The 2016 Benchmark Report on Self-Service Business Intelligence

New research and analysis on how top-performing companies are using self-service business intelligence and data visualization tools to generate actionable insights, improve business productivity and drive revenue growth and profitability.
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Introduction

The 30,000 Foot View of Self-Service Business Intelligence
The technology and analytics that enable self-service business intelligence (BI) are complicated. The concept itself, however, is easy enough to understand. Simply put, self-service BI means empowering non-IT business users with tools to make smarter, more timely business decisions. It means giving them the ability to get the answers they need at a glance, in performance dashboards and reports.

Today, companies that have invested a small fortune in traditional business intelligence initiatives often find their business users reverting to old-fashioned spreadsheet analysis. But spreadsheets are seldom the optimal solution. Creating a report that spans multiple data tables or mixes in SQL-based databases can quickly turn into a big, unwieldy mess. Entering massive amounts of data into a spreadsheet — and then dynamically refreshing it as new data becomes available — can be rife with challenges. And spreadsheets comprised of rows and columns of quantitative information, along with rudimentary graphical elements, tend to be poorly suited for data exploration and insights discovery.

Instead of grappling with endless formatting, data importing and exporting, version control issues and poor visualizations, business users should be focusing their attention on making smarter business decisions. While Excel may be a tool that is close at hand and can allow business users to conduct their own analysis without depending on IT resources, it is often the wrong tool for the job. What business users really need is something that is as intuitive and easy to use as Excel for ad hoc analysis but far more powerful and flexible.

Enter self-service BI. Today companies of all sizes are utilizing self-service BI solutions that harness the power of next-generation data management and advance user interfaces to achieve greater ease of use and faster and better access to information and insights. Even for large corporations, self-service BI solutions can supplement their core business intelligence initiatives, providing a friendlier front end that builds on existing business intelligence investments.

Self-service BI capitalizes on the fact that today the smallest tablets, and even smartphones, come with powerful processors and many gigabytes of memory. That makes it possible to perform analytic tasks in the palm of your hand that only a few years ago would have required a server. The best self-service BI solutions require no more skills than Excel, yet deliver deeper insight, faster and in far more accessible way. These tools can pull data from existing BI systems, extract it on-the-fly from spreadsheets or from any number of data sources.
Aside from the explosion in processing power and mobility, several other forces have converged to set the stage for next-generation sell-service BI. These include the proliferation of big and small data, both structured and unstructured, the rapid evolution of flexible database infrastructures, and the advent of cloud-based interfaces and interactive visualization tools that can bring data to life in a dazzling array of color-coded charts, funnels, pies, spider webs, maps and various other configurations. Anyone can easily navigate, manipulate and analyze the data using check boxes, radio buttons, sliders, lasso filtering, zooming, attribute highlighting and countless other types of drill-down mechanisms and data filtering features.

Also important to the evolution of self-service BI is the establishment of standards for data integration and analysis. These include data stored in a company’s on-premise data center, data that comes from third-party sources, data stored in the cloud, and data that comes from almost any imaginable business app.

The diversity, velocity and sheer volume of data has increased by orders of magnitude in recent years. Data comes from point-of-sale, marketing, sales and ecommerce applications. It comes from customer feedback forms. It comes from call centers and social networking apps. It comes from website and mobile device logs. And the list goes on. Meeting the needs of business users means being able to connect to data, whatever its source and wherever it may reside.

When it comes to accessing information, generating insights and driving continuous performance improvement, self-service BI can rightly be viewed as a game changer. This is true for two simple reasons: 1. Information is power, and; 2. Timing is everything. Business users have frequently struggled to get the information they need to make decisions in a timely manner. More often than not, the bottleneck is their own IT department, which, by no fault of its own, fails to keep up with the continuous flow of queries, resulting in report delivery delays.

In fact, the rapid growth of self-service BI is largely a response to stretched IT staffs that were often unable to keep up with the incessant demand for new reports using traditional BI. According to research conducted for this benchmark report, 42% of business users generally had to wait “too long” for IT resources to fulfill their requests for new reports. The wait time for a report was often several days or even weeks, by which time the information may have been stale or the opportunity to act upon it may have passed.

