



A Three-step Approach to the Cloud Transformation of your On-premises Data Warehouse Ecosystem

Embracing the cloud | Journey to the cloud | Living on the cloud



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Businesses across industries generate massive amounts of data about their customers, products, services, social media messages, operations, surveys, marketing insights, machine data, etc. Their data warehouse (DW) serves as a central repository of information from multiple sources and also delivers insights for business decisions.

The amount of data that is generated, reported and analyzed as a critical function of business intelligence and analytics is reflected in the growth of the data warehousing market.

The data warehousing market revenue is set to cross USD 30 billion by 2025¹ and the North America data warehousing market is projected to dominate the global industry with a share of above 40% by 2025² due to high adoption of cloud services, robust ICT infrastructure, and rising popularity of big data analytics.

IDC predicts that the Global Datasphere will grow from 33 Zettabytes in 2018 to 175 Zettabytes by 2025 and that 49% of the world's stored data will reside in public cloud environments³.

Even as the volume, variety, velocity and use cases of data continue to grow at a dizzying pace, traditional data warehouses are finding it increasingly challenging to hold, analyze and scale with speed and accuracy. The prohibitive cost of storing and managing massive volumes of data is also compelling on-premises data warehouses to explore the benefits of cloud architecture. This is especially true for data warehouses and MPP environments running on legacy appliances like Teradata and Exadata, or end-of-life appliances like Netezza.

According to Gartner, the future of the database market is the cloud and that by 2022, 75% of all databases will be deployed or migrated to a cloud platform, with only 5% ever considered for repatriation to on-premises. This trend will largely be due to databases used for analytics, and the SaaS model⁴. "We also believe this begins with systems for data management solutions for analytics (DMSA) use cases - such as data warehousing, data lakes and other use cases where data is used for analytics, artificial intelligence (AI) and machine learning (ML)", said Donald Feinberg, distinguished research vice president at Gartner⁵.

Benefits of a data and analytics infrastructure on the cloud

- Easy to scale for business demands
- Supports high-performance computation
- Seamless self-service capabilities through sandboxes for exploration and advanced analytics
- Lowered TCO due to avoidance of administration, systems management and software upgrades
- Increased data access for global delivery

While businesses with on-premises DWs, BI and analytics recognize the benefits of migration, they also need reassurance on the risks and challenges of modernizing their infrastructure for the cloud. Concerns include:

- Assessing the cloud readiness of the data landscape (ETL, Database and Reports)
- Which cloud transformation model to adopt (Single Cloud, Multi-Cloud or Hybrid Cloud)?
- What cloud services are appropriate for the business?
- What to migrate and what to reengineer from the ETL, database objects (tables, macros, views, procedures, functions and triggers) and visualization layer?
- Ensuring business continuity during transformation
- Minimizing the cost of cloud transformation
- Data ownership and management on the cloud
- Security of critical data and insights on the cloud
- Easy accessibility of data by more business users



It is possible to eliminate risks and leverage the full potential of cloud architecture with an expert and holistic approach to migration

A Three-Step Approach to Cloud DW, BI and Analytics

Migrating BI and analytics along with the DW or independently to the cloud is a complex task and can go wrong without careful planning. To ensure a cost-effective, timely and successful migration, we recommend a three-step approach:

Embracing the cloud

Journey to the cloud

Living on the cloud

EMBRACING THE CLOUD

- Cloud readiness assessment of the existing data and analytics landscape
- A deep discovery of the data and analytics landscape including schema, metadata, databases, ETL, reporting and data visualization

Assessment

Hexaware, in collaboration with TDWI, has built an extensive questionnaire to gauge the on-premises DW, BI and analytics landscape and reveal the cloud adoption readiness of an enterprise. The length and depth of the questionnaire are aimed at extracting all the relevant details and will become a valuable tool in assessing the readiness of the data warehouse for cloud transformation. The questionnaire will assess organizational, data, IT, analytics and governance readiness to give a clear picture of the cloud transformation roadmap. The responses will help to generate a feasibility score that can be used to advise the leadership team on what areas need to be addressed before undertaking the cloud journey.

