

Time to Take Ownership and Align Spreadsheets with Your Data Strategies and Programs

Introduction

Spreadsheets are the most common business intelligence (BI) tool used for data analysis and making decisions. The combination of a blank workbook, basic and advanced calculation functions, and easy customization made spreadsheets a go-to tool for quick and complicated analyses by many levels of business users for decades.

Spreadsheets are everywhere because of Microsoft's successful bundling of products coupled with powerful marketing and licensing, which allowed Microsoft first to defend stand-alone office productivity applications like Excel, then bundle the applications into a suite (Microsoft Office), and then extend that franchise into the cloud era.

Most users have spreadsheets, think they know how to use them, and believe spreadsheets almost always represent the best tool for the work they have always done. However, as work changes over time, most enterprises never inspect, evaluate, and guide users to the most appropriate tools that reflect the needs and requirements of new business and operating models.

Spreadsheets continue to rank highly (eighth) among the 50 technologies and initiatives Dresner Advisory Services considers strategic to BI, with 60 percent of organizations viewing spreadsheets as critical or very important (see the Wisdom of Crowds® Business Intelligence Market Study 2022). A majority of organizations (55 percent) also perceive them as strategic. In 82 percent of organizations, all or most people use spreadsheets.

Our data also show that at higher levels of data literacy and data-driven decision-making, successful organizations reduce use of spreadsheets, provide more tool training and development, as well as more process management applied to the use of spreadsheets.

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Spreadsheets can be the on-ramp for many users to understand the power and range of data analysis. But organizations often misunderstand, misapply, or underutilize spreadsheet functionality. Not enough organizations apply their governance practices to spreadsheets. Data-quality issues and data lineage can be nearly impossible to identify once users import data, or copy and paste them into a spreadsheet. And even simple data-entry errors can mar the best-performed analysis. All these factors can provide misleading results, and lead to inefficient use or incorrect business decisions.

That said, the spreadsheet certainly has its place. Every tool should have its purpose. For example, reporting and analysis tools do just that—and work best with well-structured database data in a proper data model. The spreadsheet excels at performing complicated calculations with pieces of information (often from ad-hoc data sources) to answer a specific, time-constrained question for a business user. And it does so at almost no perceived cost to users, departments, or functions—long ago being bundled into standard office suites that often are licensed and usually paid for at the highest organizational level.

But its pervasive presence also makes the spreadsheet a powerful, omnipresent tool with high potential for misuse—especially when it comes to using the right tool for the task at hand. For example, a user may utilize a spreadsheet because of its availability and his or her training, when a database and/or a more sophisticated and robust BI tool could be a better solution.

Despite their high perceptions and near-universal presence, spreadsheets continue to fly under the radar. For many data leaders, that represents bad news.

Like any other BI tool, spreadsheets require users to apply regular training to develop the skills necessary to deliver additional value to the organization. Most organizations have underinvested in spreadsheet training and proficiency development, relative to the near universal presence and decentralized control of spreadsheet use.

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Potential issues also exist in other areas. In addition to skills development and training, data quality, data integration, and data governance—four of the five highest-rated BI challenges—apply to spreadsheet use (see the Research Insight “BI Challenges in 2022: A Journey of the Willing”). Yet many organizations do not align the use of spreadsheets and include their associated data with their data strategies and programs.

In most organizations, data leaders need to embrace the pervasiveness of spreadsheets, with an eye toward their inclusion as one of many tools in the BI portfolio—all of which should align with data strategies and programs. Data issues arising from spreadsheet use—such as documenting data lineage, applying data governance, ensuring data quality, and making derivative analytical content available for collaboration and further use—will not go away on their own just because spreadsheet costs and licensing get handled at the highest organizational level.

Now is the time for data leaders to take ownership of and responsibility for spreadsheets and their use as one of many tools in the BI and analytics portfolio. Include spreadsheets and their associated data as part of your data strategies and programs. Invest in graduated levels of training that focus on applied analytical use of spreadsheets, based on real use cases and business needs for each organizational function. Revise workflows and processes to include rather than ignore spreadsheets and their data. Have executive leadership assign formal business responsibility for spreadsheets. An organization’s data leader or the BI Competency Center (BICC) would both make excellent owners.

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Executive Summary

1. In 82 percent of organizations, all or most business users leverage spreadsheets for analyzing data and making decisions.
2. Almost all organizations perceive spreadsheets as strategic or necessary.
3. A high majority of organizations expect their use of spreadsheets will stay the same or increase.
4. Organizations that report the highest level of data literacy report both the highest spreadsheet use and the highest spreadsheet discouragement.
5. Spreadsheets play a large role in more frequent data-driven decision-making.
6. Organizations that consider their BI initiatives as having the highest level of success show a slight tendency to report all or most people using spreadsheets least often.
7. Organizations that consider their BI initiatives somewhat unsuccessful or unsuccessful report the greatest likelihood of all or most people using spreadsheets.
8. Organizations whose users find it extremely easy to access analytic content tend to rely on spreadsheets the least.

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Recommendations

1. Align spreadsheets and their use with an organization's business goals and include spreadsheets as part of all data strategies and programs.
2. Consider spreadsheets as just another BI tool to manage. Ensure that the organization identifies and addresses important challenges related to spreadsheets, including skills development and training, data governance, data integration, data lineage, data quality, data privacy, integration with other tools, and business engagement.
3. Review and potentially revise business workflows and processes to include rather than ignore management of spreadsheets and their data.
4. Educate executive leadership on high perceptions and utility of spreadsheets. Highlight that failure to manage them as part of a data strategy increases the risk of data mismanagement, incorrect analysis and business decisions, and data-privacy violations.
5. After this education, have executive management assign formal business responsibility for use of spreadsheets and managing spreadsheet data. Nominate the organization's data leader or the BICC as potential owners.
6. Invest in graduated levels of training that focus on applied analytical use of spreadsheets, based on real use cases and business needs for each organizational function.
7. Include proper spreadsheet use and managing spreadsheet data as part of ongoing data-literacy programs.
8. To leverage users' existing skills, data models and knowledge bases, explore and evaluate BI tools with spreadsheet-like interfaces. If such tools are deployed, ensure users know when to best use spreadsheets or the BI tool.
9. In organizations whose users have low levels of data literacy and spreadsheet proficiency, consider greater use of and reliance on Guided Analytics[®] (see the Research Insight "What is the Future of Guided Analytics[®] in Self-Service BI Initiatives?") until skill levels increase sufficiently to properly enable more self-service analytical efforts.
10. Explore the ROI of extending and complementing the functionality of spreadsheets in areas such as data prep, master data management, workflows, collaboration, and data catalogs.

