Compare serverless options from AWS, Google and Azure

- **AWS Lambda**: As the most established platform, AWS Lambda provides extensive language support and integrates seamlessly with AWS services. Its 15-minute runtime limit supports more complex tasks.
- **Google Cloud Functions**: Google's offering is known for its developer-friendly interface and clear documentation, making it ideal for rapid development. However, its 9-minute runtime limit can be restrictive.
- **Azure Functions**: With a 60-minute runtime limit, Azure is best for long-running processes. It also supports PowerShell, catering to IT professionals and enterprise automation tasks.

Evolution of AWS Lambda's serverless offering over last 5 year

AWS Lambda has continuously evolved, addressing developer challenges such as cold starts and resource limitations:

- **2019**: AWS introduced **Lambda Layers** to share libraries and dependencies across functions, reducing code duplication.
- **2020**: AWS added **Container Image Support**, allowing functions to be packaged as Docker containers for custom runtimes.
- **2021**: AWS increased resource limits to 10GB of memory and 6 vCPUs, supporting more demanding workloads.
- **2022**: AWS launched **Function URLs**, making it easier to call Lambda functions without needing API Gateway.
- **2023**: AWS introduced **ARM64 support**, improving performance and lowering costs for ARM-based workloads.
- **2024**: AWS rolled out **SnapStart for Java**, reducing cold start times by pre-warming Java functions.

AWS Lambda's evolution reflects a commitment to enhancing performance, expanding flexibility, and addressing cold starts—one of the biggest hurdles in serverless architecture.

Proposed Feature: Lambda AI Companion

As a product manager, I propose **AWS AI Assist**: an AI-powered assistant embedded within the Lambda environment, offering real-time code optimization, debugging suggestions, and personalized recommendations based on usage data.

This feature could improve code quality, reduce costs, and set AWS Lambda apart by providing developers with an AI-driven partner to streamline their workflow.