93% of companies “agree” or “strongly agree” that self-service business intelligence enables them to gain faster (and better) insights.
Who are these business users? They are the consumers of the information. These individuals range from middle managers all the way up to the executive suite. They cut across functional areas, from marketing, market research and sales to finance, operations, competitive intelligence and new product development.

They also vary in terms of their usage requirements and level of BI sophistication, from what can be called *casual users* (individuals who require only periodic reports, with limited need to run their own custom queries or manipulate the data to generate additional insights) to *power users* (individuals whose day-to-day activities largely revolve around ad hoc data reporting and analysis, even to the point of obsession). Regardless of role or responsibility, the success of these business users, as well as the success of their companies, lies in their ability to access information to drive real-time and continuous decision-making cycles.

Their decisions are informed not only by the accuracy, completeness and timeliness of the information contained in the dashboards and reports, but also by the ability to create new, customized views into the information. Even casual users no longer wish to be merely passive recipients of reporting output. They want to be able to generate their own reports on the fly and to manipulate, interact with, and analyze the data at a granular level.

Fact is, business users at all levels today tend to be both data-oriented and technology-savvy. They want to be able to personally generate and drill down into the details of any given data set independently, on their own, without having to involve IT resources. They want to be able to uncover underlying trends and identify opportunities within their areas of accountability that may possibly surface through data analysis. They want the tools that enable insights discovery — but within a reasonable set of constraints, so that the process is manageable and doesn’t become an overwhelming part of their day-to-day activities.

Given all this, it’s easy to see why self-service BI has gained so much traction and why the advent of next-generation solutions will have an even greater impact on transforming modern-day business. Which isn’t to say that self-service BI will replace traditional, full-scale BI. But whereas traditional BI offers static reports based on pre-defined parameters, self-service BI provides ad-hoc data discovery tools that can answer new questions as they arise, allowing business users to take a more proactive approach to decision making. Large companies have a lot to gain by implementing relatively inexpensive tools that allow business users to consolidate data on the fly and present it in a visually meaningful way. For smaller companies, self-service BI tools may be the only BI solutions they will ever need.
Chapter 1

Pondering the Benefits of Self-Service Business Intelligence

1. Access to continuous, on-demand reporting
2. More flexible views into the data
3. In the driver’s seat!
Today, the name of the game in business intelligence is *easy access*. Business users want easy access to information and insights. They want up-to-the-moment dashboards and continuous on-demand reports delivered to their desktops or printers in lightning-quick speed. They also want to be in control. They want to sit in the driver’s seat. And they want to go as fast as possible.

Of course, speed comes in various forms. IT professionals talk about the performance of a BI system in terms of how quickly it can process big data and update a dashboard or produce a new report. Speed of implementation is another consideration to keep in mind. A state-of-the-art BI system that takes two years to architect, customize, and deploy will not do much good if, in the meantime, the company goes out of business.

Next-generation self-service BI solutions lend themselves to faster results because they do not presume that every important business question has already been identified and made available in a report, fed by a data warehouse optimized to answer those specific questions. Self-service BI tools thrive on agility, flexibility and ad hoc analysis. The tools are not dependent on the continuous support of IT resources. In fact, self-service BI boasts delivery models that, once deployed, generally require little IT involvement. In the past, a business user examining budgetary expenses, for example, would not have been able to drill down to individual transactions recorded in the ERP system to identify excessive expenses, along with the managers who approved them, without IT’s involvement.

While the type of on-demand reporting will vary dramatically depending on the specific job role, organizational function and business objectives, business users all want the same thing: to be able to make smarter, more timely business decisions. Ideally, they want the answers to their questions to leap off the screen — which, in an almost-literal sense, self-service BI enables.

This, again, is what separates self-service BI from traditional BI approaches. It’s about empowering non-IT professionals with data access and insights discovery. It’s about giving them the tools to know what they can do *right now* to increase efficiency and effectiveness — as opposed to what they could have done a couple of weeks ago, when they submitted their request to IT to produce a custom report based on their specified data parameters and configuration needs. The acceleration of decision-making cycles speaks to the importance of putting data in the hands of business users, however and whenever they need it.
After all, business decisions are informed not only by the accuracy and timeliness of the data, but also by the ability to create customized views into the data, based on specific requirements. Everyone has a different question they’re trying to answer, a different information need they’re trying to address. Giving business users the ability to create custom views into information that meet their needs may not seem like such a big deal. But for companies that for years and decades have been hamstrung by the constraints of static, one-size-fits-all reports, having such a capability may, in fact, be nothing short of transformational.

