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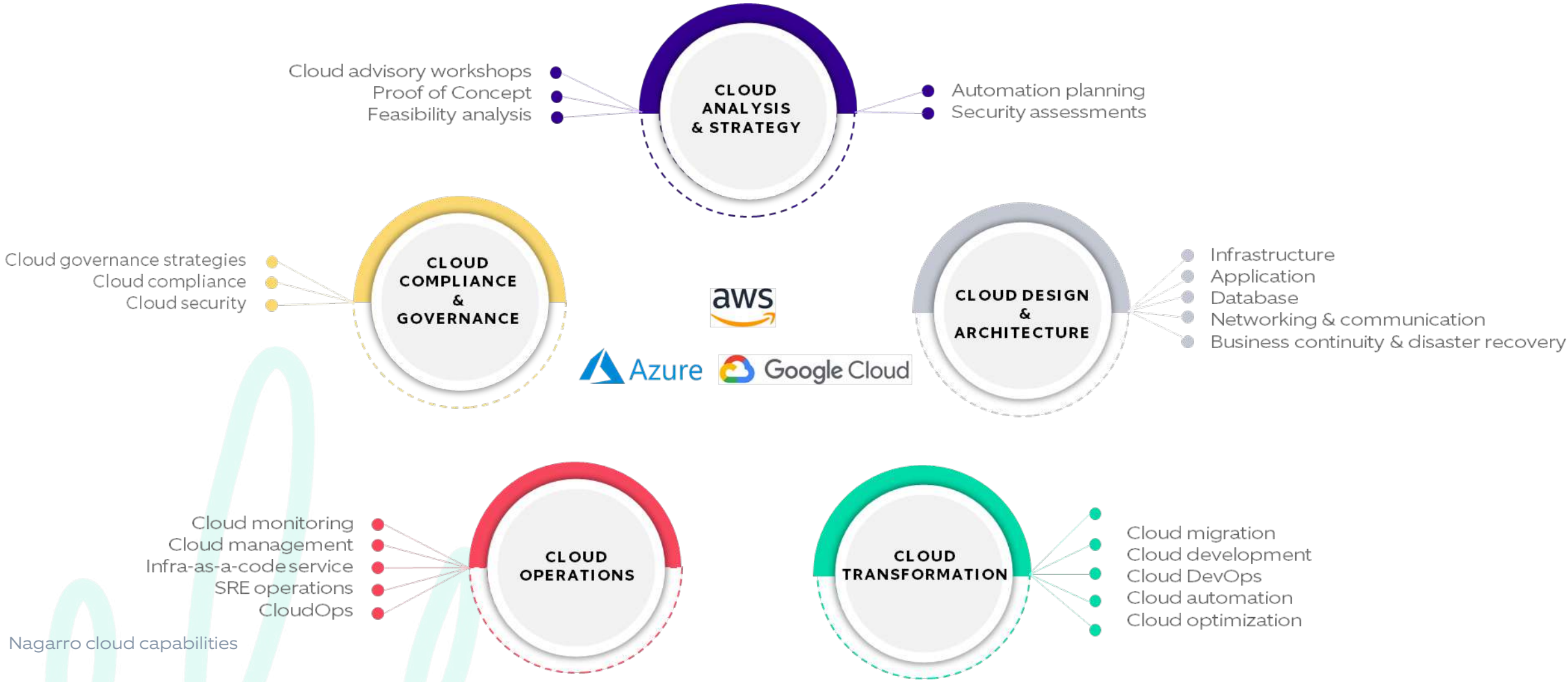
Cloud Capabilities

An overview of our cloud competency

Nagarro cloud capabilities

Cloud offerings overview

What do we offer to our client?