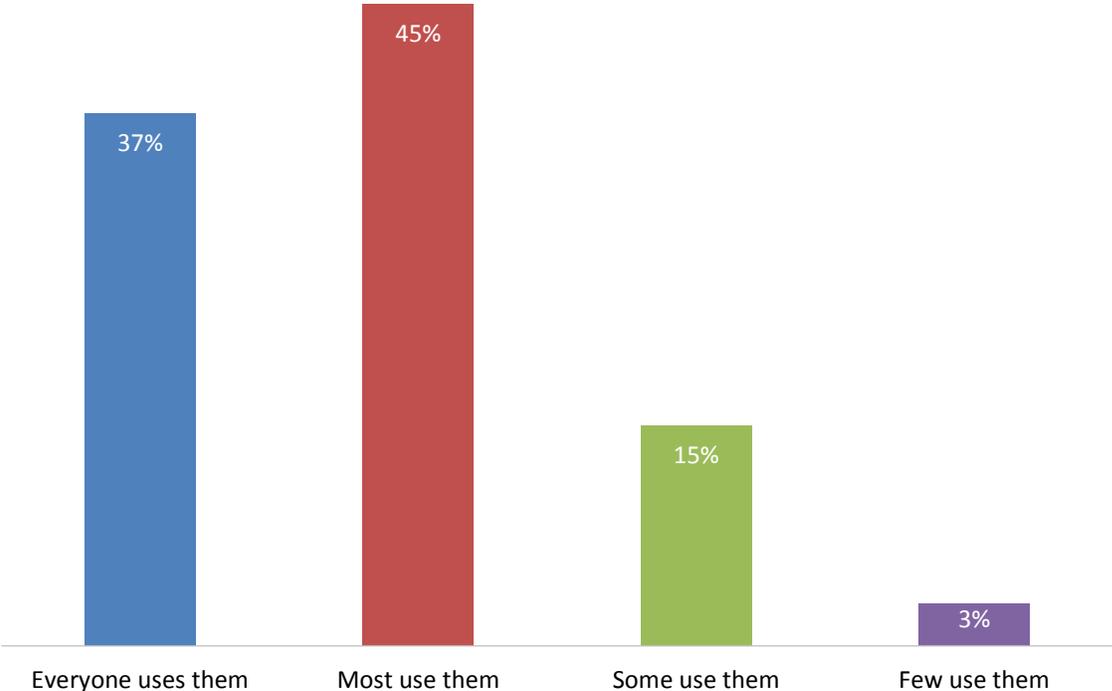
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Spreadsheets Are Pervasive

With the introduction of VisiCalc on IBM PCs in 1981, spreadsheets became widely used for automating basic calculations and analyzing data, and evolved into one of the main applications that drove the growth of the PC market. Spreadsheet functionality makes it easy for users to get started and do many data analytics tasks—including what-if analysis—with little or no knowledge of programming, and with minimal or no training needs. In 2002, an open-source version of spreadsheets entered the market as part of OpenOffice (which evolved into LibreOffice in 2010). In 2006, Google introduced one of the first web-based spreadsheets (now called Sheets).

For usage, our survey asked: “How pervasive is the use of spreadsheets in your organization?” In 82 percent of organizations, all or most business users leverage spreadsheets to analyze data and make decisions. Low cost, easy access, and ease of use help make spreadsheets pervasive. However, users tend to receive little or no training on all spreadsheet features and often use a subset of available functionality.

Spreadsheet Use



Source: Dresner Advisory Services

<http://www.dresneradvisory.com>

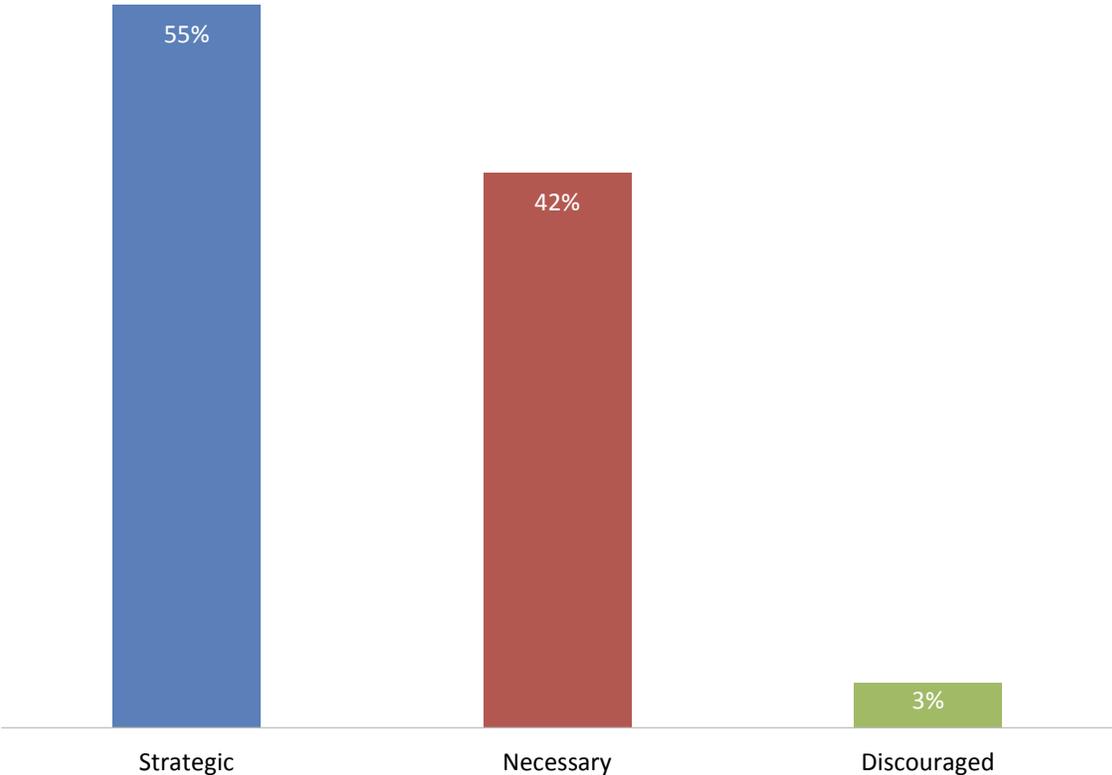
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Most Organizations Consider the Spreadsheet a Strategic BI Tool

