



Enhanced User Experience And Cost Savings Are Making Telenor India Even More Competitive



5 Key challenges

- 1 Discovering and retaining profitable customers.
- 2 Increasing share of data revenue without affecting voice business.
- 3 Deciding where to trim or invest in the network.
- 4 Reducing call-centre costs (outsourced).
- 5 Satisfying escalating financial reporting requirements.

5 Benefits Of Teradata Implementation

- 1 Complex project (including upgrading to Teradata 14.1 and a hardware floor-sweep) completed on time and in-budget.
- 2 BI ecosystem provides a single point of access to near-real-time information, and a single version of the truth.
- 3 Customer-centric architecture enables a 360° view of customer behaviour, which helps increase campaign conversion rate.
- 4 99.99% reporting accuracy, with a five-day turnaround for financial closing reduced to two days.
- 5 Self-service, USSD-based application reduces call-centre costs.

Looking Ahead

Installing the latest high-end servers has given Telenor India the requisite computing power and flexibility, together with a solution to manage the next level of analytics and enhance the BI experience. Now the system is capable of handling higher volumes and variety at higher speeds, and they expect to be providing real-time data very soon.

Telenor India's 53.5 million pre-paid mobile subscribers benefit from a simple proposition: Most affordable deals online, guaranteed, for all basic services.

Enhanced user experience and cost savings are making Telenor India even more competitive

“We want to become the preferred partner in the digital life of our customers by offering affordable mobile data to the masses.”

Tanveer Mohammad, COO, Telenor India

In one of the most competitive telecommunications markets in the world, more than 10 operators are fighting for a share of the Indian market that represents 1.21 billion people. (Telenor India operates in six of India's 22 circles, or regions, covering 50% of the population).

Not surprisingly, protecting revenues, maintaining a high-quality service, retaining valuable customers, and managing costs, are high on the agenda for every operator. And as the market turns more digital, data monetisation, optimal network planning, real-time marketing campaigns, and decision-making are becoming essential agents for survival.

Critical challenges. Endless possibilities.

India is a very price-sensitive market, and with mobile subscriber numbers growing exponentially in urban areas, there's a high chance of encountering users with multi-SIM phones. Telenor India has focused on the pre-paid segment of the market and targeted mass-market users with affordable voice and data services. Telenor also realises that for many subscribers, their connection is a secondary SIM. So now, after gaining more than 53 million customers in less than seven years, the focus is on retaining their most profitable customers.

Business Intelligence (BI) is a key element in Telenor India's technology architecture. So, the deployment of cutting-edge technology and simplified processes is essential if Telenor is to get the most out of its BI ecosystem (near-real-time data availability, a 360° view of Telenor India's customers, a single version of the truth, and ask-any-question capability, for instance).

In addition, Telenor India wants to ensure that as Internet usage goes up, its data-revenue percentage also increases without affecting the voice business. Market trends indicate a rise in smartphone penetration in non-urban areas, which is expected to trigger significant data consumption. By early 2017, Telenor will launch a state-of-the-art network, delivering high-speed internet and enhanced service quality to its customers.

“Our goal is to provide an efficient network to deliver affordable mass-market mobile services” explained Avinash Mittal, CIO, Telenor India. “We're focusing on customer insights because we want to offer relevant services to our customers.”

Consequently, Telenor India is also looking at Big Data projects to make sure they develop a better understanding of customer behaviour.

Investing in success

Telenor India has regularly upgraded its IT systems to maintain its market position. The company's previous upgrade (phase three, 2012) was expected to last for five years. However, due to rapid changes in the market, phase four had to be implemented much earlier than expected (October 2014).

Why? Because system users - inspired by the much-improved 2012 system - ran lot of heavy campaigns, causing usage numbers to rise exponentially. This meant a lot of data churning had to be done overnight and usually it would spill over to the mornings. Then the situation would heat up all over again with business planners firing major I/O-consuming queries and the system would choke.

To catch the knock-on effects threatening to bring the system down, we deployed full workload management - TASM (Teradata Active System Management). But, clearly, you can't stop users firing-off these sorts of queries - that's exactly what these systems are built for. Telenor India realised they had to bite the bullet and expand, and that the latest OS - SLES 11 would enable them to do a lot more than their current systems.

“Now we can prioritise queries, segment customer needs, and load data in a timely manner, meeting timelines as a matter of course.” Avinash Mittal, CIO, Telenor India. “

“When we replaced the old system, we introduced higher efficiencies and saved on cost. The entire system was environmentally friendly too. Eight physical cabinets were reduced to just two and the new set-up doubled performance.” Abhay Gupta, Head Analytics, Telenor India.