Nagarro cloud capabilities

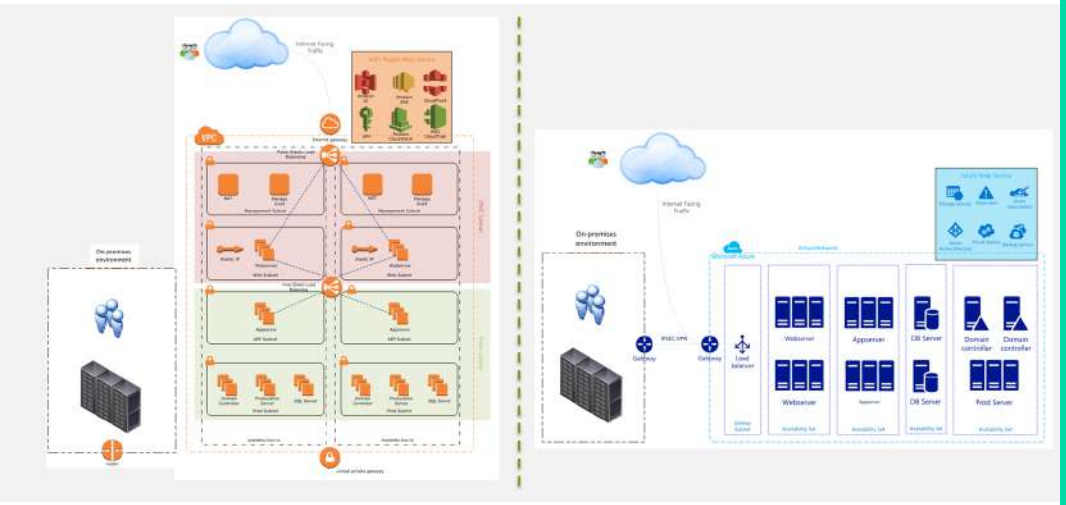
Success stories

How our solutions helped our clients reap benefits from enriched data and advanced analytics driven insights

Cloud assessment and migration

A global leader in motorcycle manufacturing

- Client is a global leader in motorcycle manufacturing who builds motocross, cross-country and street bikes, and maintains a global dealer network. The company considered moving the dealer network application framework, consisting of 180 virtual web, app and DB servers from VMware to the cloud, to raise availability, scalability and flexibility and to reduce TCO.
- Initially, Nagarro was appointed to evaluate AWS and Azure platforms and to recommend the most appropriate cloud service provider from a feasibility and commercial point of view. After selecting Cloud as the target platform, Nagarro carried out a PoC and afterwards migrated the complete on-premise environment (test/dev and production) to Windows Azure.
- Implemented cloud services and technologies:
- Assessment:
    - AWS EC2, EBS, S3, VPC; Azure VMs, Web Roles, Storage, DB Services
- PoC and migration:
    - Base platforms: Windows Server 2012 R2, IIS, SQL Server
    - Cloud environment: Windows Azure Site Recovery Manager, Azure VMs, and Web Services, Azure Storage, Load Balancer, Azure SQL



Nagarro cloud capabilities

Case Study - Ginger

Your personal assistant in Nagarro

Ginger is meant to address the way in which an intelligent company of the future will interact with its core asset, it's people. For the people, she's the avatar for a customised virtual assistant over the Data Warehouse (and other data sources) that is their interface into Nagarro.

Ginger is designed to be responsive, rich & intuitive, letting users interact with it across various channels in the following ways:

- **Ask Ginger:** Let people ask her any questions, and she can get back with answers that are personalized to their context. It also support users by letting them raise, view and manage helpdesk tickets.
- **Ginger Says:** She can push personalized information to employees in form of guidance or nudges, for improving their performance or aligning then to the culture of the company.
- **Train Ginger:** She can be used for setting up reports with a choice of filters and grouping and scheduling options by people who have access to the data. This reduces their dependencies on different departments to get required information. The framework supporting this feature allows for setting up these options for users without writing a single line of code.

Ginger is helping the organization by:

- **Making organisation competitive:** Helps make culture, approach, philosophy and practices more consistent within the organisation, this will optimise processes and achieve best operations
- **Bringing agility:** Helps influence/drive changes related to market or organisation very easily with minor tweaks or changes.
- **Empowering employees:** Helps employees fetch information through a self-serve model without reaching out to their managers.

