Big Data: A gold mine in Telcos' backyard

Extracting maximum value from Big Data

Big Data is an invaluable strategic lever for telecom operators to reverse the revenue decline trend affecting markets worldwide. Big Data enables Telcos to leverage one of their strongest hidden assets, customer insights. In this Viewpoint, Arthur D. Little provides perspectives on some of the most critical issues in order to maximize this potential.

The emergence of Big Data technologies enables Telcos to capture, analyze and monetize enormous volumes of customer information and interaction data across multiple touch points in real time. This provides them with a unique strategic advantage to improve the performance of their core business by offering more targeted products and services and differentiated customer experience. The most valuable customer insights can be monetized, and an array of enabling data and business intelligence services can be offered to companies in a range of industries.

Arthur D. Little, through its experience of working with Telcos in Europe and Middle East, provides perspectives in this Viewpoint on some of the most important questions facing Telcos wanting to harness the potential of Big Data:

■ What are the strategic considerations for Telcos aspiring to create value from Big Data?

■ What are the best practice use cases through which Telcos are monetizing their customer insights through Big Data?

■ What operating model and capabilities are required to derive value from Big Data initiatives?

■ How should Big Data initiatives be put into action to build differentiating capabilities to create Big Data as a sustainable strategic advantage?

Big Data – How to create strategic advantage?

In order to maximize the value of Big Data, Telcos should identify the market potential of these enhanced products and services and/or improve the quality of service and optimize operations of their core business to generate incremental revenue streams or cost savings through Big Data. Upon ascertaining the market potential, Telcos should select the most optimal business model – e.g. 1) Business Intelligence as an internal and/or external service, 2) Insights as a product for service industries, 3) Big Data technology as a service, 4) Advanced Analytics offerings etc. to capture the opportunity and manage the implementation from a technological, as well as operational perspective. Arthur D. Little summarizes five strategic considerations for Telcos aspiring to create value from Big Data. (Refer picture on page 2).

Customer insights – A gold mine of value for Telcos

Ownership of customer insights (e.g. location, online activity and behavior, billing and payment history etc), has long been touted as an invaluable competitive advantage for a telecom operator, especially in the wake of threats from Over-the-top (OTT) players. As customers widen their digital footprint, Big Data use cases are therefore clearly moving away from descriptive analytics towards not only predictive, but also prescriptive analytics covering users' behavior across all digital touch points. Partnering and collaboration with players across digital eco-systems is a key trend for Telcos to further broaden and enrich their customer datasets.

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A critical point of debate in ascertaining the value and benefits of Big Data for telecom operators is the level of contribution from internal and/or external monetization. While the ambition of telecom operators with a wider Information and Communication Technology (ICT) focus has clearly been in favor of external monetization; the business potential of internal monetization use cases can be 6 to 9 times more than the potential realized through external monetization.

Beyond the buzz: Five strategic considerations for Telcos aspiring to create value from Big Data

1

It's all about smarter decisions!
The real business value of Big Data lies in enabling smarter decisions that underpin new products, foster quality of services, improve customer experience leading to higher revenues or save operational costs for any enterprise

2

Go for competitive advantage!
The most business value comes from targeting the business potential and not from mere technological implementation. Telcos need to identify the right business model balancing their ambition to leverage it in the core business vs. external monetization

3

The business side needs to be in the driver's seat!
It takes a strategic initiative driven by the business to exploit Big Data potential. Telcos need to clearly identify the most relevant use cases in B2C, B2B as well as 3rd party ecosystem to generate returns from Big Data investments

4

It's a transformational challenge!
Successful monetization of Big Data very often requires a transformation of operating models, responsibilities or access/usage rights and new forms of collaborations, new capabilities and most importantly a data-oriented culture and mindset in the organization

5

Manage the risks!
Big Data implementations carry some unique risks (e.g. inability to overcome legacy data inconsistency and quality issues) which need to be mitigated right from the planning stages

Source: Arthur D. Little

Use cases – Internal monetization

Telcos will be able to increase revenue by improving their core and non-core product offerings by targeting specific customer needs, with deep customer insights on one hand and enhancing the bottom line through greater efficiency in network planning, sales, customer care, etc. on the other.