Making BI more efficient and cost-effective

To ensure that relevant information is easily accessible by subscribers, we developed a Self-Care Manager. This system pulls data from all relevant sources to provide customers with near-real-time, single-point access to the BI ecosystem.

The whole USSD-based self-service application was built from scratch to ride on top of the BI. So, if customers are looking to recharge or they need assistance with anything, they access the USSD platform instead of calling the call centre.

USSD has become a key campaign and self-care channel for Telenor India. It has helped Telenor manage costs without compromising customer service, because each second a customer is on the line with a call centre agent is an expense for the company. All Telenor India's call centres are outsourced, so reducing the number of inbound and outbound calls cuts expenditure.

Near-real-time data in BI means that customers can check their balances and usage, receive data settings, find stores, check complaint status, and much more via the self-help channels. At the same time BI enables self-activation menus to allow Telenor India to promote campaigns, offering Rocket Recharge*, VAS (Value Added Services) activation, and up-selling products in an extremely efficient and low-cost channel.



Rocket Recharge

Telenor India subscribers can now dial *234# and choose their own, customised, Rocket Recharge. The system analyses individual usage patterns and recommends the optimal recharge amount with additional bonuses like extra talk-time, extra SMSs, or a discounted VAS product.

Telenor India's BI has nine macro segments for customers. It also has over 2,500 micro segments with added KPIs for type of usage, balance, and days of inactivity, to provide low-level customer-profile granularity for targeted campaigns.

The objective of Rocket Recharge is to leverage segmented data and incentivise retailers to up-sell segmented customer offers. Agents use their Telenor India SIMs to discover which offers are available and the commission on offer (payment takes <3 minutes). Accordingly Telenor India have achieved a 20% increase in monthly recharge revenue, 25% of the total being due to Rocket Recharge.



“USSD, data insights, and BI, have taken customer centricity to a whole new level.”

Tanveer Mohammad, Chief Operating Officer, Telenor India.

Less than nine months after USSD launch:

- Around 48% of customers have used the platform more than once.

Currently:

- More than 6 million hits are handled every day.
- Around 2 million unique subscriptions, daily, via Self-Help channels (USSD, IVR, WEB, Mobile Apps) to check usage, offers, and to activate services.

Rounded customers are more responsive

The BI Enterprise Data Warehouse provides a 360° view of customer usage, top-ups, payments, interactions, CIM data, sales & inventory management, and VAS activations. These insights are used to create behaviour-based profiles (e.g. high-probability churners, prospective up-sell for VAS or voice, new customers, high-value customers) which trigger call-centre routing patterns like placing customers in the churn queue, VAS up-selling, First Call Activation, or Data Pack GPRS bundles.

As a result:

- 7-10% campaign uplift.
- 100% successful campaign execution over the last five months.
- Increased Average Revenue Per User for all channels

New BI insights mean that Telenor India can tell, precisely:

- which towers are underperforming and which are more valuable.
- how much needs to be invested in which locations.
- which towers they can shut down in their drive for network optimisation.

Meaningful feedback

In more-populated areas, customers and retailers are mapped to cell sites. All call-centre feedback is captured and each subscriber's 'most-utilised site' and 'dropped-call triggers' can be ascribed to their mapped site, and the appropriate NPS (net promoter scores) values assigned.

Strategic decisions based on fact

Traditionally, a brand views its organisation as a single business unit, assessing profit and loss at company level. Telenor India's operating model favours a cluster strategy, focused on customer experience and profitability enabled through strong, hands-on performance management.

Each cluster covers a small geography with its own group of assets (sites, infrastructure, retail, stores) and operates as a profit centre. Consequently, the new upgrade has enabled local BI insights that are being used in better network planning and targeted promotional activities leading to increased profitability, better customer experience, and a 25% increase in performance across the segments.

Bringing down call-centre costs

CRM has always been available to help resolve customer queries through online activities or raising service requests for inspection and closure. However, agents require 130 seconds of Average Handling Time and 144 unique CRM clicks to close a query. So, to reduce call-centre costs and enhance the customer experience, Telenor India deployed Teradata's next-generation CRM system; CIM (Customer Interaction Manager).

CIM helped consolidate and organise Telenor India's data so they could:

- Segment target audiences into meaningful groups.
- Predict offer-response based on historical data.
- Send individual and timely messages based on subscriber behaviours.
- Create and manage custom offers in line with a holistic messaging strategy.