For perceptions, our survey asked: “What role do spreadsheets play within your organization?” A majority of organizations (55 percent) consider spreadsheets a strategic tool, while an extreme minority (3 percent) discourage use of spreadsheets. Despite almost all organizations considering spreadsheets strategic or necessary, our data and experience show that most organizations do not align or include the use of spreadsheets and associated data with their data strategies and programs.

Perception of Spreadsheet Use



Source: Dresner Advisory Services

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The data show a gap between spreadsheet perceptions (strategic and necessary) and their usage levels (all or most use them). If people could use *only* spreadsheets for their analytics and all uses cases, much of this 15-percentage-point difference likely would not exist, as they would have no other option than to use spreadsheets. As such, this difference represents the overall minimal level of more advanced analytics (from BI tools) use in an average organization. However, that number is likely much higher, because use of spreadsheets and advanced BI tools are not mutually exclusive.

Historically, simpler use cases such as building what-if scenarios, combined with lower levels of BI tool penetration, tended to push secondary analysis into spreadsheets. More recently, BI tool providers both increased embedded functionality and embraced the universality and familiarity of the spreadsheet format into many of their interfaces. Both these factors provide increasingly viable alternatives to spreadsheets, reflected in the data on plans for spreadsheet use.

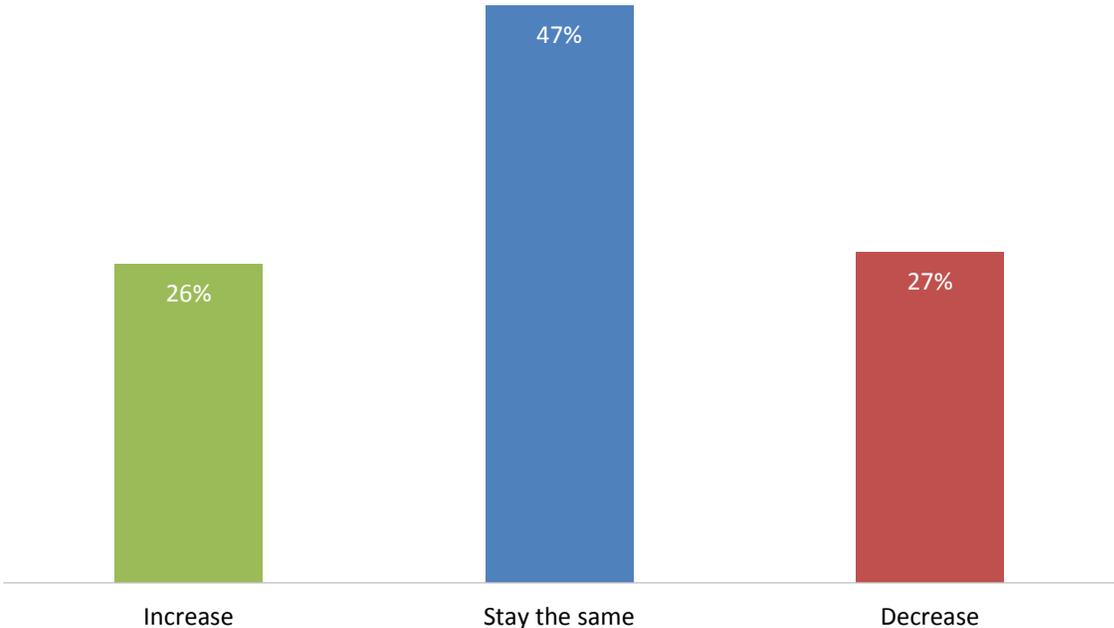
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Plans for Spreadsheet Use

For an indication of future intent, we asked: “In the next year, will the use of spreadsheets increase or decrease?” A high majority of organizations (73 percent) expect their use of spreadsheets will stay the same or increase. The other 27 percent expect their use to decline—replacing spreadsheets with other BI tools that now have equivalent (or better) functionality, and/or address spreadsheet limitations, such as:

- Performance when analyzing larger data sets and complex models
- Programming limitations of spreadsheet languages such as Visual Basic
- Functionality limitations for complex analytic workflows using real-time/streaming data sources and analytics
- Generating reports and dashboards
- Governance of the data and results from spreadsheets
- Potential for data-entry or data-quality errors to taint the analysis

Plans for Spreadsheet Use



Source: Dresner Advisory Services

Many BI tools address several of these limitations while still retaining a spreadsheet-based user paradigm. This consistency in look and feel eases the migration of spreadsheet users to these BI tools with new, more advanced capabilities.