Deep discovery

The next step is a deep discovery and evaluation of the DW application metadata, schema, ETL process, reporting and data visualization. In this phase, we recommend a comprehensive evaluation of the ETL function as it is one of the most complex and important layers of a data warehouse. It is also highly time-consuming, as it involves extracting data from different sources, cleaning it and uploading it into the target database. A deep discovery of the on-premises ETL function will help to understand the complexity in the migration process and to ensure that the ETL process on the cloud is seamless.

The second area of evaluation will be the reporting and visualization layer. A deep discovery of this layer should analyze the metadata, physical, logical and semantic layer of the reports. This will help to identify unwanted and duplicate reports and migrate only important, useful, and incisive reports to the cloud. A consolidation of the data visualization landscape also contributes to improved user experience and user-friendly, data-driven outcomes.

The success of cloud transformation depends on a deep discovery and thorough assessment of all layers, including metadata, ETL and data visualization

JOURNEY TO THE CLOUD

An incremental approach using an MVP

Post assessment and deep discovery, the plan for cloud migration should begin small. An incremental approach vis-à-vis a big-bang approach will help to observe the journey and draw lessons without any risks or disruption to the business.

The incremental process involves using an MVP (Minimum Viable Product) as an important migration strategy. It is an excellent starting point as it validates the migration approach and ensures that all specific customizations for maximizing automation are identified and implemented. It also helps to build a roadmap for the transformation.

Full-fledged transformation

Armed with all the learnings and insights from the MVP, a full-fledged transformation of the DW or BI and analytics systems can begin in a factory model.

Starting with the migration of metadata with all its tools like data inventory, semantic framework and data lineage will help in ensuring business continuity. Metadata management techniques will help to look at the data across its entire lifecycle and therefore is core to the data strategy of an enterprise.

All key processes of transformation including data warehouse platform assessment, data warehouse migration, metadata management, ETL interfaces and visualization should be automated to make the transformation agile and cost-effective while ensuring business continuity and smooth operations. Enabling data governance is also a critical aspect to be considered as it will allow for increased user adoption.

Automation enables the transformation of an on-premises DW, BI and analytics eco-system to a cloud environment rapidly without disrupting the business

LIVING ON THE CLOUD

Managing analytical applications and services on the cloud requires a shift in approach from an on-premises eco-system. Here, we list the areas that require special focus:

- Monitoring usage and scaling up or down to minimize cloud wastage
- Investing in cloud architecture skillsets for expert management and supervision
- Ensuring compliance, security and governance on the cloud

According to Gartner, by 2022, at least 95% of cloud security failures will be the organization's fault⁶. COVID-19 and remote working is leading to a greater need for data democratization. Data needs to be made available to more users for faster outcomes and also to reduce dependencies on SMEs. In this scenario, role-based access control for business users who are not experts will need to be governed tightly to prevent breaches

- Ensuring that the cloud infrastructure is leveraged for advanced predictive analytics, machine learning and data science through the integration of reporting tools, analytics frameworks and machine learning capabilities

A journey to the cloud is the first step towards modernization. Leveraging its full benefits like the ability to scale the organization's analytical capability for competitive edge requires expert cloud management



Partner with us to modernize your data and analytics landscape on the cloud

Hexaware has been a preferred partner for enterprises in their digital transformation journey. We have delivered massive cloud transformation projects for industries like banking, financial services, capital markets, insurance, healthcare, retail, manufacturing, consumer, energy and utilities, travel & transportation and professional services.

Some of our recent successes include cloud transformation from on-premises Teradata appliance to Snowflake on Azure for the largest copper mining firm in the world, based in the US. The client experienced over **70% automation** in this complex transformation which reduced their TCO by over **60%**.

A leading waste management firm in the UK had acquired multiple organizations and each entity was using a separate data warehouse and BI platform. The firm wanted to transform its fragmented BI landscape on Azure. We integrated their data warehouse and reporting on Azure SQL DW and Power BI respectively, reducing their TCO by over **50%**.

In the capital markets domain, for a leading stock exchange in Europe, we cloudified the DW on AWS. This enabled real-time data integration and reporting to monetize data at scale. **60%** of the efforts were reduced by our automated cloud transformation platforms.

A similar transformation was carried out for a global provider of shipping services. We created a centralized data lake on the AWS stack that added agility to their big data, reporting and analytics ecosystem. Business SMEs and data stewards experienced savings of over 60% in time and effort.



