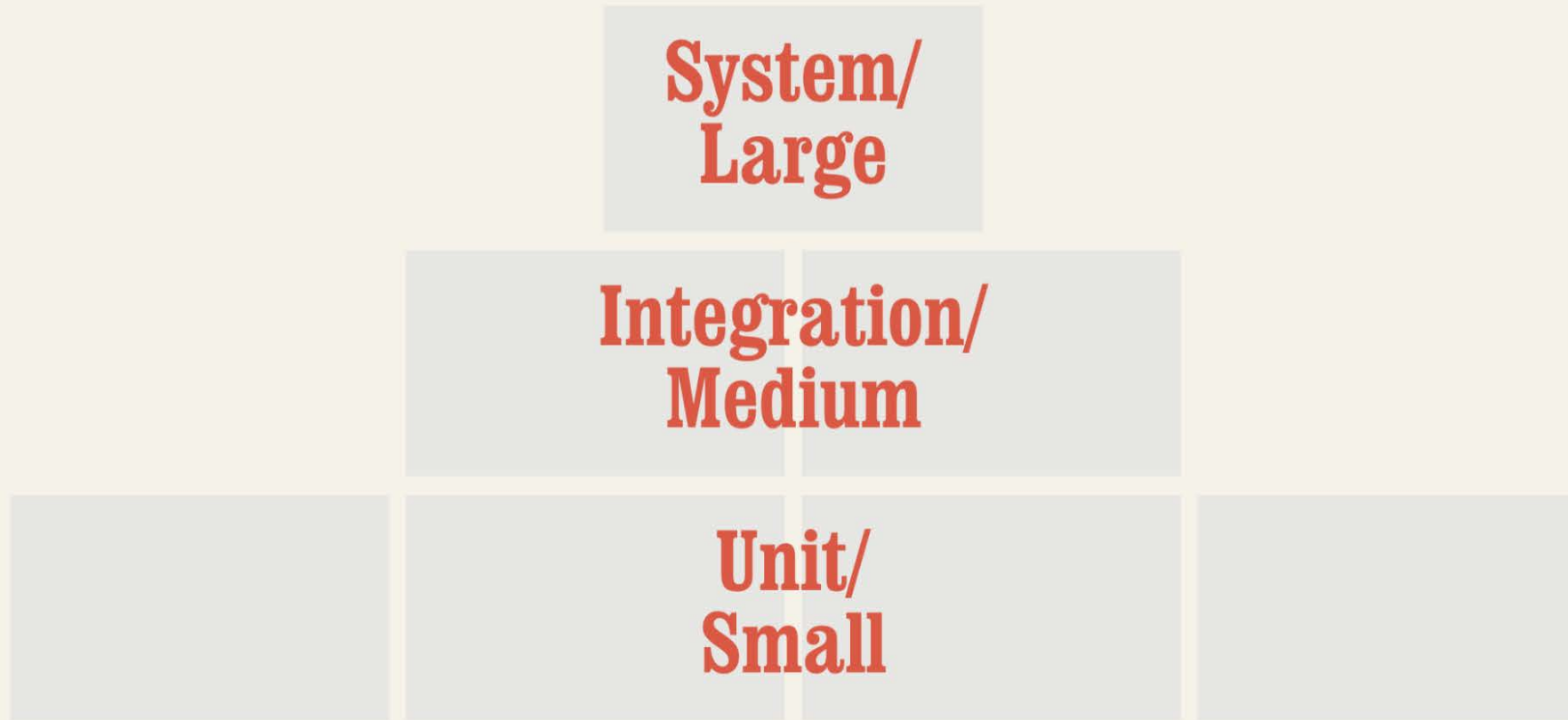
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### **THE LARGE/SYSTEM TEST**