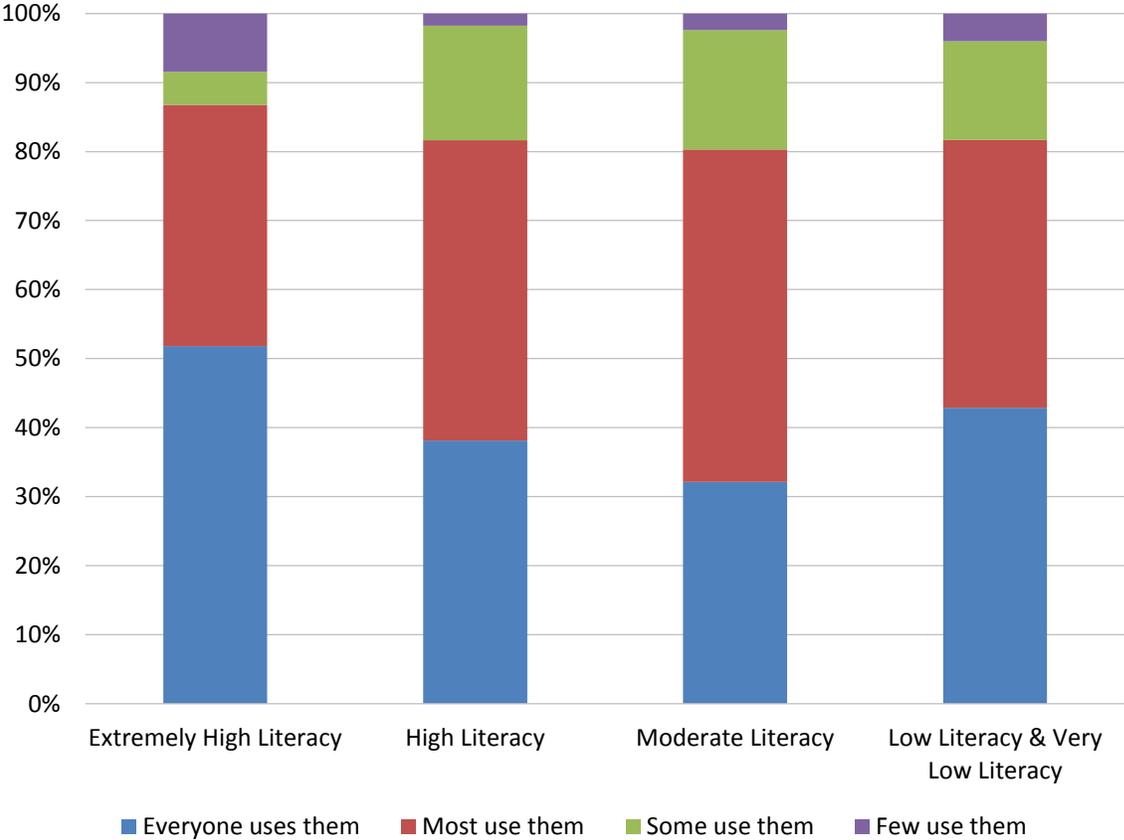
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Spreadsheets: The On-Ramp to Data Literacy for Business Users

Many tools and systems use the spreadsheet CSV file format as a “Rosetta Stone” for data interchanges without having to first program those actions. Organizations consider the ability to move spreadsheet data (in CSV format) into and out of analytic data infrastructures their second-highest-priority interface (see the 2022 Wisdom of Crowds[®] Analytical Data Infrastructure Market Study). This perception aligns strongly with the data on the pervasive use of spreadsheets.

Frequent users of spreadsheets are high consumers of data and by need/nature tend to have data-literacy levels sufficient for work requirements. Organizations that report the highest level of data literacy also indicate higher use of spreadsheets by all or most users (87 percent)—5 to 7 percentage points higher than all other levels of data literacy.

Spreadsheet Use by Data Literacy

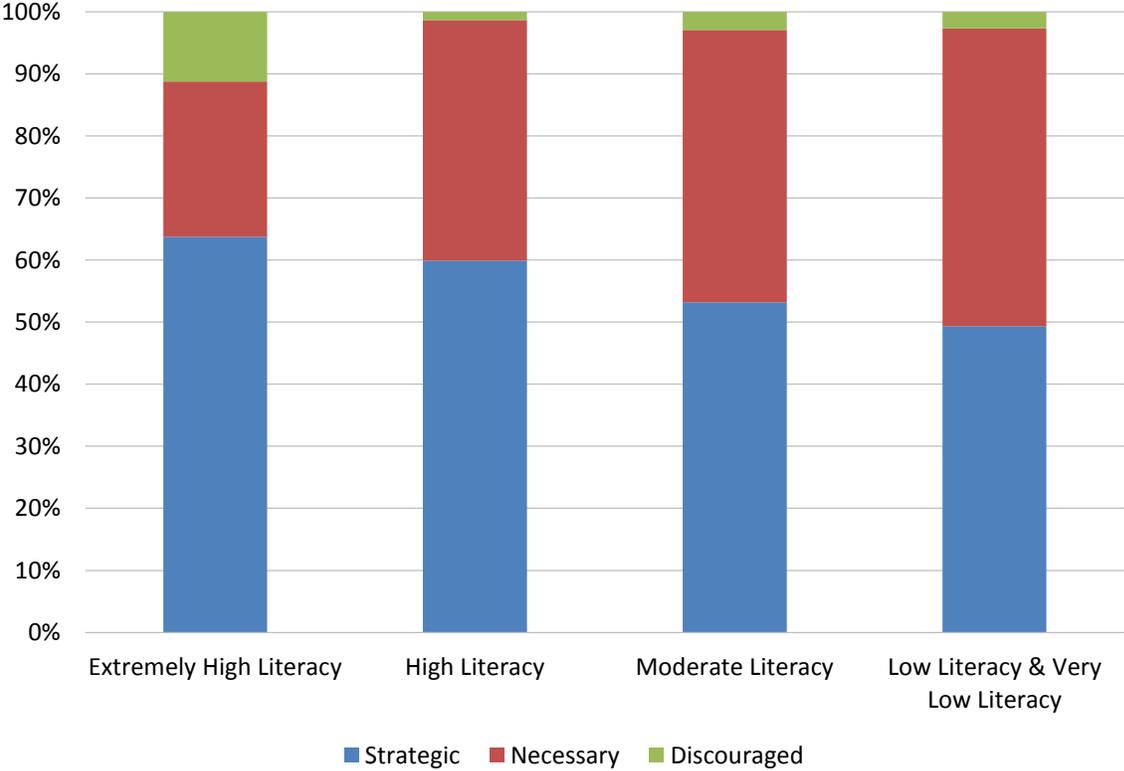


Source: Dresner Advisory Services

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Compared to spreadsheet use, perceptions indicate that organizations with the highest level of data literacy report a much-higher-than-average level for discouraging spreadsheet use (11 percent). Among those with the highest level of data literacy, this combination of highest spreadsheet use and highest spreadsheet discouragement may seem like a contradiction. However, it more likely reflects a combination of advanced or specific BI tools (as seen in the high discouragement rate), as well as more appropriate use of spreadsheets for the right use cases and business needs.