Get your DW, BI and Analytics Assessed for Cloud Readiness

Whether it is the complete EDW, or only the BI and analytics layers, Hexaware is helping enterprises to cloudify their targeted ecosystems on public cloud platforms like Microsoft Azure, AWS, GCP and cloud-native services like Databricks and Snowflake.

To kickstart your cloud transformation journey and for a readiness assessment, write to us at marketing@hexaware.com

REFERENCES:

¹The data warehousing market revenue is set to cross USD 30 billion by 2025

Retrieved from:

<https://www.globenewswire.com/news-release/2019/10/02/1923870/0/en/Data-Warehousing-Market-revenue-to-cross-USD-30-Bn-by-2025-Global-Market-Insights-Inc.html>

²The North America data warehousing market is projected to dominate the global industry with a share of above 40% by 2025

Retrieved from:

<https://www.globenewswire.com/news-release/2019/10/02/1923870/0/en/Data-Warehousing-Market-revenue-to-cross-USD-30-Bn-by-2025-Global-Market-Insights-Inc.html>

³IDC Global Datasphere prediction

Retrieved from: <https://www.seagate.com/files/www-content/our-story/trends/files/idc-seagate-dataage-whitepaper.pdf>

⁴By 2022, 75% of all databases will be deployed or migrated to a cloud platform... This trend will largely be due to databases used for analytics, and the SaaS model

Retrieved from: <https://www.gartner.com/en/newsroom/press-releases/2019-07-01-gartner-says-the-future-of-the-database-market-is-the>

⁵Quote by Donald Feinberg, distinguished research vice president at Gartner

Retrieved from: <https://www.gartner.com/en/newsroom/press-releases/2019-07-01-gartner-says-the-future-of-the-database-market-is-the>

⁶By 2022, at least 95% of cloud security failures will be the organization's fault

Retrieved from:

<https://cio.economictimes.indiatimes.com/news/digital-security/by-2022-at-least-95-pc-of-cloud-security-failures-will-be-organizations-fault/65438790>

About Hexaware

Hexaware is the fastest growing next-generation provider of IT, BPO and consulting services. Our focus lies on taking a leadership position in helping our clients attain customer intimacy as their competitive advantage. Our digital offerings have helped our clients achieve operational excellence and customer delight by 'Powering Man Machine Collaboration.' We are now on a journey of metamorphosing the experiences of our customer's customers by leveraging our industry-leading delivery and execution model, built around the strategy— 'Automate Everything™', Cloudify Everything™ and Transform Customer Experiences™¹.

We serve customers in Banking, Financial Services, Capital Markets, Healthcare, Insurance, Manufacturing, Retail, Education, Telecom, Professional Services (Tax, Audit, Accounting and Legal), Travel, Transportation and Logistics. We deliver highly evolved services in Rapid Application prototyping, development and deployment; Build, Migrate and Run cloud solutions; Automation-based Application support; Enterprise Solutions for digitizing the back-office; Customer Experience Transformation; Business Intelligence & Analytics; Digital Assurance (Testing); Infrastructure Management Services; and Business Process Services.

Hexaware services customers in over two dozen languages, from every major time zone and every major regulatory zone. Our goal is to be the first IT services company in the world to have a 50% digital workforce.

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Certain statements in this press release concerning our future growth prospects are forward-looking statements, which involve a number of risks, and uncertainties that could cause actual results to differ materially from those in such forward-looking statements. The risks and uncertainties relating to these statements include, but are not limited to, risks and uncertainties regarding fluctuations in earnings, our ability to manage growth, intense competition in IT services including those factors which may affect our cost advantage, wage increases in India, our ability to attract and retain highly skilled professionals, time and cost overruns on fixed-price, fixed-time frame contracts, client concentration, restrictions on immigration, our ability to manage our international operations, reduced demand for technology in our key focus areas, disruptions in telecommunication networks, our ability to successfully complete and integrate potential acquisitions, liability for damages on our service contracts, the success of the companies in which Hexaware has made strategic investments, withdrawal of governmental fiscal incentives, political instability, legal restrictions on raising capital or acquiring companies outside India, and unauthorized use of our intellectual property and general economic conditions affecting our industry.