

Product InfoBook



Amdocs
Network
Data Fabric

**Built to Convert Data to
5G Revenue**



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Introduction

Amdocs Network Data Fabric (NDF) is a real-time stream processing platform that can ingest from any source and transform data to a common format for real-time processing and distribution to any downstream application.

Data is the fuel of the 5G value chain. We enable service providers to realise and monetise their position in the 5G value chain by providing the ability to harness disparate and complex data, transforming and refining it into purposeful value across the business. The growing volume, velocity and variety of incoming data is now simply too vast and complex to be processed by traditional means. NDF is built for constant change in the business value outcomes required as well as the emerging challenges and complexities of data extraction and presentation into the future.

To capitalise on the opportunities 5G represents, service providers need data processing capabilities built into the fabric of their network with the capacity and agility to translate information into actionable intelligence and revenue-generating events to capture new business opportunities. NDF provides the 'data refinery' which transforms crude/raw data from anywhere into clean/useful data which can be applied downstream to anywhere.

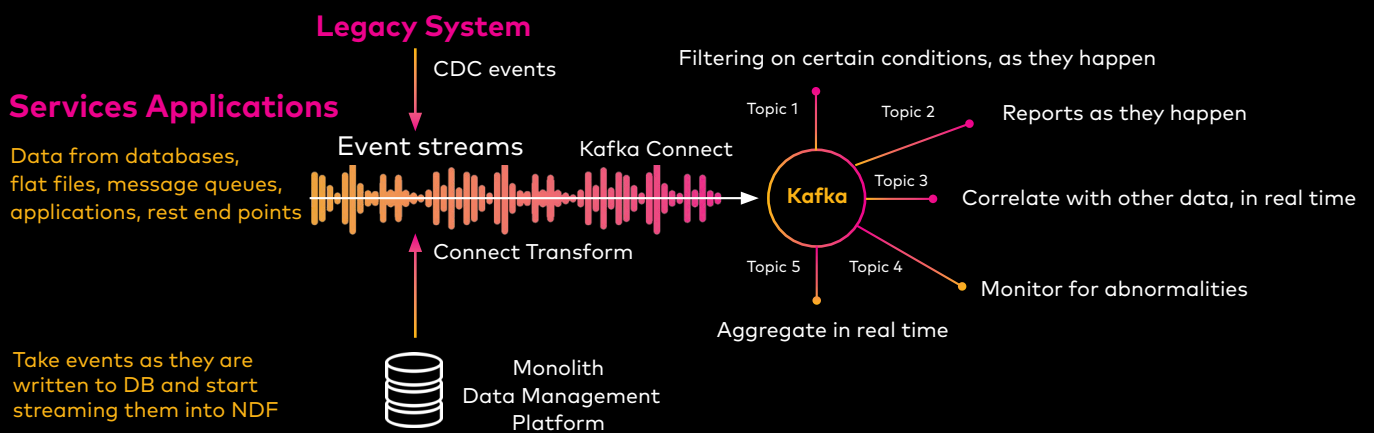
Benefits

5G will see a massive increase in use cases and applications. The growing complexity of services, the relentless growth of data and the need to manage a myriad of data flows to feed a wide range of solutions means that a new approach to data management is needed. Service providers want to increase efficiency and achieve a higher ROI through the use of open source software. They also need to be able to collect and refine vast quantities of 5G data in real-time and turn this into meaningful data that provides the foundation on which 5G businesses will be built.

Service providers today need a platform that can process records, as they are generated. This is necessary because the applications and use cases that depend on this 'fresh data' do not suffer latencies nor delays for the information they consume. Think of Tesla, whose Autopilot application relies on the processing of data in real-time.

The pace of business processes and operations now require applications not only to process information as it is created but also to predict and anticipate trends and events even before they occur.

Figure 1 : Amdocs Network Data Fabric - Sample Processing Flow



Key Benefits

Prolong 4G Investments while Delivering 5G

NDF provides a 4G to 5G data bridge, which enables service providers to prolong existing 4G investments while building out their 5G business. The bridge function performed by the NDF enables the seamless conversion of protocols so that legacy systems and supporting business processes can persist. For example, one of our Tier 1 customers is leveraging NDF to simultaneously maintain a legacy billing system investment while introducing the 5G core.