Perception of Spreadsheet Use by Data Literacy



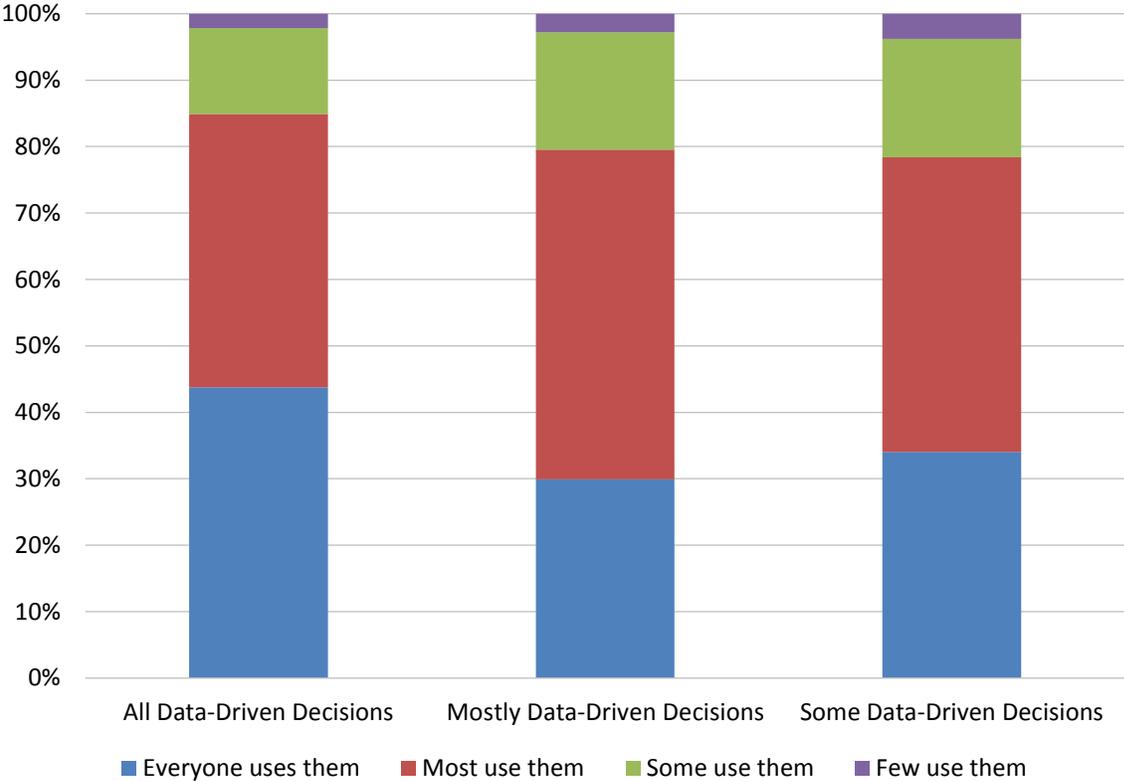
Source: Dresner Advisory Services

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Spreadsheets Are Essential to More-Frequent Data-Driven Decisions

Spreadsheets play a larger role in more frequent data-driven decision-making, with organizations that make data-driven decisions all the time reporting spreadsheet use by all or most users (85 percent) slightly more often than organizations that make data-driven decisions most or some of the time.

Spreadsheet Use by Data-Driven Decision-Making



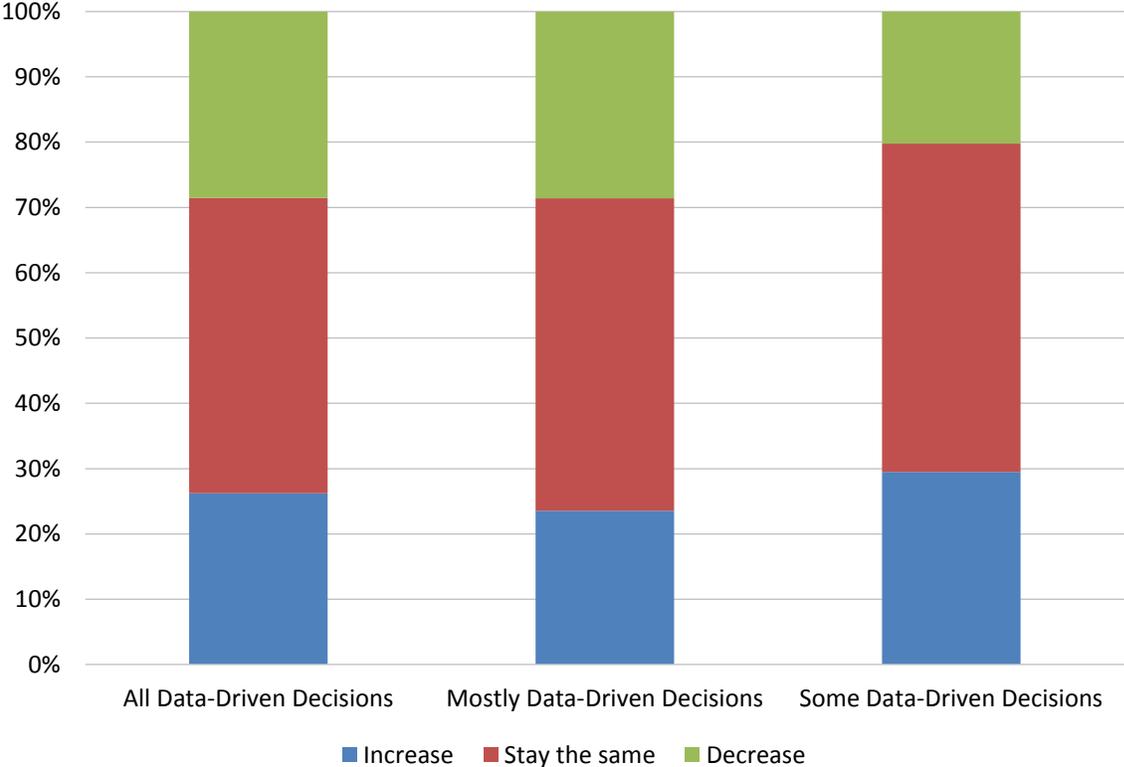
Source: Dresner Advisory Services

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Across these three levels of data-driven decision-making, perception levels of spreadsheets as strategic or necessary barely vary. However, organizations making data-driven decisions only some of the time report a greater likelihood to maintain or increase spreadsheet use.

