

From RDBMS to Big Data Architecture in Telecommunication

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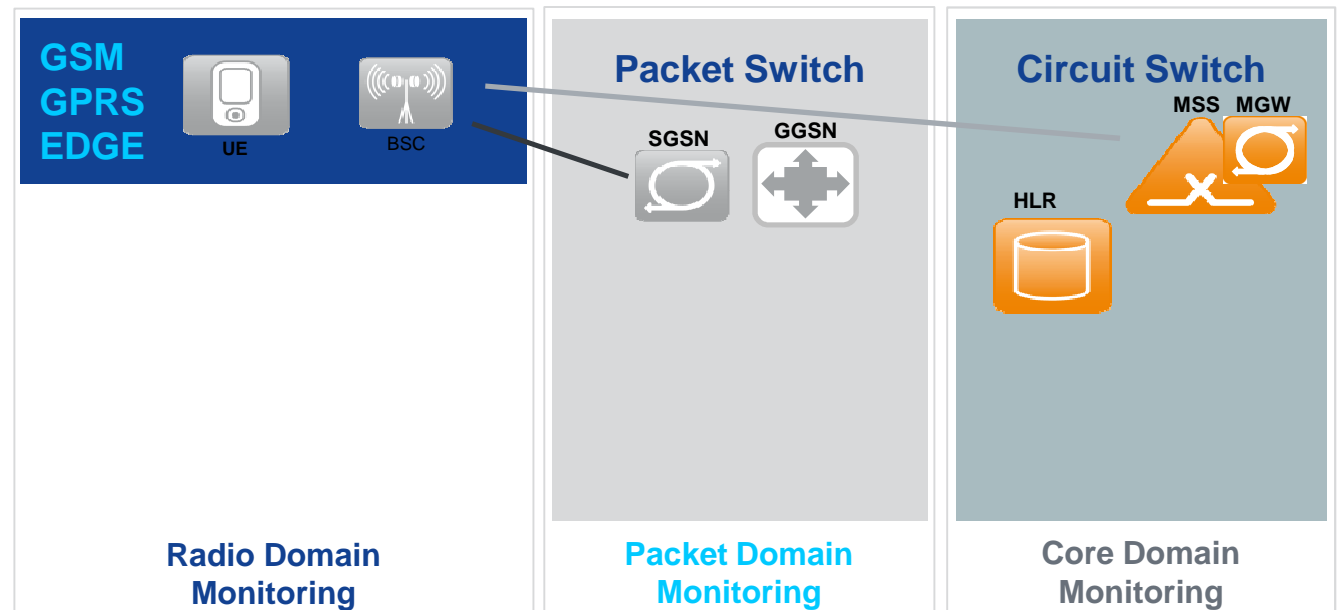
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From Relational DataBase to Big Data Architecture

