it's about time

Kx for Telco Use Case

Radio Access Network (RAN) Analytics

Capacity planning and quality management in communications networks no longer rely on outmoded measures like housing density and traditional usage patterns. They are based instead on the activity of mobile subscribers, accessing a multiplicity of services, often in rapidly changing environments, yet still demanding undiminished quality of service. As a result, deterministic planning based on the past has given way to a more nimble approach that reacts to what is happening now, in real time, in order to guarantee continued accessibility and performance.

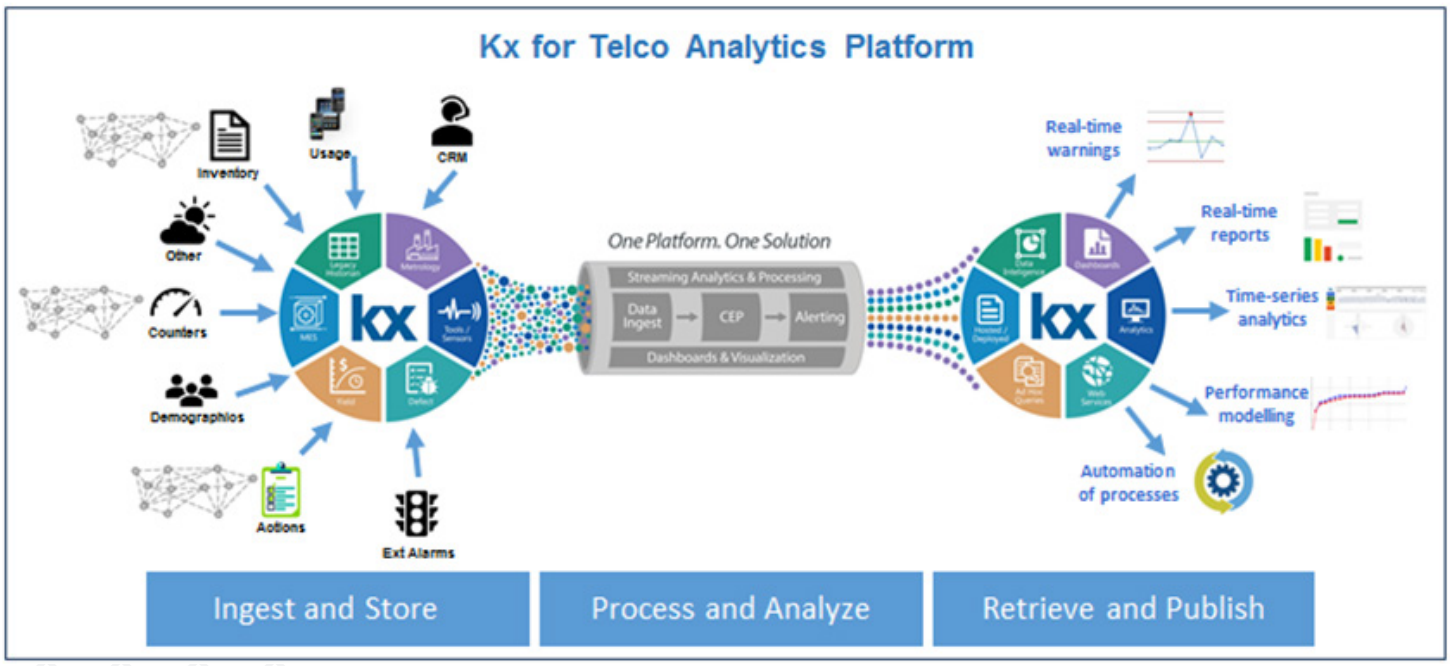
Real-time metrics from RAN elements and end user devices provide that instantaneous insight into what is happening now, how the network is operating and what is required to maintain its performance. But historical data still has its place too. Especially historical time-series data that can provide invaluable training information for anomaly detection, root case analysis and machine learning initiatives.

Network providers today therefore need a platform like Kx for Telco that can support real-time analytics on both streaming and historical data. The diagram below illustrates the generic framework for Kx for Telco use cases and is followed by an explanation of its usage in RAN Performance analytics.

