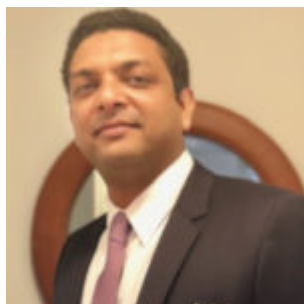


Why Cloud is Strategic and Challenging for Healthcare Organizations

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The following is a guest article by Heather Haugen, PhD and Darshan Nandi from [Atos](#).



Cloud isn't as complex or risky as we like to believe for healthcare, but it does have far-reaching impacts across IT, business, and clinical operations. Many healthcare leaders remain hesitant about moving application or data to a Cloud platform but adhering to a few best practices can dramatically decrease the risk and provide some much-needed scale, cost savings, and data analytics. The value of leveraging a Cloud platform to drive digital transformation in a healthcare organization is the ability to personalize the patient health journey, improve data-driven decisions, and accelerate precision medicine while adhering to regulatory requirements.

Strategy, Assessment and Road Map

Like many healthcare IT initiatives, Cloud shouldn't be considered a short-term project with a beginning and an end. Cloud is an operational state; it is a more effective way to manage workload, processes, and data. This requires in-depth analyses of current application, data, and storage needs. This assessment should include insights from business, clinical and IT experts across the organization. A comprehensive assessment will best inform the Cloud platform roadmap and implementation plan.

While strategizing, it's important to address the cultural change, align business and technology stakeholders, and understand the business drivers, objectives and KPIs by mapping business outcomes to specific solutions and technical capabilities.

- Business Capability
 - Business Perspective: Value Realization (Capex vs Opex), TCO, ROI
 - People Perspective: Roles and Readiness
 - Governance Perspective: Prioritization and Control
- Technology Capability
 - Platform Perspective: Applications and Infrastructure
 - Security Perspective: Risk and Compliance
 - Operations Perspective: Manage and Scale

Once a strategy is in place, it's important to create a migration readiness assessment plan, which includes several specific goals: identify the landing zone, define governance & enablement, create an



prepare for Day One operations.

Defining the roadmap with target dates helps meet customer SLA and KPI. The Cloud journey starts with building a strong foundation for a large-scale migration. The foundation includes setting up core technologies like Cloud IAM, Networking, Monitoring, Security, Billing and Cloud Identity. Once the Cloud foundation is set up, it allows clients to take advantage of accelerators in building the technology stack and applications.

Cloud transformation and migration

Healthcare organizations typically select a hybrid cloud structure to accommodate complex needs and strict regulatory requirements. A hybrid cloud allows healthcare organizations the flexibility to determine the level of security required for specific applications and data within their complex environments. During this phase, defining the expected outcomes from Cloud provides a roadmap and accountability to achieve the value from the effort. Healthcare organizations are also looking to modernize their IT environments, retire applications, gain operational efficiencies and migrate integration engines with millions of transactions per day. The focus should be on driving digital outcomes based on new approaches to health care delivery.

We must consider specific business, security, technical, and cost considerations while designing migration roadmaps. Organizations often start with disaster recovery as a service for clinical application on the Cloud before moving production workloads and subsequently offering end-to-end support. The outcomes of such a migration project include predictable IT costs as well as a faster and more agile Cloud-based solution supporting mission-critical IT needs.

Cloud Migration Design should include healthcare migration best practices to comply with and adhere to regulations. Following best practices also reduces time to migrate while lowering cost and risk and discuss total cost of ownership (TCO) and return on investment (ROI) for a Cloud migration.

Migration phases include integrating and validating in preparation for Day One operations: Accelerate the movement of workloads to reduce risk and improve the outcome; achieve the business benefits of lower operating costs and gaining agility and scalability; and optimize applications, processes, operations and costs. This phase typically takes 6 to 12 months to execute.

Once the workloads are on the Cloud, it's important to optimize the services to ensure the Cloud migration achieves the business outcomes.

Engage the right stakeholders

Organizational change management remains the most critical success factor for all large complex IT initiatives, and many organizations fail to give this the attention it deserves. This includes communication, governance, training, process, risk management, assigning accountability to define

functional authority, and establishing role clarity. A communication plan identifies the stakeholders, the cadence and content of communication, and the most effective way to reach those impacted. Defining



deployment and ongoing needs for new employees.

