

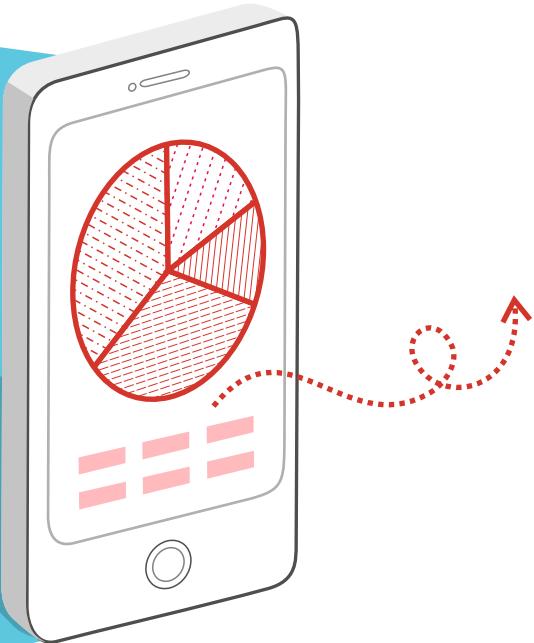


CASE STUDY

O OPERA
MEDIWORKS

Mobile marketing platform

background



- ▶ Opera Mediaworks is a part of Opera Software. It is the world's leading mobile advertising platform.
- ▶ Opera Mediaworks enables advertisers to improve advertising efficiency and monetization by reaching their target audience and publishers efficiently.
- ▶ Headquartered in Silicon Valley, California, Opera Mediaworks has offices in more than 10 countries.
- ▶ Continuing their trend of rapid growth, Opera Mediaworks posted Q1 2015 revenues of \$83.2m – a growth of 162% year on year

“In the advertising world, unless you can transform data into information and information into meaningful insights, it cannot help generate revenues.

For us, the core issue was not only transforming data into insights, but doing it in real time, and crunching a massive amount of data.”

*-Manoj Malhotra
President, Opera Mediaworks*

challenges

▼ Processing large data volumes in real time

Platform limitations on data crunching speeds prevented real time inventory forecasting. This led to unutilized inventory and low ad serving fill rates, which caused significant revenue losses.

▼ Utilizing customer segmentation data for improved ad targeting

Being unable to use customer segmentation data for precise targeting prevented Opera Mediaworks from charging premium rates from advertisers as well as increasing their opportunity costs

▼ Re-engineering the product itself to scale for a very high growth

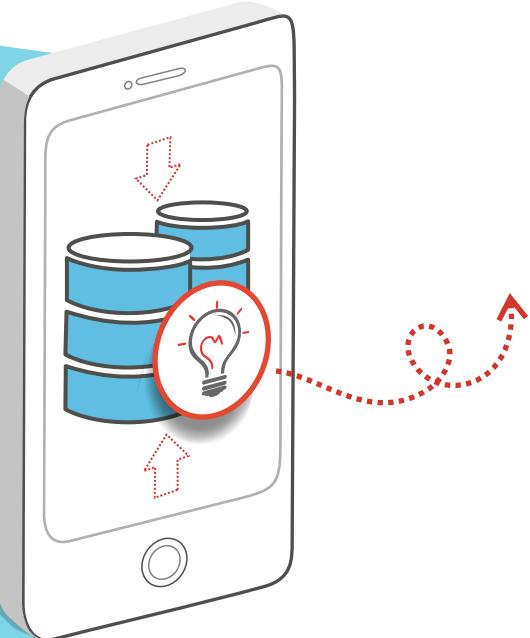
In 2013 over a billion ad requests were processed daily, using over 250 application servers. The business was expecting a 400% growth in the year 2014 and needed to be equipped to handle this growth.

solution

Our solution focused on two main aspects:

- ▼ The ability to crunch large data volumes in real time
- ▼ Re-engineered product capability to scale up for high future growth

The successful delivery of our solution required a well structured plan for which we leveraged our **Talentica Way** methodology. Our approach focused on enabling real time analytics, faster data processing, and rationalizing data storage.

