

REPORT REPRINT

How to be data-driven: a guide to the importance of cultural and organizational change

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Becoming data-driven is easier said than done. It means more than simply investing in the latest data processing, analytics and machine-learning software; it also requires cultural and organizational change.

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Most companies are increasing their investment in data processing, analytics and machine-learning software with a desire to become more data-driven. However, becoming data-driven is easier said than done, and certainly involves more than simply investing in the latest products and services. Being data-driven also requires cultural and organizational change. The precise changes required vary from company to company. 451 Research does not, therefore, claim to have all the answers in relation to the cultural and organizational changes required for any individual organization to become more data-driven. However, through conversations with enterprises, vendors and thought leaders we have gathered a list of high-level considerations that enterprises should at least contemplate as they look to ensure that being data-driven is not just something they talk about, but something they actually are.

THE 451 TAKE

There is no quick fix when it comes to successfully generating business value from data and analytics, and we do not by any means claim the list below to be an exhaustive guide to being data-driven. However, it is clear from our ongoing research that all enterprises aspiring to become more data-driven will need to implement cultural and organizational changes to complement increased investment in data processing, analytics and machine-learning software. The considerations listed below will not be applicable to every organization (SMBs, in particular, may consider some of them overkill), but they represent some of the key cultural and organizational aspects that we believe enterprises need to be mindful of if they are to make the most of strategic investments in data processing and analytics products and services.

APPOINT A CHIEF DATA OFFICER (OR SIMILAR)

The number of people with the job title 'chief data officer' (CDO) has increased significantly in recent years (for example, the CDO Club estimated that there would be 3,000 people with the title 'chief data officer' in 2017, compared to just 300 in 2014). Exactly what the role involves will differ from organization to organization (and in some cases, the role comes with a different title, such as head of data or head of analytics). However, increasingly, the companies that are the most successful in their data-driven transformational change initiatives are those that have a CDO (or similar) and an executive mandate to encourage and enforce a data-driven culture.

That executive mandate could mean that the CDO reports directly to the CEO, or at the very least the CIO, and could potentially be part of the formal C-suite itself. More important than the organizational logistics, however, is that the CDO be empowered by the C-suite to drive business change and deliver business value by changing attitudes to the ways data and analytics are used across a company. This means that one of the key skills that a CDO needs to have is the ability to articulate the company's strategic vision to business users. However, equally important is the ability to articulate the data and analytics needs of the business users to senior executives – to the extent that it could be argued that the 'D' in CDO should really stand for 'diplomacy' rather than 'data.'

Diplomacy is also important when working with the CIO or CTO, who may have been responsible for some of the tasks now under the CDO's purview. A strong relationship with the CIO and CTO is vital, although a healthy degree of engagement with the entire C-suite is necessary. It is also worth noting that some of the early crop of CDOs were focused on data governance, data quality and regulatory aspects of the business. However, the role has shifted away from being technology-driven to one involving value creation and revenue generation.

CDOs will also likely need to use diplomacy as they 'bridge' business personnel and the IT department –working with both to mitigate any conflict in requirements. Part of the function of a successful CDO is to encourage people to separate the ownership of data from the ownership of data processing and analytics technologies. While the IT department will continue to have a role in delivering the technology, it is important to ensure the business takes responsibility for the data. Again, empowerment via C-suite backing is key. No CDO can work alone, and executive backing means not just appointing a CDO but building a chief data office team, and ensuring that it is composed of personnel with a mixture of business and data domain expertise.

GENERATE A CULTURE OF BEING DATA-DRIVEN

One of the key roles of a CDO (and CDO team) will be to generate a culture that embraces data at the heart of the decision-making process. This cannot be left to CDOs and their teams alone, however. Other senior executives also have a part to play in promoting the positive benefits of being a data-driven business, as well as highlighting the potential negative impact of unmanaged data. This does not mean that every employee needs to become a data analyst, but it does mean that everyone has to have basic data literacy so they can understand, communicate and use data effectively.