GSM Network Monitoring System

Monitoring System Dimensioning

- Number of NE
- Number of calls
- Number of SMSs

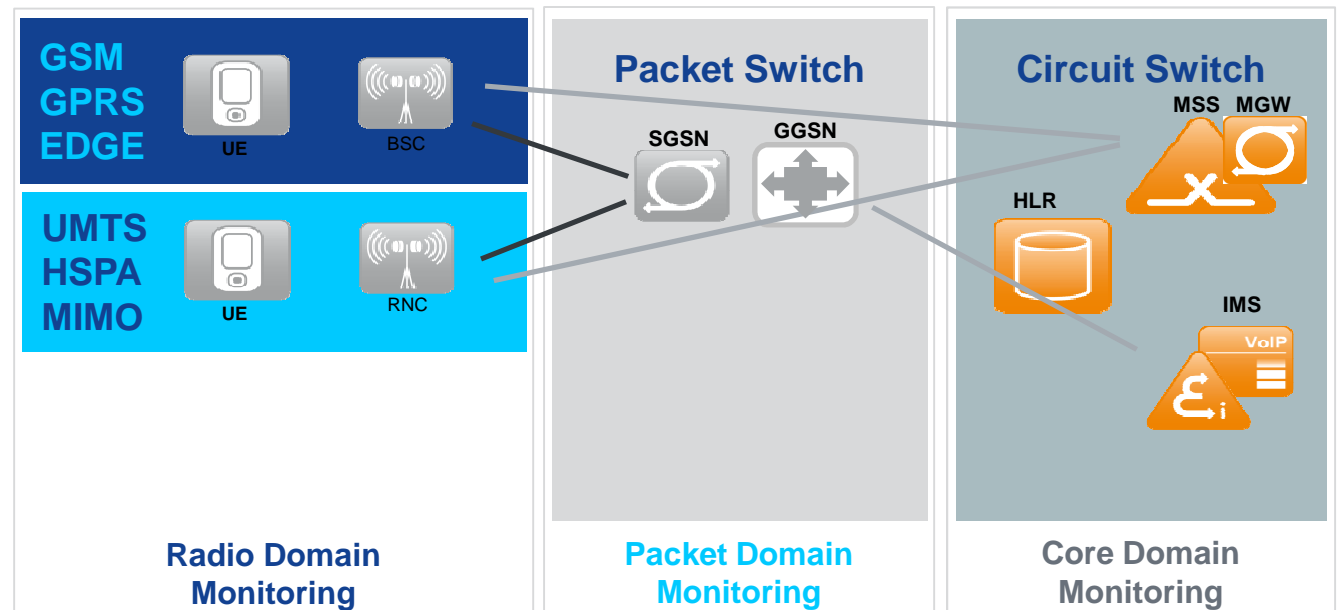


From Relational DataBase to Big Data Architecture

GSM, UMTS Network Monitoring System

Monitoring System Dimensioning

- Number of NE
- Number of calls
- Number of SMSs
- Packet Domain interface monitoring (Gb, IuPS, Gn, Gi)
- Core Domain interface monitoring (Iu-CS, Mc, A)

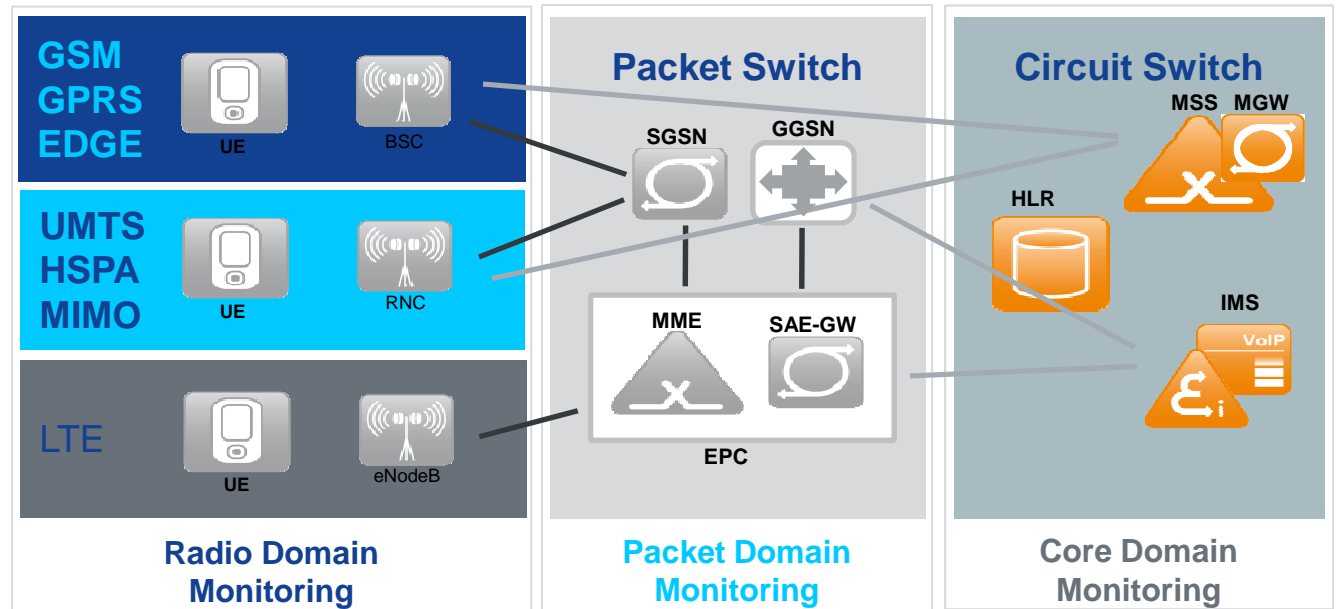


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GSM, UMTS, LTE Network Monitoring System