At a Glance

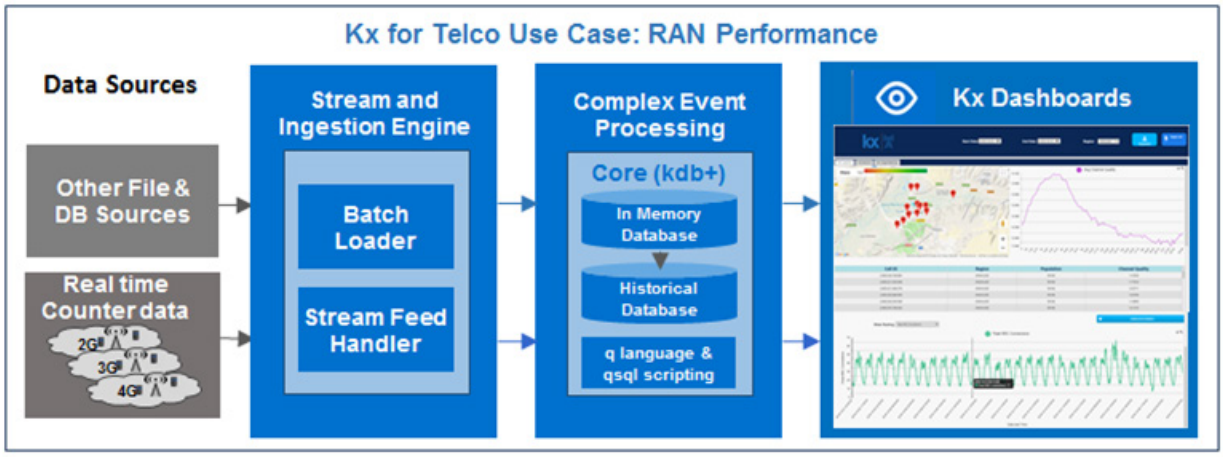
Kx for Telco is an integrated platform for ingesting, processing and analysing massive amounts of real-time, streaming and historical data from networks, devices and other data sources to support, improve and automate a number of operation and business processes ranging from network planning and CRM support to fraud detection and performance analytics.

Streaming and historical time-series analytics over a single platform



Radio Access Network (RAN) Performance Analytics

RAN's are composed of large numbers of elements called cells, each of them generating a large quantity of data via counters that capture the performance of the network in areas ranging from drop rates and signal strengths to throughput measures and transmission errors. Counter data is ingested into the Kx platform via the Stream Feed Handler module where each entry is time-stamped and logged for fail-over protection. Complementing, and giving context to the streaming input, is the cell definition and identification information of the network inventory. This data changes slowly in time, typically as a consequence of network operation and evolution in areas like release updates, refarming and densification, and is ingested as required via the Batch Loader Module.



The data is then passed to the in-memory Complex Event Processing (CEP) engine where it is processed in real time to give instantaneous updates on RAN-based analytics. This integration of database and programme language enables much faster processing of data than traditional approaches that have to extract the data and process it elsewhere rather than working on it directly. Kx is further accelerated by the vector design of kdb which is optimal for processing time series data. Older data is persisted to disk but is quickly retrievable for combining with streaming data as needed. Kx Dashboards, the visualization layer of the platform, enables rich and intuitive HTML5 visualisation of results across multiple devices. Dashboards also support ad hoc queries into the data.

Examples of RAN Analytics

Business Function	Sample Analyses	Benefit for the Operator
Supervision	Early warnings and alerts of key underperformance indicators	Prevent failures. Reduce OPEX.
Optimisation	Root cause identification and tracking underperformance or overloaded cells	Prioritize actions. Reduce OPEX.
Planning	Visualize traffic evolution and distribution using simulations and what-if scenarios	Align investments. Reduce CAPEX
Operations	Root cause analysis in identifying and investigating customer claims.	Shorten time to solution. Reduce OPEX.

Want to see how it works? Ask for a demo

Kx and the future of mobile networks

The rollout of 5G and network virtualisation technologies, along with innovative real-time and low latency services, heralds a new world for both operators and users. Machine Learning, and Artificial Intelligence paves the way for automation of processes and eventually zero-touch network management. Edge computing will enable taking action as close to the event as possible, both in the network and on devices. Kx, with its long pedigree in processing both streaming and historical data and its almost unlimited scalability, offers the ideal platform for the next-generation real-time telco solutions.

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