This greater likelihood reflects that increasing the frequency with which an organization makes data-driven decisions is a longer-term change to make. It also indicates the realization that this change needs to start with the data culture and skills improvement, rather than beginning with the deployment of advanced analytic tools and systems.

Plans for Spreadsheet Use by Data-Driven Decision-Making



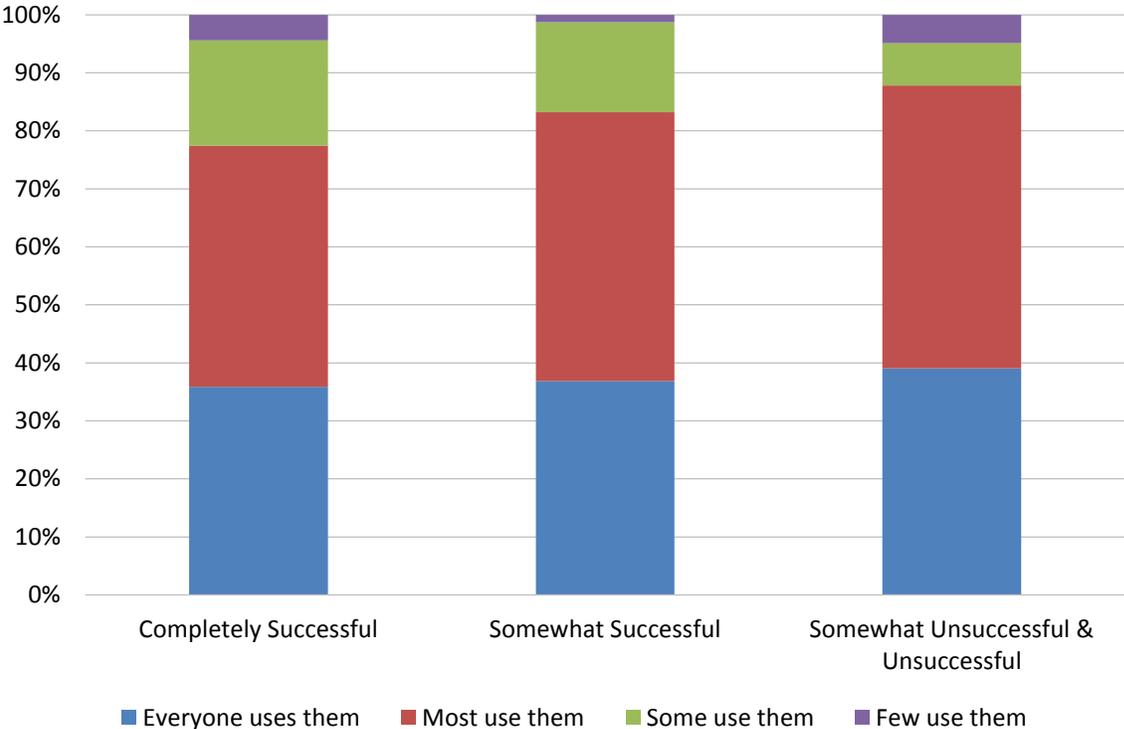
Source: Dresner Advisory Services

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Spreadsheets and Success With BI

Organizations that view their BI initiatives as having the highest level of success (completely successful) show a slight tendency to report all or most people using spreadsheets least often. Those with completely successful BI initiatives tend to have more experience with BI and higher skill levels with their BI tools. So, their lower usage of spreadsheets likely reflects a combination of more use of advanced BI tools (because of greater skill levels), as well as more-appropriate use of spreadsheets for the “right” use cases (lessons likely learned from experience).

Spreadsheet Use by Success with BI



Source: Dresner Advisory Services

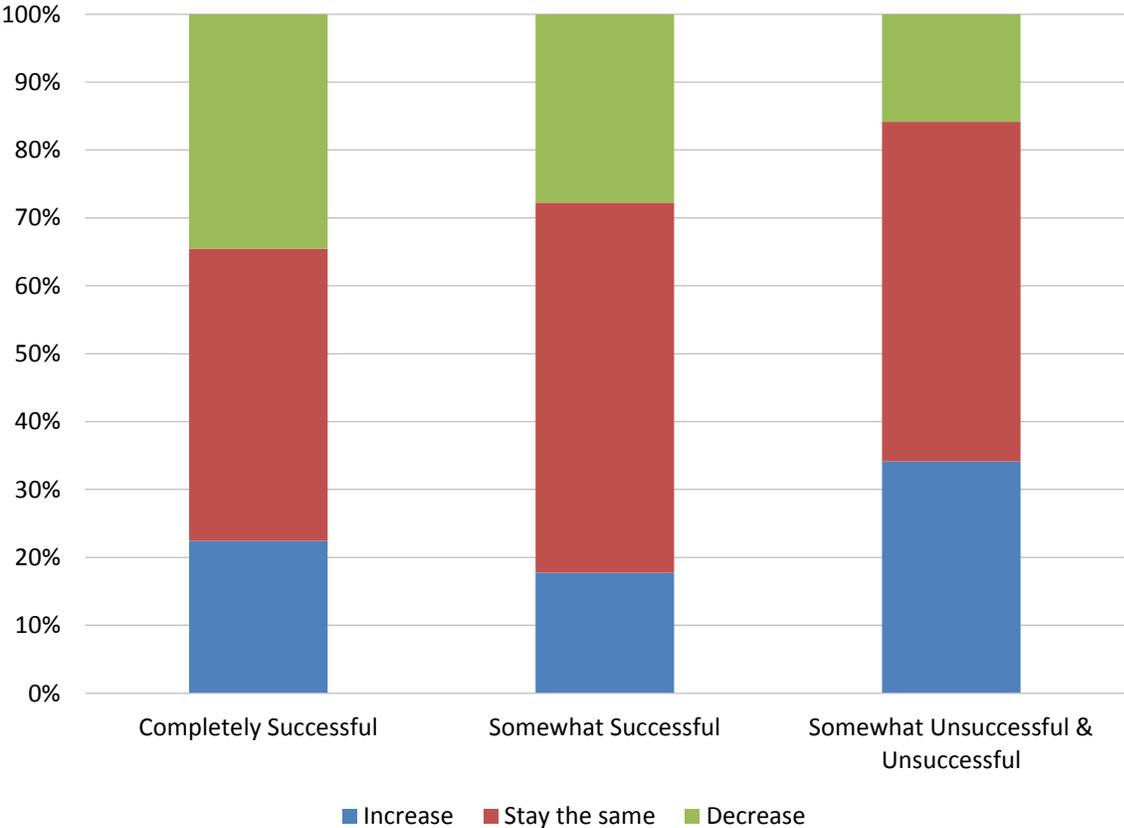
Organizations that consider their BI initiatives somewhat unsuccessful or unsuccessful show the greatest likelihood of all or most people using spreadsheets. This higher level of spreadsheet use likely reflects that unsuccessful BI initiatives tend to be less-mature BI implementations, which means less experience with BI tools and generally lower skill levels. Since people in organizations with unsuccessful BI initiatives still need to complete their analytics tasks; the higher use may in part reflect the need, as a fallback