Monitoring System Dimensioning

- Number of NE
- Number of calls
- Number of SMSs
- Packet Domain interface monitoring (Gb, IuPS, Gn, Gi)
- Core Domain interface monitoring (Iu-CS, Mc, A)
- EPC monitoring (S1, S1 - MME, S11)



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Network Monitoring System - Legacy

Data Loading

Loading performance measurements, network events coming from the network elements directly or from management system

Data Processing

Data processors which allows us to extract valuable information out of the incoming data in regular basis

Data Storage

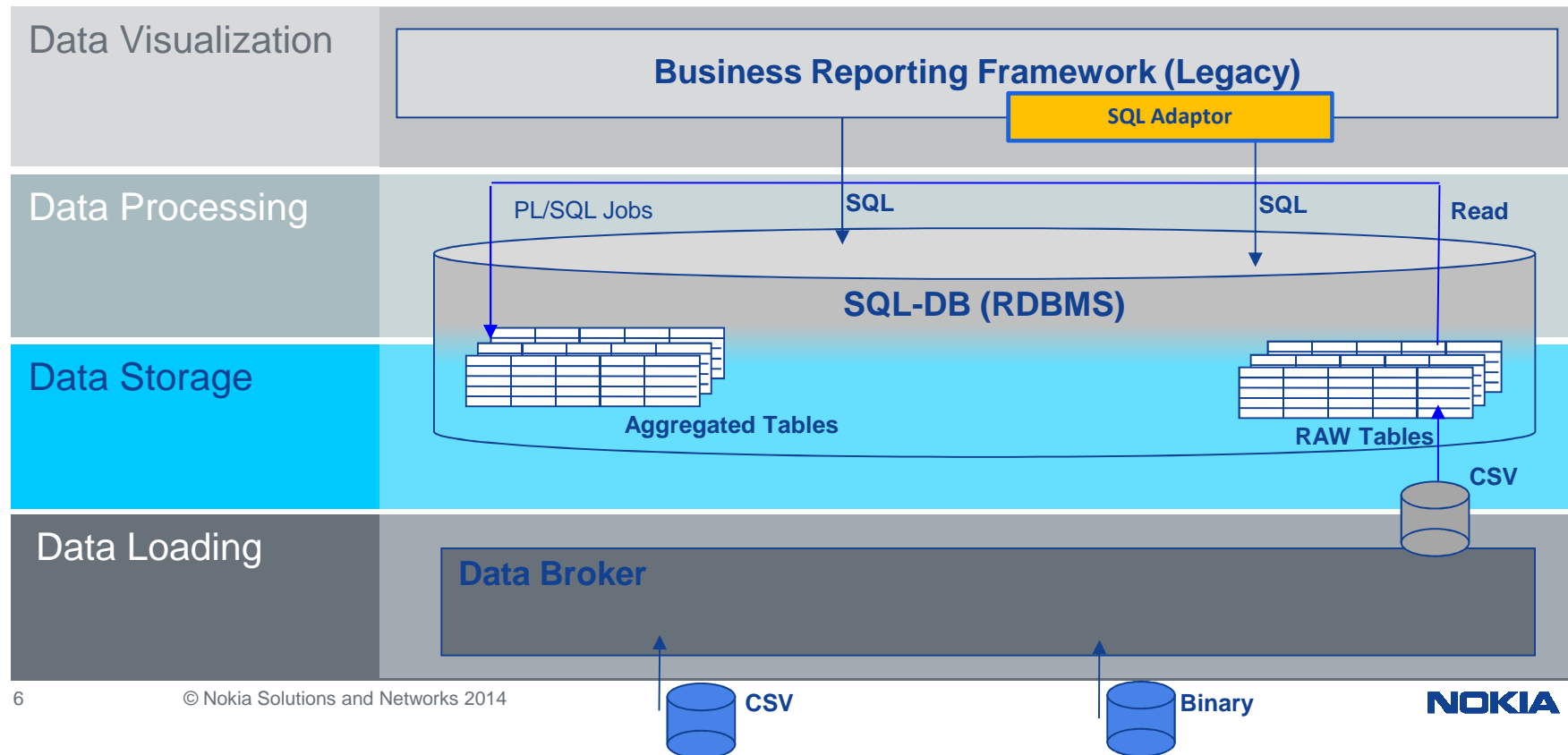
Relational database for storing data coming from the network elements directly or management system.

