Executive Summary

Asianet, a leading vernacular news channel, wanted its current platform to be assessed for maturity. Their current system was unreliable and not performant. HashedIn assessed Asianet’s infrastructure and suggested solutions to achieve a reliable and scalable system.
Problem Statement

Asianet operates in the entertainment broadcasting industry, a market characterized by stiff competition. Asianet’s networking team worked fast, bringing in the latest news before their competitors. However, their current technological systems had numerous glitches that slowed them down. The cost of infrastructure was very high, yet it did not provide the reliability they expected. Asianet required a reliable system that would enable them to go live with breaking news faster. They also wanted a robust Content Management System to augment the efforts of their content delivery team. Also, they had issues with ad monetization as most of the ad failed to load fast.

Business Requirements

Objective

A reliable and cost-effective system that will enable Asianet to broadcast news faster.

Key Requirements

Summarized requirements put forth by client were as below:

- Immediate update on the website as and when news was broadcasted.
- Improve website infrastructure to handle traffic spikes.
- Improve content management system to streamline content delivery processes.
- Address problems with advertisement display on the website to improve advertisement revenue.

Impact and involvement of stakeholders

1. Management team:
   a. Provide a stable platform so the productivity of the team could be accounted for.
   b. Reduce infrastructure cost.
2. Content delivery team:
   a. Enhanced content management system to enable faster content delivery.
   b. Improve caching to broadcast news faster.
3. Technical team:
   a. Reduce 5xx and 4xx errors.
   b. Eliminate dependency on DevOps team.
   c. Optimize database performance and reduce memory utilization.
Our Approach

To assess Asianet’s current platform we took the following approach:

- **Interview with key stakeholders**: we had a detailed discussion with all the key stakeholders to understand the pain areas and their expectations from the assessment.

- **Technology Assessment**: Based on the conversation with tech team we examined the current architecture to find out the gaps. We scrutinized the system with regard to design, reliability, scalability, cost, and performance.

- **Competitor analysis**: We did a brief competitor research, Digital Publishing landscape and Malayalam market analysis.

- **Roadmap and execution plan**: Based on our findings, we defined a roadmap to correct the articulated gaps in the current platform to achieve stability and reliability. We also proposed a mechanism to achieve the potential gains in terms of priorities and timeline.

Assessment Findings

- The infrastructure expenditure was on Akamai as CDN was not buying performance, switching that with AWS CloudFront would save 50% cost.

- The web-servers were under-utilized, therefore downsizing the machines would further cut down the cost without impacting performance.

- There was a heavy memory utilization for carrying out operations like sorting and serializing on heavy objects. Optimizing these implementation could take off the load from the server and reduce CMS crashes.

- The database missed right indexes, adding them could improve database performance.

- There were a lot of third-party packages that added load on the server and affected the performance of the application.
Large objects were being cached in redis that takes up lots of memory and I/O, storing only the details required would help in downsizing redis server.

The dev team could use Elastic Beanstalk to avoid dependency on Operations team.

Apart from these architectural flaws, the application was also missing following features:
  - Broken social media embeds.
  - Search slow and inefficient both in website and CMS.
  - No way to collaborate all external sources to the CMS.
  - CMS crashes frequently hampering productivity.
  - No engagement and segmentation of consumers.
  - Ads do not load thus effecting website monetisation.
  - Design and content were tightly coupled, making them dependant on each other.

**Technology Stack**

- Django
- Postgres
- Redis
- Akamai
- Varnish
- AWS

**Business Outcomes**

The assessment helped the management realize that infrastructure cost was bloated and could be minimized by 50%. Also, the system could scale drastically, serving 3x traffic with minor tweaks. The assessment helped the tech team understand how major features could be made performant and load on the server could be reduced. The execution plan gave a clear picture to all the stakeholders on how a scalable and performant system can be attained.

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