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position, to “get things done the old way” with spreadsheets, despite the challenges associated with the execution of an organization’s BI initiatives.

Across these levels of BI success, perceptions of spreadsheets as strategic or necessary vary by only a few percentage points. However, organizations that consider their BI initiatives somewhat unsuccessful or unsuccessful show a greater likelihood to maintain or increase their spreadsheet use. Conversely, organizations that consider their BI initiatives completely successful report a much greater tendency to expect to decrease their use of spreadsheets. The reasons for both are the same as those cited on the previous page of this report.

Plans for Spreadsheet Use by Success with BI



Source: Dresner Advisory Services

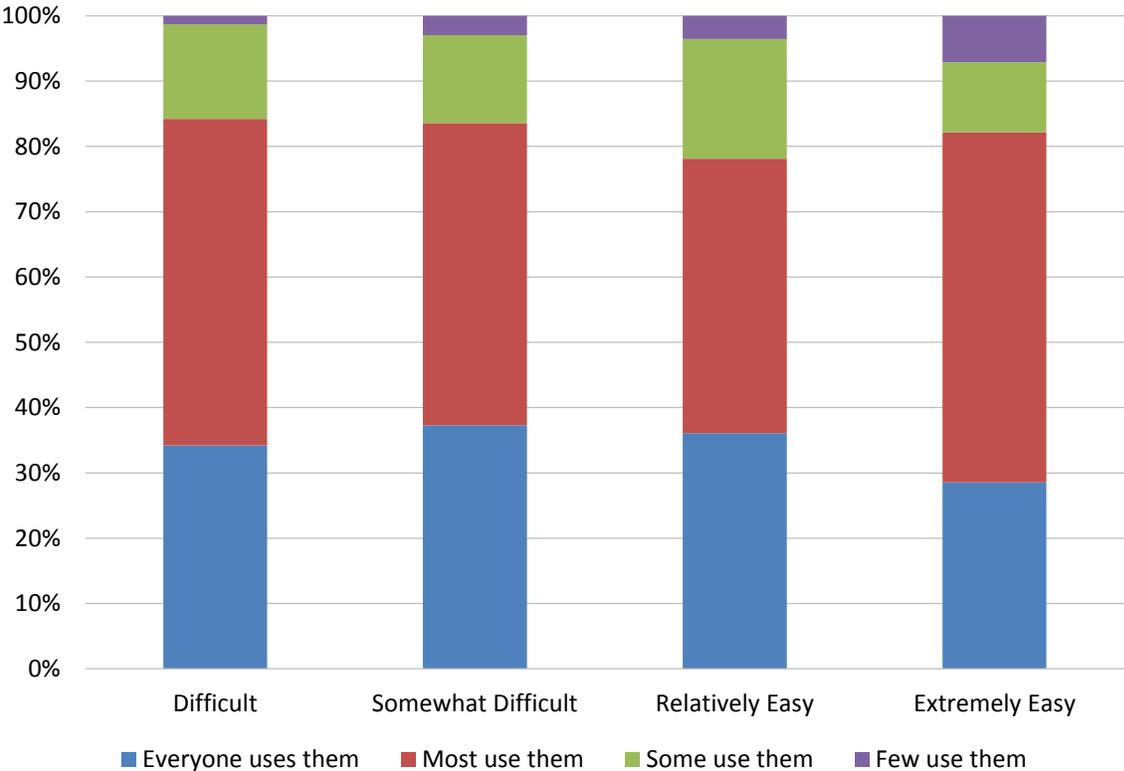
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Spreadsheet Use and Finding Analytic Content

Our surveys measure difficulty finding analytic content on a four-point scale, from most challenging to most straightforward: difficult, somewhat difficult, relatively easy, and extremely easy. Working with analytic content suggests direct interaction with source data or a curated data environment (such as a data warehouse—see the Research Insight “The Value of Data Warehousing Persists”).

Cross-tabulating these data with those on spreadsheets paints the picture one likely would expect: Organizations whose users find it extremely easy to access analytic content tend to rely on spreadsheets the least. Although organizations whose users find it extremely easy to find analytic content do not report the least instances of all or most people using spreadsheets, they indicate the most instances of few people using spreadsheets, as well as the fewest instances of everyone using spreadsheets.