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Business Intelligence & Analytics Capabilities

Nagarro offers a wide spectrum of services across the data value chain

Data to Decision journey

Acquire & Organise

- ✓ Intelligent Data Integration
- ✓ Advanced Data Transformation
- ✓ Modern Data Warehouse
- ✓ Data Governance
- ✓ Data Administration & Support

Analyse

- ✓ Exploratory Analysis
- ✓ Business Diagnosis
- ✓ Predictive Modelling
- ✓ Insights Recommendation
- ✓ Optimisation Algorithms

Visualise

- ✓ Self-service /Smart Search
- ✓ Scorecards and Smart Dashboards
- ✓ Intuitive & graphical rich visualisations
- ✓ Mobile & Embedded BI
- ✓ Live & in-memory data

Our solutions are cloud (AWS, Azure and GCP) or on-premise ready

Key Differentiators

- Certified People
- Customised Solutions
- Ready-made Accelerators
- Agile BI delivery
- Quality Focus
- Collaboration Models

Nagarro offerings – Custom dashboards and self-service intelligence

Self-Service BI, BI Search, Easy to use

- ✓ Easy data analysis using few drag-and-drop moves
- ✓ Cognitive engines provides Insights recommendations

Alerting and Emails

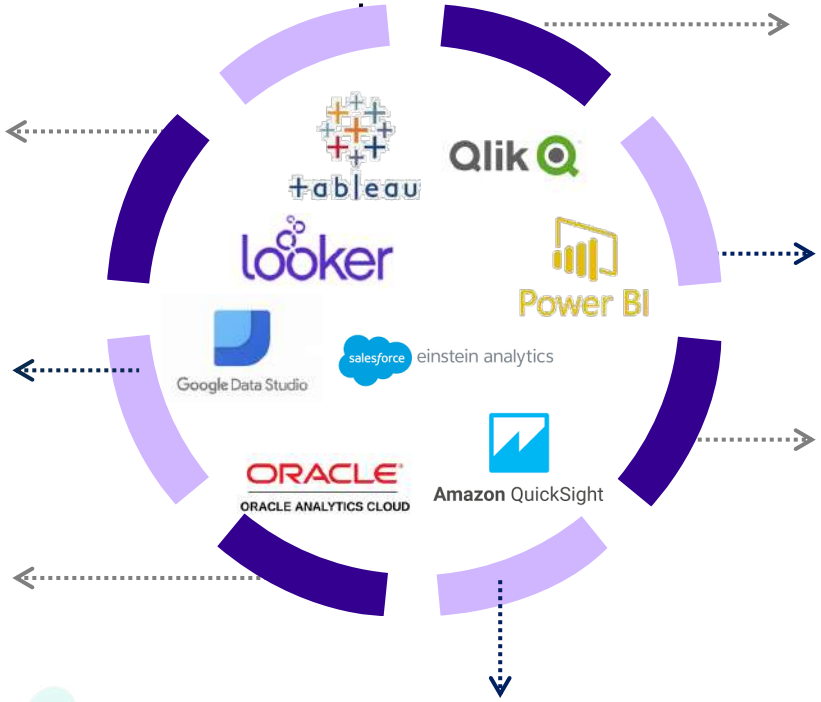
Data driven alerts can be set to send emails when data reaches important thresholds for business

Robust Security & Configurability

- ✓ Row-level security controlling the data that based on audience
- ✓ Role based security that determines the access level for a user on the content or report

Mobile friendly and Responsive reports

Dashboard experience can be optimised for different devices like phone, tablets and desktop



Interactive Scorecards & Dashboards

- ✓ On-demand filters, dig deeper using drilldowns, forecasting and trend analysis, what-if analysis etc.
- ✓ Story points to walk the users through important data and insights