Built to Enable 5G Use Cases

Amdocs have compiled a growing catalogue of over 50 use cases, covering data mediation, service monetisation, quality of experience management, network optimisation and audit, control and reporting.

Fast Deployment Through Modular Design

Amdocs' microservice-based approach to product design allows for a flexible deployment in a modular manner. The platform comes with in-built stream processing functions as standard, with the ability to easily add and configure as required for new use cases and application needs.

Zero Code

Easily configure new use cases and data insights through a GUI designed for business users. Engaging with the platform is accessible and intuitive - No need for a PhD to configure a new data flow or to source a new report.

Key Benefits

NDF Low TCO

A fully cloud-hosted solution significantly reduces infrastructure, person days for configuration and maintenance and licence costs. Unlike similar platforms on the market, NDF boasts a remarkably low footprint. This means no dependency on external applications to perform highly complex processing of streaming data within the platform itself. Alternatives rely on external applications to perform certain tasks, which means the overall cost of the platform inflates once in place. Amdocs' carefully engineered NDF platform delivers a lean and efficient solution.

Future Proof Adaptability

Designed to scale up and down for 5G data volumes and beyond. Amdocs' platform is highly scalable, allowing it to scale up to meet high volume demands and scale down to meet the needs of federated deployments for enterprise. With near limitless scaling potential, Amdocs has already surpassed the processing of 1 trillion events per day or 11.5 million events per second. The low latency demands of edge-computing require a distributed and cost-efficient platform. Unlike other platforms, NDF can scale down for small deployments equally as effectively as it scales up. This makes it an ideal candidate for edge network, enterprise, IoT and VPNs.

Features

Feature

Description

Cloud Native

Containerised with Kubernetes and optimised for cloud environments

Take advantage of a cloud native architecture to maximise the scalability and responsiveness of your platform

Allows you to focus on generating data insights and business outcomes that drive value

Intuitive Configuration GUI

Perform complex actions without technical support

An intuitive configuration GUI means that any business user is able to engage with the platform without lengthy and costly technical training

Event First Approach

Continuous stream processing as events happen

Service providers today need a platform that can process events as they are generated

Applications which depend on 'fresh data' do not suffer latencies in the information they consume, undermining their output

Compact Architecture

Low footprint and TCO with no need for 3rd Party applications

Compared to traditional proprietary mediation platforms, enjoy a significantly lower TCO thanks to a reduction in footprint, configuration and maintenance effort and no reliance on expensive SAN storage costs

Features

Feature

Description

Not Single Output Focused

Supports any downstream business and operational application

Purposefully process and distribute meaningful data out-puts to any downstream unit, from Marketing to Engineering to Finance Enhancements

Fault Tolerant

Highly redundant solution

Built-in data persistence to ensure data is never lost

Error Detection

Identify, reprocess and replay error records

Make sure any error records are captured and reprocessed

Open Source

Built on Kafka Cluster, Brokers and Zookeeper, Kafka Connect with custom modules, schema registry and microservices

As the industry moves away from proprietary vendor lock-in and towards Open Source architectures, it's important not to be left behind

Proven Open Source technologies provide a reliable community-based alternative, which is constantly being optimised