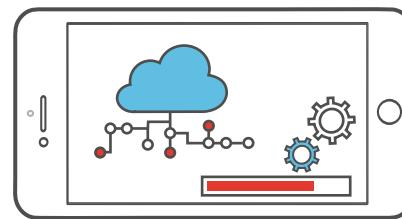


FUTURE PROOFING THE INFRASTRUCTURE



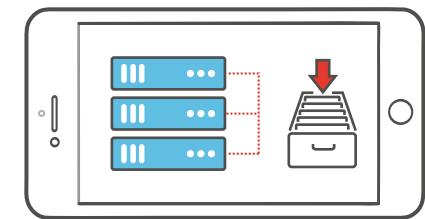
- ▶ We leveraged the existing Amazon Web Services (AWS) platform to enable the system to launch cluster nodes in real time thereby enabling it to auto scale
- ▶ Using a combination of different cluster node types allowed us to maintain speedy transfer rates across clusters, while keeping infrastructure costs low

GRID-LEVEL DATA AGGREGATION AND SUPER FAST PROCESSING



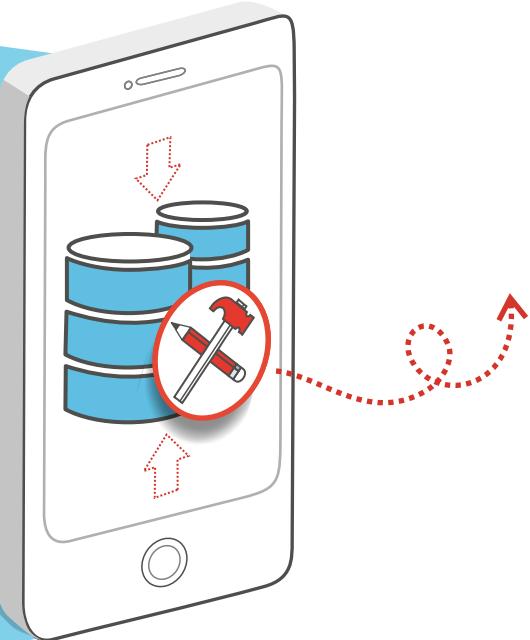
- ▶ Kafka - a distributed high performance queuing system was deployed to deliver high speed data transfer between clusters
- ▶ To seamlessly integrate data and the data processing logic, Amazon's Hadoop based Elastic Map Reduce (EMR) was used
- ▶ To further bolster real time processing we also used Apache Spark

EFFICIENT AND COST EFFECTIVE DATA STORAGE AND ARCHIVING



- ▶ Amazon's S3 services were used for storing raw data in a single, fail-over compliant location
- ▶ To store and analyze data in excess of 60 TB, we used Amazon's Redshift Data Ware house
- ▶ To rationalize the support process for high throughput queries, we used an auto-sharded 15+ node cluster with a replica set MongoDB cluster

technology



- ▼ Big Data:
 - * Amazon EMR (Hadoop),
 - * Apache Spark,
 - * Amazon Redshift,
 - * MongoDB,
 - * Apache Kafka
- ▼ Cloud: Amazon Services – S3, ec2 , ELB, Cloudfront, CloudTrail
- ▼ Programming Languages: PHP, Java, Objective C, C#.Net
- ▼ Mobile: iPhone, Android, Blackberry
- ▼ Databases: MySQL Cluster

results

OPTIMIZATION OF REVENUE REALIZATION



- ▶ Real time inventory reports brought transparency into the system
- ▶ Optimized inventory utilization in serving the maximum number of ads

PREMIUM RATES CHARGED FOR PRECISE TARGETING



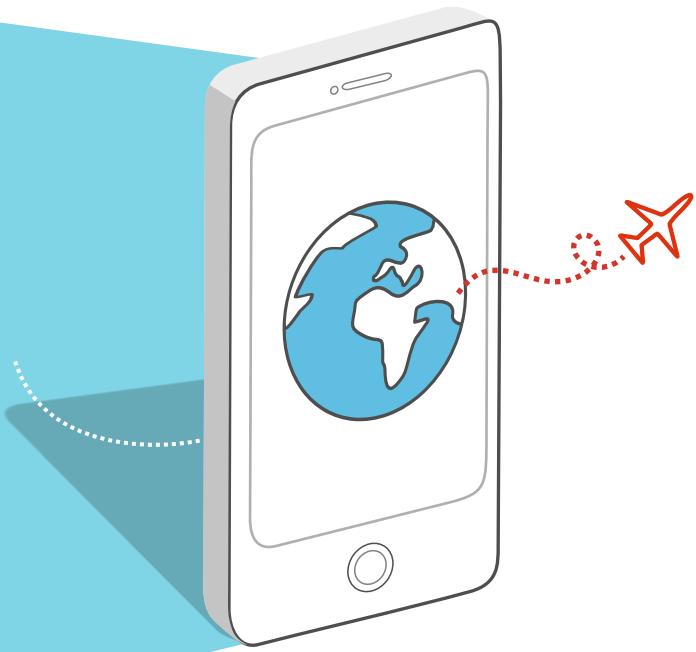
- ▶ Improved analytics reporting enabled parameter wise (demographics, click performance, etc) customer sifting and targeting
- ▶ This helped convince advertisers to pay premium rates for ad serving

SIGNIFICANT COST REDUCTION



- ▶ Effective use of the custom Big Data solution lowered operational costs by 75%
- ▶ The solution improved the performance of the system 5x times

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