Subject: Proposed Hosting Architecture and Cost Overview

Dear Lilly,

I hope this message finds you well. I am pleased to present our proposed hosting architecture, designed to provide a robust, scalable, and cost-effective solution for our upcoming project.

\*\*Architecture Overview:\*\*

Attached to this email, you will find a detailed architectural diagram outlining the key components of our hosting infrastructure.

1. \*\*Compute Resources (Amazon EC2 Instances):\*\*  
  - These virtual machines will serve as the backbone of our system. We have chosen Amazon EC2 instances due to their flexibility and scalability. They allow us to adjust computing power based on demand, ensuring optimal performance.

2. \*\*Database (Amazon RDS):\*\*  
  - We've opted for Amazon RDS (Relational Database Service) for its managed database capabilities. This service simplifies database administration tasks, providing high availability, automatic backups, and easy scaling. Given the relational nature of our data, this choice aligns well with our needs.

3. \*\*Content Delivery Network (Amazon CloudFront):\*\*  
  - To optimize content delivery and improve user experience, we're integrating Amazon CloudFront. This CDN will cache static content in edge locations around the world, reducing latency and increasing responsiveness.

4. \*\*Load Balancer (Amazon ELB):\*\*  
  - Amazon Elastic Load Balancer will evenly distribute incoming traffic across multiple EC2 instances. This ensures high availability and fault tolerance, preventing any single point of failure.

5. \*\*Monitoring and Alerting (Amazon CloudWatch):\*\*  
  - We've implemented Amazon CloudWatch to monitor system performance, resource utilization, and application health. This will enable us to proactively address any issues and ensure seamless operation.

\*\*Rationale for Choices:\*\*

1. \*\*Amazon EC2 Instances:\*\*  
  - We selected EC2 instances for their scalability, allowing us to add or reduce computing resources as needed. This flexibility aligns with our goal of efficiently utilizing resources while maintaining optimal performance.

2. \*\*Amazon RDS:\*\*  
  - The managed nature of Amazon RDS significantly reduces administrative overhead. Automatic backups, failover support, and easy scalability make it a suitable choice for our relational database needs.

3. \*\*Amazon CloudFront:\*\*  
  - CloudFront enhances user experience by caching content closer to end-users, reducing latency. This global distribution of content aligns with our goal of providing a responsive application worldwide.

4. \*\*Amazon ELB:\*\*  
  - Elastic Load Balancer ensures high availability and fault tolerance. By distributing traffic across multiple instances, we eliminate the risk of a single point of failure.

5. \*\*Amazon CloudWatch:\*\*  
  - CloudWatch provides real-time insights into our system's health and performance. With customizable alerts, we can promptly address any issues, ensuring uninterrupted service.

\*\*Cost Estimation:\*\*

While I cannot provide exact figures, I can offer an overview of how costs will be calculated and potential variations:

- \*\*Compute Costs (EC2):\*\*  
  - Costs will be based on the type and number of instances deployed. As our application's demand fluctuates, we will utilize auto-scaling groups to dynamically adjust resources, optimizing costs.

- \*\*Database Costs (RDS):\*\*  
  - Amazon RDS costs will be determined by the chosen database instance type, storage requirements, and data transfer.

- \*\*Content Delivery Network (CloudFront):\*\*  
  - Costs will depend on the volume of data transferred and the number of requests. Utilizing CloudFront effectively can help minimize these expenses.

- \*\*Monitoring (CloudWatch):\*\*  
  - CloudWatch offers a free tier with basic monitoring. Additional costs may incur based on custom metrics, alarms, and logs.

It's important to note that costs may vary month-to-month based on usage patterns and any adjustments made to the architecture. Our team will actively monitor expenses and implement cost-saving measures where applicable.

We are confident that this architecture will meet our project's requirements effectively. Should you have any further questions or require additional information, please do not hesitate to reach out.

Thank you for your consideration.

Warm regards,

Shaghayegh Haghbin  
Solutions Architect