Data Blending from different sources

- ✓ Multiple sources can be analysed together
- ✓ Capability of data preparation, cleaning, enrichment

Live & In-memory Data

- ✓ Up-to-the-minute data reporting using the live connections to database
- ✓ In-memory data facility for supporting offline reporting and take load off the data store

Collaboration and Sharing

- ✓ Reports can be published with edit rights, so that teams can work together to make changes in a central place.
- ✓ Subscriptions to share daily/weekly updates in dashboards

Tools and technologies leveraged by us

Storage

MPP

- snowflake
- amazon REDSHIFT
- NETEZZA
- Azure SQL DW
- Google BigQuery
- VERTICA
- TERADATA

Relational

- ORACLE
- MySQL
- Microsoft SQL Server
- PostgreSQL

Data Lake

- Azure Data Lake Storage
- Google BigQuery
- amazon S3

Data Integration

- Informatica
- Microsoft SQL Server Integration Services
- pentaho
- ORACLE DATA INTEGRATOR
- Google Dataprep
- AWS Glue
- MATILLION
- talend
- Azure ADF

Cloud Platforms

- Microsoft Azure
- aws
- Google Cloud

Visualization & BI

- tableau
- Microsoft Business Intelligence
- Qlik
- Power BI
- ORACLE BUSINESS INTELLIGENCE
- looker
- pentaho A Hitachi Group Company
- amazon QuickSight
- Google Data Studio

Statistical Analytics

- sas THE POWER TO KNOW.
- R
- python
- SPSS
- alteryx
- salesforce einstein analytics

illustrative, not exhaustive

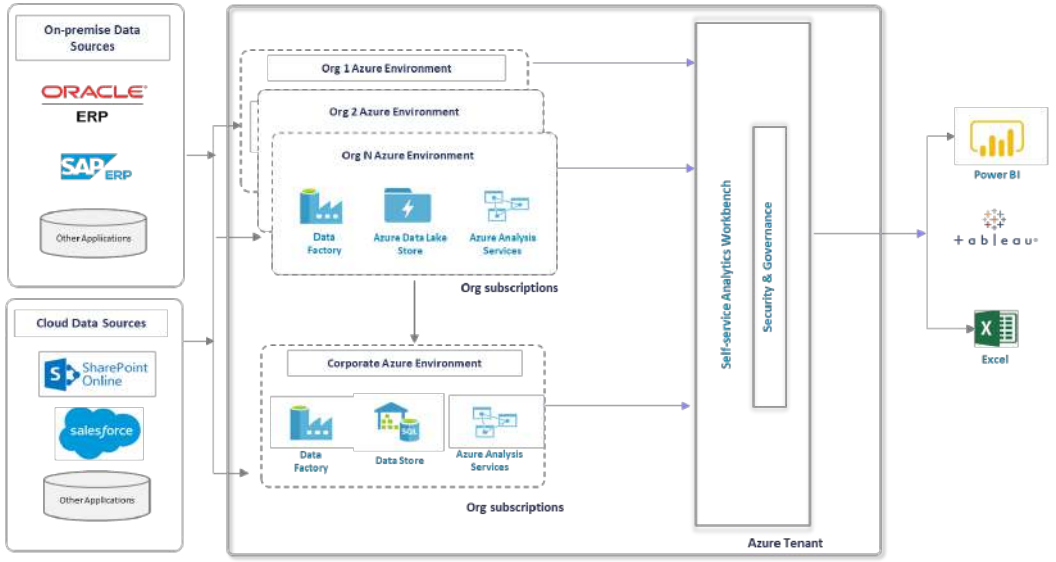
Success stories

How our solutions helped our clients reap benefits from enriched data and advanced analytics driven insights