Data Visualization

Visualizing the extracted information to the user by showing reports, statistics, alarms.

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Network Monitoring Ecosystem - Legacy



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Network Monitoring System - Challenges

Data Loading

High performing solution for loading data-streams, log-files, events etc. coming from the network elements directly or from probes or from management system

Data Processing

A framework providing us with data processors which allows us to extract valuable information out of the flood of incoming data, either in real-time or in batch-mode

Data Storage

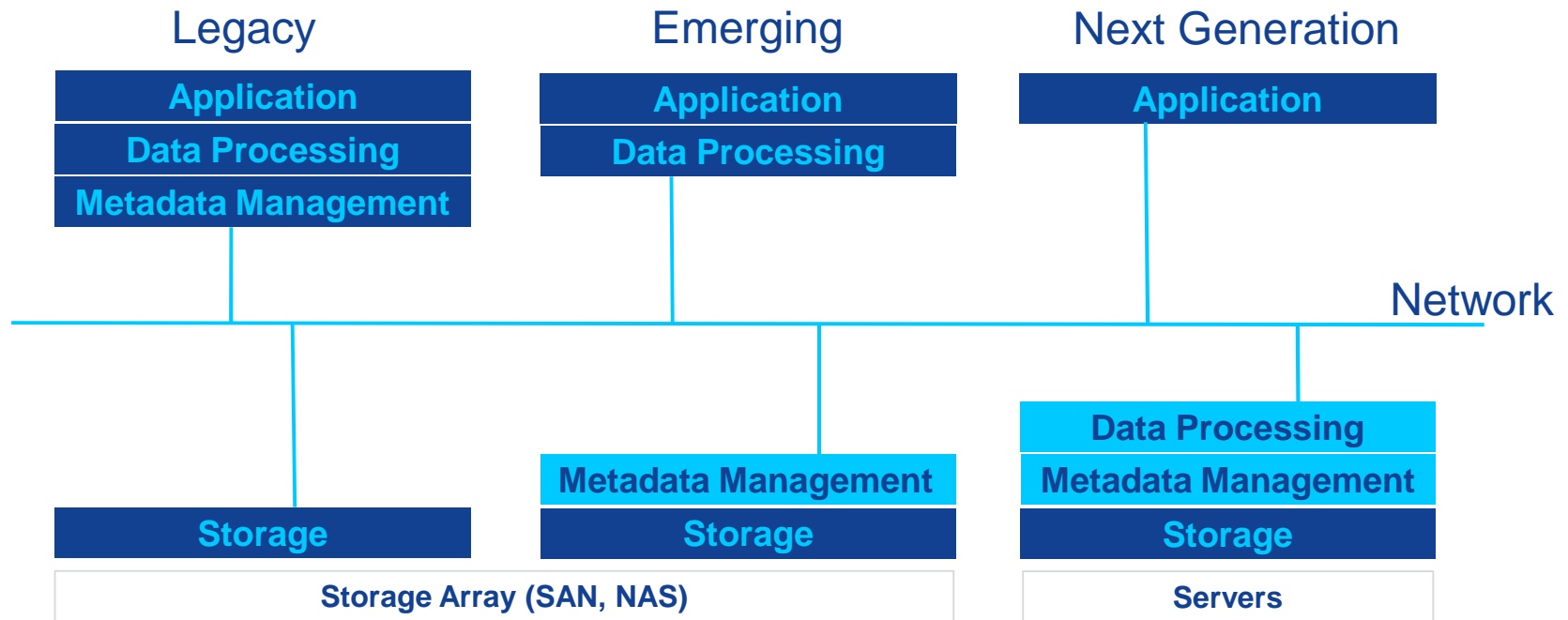
NoSQL database for storage data beyond the limits of SQL databases. Data storage has to scale horizontally on commodity HW/elastic on cloud and not vertically