The benefits are obvious. For starters, one need only consider the time savings that self-service BI can deliver. According to research conducted for this benchmark report, 92% of companies cite time reduction (e.g., the time needed to access information, the time needed to analyze data, the time needed to make decisions, etc.) as a top reason to deploy self-service BI. Again, a common refrain from business users who previously relied on traditional BI tools and processes is that the response from IT to their requests was suboptimal, at best. They complain of having had to pester IT multiple times to get a new report. Almost half (47%) of them said that they needed to go outside the standard reporting and analysis process at least once a month to get the information they needed.

Time spent chasing down information is time that employees could spend doing any number of other things to create value for the business. With self-service BI, business users can get the information and insights they need faster, and from more data sources, making it possible for their organizations to respond and adapt more quickly to changing business conditions or new opportunities. This improves employee productivity at all levels of the organization. It also reduces the amount of tension that has often existed between the IT staff and business users and that was long the hallmark of traditional BI operations.

With self-service BI, managers can spend more time focused on optimizing their numbers rather than compiling and trying to make sense of them. Knowledge workers can get more work done within the same timeframe, and make better, faster decisions along the way, leading to significant increases in productivity across the organization and increased business success that benefits the company as a whole. Needless to say, any tool that allows employees to increase output without increasing costs is music to everyone’s ears, and especially to the ears of those individuals who sit in the executive boardroom.
The benefits of self-service BI tend to permeate the entire company. Widespread usage should result in measurable increases in the ease of access, the speed of access and the quality of decision making as it relates to virtually all facets of the business. According to research conducted for this benchmark report, and as illustrated in the chart below, a whopping 96% of companies view the ability to improve business performance as the biggest benefit of self-service BI.

A final point worth mentioning in this chapter relates to the total cost of ownership. By definition, self-service BI platforms are significantly more cost-effective than traditional BI systems that require ongoing support and large-scale operational maintenance. With self-service BI, a handful of IT professionals may be all that are needed to support even a large enterprise operation, freeing high-value technology resources from spending the bulk of their time and talents completing low-value report customization tasks. The savings in terms of operational costs are glaringly obvious.

Some of the Biggest Benefits of Self-Service Business Intelligence, According to Top-Performing Companies

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Improve business performance</td>
<td>96%</td>
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<tr>
<td>Gain info and insights more quickly</td>
<td>92%</td>
</tr>
<tr>
<td>Gain better-quality info and insights</td>
<td>89%</td>
</tr>
<tr>
<td>Increase employee productivity</td>
<td>85%</td>
</tr>
<tr>
<td>Reduce IT support time and costs</td>
<td>79%</td>
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<tr>
<td>Increase employee satisfaction</td>
<td>76%</td>
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Source: Starfleet Research; Research findings are derived from the Q1 2016 survey on Self-Service Business Intelligence (n=276).
Chapter 2

Getting the Most Value from Self-Service Business Intelligence
Chapter 2: Getting the Most Value

Self-service BI is not a one-shot deal where companies purchase software and they're done, end of story. Getting the desired business outcomes in this case generally requires a certain amount of care and feeding. How, exactly, can companies get the most value from their investments in self-service BI solutions? For starters, they can focus on improving data quality. While information discovery and visualization tools can provide a shortcut to effective analytics, the tools don't eliminate the need for good data management on the back end.

As anyone with any experience in business intelligence is acutely aware, the problems with data quality can emanate from many sources and require ongoing diligence to rectify. A data cleansing tool can go a long way toward catching entry errors, false records and duplicates. But the deeper issue of integrating disparate data may require the use of advanced Master Data Management (MDM) systems. The technical aspects of MDM include data warehousing practices, ETL (extract, transform, and load) tools, Customer Data Integration (CDI) and Product Information Management (PIM) tools. MDM considerations are complex and require serious expertise. Technology alone cannot address all data quality needs.

