The Four Stages of the Data Maturity Model

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Big Data is not a technology. It's about answering business questions and delivering value. The penalty for poor decisions is enormous, so resourceful firms are combining new data streams and existing data sets in new ways, and they're applying analytics to tease out hard-to-find correlations and connections for better, faster decisions. With the emergence of in-memory data structures, file based storage systems, and massively parallel processing, technology is capable of leveraging all data. But to extract value from that data, IT and the business must partner to create an operating model that solves specific business problems, invests wisely by employing the right technology for each phase of the data lifecycle, and delivers self-service analytics with reduced development time and costs. To get there, you need to know where you've been and where you are in your data maturity. Maturity is needed because trust is built along that path. Rarely do we see stakeholders willing to accept predictions and more sophisticated analytics without a trust of what has happened and what is happening in the business, as measured by regular KPIs. At Dell, we created a data maturity model to chart our own data maturity and help our customers track theirs. See Figure 1, Dell Data Maturity Model.

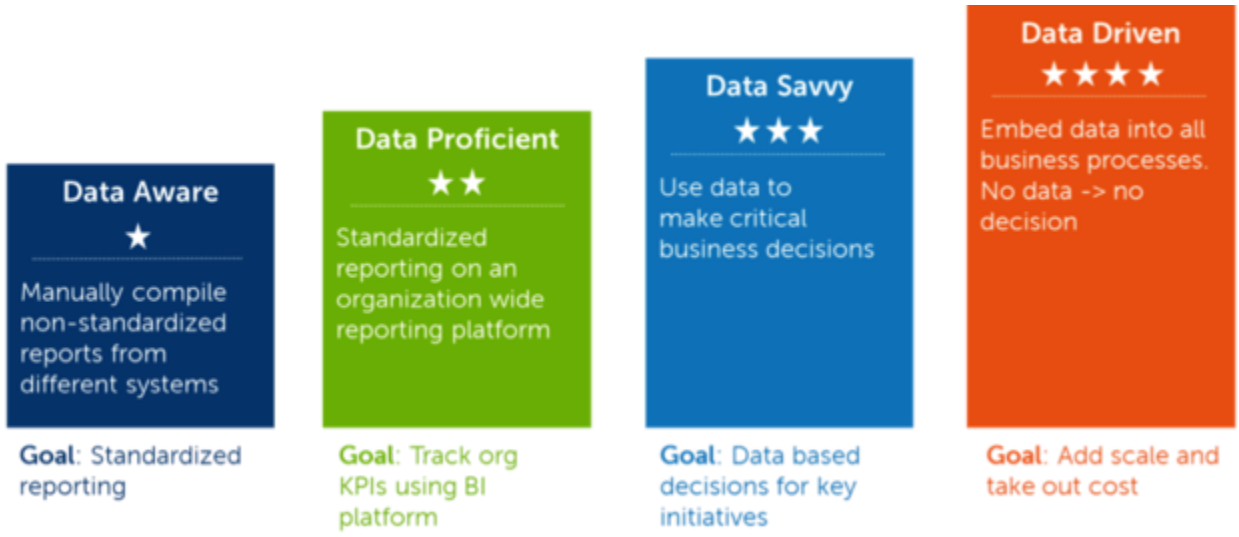

Figure 1. Dell Data Maturity Model Data Aware.

In the Data Aware phase, firms manually compile non-standardized reports from different systems with the goal of standardizing reporting. There are multiple BI systems, data sources, and databases, and there's a lack of data and app integration. The business is doing ad-hoc reporting and doesn't always trust its own reports.

If this sounds like your organization, you'll want to focus on building the following capabilities to move up the maturity curve: data modeling and database design, data normalization, feeding data to a BI/reporting system, and building reporting dashboards.

Data Proficient: In this phase, data quality is questioned. IT continues to have multiple databases or data marts and an incomplete data warehouse, and there is no app integration. The business has begun to track organizational KPIs and is now ready to pilot a data initiative, but it lacks executive sponsorship and the know-how to manipulate or use unstructured data. It's common at this stage for the business to demand innovation beyond IT's capabilities or capacity.

Firms should focus on building proficiency in data quality and app integration, provisioning data for speedy access by users, implementing new technologies like Hadoop that address unstructured data, optimizing the data warehouse (including ETL offload), and implementing a Master Data Management strategy. These actions can enable the organization to achieve standardized reporting on a platform available across the firm.

The organization is now using its resources more efficiently and is ready to realize the promise of big data and analytics: transforming the way it operates.

Data Savvy. At this stage, organizations are using data to make critical business decisions for key initiatives. This is the stage where the all-important business and IT partnership goes to the next level and executive sponsorship is put in place to quickly break down both organizational and data silos. As several business functions begin to use data as a competitive differentiator, IT must keep up by implementing new technologies that integrate all data sources and applications to provision and store data effectively and serve up data on demand.

The IT-business partnership should focus on building advanced capabilities such as a data lake, data integration with external data sources, text mining, data mining, statistical model building, and predictive analytics.

Data Driven. The final stage of data maturity is nirvana: becoming data-driven. No data means no decision. The objective is to scale the data strategy while continuing to take out cost. IT and the business are functioning as a tight, cohesive unit. IT has integrated all data sources and apps and has implemented an advanced analytics platform. The business has identified where and how to embed analytics in its processes.

The challenges to remaining data-driven and realizing the competitive advantages inherent in this maturity level are embedding analytics seamlessly into business processes, scaling beyond databases and Hadoop, and moving up the analytics maturity curve from descriptive and predictive analytics into prescriptive analytics.

IT and the business must invest in the development of need-based UI/UX for different functional roles (sales, marketing, operations, HR), creating responses and actions through prescriptive analytics, and building machine learning, forecast modeling, and sentiment analysis capabilities.

Reaching maturity and becoming a data driven organization involves enabling end users with the ability to perform their own analysis, without the need for IT, on a trusted and supported architecture. This model allows the business to increase the speed and number of iterations in its analytics development and also provides the required compliance, security and scalability of enterprise IT infrastructure.

At Dell, our journey up the maturity model has lowered our BI spend by 50%, increased our predictive analytics capabilities by 20%, eliminated the use of non-standardized reports and KPIs, and increased revenue by millions of dollars. The speed of moving from data to decisions has gone from weeks to hours to even minutes and seconds, and IT has driven down overall development costs by 25% while maintaining a stable delivery portfolio.

For a closer look at these results and how Dell moved up the maturity curve from Data Aware to Data Driven, please visit the case study How Dell Does IT: Business Management System and this video on the impact of this strategy on marketing.

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