It ought to go without saying, but when we say 'everyone,' that includes the C-suite itself. Barriers to becoming more data-driven include a lack of awareness and knowledge of the most appropriate technology to use, and a lack of understanding of, or skepticism about, the potential business benefits. In some cases, while business and data analysts might grasp the opportunities enabled by advanced analytics, senior decision-makers lack the technical understanding required to comprehend the business value of advanced analytics techniques, which means they aren't adopted more widely.

With that in mind, we think educational services for senior executives, such as DataRobot's Machine Learning for Executives training course, are particularly interesting. DataRobot's course is aimed at business executives sponsoring, funding or implementing machine-learning initiatives, regardless of whether they are using the company's automated machine-learning software. It is designed to help senior executive understand the potential of machine learning and identify appropriate business problems.

Clearly, there needs to be a balance between enabling a culture of data-driven decision-making and forcing it on people. Another of the CDO's roles will be to encourage more data-driven decision-making while also fostering a degree of data skepticism and curiosity so personnel don't blindly accept data, but think critically about it.

As noted above, part of the culture of being data-driven is enabled by collaboration between business units and the IT department, but it is important to enable and encourage collaboration between lines of business as well. Additionally, within the IT group, it is important to identify internal staff with domain expertise, transferable skills and the desire to upskill and learn new data processing and analytics techniques (as well as identify those without those desirable traits).

One approach to this challenge is to hold internal hackathons to encourage interest among developers and engineers in new data processing and analytics technologies by providing them with the opportunity to innovate and develop proof-of-concept (PoC) projects and rewarding them with training to expand on their emerging skills. As a result of these kinds of projects, enterprises can quickly prove technical concepts, identify people with interest in new approaches, and reward them with the skills to later expand on the PoCs.

ORGANIZE TO BE DATA-DRIVEN

In addition to fostering collaboration between lines of business and between business and IT, companies that aspire to be data-driven need to also rethink their assumptions about how skills are distributed across their organization. Rather than the traditional approach of having a central IT department, an increasing number of enterprises are adopting a federated model with distributed data analytics and data science expertise, along with a central office of the CDO or an analytics center of excellence.

One popular approach to this organizational challenge involves tribes, squads, chapters and guilds. The approach is closely associated with Spotify (although Spotify didn't invent it) because it articulated its adoption of the approach a few years ago. Dutch financial services firm ING has also explained how it has adopted the approach of organizing business experts, data analysts, data scientists, developers and operations staff into 'squads' – similar to a scrum team – focused on a specific business problem or development project.

'Tribes' are essentially groups of squads focused on related areas, while forming 'chapters' of people with similar skills across different squads within the same tribe enables collaboration among people with similar skills working on similar business problems. More broadly, people are encouraged to form 'guilds,' which are less formal communities of interest that involve people with differing skillsets from multiple tribes and squads.

While this approach has worked for Spotify and others, it is not a panacea, and there are a few horror stories from companies that have struggled to implement it effectively. One key piece of advice seems to be to avoid replicating what Spotify has done completely, but to take it as inspiration for potential organizational changes that are suited to your individual enterprise.

PLAN TO BE DATA-DRIVEN

That brings us to our final piece of advice, which is essentially to avoid trying to drive change too quickly in an attempt to emulate the likes of Spotify. Enterprises need to be cognizant of the long-term strategic direction and should articulate the path they will travel to get there, but also be aware that the journey will be completed via multiple short-term tactical wins.

In the long term, enterprises are looking to use data for competitive advantage and for competitive differentiation, as well as to identify new growth opportunities. Initial projects are unlikely to be dramatic, however, and should focus on fundamentals such as improving data management and good data governance, as well as quick wins in terms of improving customer engagement, reducing fraud/risk and driving greater operational efficiency.

As always, the advice is to focus on business outcomes primarily and data (as well as data processing and analytics products and services) as a means to achieve them. Start with the use cases and define what it is you are trying to achieve as a business. Then look at what data will be required to achieve those goals – is it available internally, or will it need to be sourced externally? Another important consideration is to understand the potential changes to business processes and workflows that will be required. Only then should the company explore the technologies required to store, process and analyze the data to achieve those business goals.