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An Overview of Microservice Architecture Impact in Terms of Scalability and Reliability in E-Commerce: A Case Study on Uber and Otto.De

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I. INTRODUCTION

A Microservices architecture consists of a collection of services that are small and autonomous. Each service is self-contained and should imply a single business capability. Thus, these applications built on microservices architecture are loosely coupled. The basic idea of implementing an microservice architecture is that when an application is broken down into small, composable pieces or components that work together are easy to deploy, create, and maintain. Each service has a separate codebase structure, thus can be managed by a small group of development team. This is the opposite to Traditional monolithic architectural style where the final product of application is developed all in single and indivisible unit. In monolithic architecture, all features of the application are written as separate modules which are then packaged in a single main application. We should use microservice architecture when there is a large application and need high release speeds, high scalability, high resilience, easier debugging and maintenance.

From an e-commerce perspective, today's competitive world of e-commerce requires various strategies to increase revenue and customer satisfaction. E-commerce companies are required to share various services to achieve flexibility. They should have reusability services, automated service deployments, and fast service scalability. Today, monolithic applications in e-commerce, are becoming a barrier to innovation as they are deployed at once and need to be checked and tested at the end, it comes with complexity and flexibility. Microservices are the ultimate risk-free way to build e-commerce platforms for traffic peaks, as well as implement and test new trends, such as new payment methods, voice assistants or progressive web apps. Micro-service can also be used to set up complex omnichannel systems. In order to meet your customers' expectations in omnichannel systems, you need to gather all the information about products, shipments, stocks and orders and keep them up to date. Microservices enable companies to use API gateways that integrate POS, ERP, or WMS solutions that are in the best range and synchronize them with existing processes.

The concept of microservices was coined by the evangelists of microservices, with Martin Fowler at the forefront and global companies facing the wall in terms of business scalability, agility and speed of implementation of changes [1]. Amazon, a provider of major online marketplaces, was one of the first. After this, Other leading e-commerce companies have transformed their infrastructure into micro-services. eBay, Coca Cola, Netflix, Spotify, Uber, Etsy, Gilt and Zalando, just to name a few, used microservices to create a flexible, global system and a whole new work culture, easy to access and inspiring for developers.

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