When it comes to data management, it’s important to remember that quantity for the sake of quantity should never be an overriding goal. Generally speaking, organizations get the most value from self-service BI solutions that are customized to the needs of business users based on their individual roles and function — or that are easy enough to use that those individuals can get the data they need themselves.

Generally speaking, business users want the tools that will enable insights discovery, but within a reasonable set of constraints, so that the process is manageable. This may mean applying “guardrails” with enough data access to address the needs of business users without the risk of overwhelming them with mountains of data that may or may not be relevant to their specific needs.

To that end, companies would be well-advised to think about self-service BI in terms of role-based data requirements and role-based dashboard interfaces. Sales managers could be given access to only the data they need in order to see details on prospecting and inventory, CIOs could get the alerts they need to get to the bottom of system anomalies. HR could drill down to the details of individual employee benefits and performance but not information outside of their purview. Top executives could have the views they need to be able to ferret out problems and make strategic decisions related to their areas of accountability.
Chapter 2: Getting the Most Value

Or consider the requirements of CMOs. They may need to understand the results of various promotional levers. They may need to feed this information into campaign planning models and run scenarios month by month. They may need to refine the integrated marketing model by comparing the relative productivity of different media, channels and tactics. They may need to understand how related investments impact consumers at various points of the consideration process and how they translate into incremental economic value. They may need to see what percent of prospects at the top of the buying funnel are moving downward through each successive stage and over what period of time.

With a customized dashboard enabled by a self-service BI solution, CMOs could parse all of this data and track the coefficients of progress on a continuous, on-demand basis. Importantly, they could do this without any involvement from the IT organization. Where the IT organization may need to be involved, at least on the front end, is in integrating new data sources as they become needed.

To be effective in their jobs, business users need a highly customizable presentation layer. But that requires a flexible data management foundation. While discovery and visualization tools can provide a shortcut to effective analytics, they don’t eliminate the need for data management on the back end. Companies that excel in self-service BI are differentiated not by just the deployment of next-generation solutions but also by the degree to which their underlying data architecture is adaptable to changing business needs. In short, being able to drive real-time and continuous decision-making cycles depends on the accuracy and flexibility of the data management architecture.

Of course, getting the most value from self-service BI goes beyond technology and data management, if only it were so easy. On the organizational side, it requires that companies work to foster a culture of data-driven decision making. The best analytic technology in the world won’t count for much if managers still trust their gut instinct and intuition more than what the numbers are telling them.

For a company making self-service BI solutions available to business users for the first time, it may be necessary to emphasize this cultural change more than in the case of an organization that has stressed data-driven decision making for a long time, to the point that it has already become part of its employees’ DNA. Even for companies that have been using self-service BI for a number of years, it is necessary that they track and measure success using relevant performance metrics on an ongoing basis to as to continually reinforce the importance of data.
Unfortunately, self-service BI solutions tend to be a far cry from plug-and-play software that works perfectly without any reconfiguration or adjustment. This has led to many organizations looking for BI solutions that are embedded or pre-integrated into the applications they use on daily basis. The common challenges that companies face tend to be many of the same challenges they face with instituting a traditional business intelligence initiative. As already suggested, the biggest challenges can be as much organizational in nature as they are technological. The need to create a data-driven culture for decision-making can be a particularly daunting task because many business user may not be naturally predisposed to taking a scientific approach to much of anything.

As business users often quickly find, the most valuable insights that data analysis can provide are often the ones that are the most counter-intuitive and surprising. These are the insights that point to unexpected opportunities to increase sales, cut expenses, drive operational efficiencies, beat out competitors or launch new products or services that serve unmet customer needs.

Self-service BI solutions have a way of making managers more self-aware. Having analysis at their fingertips can force people in the company to question their assumptions at all levels of the organization. An unexpected result deserves to be questioned until it becomes certain that it’s not based on faulty data or a flawed analysis. What should be avoided is the smug “I know better” attitude that has been known to blind managers to genuine business opportunities.