US based manufacturing client

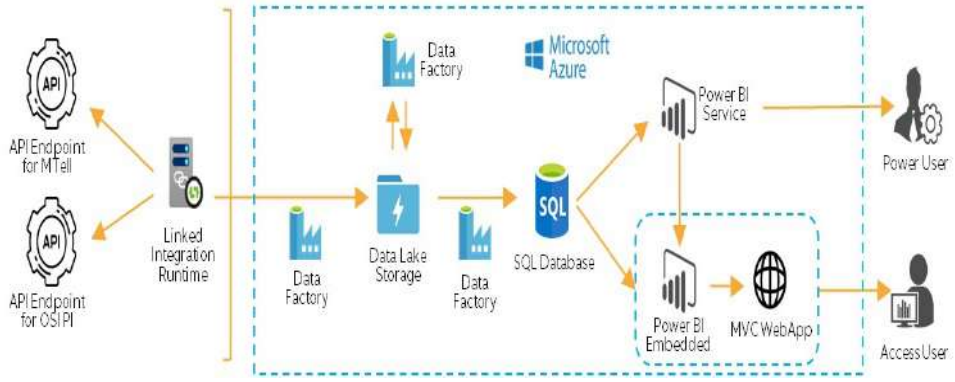
Centralized data collection and reporting

- Client is a leading manufacturer of wood products in US for residential, commercial, construction, and industrial applications and serves architects, builders and homeowners. It serves transportation, millwork, cabinetry, and furniture industries.
    - Current setup is an on-premise solution and stored at disparate locations. Our new BI solution hosted on Azure integrates into a central data repository.
    - Designed to provide flexibility to scale up -down environments to increase overall optimum performance level
    - Effective resource usage tracking.
    - Multiple level of security, ISO 27001 security and compliance
    - The new BI platform enables client to optimize and manage spending
- Our Solution enables customer to analyze their historical manufacturing and on-hand inventory data. Client can create multiple and extensive dashboard reporting using self-service BI from Tabular model cubes in quick and easy manner.
- Implemented cloud services and technologies:
    - Azure Data Lake Store,
    - Azure Data Factory
    - Azure Data Bricks,
    - Azure Analysis Services
    - Power BI



Predictive Maintenance system

A Southeast Asia based petroleum giant



Overview:

A predictive maintenance dashboard that helps refinery engineers to monitor the state of refinery/equipment/sensors and take necessary action when any equipment records an alert.

- The platform was needed to be equipped with a failure library that is useful for providing recommendations for potential causes of failure.

Solution:

Nagarro designed and developed a scalable Azure cloud-based ASP MVC web application with embedded Power BI reports.

- The solution also included data lake store and a data warehouse, with data being extracted from the sources in near-real time by the Azure Data Factory pipelines.
- The data warehouse acted as the centralized repository for structured and processed semi-structured data to enable comprehensive analytics

Nagarro cloud capabilities

Key highlights

Data Sets

- Events data generated from various refinery equipments & sensors

Technologies

- Azure SQL DB, Azure Data factory, ADLS Gen2, Azure App Service, Asp MVC web app, power BI embedded

Big Data and DevOps engineering

ROI

- A unified portal to track the overall health of refinery
- Near-real time alerts
- Recommendation emails

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Security Capabilities

Categories

- Best Practices
- Authentication Standard and Logging
- Secure Payment
- Third-Party Tools and Scans
- Compliance & Audits

Best Practices

01

Database Hardening

- Encryption at rest and encryption in transit
- Fine grained audit for all access into the data
- Obfuscated to the application for specific attributes

02

Implement OWASP top-10 Application Security guidelines

- Cross Site Scripting and request forgery
- Injection and security misconfiguration
- Insufficient logging, monitoring and insecure deserialization

03

Design and architect for security

- PCI and GDPR compliant design for privacy and security
- Use latest and secure libraries and protocols
- Automate and integrate for quick deployments of fixes.

Authentication Standards & Implementations

Strong Customer Authentication Standards

- Password format, expiration and repeat restrictions
- Multi-factor authentication

Protection against Brute Force Attacks

- Account Locks
- Event Logging and automated reporting

Identity & Access Management Implementations

- Single Sign On
- Integrations with Okta , Microsoft Azure AD etc.

