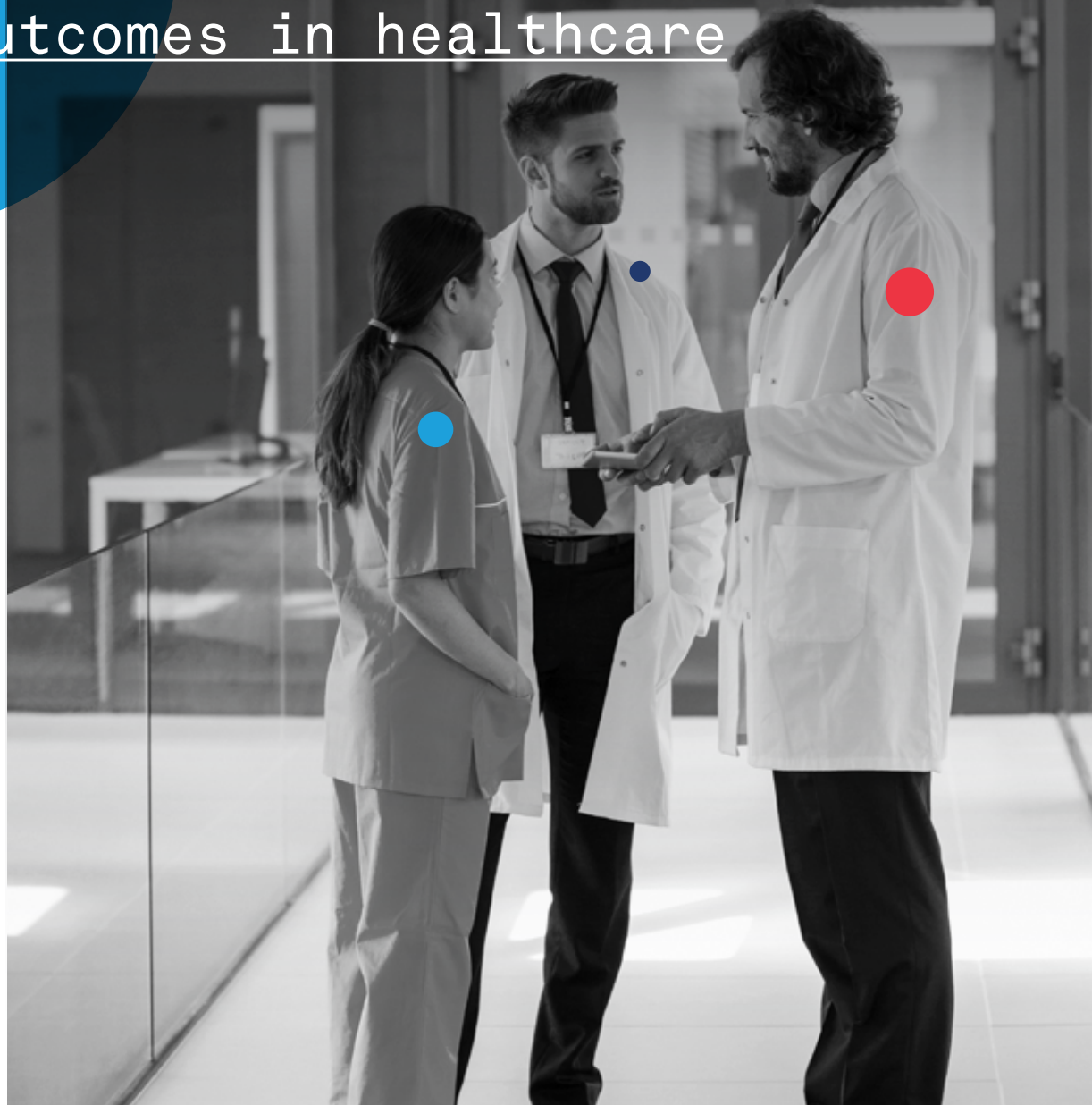


Adopting a cloud-first
approach for better
business differentiation
and outcomes in healthcare



