Persistent | **Google** Cloud

Healthcare and Hospital Solutions

Persistent and Google have partnered to simplify and transform healthcare, improving patient outcomes and optimizing revenue cycles by combining the power of technology, innovation, and digital transformation.

Challenges

The healthcare industry has been challenged to figure out how to transition to more digital ways of communicating with patients and meeting their technological expectations.

Telehealth: 84% of patients are more likely to choose a provider who offers telemedicine. The healthcare industry needs to pivot to ensure its technology framework supports demand.

Patient Experience: According to the National Center for Biotechnology Information, a majority of patients wish to schedule, view lab results, and manage their patient care securely online.

Security: The healthcare industry is challenged with implementing systems to ensure patient HIPPA compliance & privacy across all digital initiatives from outside threats.

Invoicing and Payment Processing: Healthcare institutions are challenged to provide a frictionless digital online patient experience beyond telemedicine including payments and invoicing.

Insurance Payments: Nearly 20% of all U.S. households have medical debt, according to the U.S. Census Bureau. Healthcare organizations are facing many hurdles to collect patient financial responsibility payments from insured and uninsured patients.

Unified Healthcare Institution Data: Healthcare institutions are currently diverse systems with siloed legacy department patient data (i.e. accounts payable versus patient intake).

Staffing Shortages: Hospitals and healthcare systems are forced to do more with fewer workers, prompting departments to seek out technology to streamline workflow processes.

Solutions We Deliver

Telemedicine / ML Virtual Learning: Virtualize and expand workforce training, expand patient care, telemed experience to support scheduling, provider selection, and aftercare requirements.

Revenue Cycle Optimization: Transforms manual revenue cycle management programs including authorization and denials management processes to improve revenue recognition of patient financial responsibility payments for insured and non-insured patients.

Intelligent Automation: Leverages digital process automation tools to help hospitals and agencies implement enterprise applications in weeks not months and years.

Data Modernization: Provides a single source of truth for unstructured and structured analytics platforms with equal focus on health monitoring and security and governance.

Digital Patient Experience: Omnichannel experience for patients, care providers, and agents designed to enhance patient interaction and care delivery.

Healthcare Interoperability: Secure and easy access to health data for physicians and providers to deliver a frictionless, coordinated, data-driven patient care experience.

Population Health Management: Enable holistic care outcomes with reduced care and risk gaps and a more integrated care plan lifestyle.

Clinical / Disease Research Modernization: Supports healthcare genomic automated data management lookups by creating a data lake architecture for Clinical Trial Management Systems.

Outcomes

- Streamlined, optimized, and enhanced patient citizen experiences and processes.

- Increased employee productivity and reduced provider and healthcare employee burnout.

- Improved health outcomes and health equity for all patients and citizens.

- Affordable healthcare in the most cost-effective setting including hospitals or at home.

- Data-driven care — Secure HIPAA / PCI complainant and easy access to patient records.

- Expanded virtual training and telemedicine appointments, career paths, and patient care.

- Transformed revenue cycle management process including authorization and denials and improved patient financial responsibility payments revenue recognition.

Google & Persistent Healthcare Use Cases

Hackensack University Medical Center delivers software-driven healthcare with assistance from Persistent. A member of Hackensack Meridian Health, it's recognized as one of the most progressive medical institutions in the country.

Challenges

> Medicine is not just about science — it's also about human beings. And likewise, technology by itself cannot do anything. We must understand how consumers like to be treated, which demands an adaptive, agile team that can respond quickly to customer needs and changing technologies.
>
> **Dr. Shafiq Rab**, SVP and Co-CIO of HackensackUMC

Solution

o HackensackUMC is one of the first health systems in the nation to link patient-generated data from personal fitness devices and mobile apps to its electronic medical record, enabling clinicians to have a more complete view of a patient's history.

o HackensackUMC also introduced the HackensackUMC Mobile Access app, which allows users to look up symptoms, find doctors, make appointments, and receive reminders for upcoming appointments. If patients use MyChart, they can access test results, send their doctors data from fitness trackers and send and receive messages from their doctors. The app also helps reduce paperwork. Before seeing a doctor, most patients are greeted by a clipboard with several forms to fill out. On the app, when users first make an appointment they must register as a patient. This involves taking a selfie, scanning their driver's license to verify their identity, scanning their insurance card, followed by filling out forms which can all be done at home.

