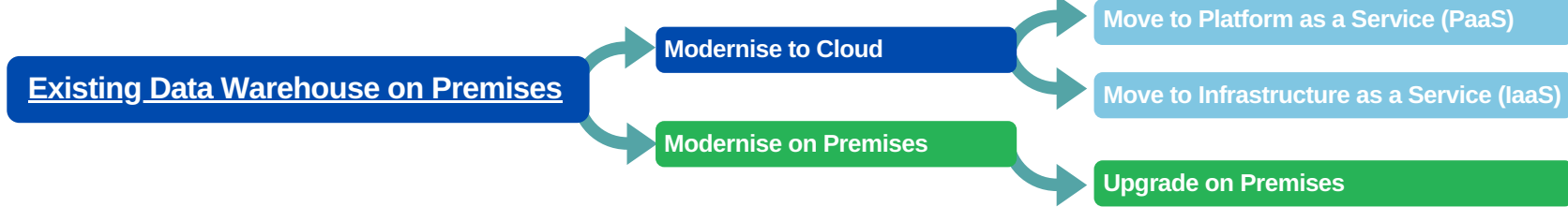# DATA WAREHOUSE MODERNISATION:
DRIVING SCALABLE AND RESILIENT INTELLIGENT BUSINESS

What is Data Warehouse Modernisation?

- The average data warehouse is today evolving, extending, and modernising, to support new technology and business requirements, as well as to prove its continued relevance in the age of big data and analytics.
- Brings together all data at any scale easily, and gives insights through analytical dashboards, operational reports, or advanced analytics for all users.
- Modernisation can include a combination of a data warehouse and data lake to manage and analyse structured and unstructured data.
- Can be done on-premise, on the cloud or as a hybrid.

Existing Data Warehouse on Premises

- **Modernise to Cloud**
  - Move to Platform as a Service (PaaS)
  - Move to Infrastructure as a Service (IaaS)
- **Modernise on Premises**
  - Upgrade on Premises

Managed BY:	Threat Detection, Risk Management	Performance Management	Applications & Data	High availability /DR/Backups	Database Provision/ Patch/ Scaling	O/S Provision/ Patching	Virtualisation	Hardware	Data Center Management
On Premises:	Customer	Customer	Customer	Customer	Customer	Customer	Customer	Customer	Customer
IaaS	Customer	Customer	Customer	Customer	Customer	Customer	Cloud Provider	Cloud Provider	Cloud Provider
PaaS	Either	Either	Customer	Cloud Provider	Cloud Provider	Cloud Provider	Cloud Provider	Cloud Provider	Cloud Provider

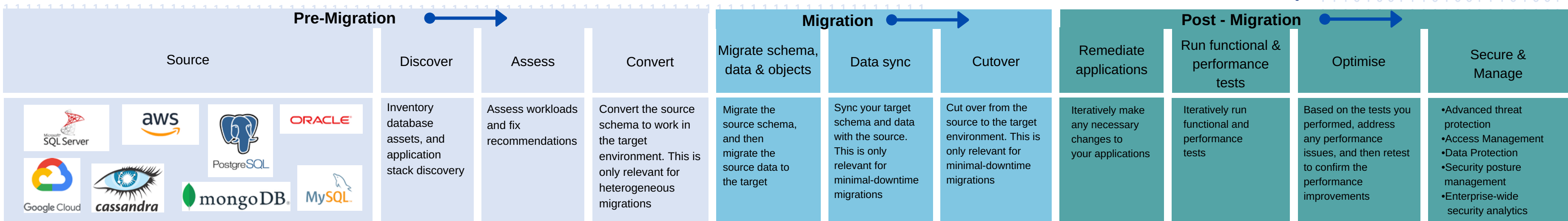## What is the Triggers & Value Benefits of Data Warehouse Modernisation?

Migration and Modernisation Triggers

- Application Innovation
- Software end of Support
- Software and Hardware refresh
- Security Threats
- Compliance
- Data Centre Contracts Expiry
- Quickly Integrate Acquisitions
- Urgent Capacity Needs

Value Benefits

- Versionless, managed platform freeing yourself from patching, upgrade and EOS cycles forever
- DW-to Business alignment
- Greater scale and speed for better and newer analytics
- Embrace new best practices and tool types
- Life cycle issues lead to redesigning
- New data types and platforms built

- Machine learning based, continuous performance optimisation lowers costs significantly
- Automated, modern security capabilities
- Dashboard view for VM awareness
- Innovation - Leverage Cloud+Data+AI
- Dynamic scale

Top 12 Priorities for Data Warehouse Modernization

- Embrace change
- Make realignment with business goals a top priority
- Make Data Warehouse capacity a high priority on the technology side
- Make analytics a priority too
- Consider related systems and disciplines that also need modernization
- Don't be seduced by new, shiny objects – think cost vs. benefit
- Assume that you'll need multiple manifestations of modernization
- Know the tools and techniques of the modern Data Warehouse environment
- Adjust the large-scale architecture of the Data Warehouse environment
- Reevaluate the current Data Warehouse platform
- Consider Hadoop for various roles in the Data Warehouse environment
- Develop plans and recurring cycles for Data Warehouse modernization

Exotic Data Types in the Modern Data Environment

- Social media data (blogs, tweets, social networks)
- Real-time data (messages, events)
- Internet of Things (IoT) data
- Unstructured data (human language,audio, video)
- Web logs and clickstreams
- Semi-structured data (XML, JSON, similar standards)
- Application logs
- Machine-generated data (sensors,devices, vehicles)
- Spatial data (long/lat coordinates,GPS output)
- Demographic data and other third-party data
- Complex data (hierarchical or legacy sources)
- Scientific data (astronomy, genomes, physics)
- Structured data (relational, tables, records)

Common Categories of Modernisations

- System modernization
- Arbitrary modernization
- Non-Data Warehouse modernizations
- Optimization modernization
- Continuous modernization
- Disruptive modernization

The average Data Warehouse manages 3–10 TB today, increasing to 10–100 TB in three years.

Application: Migration & Modernisation

Pre-Migration

Source	Discover	Assess	Convert
	Inventory database assets, and application stack discovery	Assess workloads and fix recommendations	Convert the source schema to work in the target environment. This is only relevant for heterogeneous migrations

SQL Server, aws, PostgreSQL, ORACLE, Google Cloud, cassandra, mongoDB, MySQL

Migration

Migrate schema, data & objects	Data sync	Cutover
Migrate the source schema, and then migrate the source data to the target	Sync your target schema and data with the source. This is only relevant for minimal-downtime migrations	Cut over from the source to the target environment. This is only relevant for minimal-downtime migrations

Post - Migration

Remediate applications	Run functional & performance tests	Optimise	Secure & Manage
Iteratively make any necessary changes to your applications	Iteratively run functional and performance tests	Based on the tests you performed, address any performance issues, and then retest to confirm the performance improvements	•Advanced threat protection •Access Management •Data Protection •Security posture management •Enterprise-wide security analytics

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