The triple aim of healthcare is to reduce cost, improve outcomes and deliver better patient experience. These goals are largely dependent on the availability of healthcare data and the ability to analyze it. Fortunately, there is no dearth of healthcare data today. According to analysts, the volume of healthcare data which was at 153 exabytes in 2013 is projected to swell to 2,314 exabytes by 2020¹. Adding to the ability to access and rapidly analyze newer forms of data, are technologies like speech-to-text, Artificial Intelligence platforms and Big Data tools. These technologies have the potential to accelerate initiatives such as Accountable Care Organizations (ACO's), Patient Centric Medical Homes (PCMH), telemedicine and bundled payments. These, in turn, can bend down cost curves, improve outcomes and deliver exceptional patient experience.

Yet, the biggest barrier to achieving the triple aim of healthcare has been the legacy approach to data – one that focuses on custodianship instead of collaboration. Initiatives such as ACO, PCMH and bundled payments depend on data sharing between healthcare organizations. The quick and speedy route to data sharing in our opinion is a cloud-first approach.

Recent announcements such as the ones from Amazon, Berkshire Hathaway and JP Morgan, and continued rapid disruption in healthcare led by consumer-centric entities (CVS-Aetna, Cigna-Express Scripts, etc.) point in one direction; the pace of change in innovation and transformation in healthcare, must accelerate as large employers and consumers will not standby and wait for the industry to fix itself.

Adopting a cloud-first approach has become a necessity for the journey towards differentiation and better business outcomes for payers and providers alike.

Cloud is much beyond infrastructure and application hosting

Analytics and Business Intelligence	Amazon Web Services	Athena, EMR, CloudSearch, Elasticsearch Service, Kinesis, Redshift, QuickSight, Data Pipeline, Glue
	Microsoft Azure	HDInsight, Stream Analytics, Data Lake Analytics, Databricks, SQL Data Warehouse
	Google Cloud Platform	BigQuery, Dataflow, Dataproc, Datalab, Pub/Sub
Machine Learning and Predictive Analytics	Amazon Web Services	Amazon ML, Amazon SageMaker
	Microsoft Azure	Azure Machine Learning, ML Studio, Cortana Intelligence Gallery
	Google Cloud Platform	Prediction API, Google ML Engine
Speech and text processing APIs	Amazon Web Services	Lex, Transcribe, Polly, Comprehend, Translate
	Microsoft Azure	Speech, Language
	Google Cloud Platform	Dialogflow, Cloud natural language API, Cloud speech API, Cloud translation API

Image and video processing APIs	Amazon Web Services	Amazon Rekognition
	Microsoft Azure	Azure Cognitive Services - Vision
	Google Cloud Platform	Cloud Vision API, Cloud Video Intelligence
Internet of Things	Amazon Web Services	AWS IoT Core, FreeRTOS, Greengrass, IoT 1-Click, IoT Analytics, IoT Button, IoT Device Defender
	Microsoft Azure	Azure IoT Suite (IoT Hub, Machine Learning, Stream Analytics, Notification Hubs, PowerBI)
	Google Cloud Platform	IOT core
Mobile Apps and Backend	Amazon Web Services	AWS Mobile Hub, Amazon API Gateway, Amazon Pinpoint, AWS AppSync, AWS Device Farm, AWS Mobile SDK
	Microsoft Azure	Mobile Apps, Xamarin Apps, HockeyApp, Application Insights, Intune
	Google Cloud Platform	Firebase, Cloud Functions, Mobile App Backend Services

Table 1 - Technologies available on cloud beyond Infrastructure and Application Hosting



An impact beyond infrastructure and applications

Cloud technology is in the second decade of its lifecycle now, and is mature, secure, and simply better than most organizations can create for themselves. Any organization not leveraging cloud will underperform versus its competitors. The benefits of cloud for speed to market, agility,

and innovation mean that it should be an important consideration in any healthcare CXO agenda. Adopting a cloud strategy does not mean merely moving existing IT infrastructure and applications to a cloud provider while keeping applications and user experience static. Cloud strategy for healthcare payers and providers should hinge on building and delivering differentiation across:

Patient or Member Experience	Worker Experience	Partner Experience
<p>Oscar Health, Stride Health, Dr On Demand, Virta Health, etc., are great examples of start-ups that use new age digital tools for better patient engagement. Most of these startups are 100% cloud native. Transformative patient and member experience can be best enabled by leveraging cloud and cloud based technologies, and this is vital for success of any healthcare business.</p>	<p>Workday, Salesforce, Oracle and other enterprise applications today reside in the cloud, delivering an always on and enhanced user experience for workers. However, core healthcare applications such as Claims Processing Applications, EMR's, Call Center Tools, etc., still don't leverage cloud effectively. Providing a better worker experience will help healthcare organizations attract the best staff and enhance patient experience.</p>	<p>Healthcare is the only industry where data sharing is vital yet poorly executed. The barrier has been both a custodian approach to data and an IT policy that revolves around the data center. A cloud-first approach will enhance the sharing of data, both within healthcare organizations as well as with partners. Better data sharing will lead to empowered partners and, therefore, satisfied patients.</p>

Healthcare corporations have started to use cloud effectively to differentiate themselves. As an example:

Healthcare.govⁱⁱ: Better member experience and collaboration, achieved by leveraging cloud.

The U.S Department of Health and Human Services, responsible for the Healthcare.gov portal, recently adopted cloud services to enhance the member experience beyond what their traditional data center model could deliver. The healthcare.gov portal was built for consumers to find information and sign up for coverage under the Affordable Care Act. Adopting cloud has led to transformational benefits such as a faster launch, better experience and greater visibility into the environment. They were able to launch new features, like identity management, comparing insurance plans and eligibility determination tools. Moving to the cloud made it possible to scale up and scale down their systems, based on peak insurance sign-up periods.

Delivering tangible business outcomes

Cloud adoption offers major opportunities for healthcare providers and payers to build flexible, nimble and customer-centric business models that drive performance and growth. At a minimum, cloud helps save costs by moving out of the data center.

Healthcare organizations should begin by outlining business outcomes they are looking to achieve by moving to the cloud. Business outcomes for healthcare organizations should, at a minimum address the following:



Health outcomes: Improved population health, improved detection and treatment of chronic conditions, preventative measures keeping the cost to value in check.



Commercial outcomes: Increased membership, reduced cost of care, reduced Medical Loss Ratio, reduced SG&A and improved profits.



Experience outcomes: Higher net-promoter scores for patients/members, high recommendation from patients and partners alike, faster and more accurate provider payments.

Healthcare corporations are leveraging cloud for better business outcomes: As an example:

Oscar Insuranceⁱⁱⁱ: How Oscar beat traditional insurers at their own game, by creating real-time experience for consumers.

Oscar wanted to provide intuitive, simple and human insurance plans for their members. And, they had three months to build a company that would do this. As they were starting up, they realized that cloud is the only way to go, to be able to empower their members to make better decisions about care. Oscar adopted cloud to build rapidly scaling systems, leveraging the security that cloud offers in highly regulated environments. Moving to cloud helped Oscar provide complete transparency to members through automation, at lower costs. By using cloud, Oscar was able to process more than 25 million historical insurance claims in hours, and launch its platform on time.

Drawing a roadmap for your cloud journey

It is critical for a healthcare payer or provider to determine which business initiatives drive maximum differentiation, while delivering the most effective business outcomes. In addition, they need to determine how a cloud-first approach can accelerate these business initiatives and deliver the desired results. To do this, a cloud strategy should consider the five-stage approach:



Assess: Prioritize cloud initiatives based on business differentiation and business outcomes – this includes portfolio analysis and readiness assessment.



Plan: Create a detailed plan (current state/fitment, change management) to roll-out cloud across the enterprise.



Execute: Work with partners to carry out the cloud transformation effort across the organization.



Govern: Create a governance model that is aligned with industry regulations and the organization's finance management goals.



Innovate: Increase differentiation and disruption by continuously innovating, using emerging cloud-based tools and technologies.

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