Data Visualization

A framework for visualizing the extracted information to the user in form of reports, statistics, alarms, CDRs etc. in an acceptable timeframe

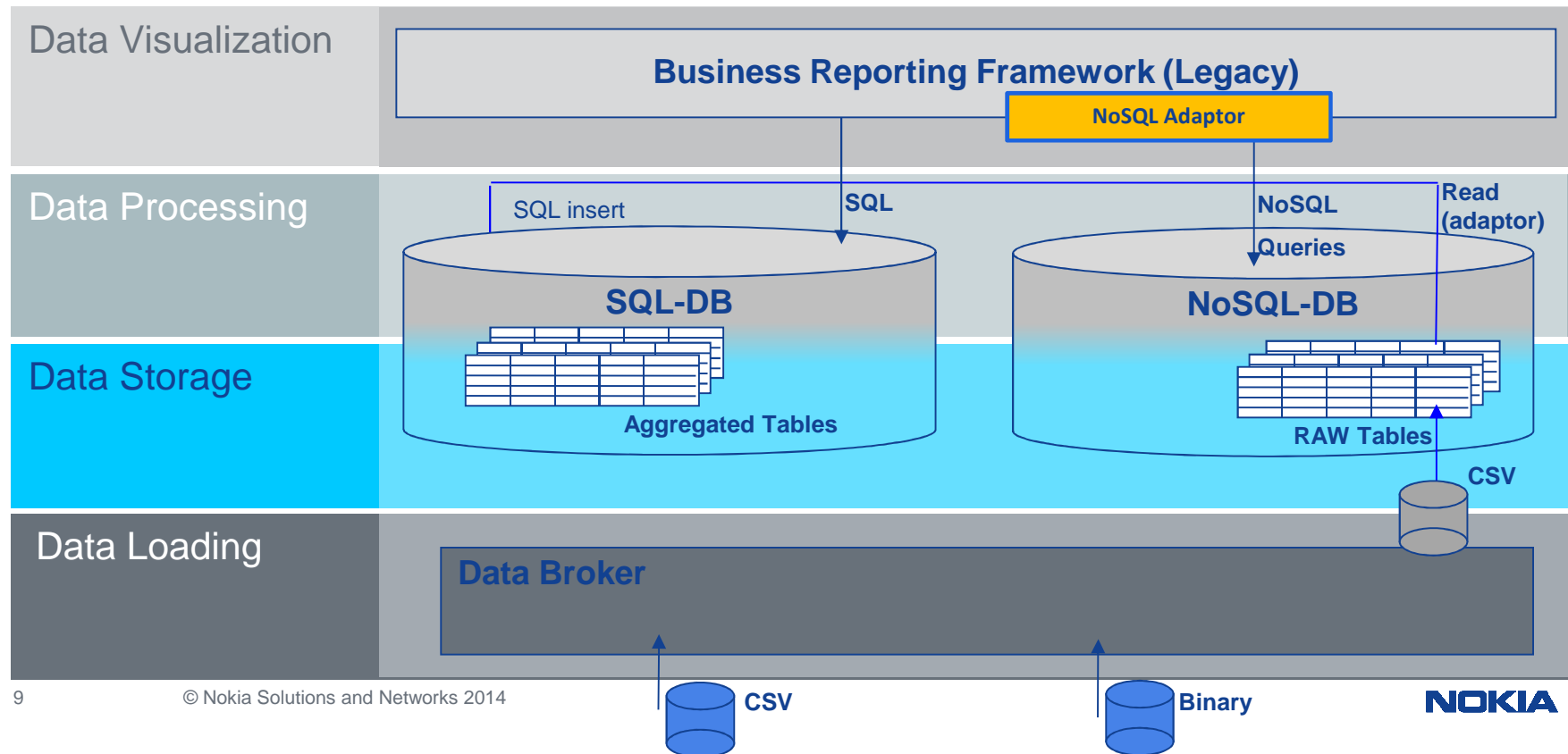
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Network Monitoring System - challenges to move data processing to storage



