



## CASE STUDY

# Re-engineering a patient portal



### CONTEXT

Customer acquired a patient portal and decided to promote it to their existing customers. The portal had functionalities for appointment scheduling, viewing health records, bill payment, messaging and patient education. The portal had controlled access privileges.



### THE CHALLENGE

The portal, which was handling 3 million patients before the acquisition, now had to service another 20 million patients. The patient portal had never been subjected to performance testing since inception. This became a handicap now that the portal had to handle seven times its original load. The portal was built using legacy technologies. Upgrade to any technology became too complicated as a long chain of dependencies required all technologies to be upgraded.

The portal experienced excessive delays (72 hours in some cases) in relaying SMS messages to newly onboarded patients. Because of the delays, users made multiple requests, choking the communication channels.

### THE CUSTOMER

The customer is a leading developer of Electronic Health Record (EHR) software and Practice Management (PM) systems that cater to the US healthcare industry.



## HEALTHASYST SOLUTION

HealthAsyst partnered with the customer to re-engineer the portal to make it scalable, extensible, and maintainable. The team upgraded the system's technology stack, starting with the front-end language (Angular 10), consolidating disparate Angular versions across different screens. The database was migrated to a cloud-based server for improved performance and scalability.

Dependencies were eliminated step-by-step, and security-related bugs were cleared before performing a system-wide upgrade to enhance maintainability. The implementation of unique IDs for transactions between layers brought in observability. Migrating from monolithic to microservices architecture facilitated easier error tracing and root cause analysis for organized maintenance.

Delays in relaying SMS messages were resolved by implementing priority queues for time-sensitive messages, optimizing code, and scaling queues from 1000 to 2048. With browser-based testing, the team ensured performance levels didn't drop even without performance testing. User access tiers were enhanced to meet the needs of corporate clients.



## THE RESULT

The re-engineered portal was compliant to accessibility and security requirements. It could accommodate diverse user privileges and seamless introduction of new features as needed. The portal seamlessly scaled to accommodate 20 million patients allowing 2000 new customers to be onboarded. SMS relay time was reduced to just 5 seconds for 95% of messages. All transactions had a response time of less than 3 seconds.

## ABOUT HEALTHASYST

HealthAsyst powers the healthcare industry through product engineering, and digital transformation services. Over the last 24+ years, HealthAsyst has partnered with premiere US healthcare organizations, ISVs, payers, providers, and more to solve healthcare challenges by leveraging technology. With our deep expertise in the healthcare domain, regulatory frameworks, product engineering best practices and a product mindset, we take ownership of solving technology challenges for our customers so that they may focus on their core business.

[www.healthasyst.com](http://www.healthasyst.com)

[itservices@healthasyst.com](mailto:itservices@healthasyst.com)

### US Office:

HealthAsyst  
746 Holcomb Bridge Road, Norcross,  
GA - 30071 P: +1 404 596 8228

### India Office:

HealthAsyst  
147, III Floor, Anjaneya Techno Park,  
Old Airport Road, Bangalore 560008.  
P: +91 80 4266 7700