Outcomes

The medical center worked with Persistent (BSE & NSE: PERSISTENT), a world leader in developing large-scale software-driven healthcare solutions, to deliver the best possible patient experience. HackensackUMC is one of many transformative healthcare solutions Persistent has worked on around the world, reflecting the huge opportunity to use Big Data and software-driven environments to reshape doctor / patient interaction.

HackensackUMC was also proud to accept President Obama's call to action to improve the interoperability of electronic health records as part of the President's Precision Medicine Initiative. HackensackUMC is one of a very select group of organizations that has accepted and delivered on this challenge based on the medical center's strength in healthcare information technology, early adoption and advancement of interoperability standards as well as its ongoing commitment to patient experience.

YouGenomics brings Genomics Data Analysis to Labs without Bioinformatics Resources

YouGenomics essentially gives research, government, and hospital labs access to high-powered computational resources and bioinformatics expertise available on demand.

Challenges

When bioinformatics expert Dr. Avinash Abhyankar looked at the genomics landscape, they noticed

- **Labs and institutions were divided into haves and have-nots:** Those with computational and analytical experience to deal with enormous genomics datasets, and those that could produce but not interpret the "omics" data. Dr. Abhyankar launched YouGenomics with a vision to make these analytical capabilities available to hospitals and small research labs.

- The main goal was to make the analysis of these kinds of high throughput studies available to everyone, not just a few big labs with big funding.

- Dr. Abhyankar knew it didn't make sense for each lab or research facility to build its own compute infrastructure to manage these projects since it would require too much maintenance and investment and wouldn't scale as needed.

Solution

MediaAgility, now acquired by Persistent, developed a platform for YouGenomics that automates the analysis of next-generation sequencing data and reduces the turnaround time as well as saves on heavy investments. DNA / RNA sequence analysis typically involves extensive and time-consuming manual processing. But this application is scalable, secure, and available for users around the world.

Outcomes

- With Google Genomics, the YouGenomics team can use existing data-processing pipelines or create their own, which lets them consider different approaches to find the best one for each project rather than being stuck with a one-size-fits-most pipeline. They can now choose their proprietary pipeline or Google's version of the GATK best practices pipeline for processing DNA sequence data for any new dataset. Google is doing a great job of simplifying these problems and letter users focus on the science. This ease of use also keeps YouGenomics lean, with no staff needed to manage the cloud platform.

- Speedy queries for clients around the world:

  - **YouGenomics** has provided many labs with lightning-fast data analysis. This has been a crucial component in that success, according to Dr. Abhyankar. "Storing whole genome and whole exome sequencing data in conventional databases makes it slow to query, and performance takes a hit from having hundreds to thousands of samples in there," he says, noting that a typical human genome contains about 4 million variants that must be queried for any analysis. "We use Google BigQuery for storing and querying genome and exome sequencing datasets, and it simplifies things quite a lot."

  - "GCP has also allowed the team to collaborate with labs all over the world. Clients anywhere can access the analysis and results through Google Genomics in a secure and HIPAA-compliant environment. This would not have been feasible for us if we decided to build hardware on our own." Dr. Abhyankar.

About Persistent

Persistent Systems (BSE & NSE: PERSISTENT) is a global services and solutions company delivering Digital Engineering and Enterprise Modernization to businesses across industries. With over 23,900 employees located in 19 countries, the Company is committed to innovation and client success. Persistent offers a comprehensive suite of services, including AI-enabled software engineering, product development, data and analytics, CX transformation, cloud computing, and intelligent automation. The Company is part of the MSCI India Index and is included in key indices of the National Stock Exchange of India, including the Nifty Midcap 50, Nifty IT, and Nifty MidCap Liquid 15 as well as several on the BSE such as the S&P BSE 100 and S&P BSE SENSEX Next 50. Persistent is also a constituent of the Dow Jones Sustainability World Index. The Company has achieved carbon neutrality, reinforcing its commitment to sustainability and responsible business practices. As a participant of the United Nations Global Compact, Persistent is committed to aligning strategies and operations with universal principles on human rights, labor, environment, and anti-corruption, as well as take actions that advance societal goals. With 327% growth in brand value since 2020, Persistent is the fastest-growing IT services brand in the 2024 Brand Finance India 100 Report.

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