Features

Feature

Description

Observability

Interrogate data stream in real-time

Enable distributed tracing, data lineage, statistics and metrics monitoring

Always know what is happening with the data traversing your network

Enabling AI & Machine Learning

Implement big data analysis and adaptive policy decision-making

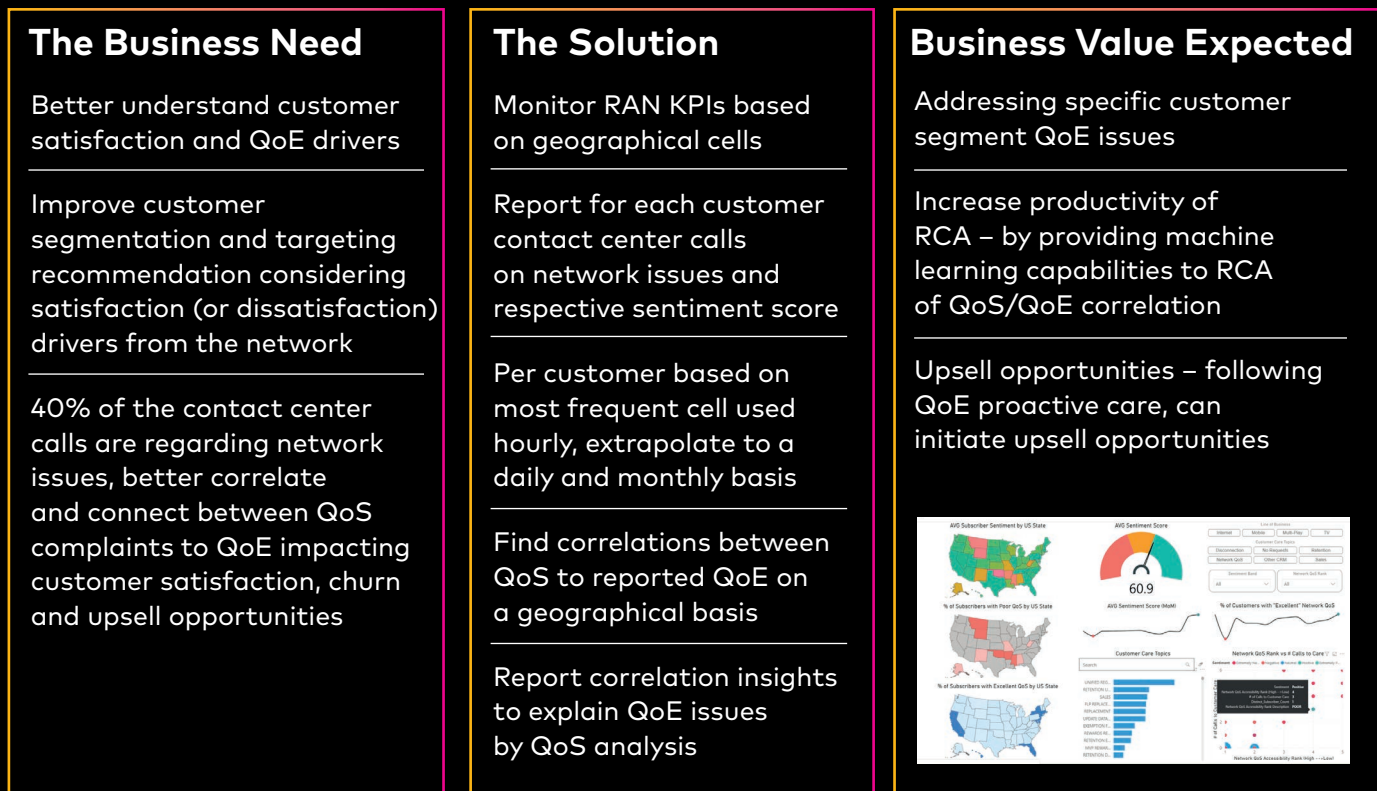
Understand and predict customer and network requirements

Realise the goal of a complete intelligent autonomous network product enhancements

Features

Amdocs Network Data Fabric performs the heavy lifting in preparing all data for analysis, enabling a wide range of artificial intelligence and machine learning applications. Taking a sample use case, let's look at how NDF supports the correlation of Quality of Service (QoS) and Quality of Experience (QoE). Here, we correlate network QoS experience to QoE reporting to better understand customer satisfaction.