Password Protection

- Only one way hashing for passwords
- Use of standard algorithms

Secure Payments

Payment Optimization

- Seamless and faster payment integration
- Extensive logging
- States maintained at each stage for tracking and re-attempt

Fraud management

- Use of 3rd party service like Maxmind to identify Fraud transactions.
- High-risk IP/location blacklisting
- Blocking high frequent transaction in a timeframe

Compliance & Audits

GDPR

- Right to be Forgotten - Masking of Personally Identifiable Information on user request.
- User Communication Preferences – Email, SMS etc.
- Data retention and deletion policies

PCI and PADSS auditing

- Protect and restrict access to card holder data
- Track and monitor all access to sensitive data
- No usage of default parameters for security parameters

Third Party Tools and Scans

Third-party tools for code scanning, penetration testing etc.

Qualys. SYNOPSYS® Checkmarx

WhiteSource VERACODE

Extensive logging and analytics

APPDYNAMICS splunk>

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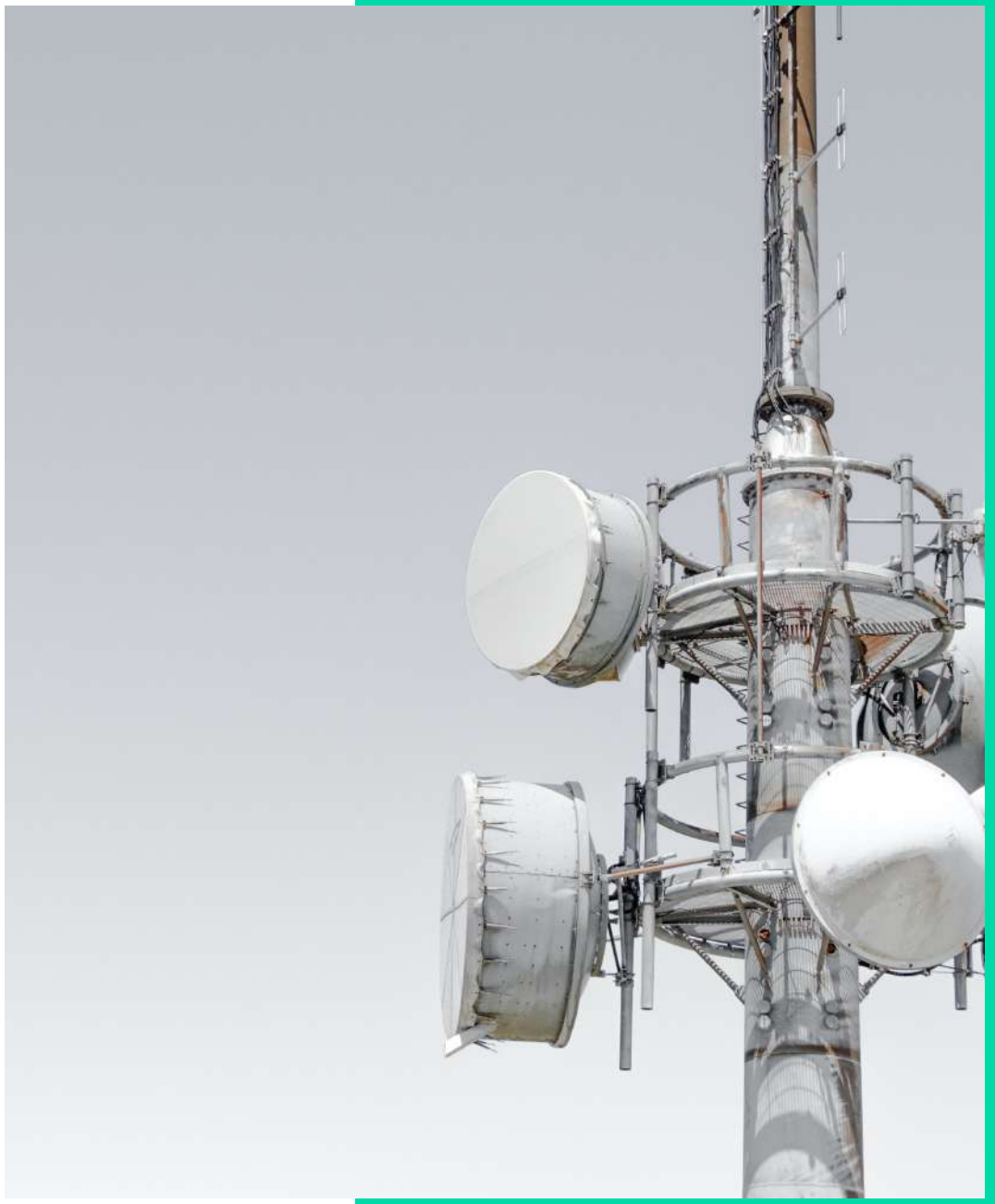
Success stories