Alex Cowan

# THE TEST STACK



# OUR TOPOLOGY





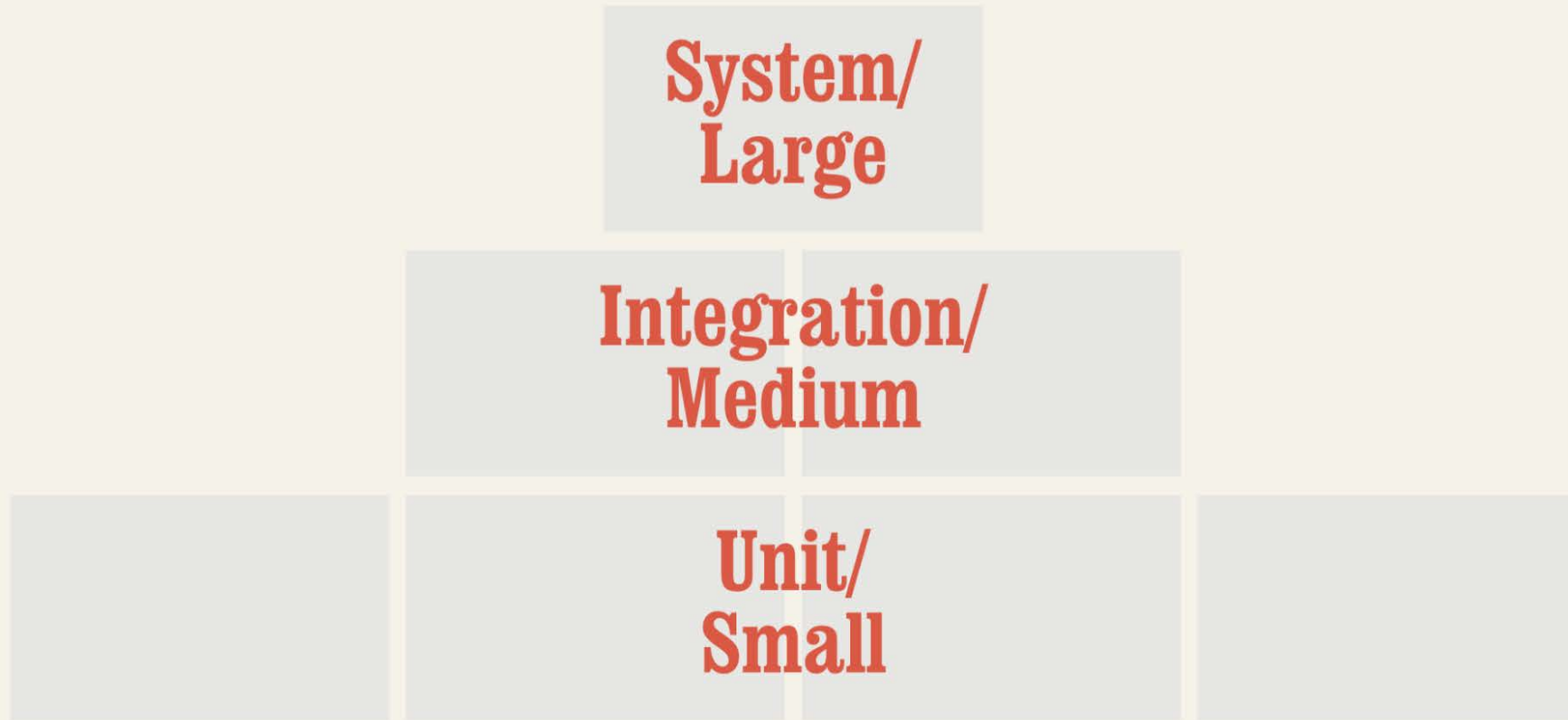
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'As Ted the Technician, I want to create an account so I can try out the system.'

"Given [a circumstance],  
When [the user does something]  
Then [expected change in state]"

"Given [Ted does not have an account under his work email],  
When [he enters his email and a pair of matching passwords]  
and [clicks the Register button]  
Then [an account is created on Firebase]  
and [the Log In text transitions to Log Out]  
and [the log in window collapses back into the nav]."

