Important Terms

Well-Architected Framework Review (WAFR): The consistent and systematic process of learning AWS best practices, measuring architecture against these best practices, identifying architecture risks and creating an improvement plan to address them in accordance to the AWS Well-Architected Framework.

Workload: A workload is a collection of resources and code that delivers business value, such as a customer-facing application or a backend process. Examples include marketing websites, e-commerce websites, back-ends for mobile apps, and analytic platforms.

AWS Well-Architected Tool (AWS WA-Tool): The AWS service in the console to run the WAFR.

AWS Well-Architected Pillars:

Operational Excellence: This pillar focuses on running and monitoring systems to deliver business value, and continually improving processes and procedures.

Security: The Security Pillar emphasizes protecting information, systems, and assets while delivering business value through risk assessments and mitigation strategies.

Reliability: The Reliability Pillar aims to ensure that a workload performs its intended function correctly and consistently when it's expected to.

Performance Efficiency: This pillar is about using computing resources efficiently to meet system requirements, and maintaining that efficiency as demand changes and technologies evolve.

Cost Optimization: The Cost Optimization Pillar involves continually revisiting systems over time to look for opportunities to implement cloud best practices that can optimize costs.

Sustainability: The Sustainability Pillar focuses on minimizing the environmental impact of running cloud workloads by implementing sustainable practices throughout the cloud lifecycle.

General Design Principle: The general design principles are not specific to any particular pillar of the Well-Architected Framework. Instead, they offer a holistic approach to cloud architecture design, encouraging practices such as leveraging cloud elasticity, testing at production scale, automating processes, enabling evolutionary architectures, and data-driven decision-making.

Pillar-specific Design Principle: The pillar-specific design principles in the AWS Well-Architected Framework provide guidance and best practices tailored to each of the six pillars.

Phases of WAFR: There are three phases for WAFR: Prepare, Review, and Improve.

High Risk Issues (HRI): HRIs are architectural and operations choices that may cause significant negative impact to a business. An example of an HRI on the Security Pillar is not securing your AWS account.

Medium Risk Issues (MRI): MRIs might also impact your business negatively, but to a lesser extent than HRIs. An example of MRI on the Security Pillar is not auditing and rotating credentials periodically.

Customer Story Scenario

Customer Name: AnyCompany
Location: Headquartered in New York, New York
Industry Type: Manufacturing
Industry : Consumer / Packaged Goods (CPG)
Manufacturing Focus: Bottles & containers for public & private sector

Recent Acquisition: Bought Example Corp in 2024

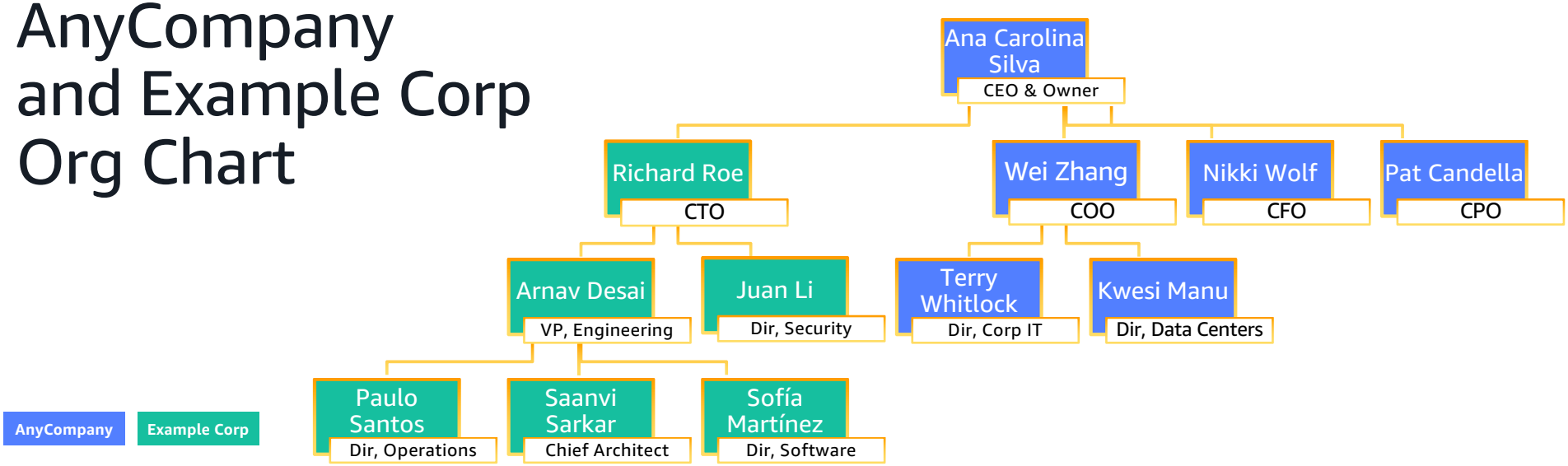
- Example Corp is an IoT startup located in Singapore
- Example Corp makes wafer-thin IoT sensors that detect changes in weight & movement
- Together (AnyCompany + Example Corp) have built a new product: the “AnySmartProduct”
- Well-Architected Framework Review will be on the AnySmartProduct Workload

Customer Story Scenario

Founded in 1897 in Dallas by a Texas cattle baron, AnyCompany has grown over the past 120 years into a global supplier of bottles and containers used throughout the world. Their first products were bottles for tinctures and elixirs at the turn of the 20th century, used by pharmacists and doctors across the Southwest. They became a key supplier for the US Army in 1913, which spurred growth over the next decades. Today, AnyCompany has diversified their product portfolio and has manufacturing centers on six continents, providing bottles and containers to customers in over 130 countries.