How our solutions helped our clients reap benefits from enriched data and advanced analytics driven insights

Building a new IAM Infrastructure

Leading Swedish telecom operator

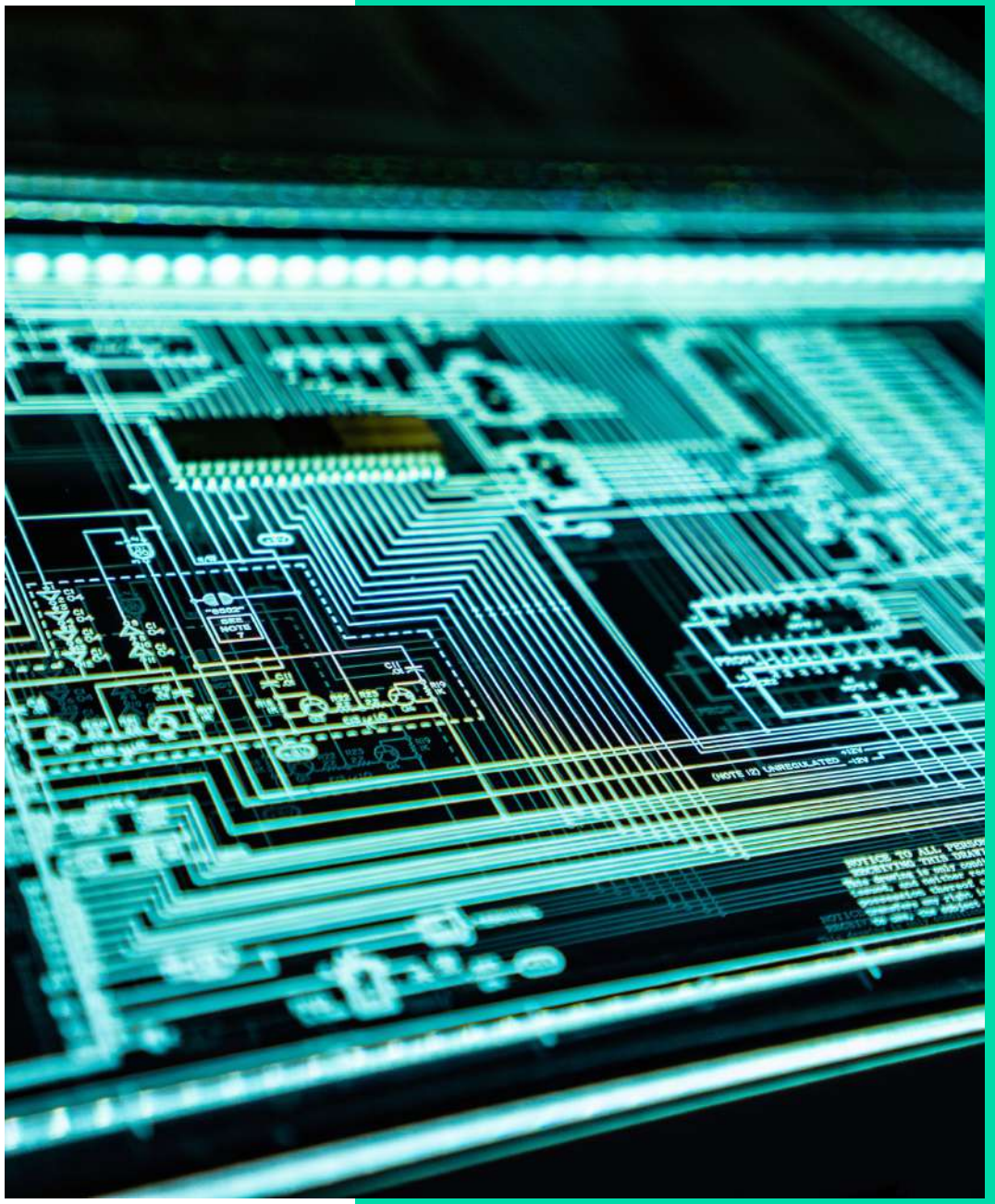
Nagarro partnered with the client in building a new Identity and Access Management Infrastructure covering customers, employees and partners. We implemented an IAM solution based on Keycloak, and worked on a broad set of features, like SSO, authentication and authorization, social login, multifactor authentication and centralized user management. The outcome of our engagement is an improved IAM infrastructure and a modernized strategic approach to access management.