Spreadsheet Use by Difficulty Finding Analytic Content

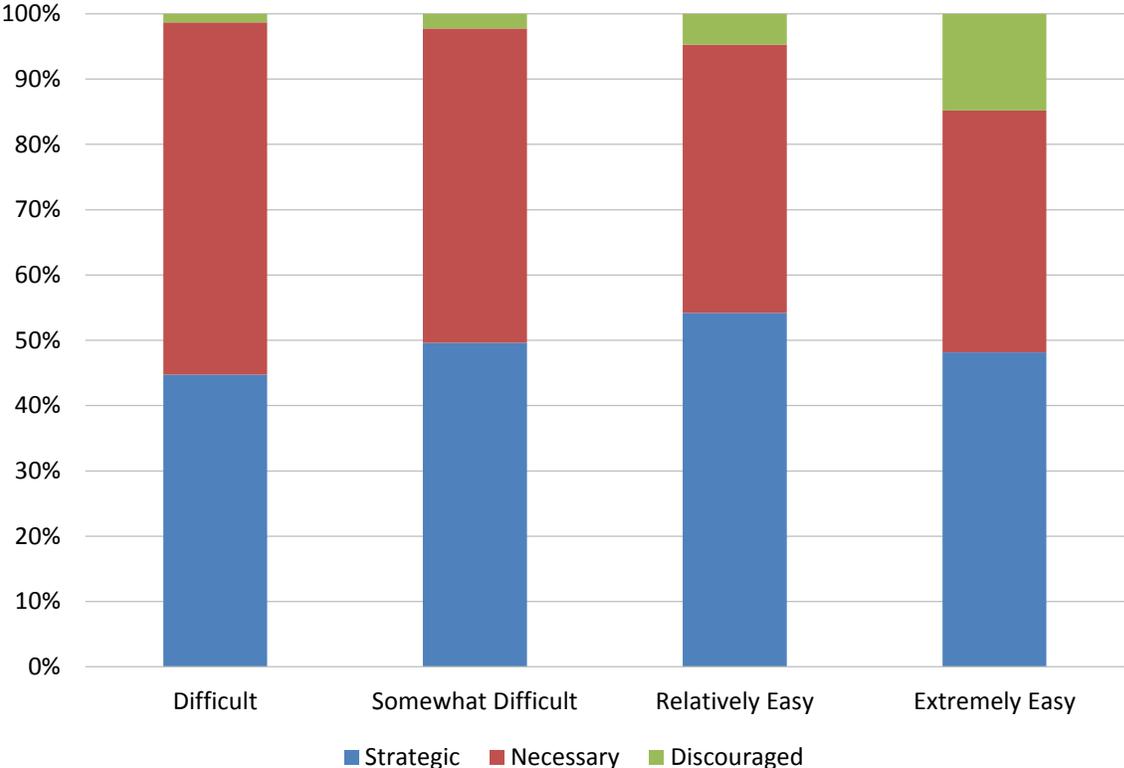


Source: Dresner Advisory Services

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Organizations whose users find it extremely easy to access analytic content show a lower perception of spreadsheets in general, especially by least frequently considering spreadsheets necessary and discouraging their use three times more often than any other level of difficulty. Discouraging spreadsheet use conversely means encouraging use of other advanced analytic systems and specialized BI tools.

Perception of Spreadsheet Use by Difficulty Finding Analytic Content

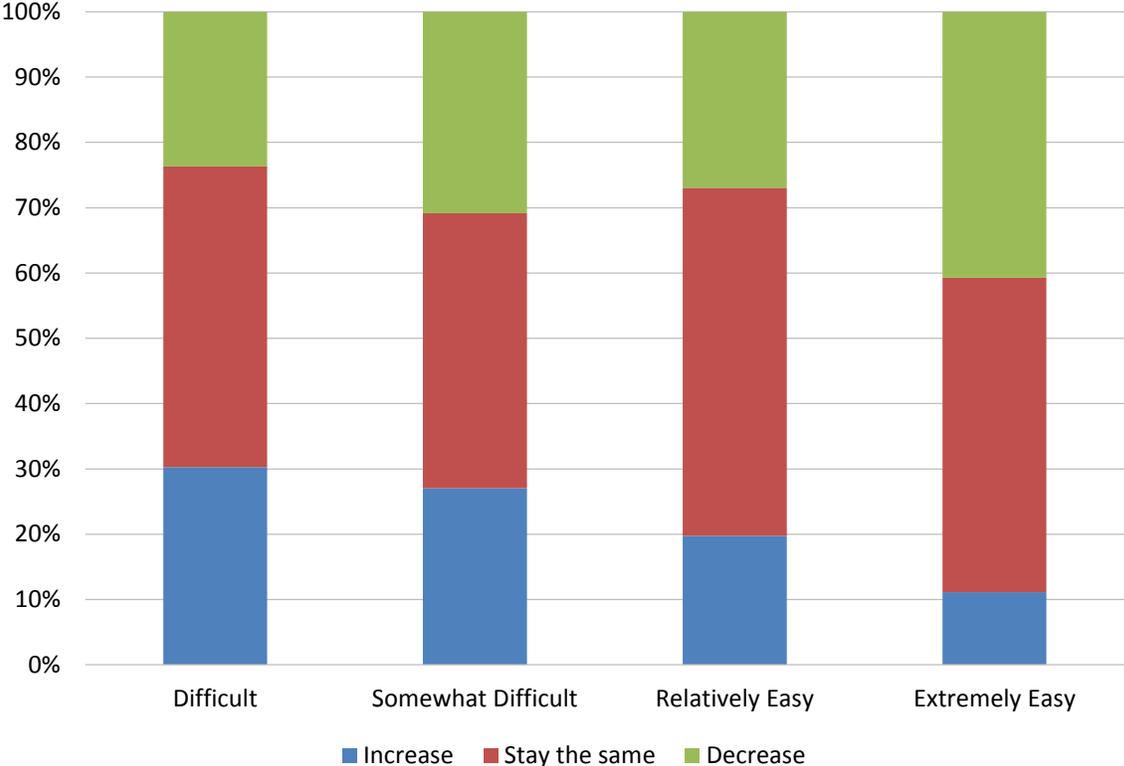


Source: Dresner Advisory Services

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Data on future plans rounds out the picture: Organizations whose users find it extremely easy to access analytic content are most likely to decrease spreadsheet use, and least likely to increase spreadsheet use. Their combination of intent and perceptions shows a clear desire to expand their use of advanced analytic systems and specialized BI tools.

Plans for Spreadsheet Use by Difficulty Finding Analytic Content



Source: Dresner Advisory Services