The implementation of CIM has already brought several benefits. For instance:

- Average Handling Time has been reduced from 130 to 122 seconds.
- Repeat callers have been reduced from 23% to 15%.
- No capital expenditure.
- Operational expenditure savings of 33%.

- The CIM system's simplified architecture, reduced complexity, smaller data-centre footprint, and lower costs, have become the benchmark for all other Telenor Group business units, increasing Telenor India's revenue.

Consistent and simple DIY support

Telenor India had multiple IVRs (Independent Voice Recognition) from a whole host of vendors for various support services like: VAS, Do not Disturb, CRBT, Billing & Charging, etc.

Consequently:

- customers had to remember multiple numbers
- the customer experience fluctuated
- self-help was not available
- performance was hindered
- high change-management costs
- long time-to-market

Clearly a single IVR was needed. It was enabled through the Self-Care Manager integration with the BI ecosystem to deal with the full range of customer queries, anytime, anywhere.

Less than four months after SIVR launch:

- single-number calling - 8 short codes (121,198,5001 etc)
- over 80,000 fewer calls per day to call centres, due to Self Care
- more than 0.5 million calls are made to SIVR each day.

Incentivising retailers

Happier retailers

Each day, Telenor India shares hot leads (customers who live <5km from a store and are eligible for recharge) with their 2,000 dedicated stores¹. The store calls these customers and gets their phones recharged. Options offered include walking into a franchisee or a retail outlet to pick up a range of benefits. For this, the retailer picks up a 7% recharge commission.

Instead of having to make calls 'blind', the retailer now knows which subscribers have low balances and who's most likely to agree to visit a store on that particular

day, or who's most likely to be interested in current promotions. As a result, customer visits have increased by 14%, with both customers and stores benefitting from special campaigns.

¹ Telenor India has nearly 400,000 retail outlets, and a lot of the metros' migrant population are customers. So, to reach mass-market customers easily and be available whenever required, Telenor has made auto-rickshaw drivers, or people selling water at bus stop or at train stations, POS (point of sale) retailers.

Keeping an eye on revenue and expenditure

Fraud management savings of around 60 million INR a year

After retiring the existing fraud management system, we designed KPIs and alerts to prevent revenue leakage, delivering significant savings. The hourly, daily, and weekly alerts flagged-up fraudulent activities like waivers, cumulative recharge, negative balance, SIM Box, and incorrect usage.

Telenor India's current re-rating mechanism is remarkable. It can re-rate over 100 bill plans a day compared to a market norm of around 10. Rating-validation control ensures customers are charged correctly. Which is important because over-charging could be penalised by the telecom regulatory body and, obviously, under-charging costs the company money.

Record-breaking financial reporting

Financial closing has been reduced from five days to two, with 99.99% accuracy. More than 55 financial reports provide monthly-daily reporting, and a revenue dashboard allows internal users to track revenue targets. Telenor India has been rated #1 across all Telenor operating companies for excellence in quality and timely financial reporting for a record 12 quarters now.

Checks and balances

Using a demand management process, the IT team evaluate all business requirements according to feasibility and impact assessments, before presenting the most likely ideas and a business case to the steering committee (C-suite +) for investment approval. As soon as a project is completed, the committee receives an impact report which they compare to the initial business case.

Facts & figures

Being a CSP, Telenor India's business and operational support systems deal with huge volumes of call data (rated, unrated, and logs: ~400Gb of data processing). This requires complex transformations to ensure effective and timely processing.

Telenor India's EDW ecosystem underwent a complete floor-sweep (Oct 2014), moving to a Teradata 6750H 3+2 series from Teradata 55XX, 56XX, 66XX. Telenor India features ODI (Oracle Data Integrator) as an ETL tool providing a graphical environment to build, manage, and maintain the data integration process into the BIEDW. It takes care of extraction and ingestion, plus aggregations, datamarts, and OLAP Cubes (Online Analytical Processing of multi-dimensional data sets).

“Our relationship with Teradata goes back to 2009. Over this period our relationship has grown, as has our respect for each other.”

Tanveer Mohammad, Chief Operating Officer, Telenor India.

Data is collected and seamlessly updated throughout the day, while the resource allocation is managed via TASM. End-user-reporting analytic requirements are managed by Oracle BI Enterprise Edition, SAS, and Teradata tools.