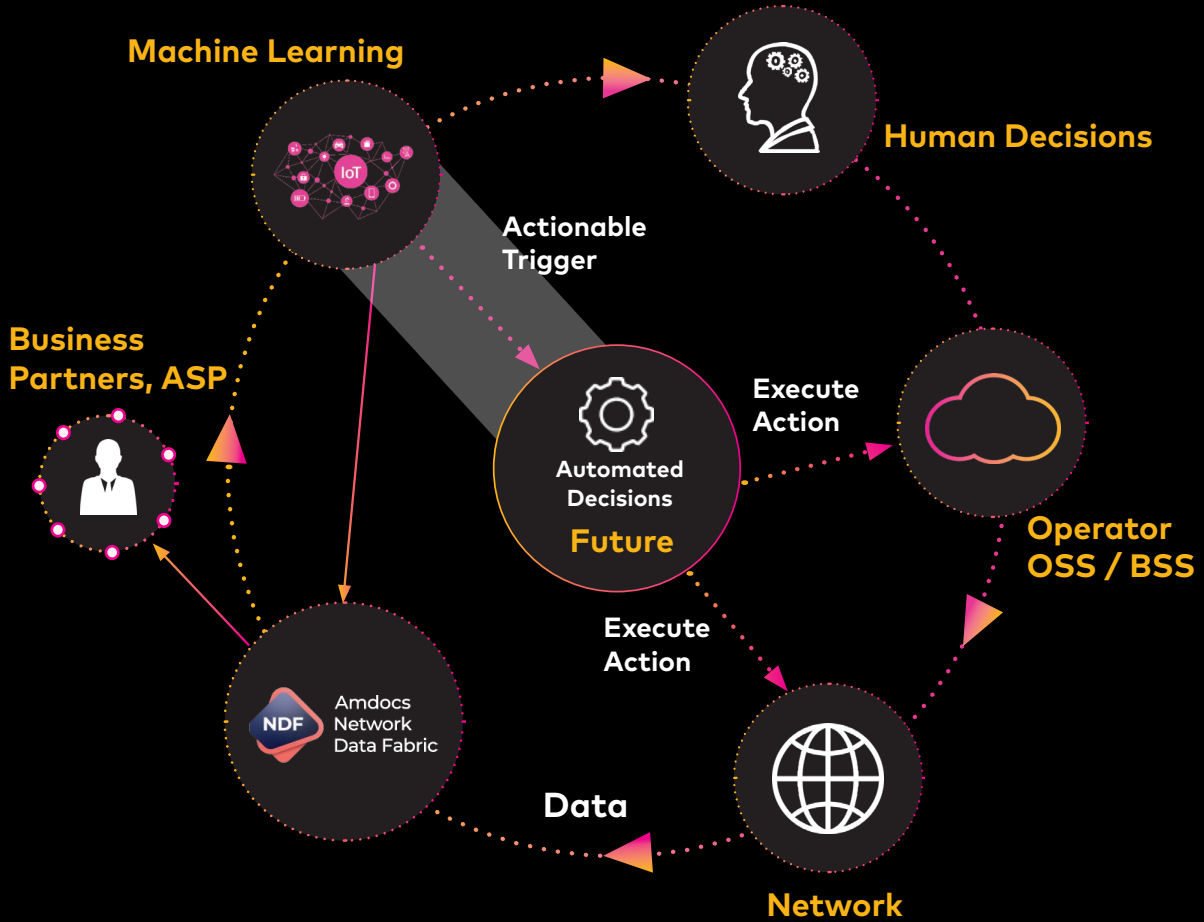
Figure 2: Enterprise Customer-Centric View of Network Events



