**DESIGN OF CLOUD ARCHITECTURE OF IKEA IN AZURE**

**Introduction:**

In the digital era, businesses are leveraging cloud technologies to revolutionize their operations and extract actionable insights from their data. For IKEA, a global leader in home furnishings, harnessing the power of data is crucial for enhancing customer experiences and driving business growth. This article explores IKEA's journey in building a resilient data pipeline architecture within the Azure environment, facilitating seamless data flow from sourcing to transformation, analysis, and service delivery.

**Data Pipelines: The Foundation of Data Flow**

At the heart of IKEA's data strategy lies the data pipeline—a sophisticated framework designed to propel data through a series of orchestrated actions. From initial ingestion to final analysis, these pipelines serve as the foundation of IKEA's data ecosystem, enabling the organization to leverage its data assets effectively. Let's delve into the key components of IKEA's data pipeline architecture, including the innovative implementation of bronze, silver, gold, and service layers:

**1. Sources:**

**IKEA leverages diverse data sources to fuel its data-driven initiatives:**

* **Sales Database (Azure SQL):** This database stores sales transactions data from IKEA's brick-and-mortar stores, offering insights into customer purchasing behavior.
* **E-commerce Transactions (Stream):** Real-time streams of online product sales data provide immediate insights into customer trends and preferences.
* **Currency Conversion API (REST):** A REST API converts sales data into a unified currency format for consistent financial reporting.
* **Website Tracking Logs (Azure Blob Storage):** Logs from website tracking offer valuable information on customer interactions and behavior.
* **Geo-location Data (HTTP Download):** Geo-location data enables targeted marketing efforts by mapping customer locations.

**2. Ingestion:**

Data ingestion initiates IKEA's data journey, where raw data from diverse sources is ingested into the system. IKEA employs batch and streaming ingestion mechanisms using Azure Data Factory and Azure Event Hubs, ensuring timely and efficient data processing.

**3. Transformation:**

As data progresses through the pipeline, it undergoes transformations to prepare it for analytical operations. Data transformation includes processes such as curation, standardization, and aggregation. IKEA implements bronze, silver, and gold layers to ensure data quality and integrity.

**Bronze Layer:** Raw data is stored in its original form, preserving integrity for future analysis and replication.

**Silver Layer:** Processed data undergoes further refinement, including standardization, validation, and de-duplication, enhancing usability for analytical purposes.

**Gold Layer:** Aggregated data represents the pinnacle of IKEA's data pipeline, providing actionable insights and supporting informed decision-making.

**4. Service Layer:**

After data undergoes transformation, the service layer facilitates its delivery to end-users and applications. This layer encompasses data APIs, dashboards, and reports, enabling stakeholders to access and visualize insights effectively.

**Conclusion:**

In conclusion, IKEA's robust data pipeline architecture within the Azure environment empowers the organization to unlock the full potential of its data assets. By seamlessly navigating data through sourcing, transformation, analysis, and service delivery stages, IKEA can derive actionable insights, optimize operations, and enhance customer experiences globally.

As IKEA continues to innovate and adapt, its commitment to leveraging cloud technologies and data-driven strategies remains steadfast. With a comprehensive data pipeline architecture in place, IKEA is poised to drive innovation, foster growth, and deliver exceptional value to its customers worldwide.

**VISION VISUAL**A diagram of a cloud architecture

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**DATA PIPELINES:**

A diagram of data flow

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**CLOUD ARCHITECTURE DIAGRAM:**

**A computer screen shot of a diagram

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