Network penetration testing

Nordics IT services provider

Nagarro worked with the client to identify and test attack vectors to show how attackers could potentially compromise them via their hosted customers, both from the Internet and from within customer networks. We provided proof-of-concept and pragmatic recommendations to reduce the exposed attack surface (and risk) to both Managed Services provider and their clients.

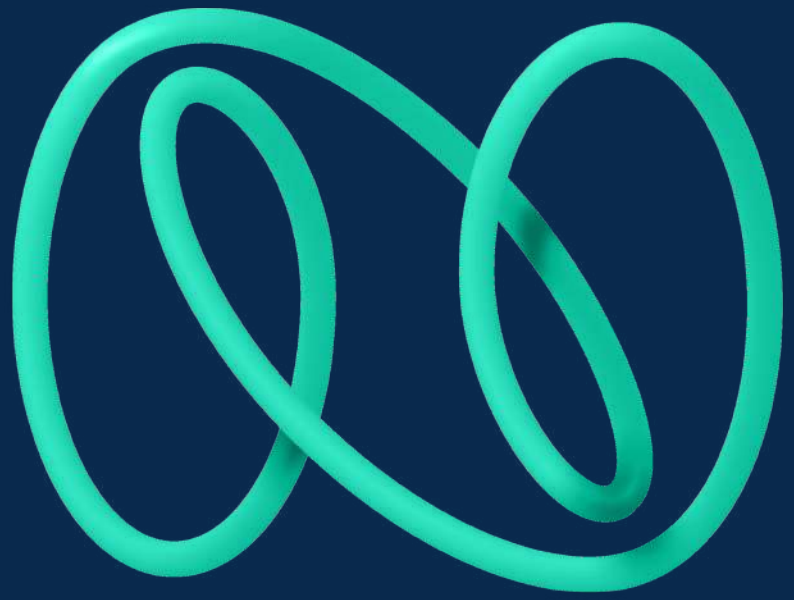


Cloud operated IAM

Large Nordic bus company

The goal was to establish a platform to represent all 7000 employment relationships with the company digitally. This enabled the company to use Single-Sign On for the many IT systems used by the employees.

The solution includes OpenAM, OpenIDM and OpenDJ components from ForgeRock that integrate with existing HR systems and AD.

In relation to this, Nagarro also delivered a Master Data system for managing Master Data, a source system for relevant data. Nagarro also operates the IAM solution from its Cloud Operations center in AWS.

Thank you!