Features

Figure 3 : Paving the Way Towards the Autonomous Network

Solution Overview



Why We're Different

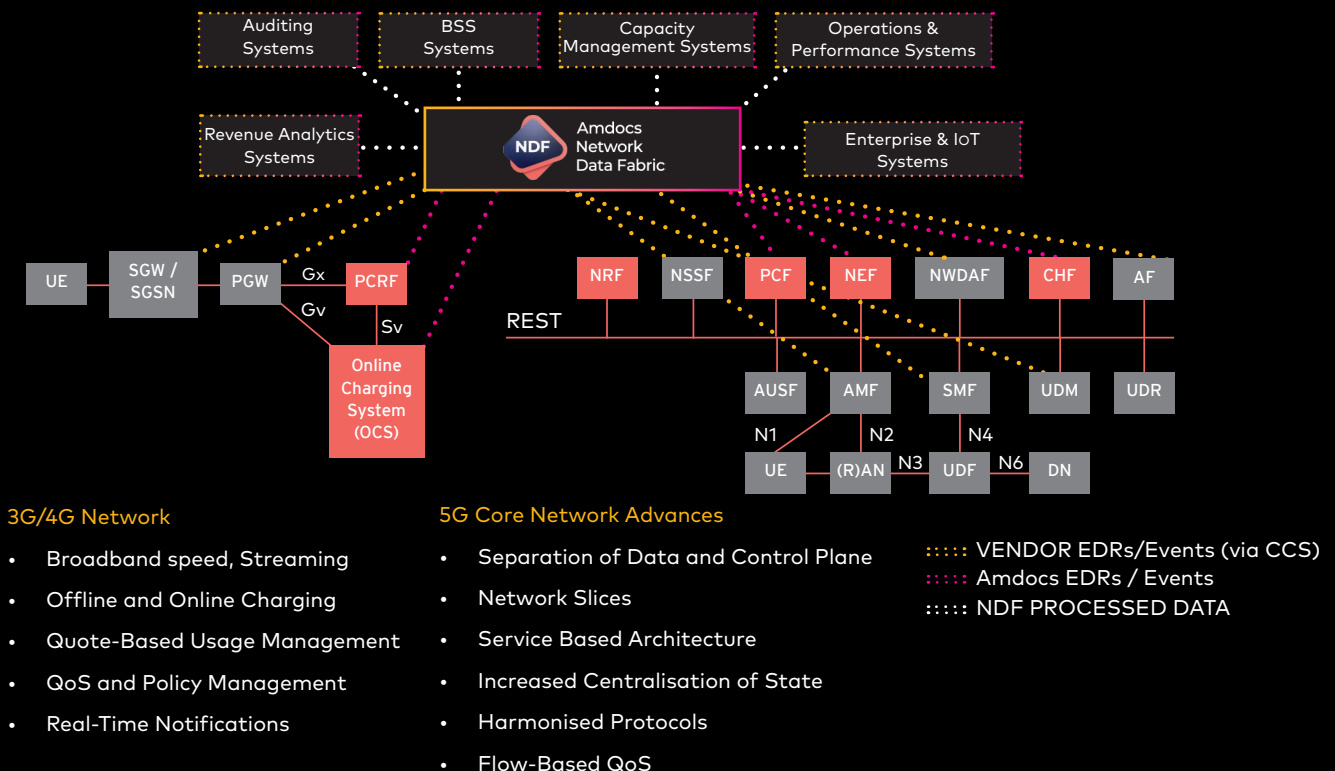
Supporting Multiple Network Generations at Once

Migration to a modernised stream processing platform can be performed easily by tapping into the transaction system of the monolith mediation system, transforming this 'batch' feed (or Changed Data Capture feed) into a real-time streaming event feed. Stream processing of this data can be performed, opening up diverse applications, such as filtering, enrichment and correlation with other information streams.

Legacy systems and batch processes use Change Data Capture (CDC) to capture all changes made in database, but this uses a lot of system resources, making it impractical for large data sets. Transforming the CDC feed into a continuous feed results in faster updates and more efficient scaling as more data becomes available.

Figure 4 : Supporting the Data Needs of Multiple Network Generations at Once

For real time event capture and processing to support business systems



Why We're Different

Amdocs Network Data Fabric enables real-time event processing for analytics use cases, which are often highly dependent on the analysis and comparison of information as it happens in order to make it useful. The platform has the ability to ingest and transform real-time data feeds, filter and aggregate, as events happen and correlate with reference data (e.g. service profiles, benchmark KPIs, expected load levels) in order to present output triggers for a policy decision, alarm notification, offer notification or downstream analytics systems.

Amdocs Network Data Fabric is carefully engineered to exploit all the benefits of a stream processing architecture, acting as a central hub for all data events to help serve all business applications and processes that require real-time processing of events. It can collect event records from the vendor-agnostic 3G/4G network and from 5G components as well as external components to support business systems.

Why We're Different

Examples of the business applications that NDF supports with real-time data include:

- **Monetisation:** Real-Time Offer Management, Next Best Action, Real-Time Customer Satisfaction Response and Contextual Marketing
- **Audit & Control:** Revenue and Fraud Assurance, QoE and QoS Management, Customer Experience Management and Customer Care Support
- **Insights:** Customer Adoption Trends, Anomaly Detection, Profile Analysis, Sampling of Service Types, Discovery and Reporting
- **Service Assurance:** Operational Monitoring, Network and Service SLA Adherence and Service Degradation Analysis
- **Network Optimisation:** Network and System Resource Management, Tuning of Services to Optimise Resource Utilisation, Cost Efficiency and Experience. This includes support for NWDAF (network and data analytics function) in 5G networks

Amdocs can leverage the expertise, scale and solutions of Amdocs to provide our world leading products stand-alone or as part of a wider multi-product solutions.

Figure 4 : Supporting the Data Needs of Multiple Network Generations at Once