# THE TEST STACK



# TOOLS

# WHAT'S HARD? WHAT GOES WRONG?

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### **CREATING A CULTURE OF EXPERIMENTATION**

Alex Cowan

# THE SCIENCE OF TESTING

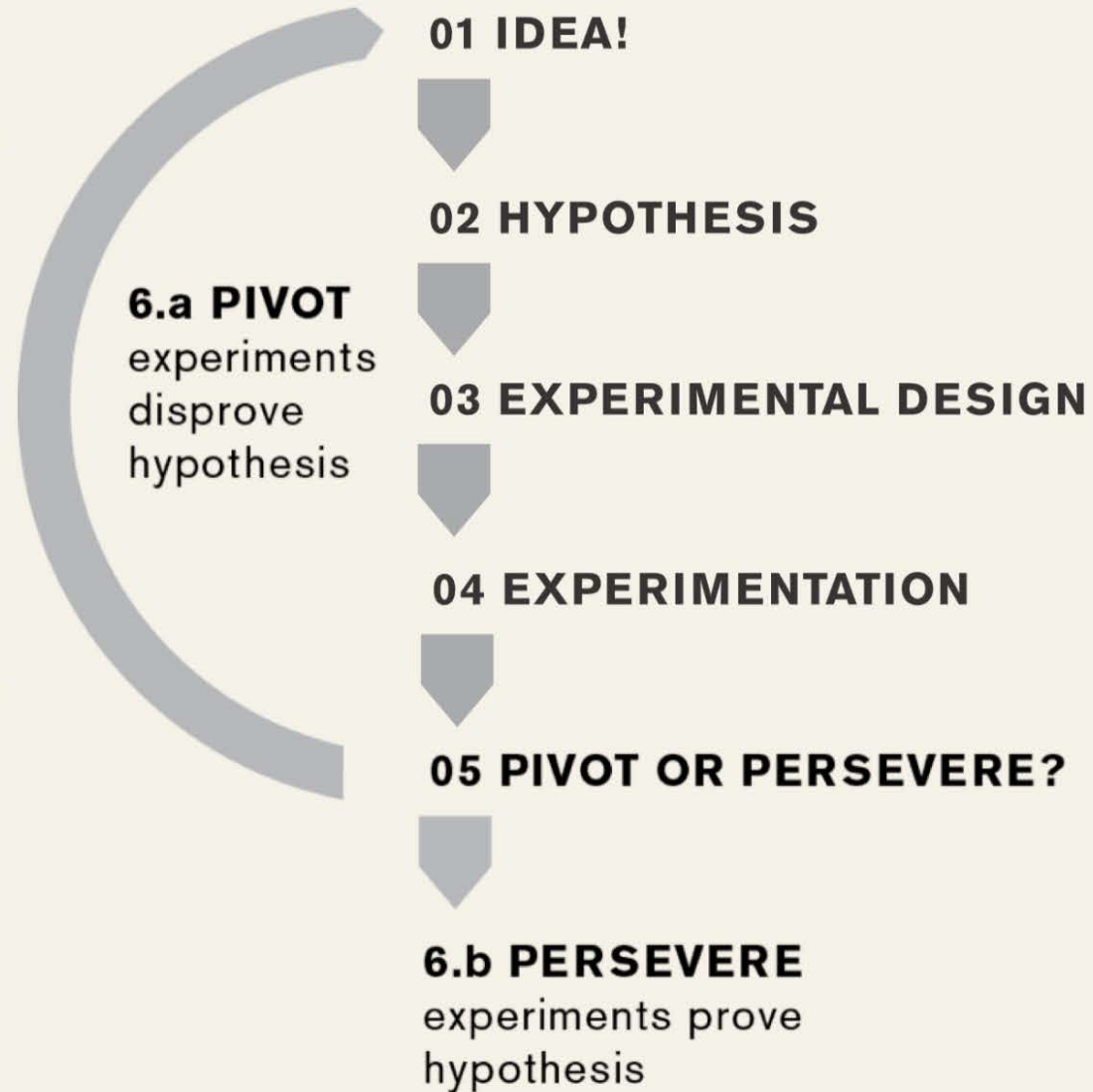
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# THE EMERGENCE OF DEVOPS

