

involving mission-critical applications rather than for the medium- and long-term decisions associated with an EDW. An ODS is similar to short-term memory in that it stores only very recent information. In comparison, a data warehouse is like long-term memory because it stores permanent information. An ODS consolidates data from multiple source systems and provides a near-real-time, integrated view of volatile, current data. The exchange, transfer, and load (ETL) processes (discussed later in this chapter) for an ODS are identical to those for a data warehouse. Finally, **oper marts** (see Imhoff, 2001) are created when operational data needs to be analyzed multidimensionally. The data for an oper mart come from an ODS.

Enterprise Data Warehouses (EDW)

An **enterprise data warehouse (EDW)** is a large-scale data warehouse that is used across the enterprise for decision support. It is the type of data warehouse that Isle of Capri developed, as described in the opening vignette. The large-scale nature provides integration of data from many sources into a standard format for effective BI and decision support applications. EDW are used to provide data for many types of DSS, including CRM, supply chain management (SCM), business performance management (BPM), business activity monitoring (BAM), product life-cycle management (PLM), revenue management, and sometimes even knowledge management systems (KMS). Application Case 3.1 shows the variety of benefits that telecommunication companies leverage from implementing data warehouse driven analytics solutions.

Metadata

Metadata are data about data (e.g., see Sen, 2004; and Zhao, 2005). Metadata describe the structure of and some meaning about data, thereby contributing to their effective or

Application Case 3.1

A Better Data Plan: Well-Established TELCOs Leverage Data Warehousing and Analytics to Stay on Top in a Competitive Industry

Mobile service providers (i.e., Telecommunication Companies, or TELCOs in short) that helped trigger the explosive growth of the industry in the mid- to late-1990s have long reaped the benefits of being first to market. But to stay competitive, these companies must continuously refine everything from customer service to plan pricing. In fact, veteran carriers face many of the same challenges that up-and-coming carriers do: retaining customers, decreasing costs, fine-tuning pricing models, improving customer satisfaction, acquiring new customers and understanding the role of social media in customer loyalty.

Highly targeted data analytics play an ever-more-critical role in helping carriers secure or improve their standing in an increasingly competitive marketplace. Here's how some of the world's leading providers are creating a strong future based on solid business and customer intelligence.

Customer Retention

It's no secret that the speed and success with which a provider handles service requests directly affects customer satisfaction and, in turn, the propensity to churn. But getting down to which factors have the greatest impact is a challenge.

"If we could trace the steps involved with each process, we could understand points of failure and acceleration," notes Roxanne Garcia, manager of the Commercial Operations Center for Telefónica de Argentina. "We could measure workflows both within and across functions, anticipate rather than react to performance indicators, and improve the overall satisfaction with onboarding new customers."

The company's solution was its traceability project, which began with 10 dashboards in 2009. It has since realized US\$2.4 million in annualized revenues

(Continued)

Application Case 3.1 (Continued)

and cost savings, shortened customer provisioning times and reduced customer defections by 30%.

Cost Reduction

Staying ahead of the game in any industry depends, in large part, on keeping costs in line. For France's Bouygues Telecom, cost reduction came in the form of automation. Aladin, the company's Teradata-based marketing operations management system, automates marketing/communications collateral production. It delivered more than US\$1 million in savings in a single year while tripling email campaign and content production.

"The goal is to be more productive and responsive, to simplify teamwork, [and] to standardize and protect our expertise," notes Catherine Corrado, the company's project lead and retail communications manager. "[Aladin lets] team members focus on value-added work by reducing low-value tasks. The end result is more quality and more creative [output]."

An unintended but very welcome benefit of Aladin is that other departments have been inspired to begin deploying similar projects for everything from call center support to product/offer launch processes.

Customer Acquisition

With market penetration near or above 100% in many countries, thanks to consumers who own multiple devices, the issue of new customer acquisition is no small challenge. Pakistan's largest carrier, Mobilink, also faces the difficulty of operating in a market where 98% of users have a pre-paid plan that requires regular purchases of additional minutes.

"Topping up, in particular, keeps the revenues strong and is critical to our company's growth," says Umer Afzal, senior manager, BI. "Previously we lacked the ability to enhance this aspect of incremental growth. Our sales information model gave us that ability because it helped the distribution team plan sales tactics based on smarter data-driven strategies that keep our suppliers [of SIM cards, scratch cards and electronic top-up capability] fully stocked."

As a result, Mobilink has not only grown subscriber recharges by 2% but also expanded new customer acquisition by 4% and improved the profitability of those sales by 4%.

Social Networking

The expanding use of social networks is changing how many organizations approach everything from customer service to sales and marketing. More carriers are turning their attention to social networks to better understand and influence customer behavior.

Mobilink has initiated a social network analysis project that will enable the company to explore the concept of viral marketing and identify key influencers who can act as brand ambassadors to cross-sell products. Velcom is looking for similar key influencers as well as low-value customers whose social value can be leveraged to improve existing relationships. Meanwhile, Swisscom is looking to combine the social network aspect of customer behavior with the rest of its analysis over the next several months.

Rise to the Challenge

While each market presents its own unique challenges, most mobile carriers spend a great deal of time and resources creating, deploying and refining plans to address each of the challenges outlined here. The good news is that just as the industry and mobile technology have expanded and improved over the years, so also have the data analytics solutions that have been created to meet these challenges head on.

Sound data analysis uses existing customer, business and market intelligence to predict and influence future behaviors and outcomes. The end result is a smarter, more agile and more successful approach to gaining market share and improving profitability.

QUESTIONS FOR DISCUSSION

1. What are the main challenges for TELCOs?
2. How can data warehousing and data analytics help TELCOs in overcoming their challenges?
3. Why do you think TELCOs are well suited to take full advantage of data analytics?

Source: Teradata Magazine, Case Study by Colleen Marble, "A Better Data Plan: Well-Established Telcos Leverage Analytics to Stay on Top in a Competitive Industry" <http://www.teradatamagazine.com/v13n01/Features/A-Better-Data-Plan/> (accessed September 2013).