Some of the most interesting internal use cases resulting in significant quantifiable impact include:

- **Reducing churn through real-time Call Data Record (CDR) analysis.** Detailed analytics of CDRs by an operator revealed that customers experiencing more than 10 dropped calls in a month had 8 times greater propensity to churn. Furthermore, the operator could pinpoint the exact cause of the issue, from tower to customer's handset. This insight, available in real time, was used to design a churn prevention action specifically tailored for the individual customer. **Results: This approach helped the operator reduce churn significantly, especially in their high value segment.**

- **Event based churn management.** Big Data analytics enables operators to conduct sophisticated "event-based churn" modeling, through which operators can predict churn due to a specific competitive action and develop their own anti-churn campaign accordingly. **Results: Such efforts**

have improved the efficacy of an operator's anti-churn campaigns by a factor of three.

- **Proactive approach to customer experience management.** Another operator in Europe leveraged Big Data analytics to improve the uptake of data plan renewal offers. An analysis of customers' renewal patterns indicated a greater propensity to take-up when the customers were closer to reaching the fair use cap. The complexity of analytics in this use case involves several hundred parameters, such as customer usage, device used, when to contact the customer, how much data to offer at what price, etc. In fact, there are more than 100,000 possible combinations of these variables, which can be analyzed by the operator to design the renewal offer. **Results: With the right formula enabled by Big Data analytics, the offer conversion rate jumped to more than 40% from 1-2%.**

- **Intelligent communication – using the "voice of the customer".** A telecom operator monitors twitter and social network activity and then tailors marketing campaigns using the customers' colloquial terms, rather than the traditional marketing or technical lingo. **Results: By interacting with the customers in their own language, the click rate for the online marketing campaign increased by 30% and conversion rate by 20%.**

Use cases – External monetization

Telefonica Dynamic Insights and Orange Datavenue are some of the pioneering initiatives by Telcos toward external monetization. Furthermore, some interesting examples of Telcos successfully monetizing their Big Data capabilities through external use cases include:

- **Applications for third parties to optimize branch locations.** A leading telecom operator uses anonymous and aggregated mobile network data to provide third parties with the best ways to optimize their store location and layouts. This application could be used by multiple players:

  – **Retailers** to better understand footfall, tailor product promotions, and determine locations and formats for new stores.

  – **Town councils** to measure impact on visits after implementation of new markets, parking spaces, etc.

  – **Sporting arenas** to manage traffic and crowds during large events such as concerts, sporting events, etc.

  – **Emergency responders** to improve emergency response planning by providing an understanding of people movement at different places and time.

- **Smart Targeting** – Another operator analyses web and location logs in order to develop micro-targeted campaigns by micro-location, lifestyle, type of handset owned, etc.

- **Optimization and targeting of billboards** – Operators use their network data to help advertisers best position and measure advertising effectiveness.
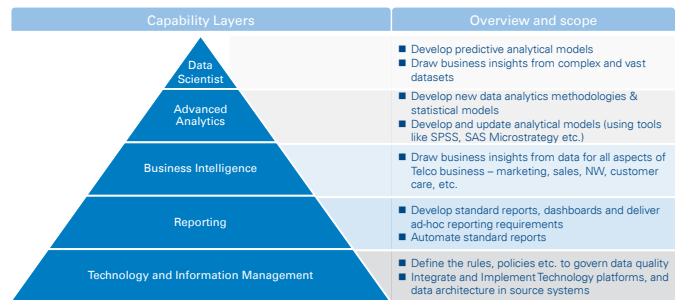
Big Data Operating model for Telcos

Big Data analytics provides an immense opportunity for companies to rediscover the scientific way of working – hypothesis-driven and based on rigorous data analytics. Implementing the most optimal operating model is key for organizations striving to maximize the benefits of Big Data. Critical aspects of best practice operating models are:

1. Advanced Data and Business Intelligence (D&BI) capabilities.

2. Clear outline of the accountabilities across the D&BI value chain.

3. Organizational emphasis on the D&BI function.

For operators, there is a range of options for operating models. At one end of the spectrum is the fully Distributed Model, in which the roles and responsibilities across the Data and BI value chain are dispersed across the organization. On the other end is the Centralized Model in which a central function takes ownership from strategy to implementation of Big Data initiatives and acts as a service provider to internal, as well as external customers, on data, insights and advanced analytical offerings.

Telcos aspiring to monetize Big Data investments should develop capabilities across five layers of D&BI value chain

An operating model for Big Data should be selected based on some key considerations:

- Maturity level of Data & Business Intelligence processes – operators with lower maturity of traditional BI functions should aim at greater centralization.

- Ambition with respect to 3rd party monetization – operators aiming at significant focus on 3rd party monetization should aim at greater centralization

- Availability of advanced analytics skill sets in the organization – operators with scarce resources should aim at greater centralization to build capabilities sustainably in the long run.

The Big Data operating model should reflect a clear definition of responsibilities in the Data & BI value chain with complete centralization of advanced analytics, BI and Information Management activities to foster standardization and transparency of information on one hand, and organization-wide dispersion of end-use activities on the other hand.

Telecom companies should embrace the role of Chief Data Officer (CDO). A CDO is dedicated to mining, analyzing and managing data, and coordinating its use throughout the whole organization across use cases. The CDO is in-charge of the central Data & BI function which should be the engine to deliver analytics products roadmap, implement the chosen business models for internal and external monetization, implement robust data governance and promote a data driven mindset in the organization.

Telecom Operators shoould ensure clear accountabilities for key processes related to Data and Business Intelligence

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Viewpoint

Recommendations for decision makers

Think big, start small

Telcos should aim to build upon small successes and then gradually roll out Big Data initiatives organization-wide. Once the value of Big Data analytics becomes visible, a companywide rollout and adoption becomes much easier to accomplish.

Ascertain the business impact in specific context

Even though Big Data is a new frontier and there is a widespread excitement to master and execute something new, it is important to base any new investments in skills and technology on a strong business context. This is especially true with something as vast and dynamic as Big Data as it is pertinent that the business does not get "drowned" in the huge amount of secondary information that will be inevitably generated.

Build the human capital base

As such scarce supply of Data Analysts and Data Scientists is a key barrier across markets (especially in Middle East). Operators should place special impetus on attracting and retaining such talent.

Bring Big Data from plan to action

Arthur D. Little recommends seven key steps for Telcos to bring their Big Data plans into action.

Big Data – From plan to action

1	**Ascertain ambition and strategic objectives & prioritize internal and external monetization** Select the right business models in specific market context
2	**Develop data model covering internally and externally available data across source systems** Identify what needs to be sourced from an external provider. What other data needs to be captured in order to answer the questions fully ?
3	**Develop operating model for startup phase (incl. key resources for implementation)** This should cover the capabilities across all layers of D&BI value chain.
4	**Select the appropriate infrastructure and Big Data technologies and tools** Those are needed for analytics, reporting and visualization for implementation
5	**Cleanse data** Crucial Step to perform in order to address an inconsistency and corruption in datasets, ensure individuals' privacy and take out any unwanted "noise" data that might hinder the analysis.
6	**Run a short project as a "Proof of Concept"** Ensure tangible outcomes and share the results in order to generate greater acceptance of Big Data.
7	**Develop and target a broader set of use cases in the most appropriate operating model**

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Arthur D. Little

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Our consultants have strong practical industry experience combined with excellent knowledge of key trends and dynamics. Arthur D. Little is present in the most important business centers around the world. We are proud to serve most of the Fortune 1000 companies, in addition to other leading firms and public sector organizations.

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