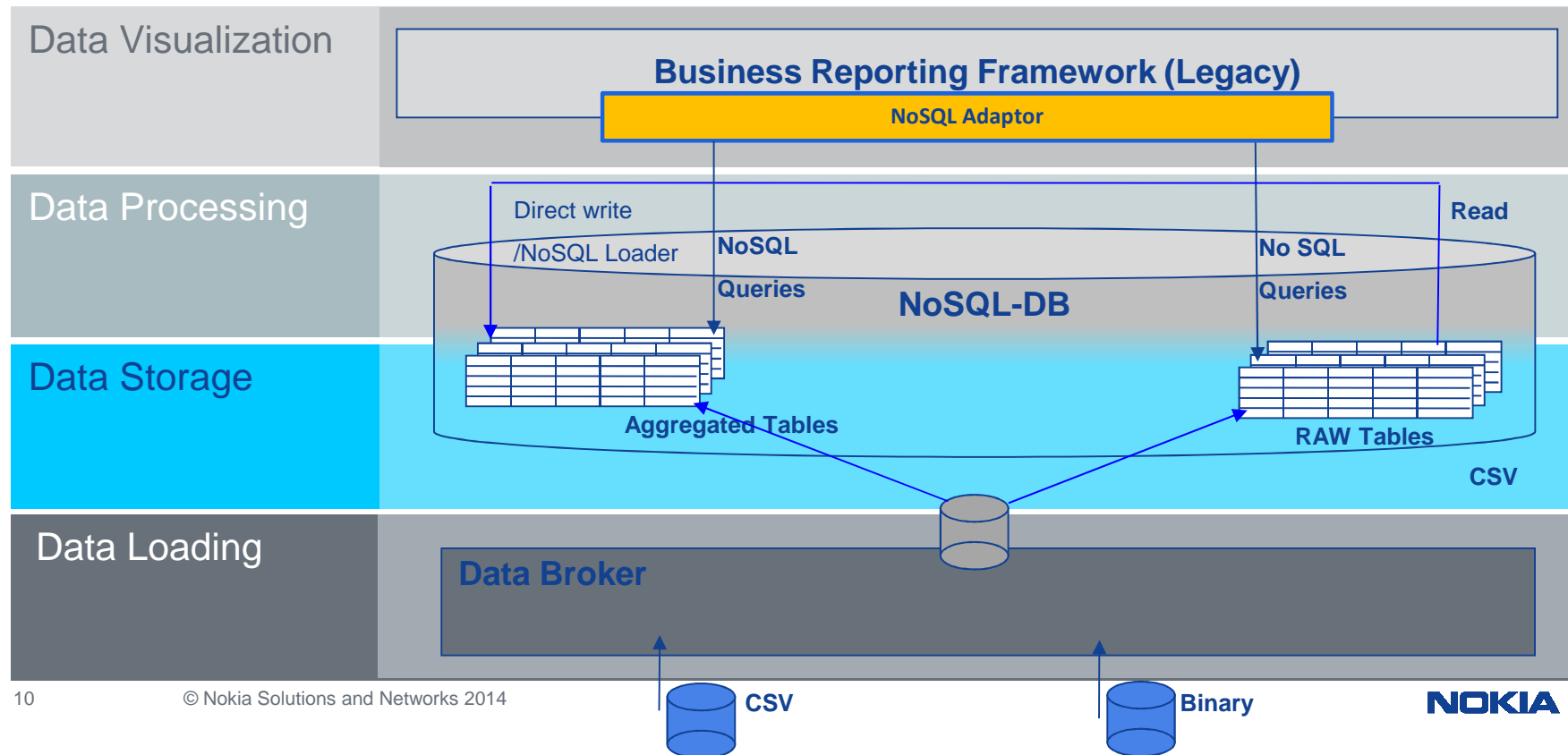
From relational DataBase to Big Data Architecture

Network Monitoring Ecosystem - Emerging



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Network Monitoring Ecosystem – Next Generation



NOKIA