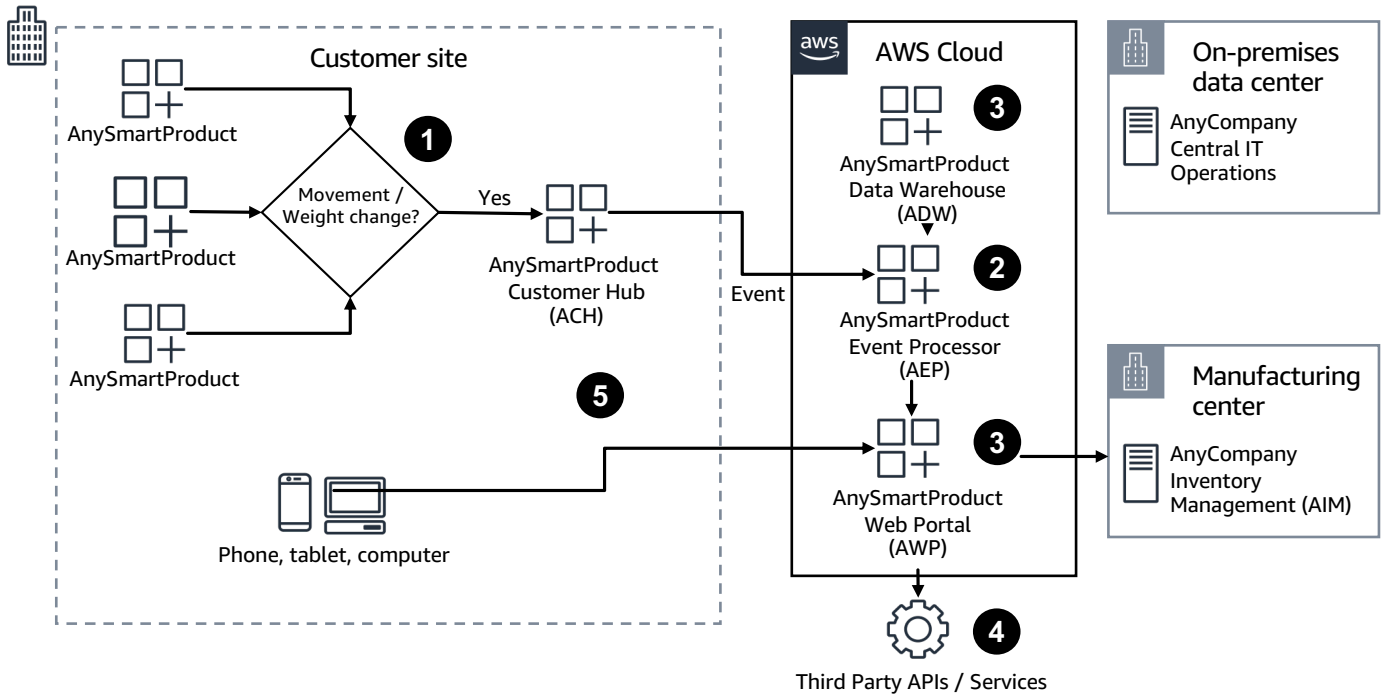
In early 2024, AnyCompany acquired a small IoT company, Example Corp. Headquartered in Singapore with offices in London and San Francisco, Example Corp designed and licensed wafer-thin IoT sensors that could calculate and transmit changes in weight and movement with great precision. AnyCompany's CTO, Richard Roe, felt that the future of glass containers was making them smart. Combining AnyCompany's traditional products with IoT sensors from Example Corp, a new product was born in 2024: the AnySmartProduct. This container reads movement and weight of the container and sends events to the back-end infrastructure hosted in Amazon Web Services. Customers use a custom web portal to set up rules based on these events, like sending a refill order or updating inventory projections based on how often a container is moved.