Three innovations that helped maximise business value

1

IN/MSR Merger: Storage for IN and MSR files - a common practice of Indian CSPs - leads to data duplication and heavy space consumption. So an IN-MSR (Rated-Unrated) merger was required. Data was merged, de-duping the common records to create a single view for end-users. This resulted in around 40% a month cost reduction in BIEDW storage.

2

ITPI for measuring IT Performance Index: Telenor India has developed ITPI methodology to gauge performance of its entire BSS stack, including BIEDW. Questionnaires are sent to business users (rating 1-5 Detractors, 6-7 Passive, 8-10 Promoters) and actions created for SMEs to follow and close. ITP reached 92% (Dec 2014); up from 83% (Mar 2014). We migrated in October 2014.

3

One BI: Telenor India's decision to develop a One-BI ecosystem and to clean redundant data in BI / ODS / FMS / RA enabled them to benefit from a single version of the truth, realising data storage / processing savings without disrupting business functions.

Top 5 Best Practices

1 Naming convention: all tables in BIEDW follow a unique nomenclature. Starting with a number denoting the subject area or the data source, i.e. all MSC tables start from T08 (T for Table, 08 for MSC), similarly T01 for all-party subject-area-related tables. This helps internal users easily search across tables and make use of the glossary.

2 Re-using KPI: instead of creating separate KPIs for separate functions, a common glossary of KPIs is available. Monthly KPIs are developed so that all functions can use already-extracted KPIs rather than have to execute their own reports.

3 SLA adherence and data quality: end-to-end source to target (EDW) reconciliation and daily monitoring of SLA adherence in terms of data completeness.

4 SQL training module: Telenor India created its own SQL book with relevant Telenor India model-based-queries examples to acquaint users with SQL concepts.

5 IMEI-IMSI history maintenance: since both IMEI & IMSI are repeated in most Call Data Records, an SCD type II was created to capture change in IMEI/IMSI instead of storing repeated data in base tables. This resulted in a 5% saving in table space.



Scope

Data Volume:

92.8 TB (data in the DW, including any downstream datamarts or operational data stores)

Rollout Dates:

Phase 1: April 2010

Phase 2: January 2011

Phase 3: August 2012

Phase 4: October 2014 (with all capabilities)

Users:

Active: 150+

Casual: 45% (view reports several times a week)

Power: 40% (explore data regularly)

Customers / suppliers: 15%

Team:

24 FTEs (full-time equivalent staff) on current team.

55% external consultants / contractors.

Looking ahead

“We developed the BI platform more than five years ago to support Telenor India’s analytical, reporting, and campaign functions. We were running an older version of the Teradata Database [13.1] even after reaching the end of its life and extended support. However, as demand increased over time we had to upgrade the hardware and software.”

“Installing the latest high-end servers will meet our requirements for another 3-4 years. Upgrading to Teradata’s next version as well as the hardware floor-sweep was a complex project. To deploy other BI tools, ensure minimal downtime, and maintain business continuity, we made the transition in phases via our BI-OLAP tool (OBIEE), BI-ETL tool (ODI), and the back-up solution.” Avinash Mittal, CIO, Telenor India.

Real-time campaigns and real-time decision making

Active Data Warehousing (ADW) is making marketing campaigns more relevant and more contextual, rolling them out with a 2-3-hour window. Real time is the next big thing, and it could provide a real revenue uplift for Telenor India. Previously, they were doing multiple daily campaigns and the inferior response rate wasn’t working for them.

ADW will also reduce the load on SMS and USSD gateway, and the context provided by fresh data should spark an increase in campaign up-take.

Now, Telenor India have the computing power and necessary solutions to tackle the next level of analytics, and continue enhancing the BI experience. As the system is now capable of handling more volume, variety, and velocity, we expect to be providing real-time data very soon.

Commercial acuity

Telenor (India) Communications is a wholly owned company of the Norway-based Telenor Group, and it offers mobile telephony services under the brand, Telenor.

Telenor’s pre-paid GSM mobile services are commercially available in the six circles of UP (West), UP (East), Bihar (including Jharkhand), Andhra Pradesh (including Telangana), Maharashtra, and Gujarat. Together, these circles account for more than 50% of India’s population which means that Telenor serves every second person in India.

Telenor has positioned itself as the most affordable operator in India, offering value-for-money voice and Internet services to 53.5 million subscribers. Its three-pillar strategy of being the best in basic services, mass-market distribution, and low cost operations, has helped the company rise to fourth in customer and revenue market share for its operational six circles.

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