According to research conducted for this benchmark report, a top challenge that companies face relates to data integration, which, in truth, can be both technological and organizational in that it involves breaking down data and departmental silos. One might think that this is less of a challenge for smaller organizations. However, departmental databases and managerial fiefdoms can proliferate in organizations of all sizes. There are really two issues here: data access and organizational ownership. Of the two, the technology issue is often easier to solve. Given the right strategic need, time, money and effort will be committed to consolidating and cleansing data in an on-premise data warehouse or data mart stored in the cloud.

Self-service BI solutions can only provide the necessary discovery and visualization capabilities that business users need only by being able to stitch together data from multiple sources on demand. The solutions only work with permission to access the relevant data sources. If a marketing analyst wants to merge supply
chain and sales data, and the supply chain organization refuses to grant database access to analytic applications from other departments, that initiative will stall pending a ruling from some higher power.

A related challenge is data quality. According to research conducted for this benchmark report, 86% of companies view the need to achieve acceptable data quality as the biggest obstacle of all. Clicking on a bar chart, or dragging and dropping data elements on the chart in real time to see how different relationships between the elements create different conclusions, can produce a treasure trove of insights. But that only happens if the data that feeds into the chart is accurate, current and complete.

Whether traditional BI or self-service BI, companies need to identify data quality issues and work to improve quality over time. Skipping the data cleansing steps means running the risk that the analysis will be distorted by inaccuracies and will seriously skew any decisions that are made. Data quality has to be a strategic priority if the goal is high-quality actionable analysis.

Data quality will never be perfect, but it can always be better. Companies need to create a systematic process for identifying and eliminating the majority of data errors. Tactics should include improving validation at the data entry stage, cross-checking reference data, and employing data cleansing software.

Providing business users with the right level of data access can be another challenge. Given “too much” access to the underlying data infrastructure, business users may create performance challenges in operational systems. With too little access, they may feel stymied and constantly subjected to unnecessary bureaucracy.

However, coding a reporting tool to integrate with a core business application challenges that app’s development team. Similarly, businesses often struggle to implement a stand-alone BI solution with their data sets and their business applications. Third-party vendors who specialize in BI and analytics solutions can make integration easier for both ISVs and their customers. Like other software vendors, a BI vendor has developers who have become experts in their field. They play to their core strengths in creating a BI solution that can be integrated within other applications.

77% of companies cite predictive capabilities (e.g., being able to spot emerging trends and conduct scenario analysis) as one of top reasons to deploy self-service business intelligence.
Before selecting the self-service BI solution that meets an organization’s needs, key considerations should be addressed: Can the IT department support the BI solution, a greater consideration if it is open source? Does the BI vendor provide strong support and maintenance for a commercial product? How important is drag-and-drop interface design and visualization? Does the BI solution include provisions to easily define and assign different roles and functions by seat within the organization? Can features and access be restricted by these roles? Does it offer data management functionality — e.g., being able to clean, transform and combine data without extensive knowledge of SQL or ETL? In the end, the right technology choice depends on the specific resources and focus areas of the organization and what it seeks to accomplish with a self-service BI solution.

Finally, to maximize the value of the investment, it becomes important to implement relevant performance metrics, a topic addressed in the next chapter. Companies should select metrics that really matter for the performance of the business as well as ones that are specific to the business users’ individual areas of accountability. The challenge lies in getting all vested parties to agree on what these metrics are and to then put processes in place to actually track them.

The Top Challenges with Self-Service Business Intelligence, According to Top-Performing Companies

- Achieve optimal data quality: 86%
- Integrate data from all relevant sources: 83%
- Track and measure performance: 74%
- Create the right organizational culture: 71%
- Deploy the right technologies: 69%
- Secure the right level of IT support IT: 63%

Source: Starfleet Research; Research findings are derived from the Q1 2016 survey on Self-Service Business Intelligence (n=276).
The vast majority (93%) of top-performing companies agree that tracking and measuring performance is a key success factor with self-service BI. Yet the metrics they use are bound to vary. Many of them will be role- and function-specific. Marketers will be apt to use metrics that look at campaign results in terms of the quantity and quality of leads, for example, and that keep close tabs on customer acquisition, retention, cross-sell/upsell — and, ultimately, marketing ROI. Product development managers, on the other hand, may be more interested in the number of new product ideas in the pipeline. Ideally, the performance metrics should be customized to specific job roles and functions within the organization.