AnyCompany and Example Corp Org Chart



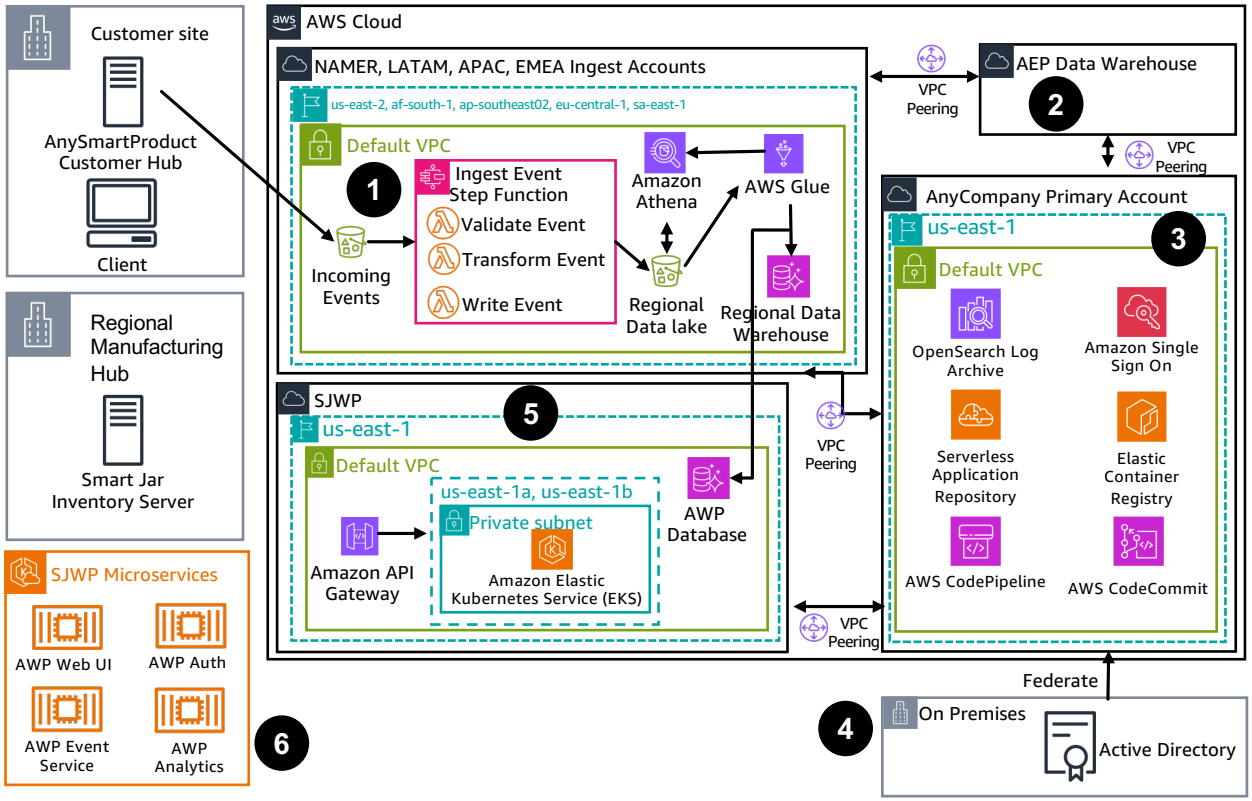
Early on, there were conflicts between the Central IT Team at AnyCompany and the software engineering team at Example Corp; the former was a traditional centralized services team while the latter was a DevOps oriented team. This clash of cultures resulted in compromises at the senior leadership level. Richard Roe, CEO and Founder of Example Corp, became the AnyCompany CTO and retained control of most of his team. Juan Li, the Director of Security at AnyCompany, was moved under Richard Roe's new organization. The COO, Wei Zhang, still owns Corporate IT and their Data Center, but most software development tasks have been moved under the CTO. It's important to get a feel for this with your customer. You want to know their org to get a better understanding of their political structure to make sure you get to the right people.

AnySmartProduct Business Workflow



1. AnySmartProducts are installed at a customer site with a AnySmartProduct Customer Hub (**ACH**)
2. Whenever a Smart Jar emits an event it goes to the AnySmartProduct Event Processor (**AEP**)
3. The **AEP** sends the data to the AnySmartProduct Data Warehouse (**ADW**) and AnySmartProduct Web Portal (**AWP**)
4. Data is sent to third-party services based on rules set by the customer in the **AWP**.
5. Customers access their rules and events via mobile devices and computers on the **AWP**.

AnySmartProduct workload



1. Each **AEP** pipeline is in its own account and locted in the region of the manufacting center.
2. The **ADW** is a separete workload and we will not cover it in this review.
3. **AnyCompany** hosts their build, deployment, management and identity services in a central AWS account; all accounts are subordinate to it in AWS Organizations.
4. **AnyCompany** uses their Active Directory on-premises to provide centralk identity to AWS.
5. The **AWP** is also in a separate account, consisting of API Gateway, an Aurora Database and an EKS cluster.
6. There are four micro services that form the **AWP**: Web UI, Auth, Event Service and Analytics.

Prioritizing Improvements

1. HRI: Workload state isn't well understood
   Solution:

2. HRI: Infrequent review of security logs
   Solution:

3. HRI: No awareness/monitoring for sevice quotas
   Solution:

4. HRI: No performance evolution process
   Solution:

5. HRI: No Cloud Financial Managegement in place
   Solution: