Lesson 2.2: The Importance of Loosely Coupled Architecture Teams

### **DEVOPS CULTURE AND MINDSET**

The Importance of Loosely Coupled Architecture Teams



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Slide 1: Complexity in the Software Industry



# **Complexity in the Software Industry**

**Architecture** term borrowed from building industry

Vendor software packages add complexity

This makes a monolith

Slide 2: Learning Objectives



#### **Learning Objectives**

Define loosely coupled architecture

Explain why it's important

Slide 3: Coupling in Software Architecture



Refers to **dependencies** between various **mechanisms** in a system

Coupling can be tight or loose

Slide 4: Tightly Coupled Architectures



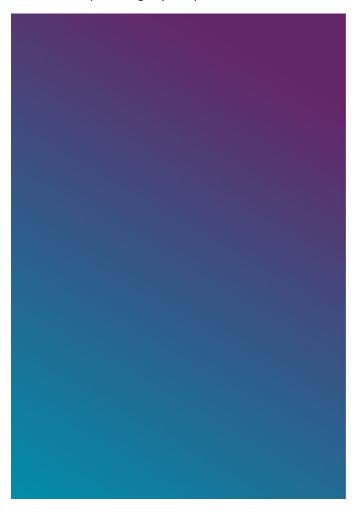
#### **Tightly Coupled Architectures**

**Tightly Coupled**: components are heavily reliant on other components in the system

High level of **integration** 

Changes to **one part** require changes to other components **throughout the system** 

Slide 5: Example of Tightly Coupled Architecture



### **Example of Tightly Coupled Architecture**

Point of Sale system (POS) in retail

Tightly coupled architecture is a **limiting factor** during digital transformation

Slide 6: Loosely Coupled Architecture



#### **Loosely Coupled Architecture**

Components are appropriately isolated

Can modify and test **independently** 

Still collaborate and communicate

Changes can be readily implemented

Slide 7: Benefits of a Loosely Coupled Architecture



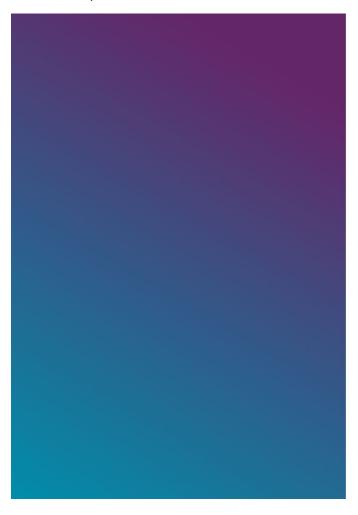
# **Benefits of a Loosely Coupled Architecture**

Able to scale horizontally

**Streamlines** testing

Allows for **speed** and **agility** 

Slide 8: Example from Nordstrom



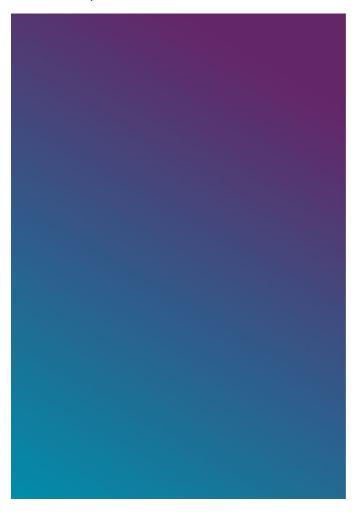
#### **Example from Nordstrom**

Rewrote commerce stack in a loosely coupled way

**Isolated functionality** to deploy independently

Able to make changes more frequently

Slide 9: Example from Starbucks



#### **Example from Starbucks**

**Extracted functionality** out of POS

Moved it to the cloud and APIs

Loosely coupled approach improved loyalty functionality

Slide 10: What I've learned



#### What I've Learned

Assign an **individual** to track and manage **dependencies** 

Important to work to reduce dependencies



Better collaboration between teams through loosely coupled architecture

Ensure available communication bandwidth is not overwhelmed

Avoid fine-grained decision-making at implementation level

Free team to discuss higher-level shared goals and how to achieve them