At a high level, however, companies may focus on performance metrics tied to less granular and more general business outcomes, such as time and cost reduction — metrics that are closely linked to overall financial performance. In reality, the impact of self-service BI on shareholder value can be hard to measure, especially in the short-term. How well can an organization judge the contribution of faster and better decisions on shareholder value? This question may be difficult to answer quantitatively. It’s easier to pay attention to employee usage and satisfaction metrics, which are easy to measure, even if they reveal less about whether the business is realizing tangible value, and to what extent.

It only stands to reason that those organizations whose business users are empowered with self-service BI solutions that enable them to increase their speed of access to vital information and the quality of decision making will enjoy improved financial performance over time. In the end, companies should determine which metrics will truly drive business growth and are also most relevant in the context of the particular business and industry sector.

Some of the broader, high-level metrics that companies commonly factor use with respect to self-service BI include the following:

- **Employee performance / productivity.** This metric is already widely used by HR departments, typically in terms of profit per full-time equivalent (FTE). It is a calculation of the number of pre-tax profit dollars generated for every FTE. A related metric is Human Capital Return on Investment (HCROI), which is a measure of the pre-tax dollars generated for every dollar invested in employees. Self-service BI deployment has the potential to turn the dial employee performance and productivity in a highly measurable way. Incidentally, collaboration features can result in fewer meetings and, in all likelihood, improved work efficiency.
• **Employee satisfaction (particularly, with information access).** Asking employees for feedback about their level of satisfaction with information access would seem to be a good way to measure the extent to which self-service BI tools are not only enhancing productivity but making people’s jobs more effective and enjoyable (or at least less stressful and frustrating). What better way to assess the impact of a system intended to boost employee productivity than to ask the employees themselves? Periodic surveys should include business users as well as IT staff.

• **System usage.** While an acceptable level of system usage is the minimum ante an organization needs puts on the table to play the BI self-service game, it says nothing about their winnings in terms of business outcomes. Counting the number of active users and average amount of time spent on the systems is good and fine, but it has little direct correlation with actual business results.

• **Time required to accomplish tasks / make decisions.** Self-service BI can be rightly viewed as a business accelerator, a vehicle for driving faster, better and more informed decision making across the organization. Time required to accomplish tasks / make decisions is no doubt the most valuable metric when it comes to measuring value short of being able to measure actual financial outcomes. Of course, it is also a metric that few companies are actually using, given the obvious difficulty of tracking it. Ideally, organizations could find ways to measure changes in speed-to-decision and time-to information other than through self-reporting in employee feedback.

• **IT operating costs (relative to traditional BI).** By having to rely less on IT resources for day-to-day report generation and data management and becoming more self-sufficient in that regard, self-service BI should reduce IT operating costs and overall systems maintenance by a very significant measure. This metric can be easily tracked and measured based on IT time allocation to providing business user support. If the core business application ISV embeds a third-party BI solution, self-service BI should reduce reliance on outside vendors for day-to-day support. Expect faster turnaround time for upgrades and enhancements as well.

• **Volume / quality of actionable insights.** Quantifying insights is a near-impossible task, which explains why few companies view it as a commonly-used metric for measuring performance when it comes to self-service BI solutions. What is an actionable insight? It depends on how it becomes applied to drive business value. But how wonderful it would be if the value of self-service BI could be measured using this metric.
Putting all pertinent information at the fingertips of every business user in the company was once considered a pipedream, but today it is a reality. Quickly and easily, business users can customize dashboards and reports to their specific needs as those needs arise. They can engage in ad hoc data analysis as well as automatic scheduled reporting.

They can also make changes to key assumptions, look at business outcomes over different time periods, test every imaginable scenario, and understand the financial impact of their decisions. According to research conducted for this benchmark report, 77% of companies cite predictive capabilities (e.g., being able to spot emerging trends and conduct scenario analysis) as one of top reasons to deploy self-service BI.

A next-generation self-service BI solution can be transformational for a company in that it can force business users to think more strategically than ever before. It can spur them to drive the business further and faster. It can enable them to respond more quickly to business change and empower them to drive integrated decision-making and ownership. It can also fuel greater collaboration within business units and across different functions within the organization.