Establishing leadership at all levels: Integration efforts require significant, high-quality resources, including committed members of the executive team. Cloud migration will help achieve unique values when there is alignment with the right stakeholders from both business and technology. Some unique values include achieving patient value-based care, being ready for potential shifts due to regulatory impacts, improving population health, and preparing for future trends in addressing big challenges and uncertainty.

Cloud management and optimization

Finding success in cloud has moved from 'why cloud' to 'how to optimize the services that are on the cloud?' KPI that helps customers manage business on cloud, TCO, ROI, agility, elasticity, scalability concentrate on their core services and innovation are a few examples. Cloud computing benefits organizations by giving them the ability to trade capital expense for operational expense, gain advantage from massive economies of scale, make agile capacity decisions, increase business speed and agility, stop running and maintaining data centers, and go global in minutes.

Atos continues to help our healthcare customers in cloud management and optimization. We have helped companies in Application-led Modernization, Data Modernization & Intelligence and Platforms & Innovation

- Application-led modernization: Atos is well positioned to lead with pro-active, holistic, application migration and modernization. These can target on-premise data centers and deliver business outcomes and agility by migrating to Cloud.
- Data Modernization and Intelligence: the movement of data to the cloud will continue to be a dominant force in coming years as healthcare companies continue to transition their data strategies rapidly to a cloud-first model. They are doing this to apply AI/ML on all the data to create maximum value for their business.
- Platforms and Innovation: Atos has helped optimize some of the workloads on the cloud, focus on is enterprise workload migration as well as core industry platforms. Forbes estimates that 83% of enterprise workloads will be in the Cloud by 2020. This area encompasses migrating workloads of enterprise systems to Cloud and operating from Cloud. These include Windows/SQL, SAP on Cloud, Oracle on Cloud and Cloud-based Contact Center.

Atos has a proven track record with large Cloud platform transformations. With new business models and processes, we provide guidance on restructuring for agility and speed of response, assessing risk and management, conducting dependency and inter-operability mapping and designing recovery and resilience into new structures and processes. At the application level, we ensure applications are built

and implemented with 24x7 availability and consistent performance. We map dependencies and interactions and define and implement Disaster Recovery requirements. Atos has a strong organizational



Best Practices:

1. **Strategy, assessment and roadmap** – gather information about the current state and establish the goals for your cloud migration aimed at imparting insights and prioritizing planning to maximize cloud capabilities to enable digital transformation
2. **Cloud transformation and migration:** The outcome of this stage is a new operating model for your business for innovating more quickly, effectively and efficiently.
3. **Engage the right stakeholders**– ensure business, IT and clinical leadership have fully engaged in planning your cloud strategy
4. **Cloud management and optimization:** Execute with a Cloud Management Platform fostering innovation while providing services and advanced analytics for precision cost control, governance, security and accountability.

About the Authors

Heather Haugen PhD is the Chief Science Officer for Digital Health Solutions for Atos. Haugen holds a faculty position at the University of Colorado Denver- Anschutz Medical Center as the Director of Health Information Technology, where she actively mentors- doctoral students and teaches courses. She is also the author of [Beyond Implementation: A Prescription for the Adoption of Healthcare Technology](#).

Darshan Nandi is the leader in Cloud and Digital Services for Healthcare and Life Sciences for Atos NA. Helping enterprises transform and addressing customer's needs on their digital or cloud transformation journey. He is also the author of a few Cloud blogs including [Application Management Paradigm for a changing Technology Landscape – Addressing the cloud](#) and [Healthcare Cloud: The Road to Innovation](#)

Inbal Vuletich serves as the editor for Atos Digital Health Solution publications.

About Atos

[Atos](#) is a global leader in digital transformation with 120,000 employees in 73 countries and annual revenue of € 11 billion. Atos Positioned as a Leader in Gartner Magic Quadrant for Data Center Outsourcing, Hybrid Infrastructure Managed Services, Managed Workplace services, Cloud, Cybersecurity and High-Performance Computing, for Both Europe and North America, the Group provides end-to-end Orchestrated Hybrid Cloud, Big Data, Business Applications and Digital Workplace solutions through its Digital Transformation Factory.

Atos has completed one of the world's largest hybrid migration and is a leader in hybrid orchestrated cloud for third year in a row according to Gartner Magic Quadrant.

The Atos healthcare business has a vast set of core competencies including a dedicated EHR team with a tremendous amount of experience with Epic and clinical data. This is complimented by the Atos Scientific



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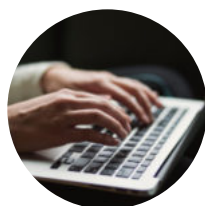
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About the author



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