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5/26/2024

Part 1

Before answering whether or not technical debt is lower before then migration , it is important to know what technical debt is. Technical debt is design debt or code debt that references everything from bugs to missing documentation. The phrase technical debt was originally used to explain to non-technical stakeholders to explain to them that rushing software to deploy the software sooner than later is similar to borrowing money to do things sooner than later.

A study has looked into whether or not the technical debt increases after the migration from monolithic systems to microservices. The study has found an increase in technical debt after the migration, however, the study has found that the technical debt grew slower longterm than in the monolithic system.

There are many benefits for a business to migrate from a monolithic system to a microservice. These benefits include faster iteration, team independence, the ability of a culture of quality, independent deployment, independent scalability, independent testability, and simplicity. I have learned through this research how valuable microservices are and that in the long run, the technical debt will be lower than it would be before the migration would happen. The advantages of microservices, and the lower technical debt are very persuasive points to migrate any monolithic systems you may have to microservices. Microservices are great at getting software deployed quickly and leads to more independence with teams to develop the best they can. Monolithic systems used to have their benefits, but now they are slow and outdated.

Part 2

Microservices can be known as a subtype of Service-Oriented Architecture (SOA) because the services and APIs in microservices are similar to the ones in SOA. SOA is used to build software that includes complete enterprise development. This strategy allows the reuse of items from other applications when creating new applications. This promotes the development of a bunch of services that can work with each other and support other applications. Advantages of SOA include a faster time to market, an ability to leverage legacy functionality in new markets, improved collaboration between business and IT, allows for loose coupling and platform independence, and enhanced agility. The disadvantages of SOA include and extra overload and increased response time, there is a large upfront cost, SOA requires a high bandwidth server, and there is a complex management due to a vast variety of services.

Microservices are a subtype of SOA as they are developed around business domains and creates a network for it. Microservices are useful to ease the updating of the codebase for developers. Advantages of microservices include small modules, easier process adoption, independent scaling, independent operations, a faster time to market, easier DevOps, and an increased fault tolerance. Disadvantages of microservices include the need of automation, the testing of the modules becomes very difficult, and there are an increased risk of security breaches.

After learning about SOA and microservices, I have learn how microservices can be seen as a subtype of SOA. It is important to learn about extensions and improvements or different strategies in computer science and how they can speed up different development processes.

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