But while the best self-service BI solutions on the market can lower many of the barriers to better use of data, the solutions alone do not eliminate many of the common challenges associated with effective business intelligence, particularly the organizational ones that may exist when data ownership is distributed and the technological ones related to data quality. The payoff from self-service BI should be a measurable increase in the speed of access to information and the quality of decision making. But getting from here to there is not always smooth sailing.

Following are just a few considerations and recommendations that can help companies rocket to success with self-service BI:

**Self-service BI does not always mean do-it-yourself.** There are technical and design pitfalls for the uninitiated — mapping and consolidating data, linking to data connectors and creating the right visualizations, to name just a few. Most solution providers offer guidance in setup and support, and some consulting firms specialize in tuning customized dashboards for optimal usability. Their advice can be the difference between dashboards that drive decision-making and ones that are largely ignored. Also critical in terms of resources, of course, is the technical personnel within the IT function. These include the database administrators who
serve as the gatekeepers to the databases that feed any ETL efforts or any efforts that are designed to run reporting atop an operational database. Different business users come to self-service BI solutions with a wide range of analytical sophistication. Regardless, even the most self-sufficient power user will require the support of IT resources on occasion, so better to stay in their good graces.

**Provide access to the right data.** Delivering against the needs of business users means being able to connect to a multitude of different data sources – structured and unstructured data, custom data and relational data. These sources include everything from ecommerce applications that predict promotional strategies to social networking apps for improved support services and mobile device logs for measuring customer reach. Given the explosion of new data sources, as well as the anticipation of others, companies need to understand the extent to which solutions can readily embrace new sources of data as they become available. At the same time, it’s better to focus less on the sheer quantity of data and more on whether the data is the right data and how quickly it can be accessed and acted upon by business users. The ability to continuously and quickly integrate new data to improve insights are common goals. An often-overlooked objective, however, is integrating only the data that is most appropriate to their needs.

**Ensure a positive mobile experience.** Having the right data at the right time to make the right decisions means being able to access and analyze that data on a mobile device. The mobile dashboard should provide an accurate, real-time graphical representation of the data with a user-friendly interface. The quality of the user experience is of paramount importance. In fact, according to research conducted for this benchmark report, 96% of companies agree that the mobile user experience is an “important” or “very important” purchase consideration with self-service BI. A best practice for mobile dashboards is to share only data that requires action, and that means setting alerts using predefined triggers.

**Annotate and collaborate.** Collaboration capabilities are important with self-service BI. In fact, 81% of companies agree that group collaboration features and functionality are “important” or “very important” purchase considerations. Most dashboards allow users to add comments and tags to data that is presented to multiple people. This commentary enables a conversation about data and adds greatly to the value of BI. Executives can ask questions and knowledgeable users answer; people can point out important discrepancies; and everyone can see which data points gather comments and which gather dust.
Appendix

Research Notes and Useful Information
In Q1 2016, Starfleet Research conducted an online survey to capture the perspectives of industry practitioners with firsthand experience with self-service business intelligence. 276 qualified respondents participated, from industries that include Consumer Goods (17%), Retail (11%), Financial Services (9%), Technology (7%) and Non-profit and Government (6%). Following is some additional information about their backgrounds:

Job level / role of survey respondents
- Staff: 49%
- Managers: 36%
- Senior executives: 15%

Size of survey respondents' employers, by revenue
- Very small and small companies (less than $10M in revenue): 13%
- Midsize companies ($10M to $100M in revenue): 46%
- Large and very large companies (more than $100M in revenue): 41%

Geographic location of survey respondents
- North America: 69%
- Europe: 26%
- Other: 5%

Note: Starfleet Research selects 2-3 key performance indicators (KPIs) to identify the top-performing companies within a given data set. This provides a basis for benchmarking best practices. These companies are comprised of the top quartile of qualified survey respondents. The KPIs for identifying top-performing companies focus on metrics that speak to year-over-year improvement in relevant, measurable areas. Not all KPIs are weighted equally. The KPIs used for this report are: information access and decision-making ability.
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This benchmark report is the result of primary and secondary research conducted by subject matter experts at Starfleet Research, which is the IT market research arm of Starfleet Media. To learn more about Starfleet Research, please visit www.starfleetresearch.com.

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