

# Impact of data effectiveness

**on business outcomes at medium-sized  
businesses in North America and Europe**

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# Executive summary

Do companies with more user-friendly and accessible enterprise resource planning (ERP) systems enjoy more positive business outcomes? Are they more profitable? Do highly effective ERP systems help create a sharper upswing of revenue growth? How much difference does effective data really make to business success?

To answer these questions, Sage commissioned IDG Research Services to conduct a study of medium-sized businesses in North America and Europe to explore the business implications (in US dollars) of improving data access and usability, and better understand the associations between the overall effectiveness of the ERP infrastructure and business profitability, revenue, projected growth, and so on. In other words, how do key business outcomes change as accessibility, usability, and insight into business information improves—even by small increments?

The research aimed to explore how investments in ERP solutions that address four data attributes—accessibility, usability, quality, and intelligence—can impact key business outcomes, such as revenue growth, profitability, sales (including sales to new customers and of new products/services), operational efficiency, and market penetration.

The study validated the theory that improvements in the accessibility, usability, quality, and intelligence of data have a direct and positive impact on critical business outcomes:

- Companies with more effective data grow 35% faster.<sup>1</sup>
- Only 40% of companies rate their ability to process customer demands on the road as excellent.<sup>2</sup>
- More intelligent data means more revenue—a 20% improvement<sup>3</sup> brings \$9,216 more per employee.<sup>4</sup>
- Companies with better intelligence are 2.2% more profitable.<sup>5</sup>
- Companies with better intelligence are 4 times more likely to optimize inventory levels.<sup>6</sup>
- Companies with better data improve consistent quality delivery to customers by 9%.<sup>7</sup>
- Companies with more usable data increase productivity by 10%.<sup>8</sup>
- Companies with mobile access to data increase sales of new products by 5%.<sup>9</sup>
- Companies with mobile access to data sell 3% more to new customers.<sup>10</sup>
- Successful companies are 4 times more likely to process orders remotely.<sup>11</sup>

Moreover, companies with highly effective ERP systems that provide more usable and accessible data are more likely to realize these outcomes. Businesses ranking in the top third for overall data attribute scores consistently achieve higher performance—a fact that should be noted by other companies looking to improve their performance. The return on investment (ROI) in an ERP system that maximizes these data attributes would be significant given the potential impact on business outcomes.

Improving insight into which data attributes positively impact outcomes for medium-sized businesses can help address their pain points. The key findings section of this report further illustrates the effects of data accessibility, usability, quality, and intelligence on business performance and outcomes.

1 A top-performing company (defined as those in the top third for overall data attribute scores) improving performance in data accessibility, quality, intelligence, and usability can expect a net gain of 35% more in incremental revenue year over year than a low-performing company.

2 40% of companies rate their performance of enabling sales to directly process customer demands on the road, anytime as excellent.

3 An improvement of 2 points on a 10-point scale where 1= poor and 10=excellent

4 A 20% improvement in data intelligence will increase year-over-year revenue by 2.6%. This increase is solely due to improved data intelligence and is in addition to changes in year-to-year revenue due to other factors. Based on average revenue per employee of \$354,482 for medium-sized businesses in our sample, a 20% improvement in data intelligence increases year-over-year revenue by \$9,216 per employee.

5 A 20% improvement in data intelligence will result in a 2.2% increase in year-over-year profitability.

6 Top-performing companies (defined as those in the top third for overall data attribute scores) achieved excellent company performance in optimizing resources or inventory levels to minimize costs 71% of the time compared to low-performing companies (defined as those in the bottom third for overall data attribute scores) at 16%.

7 A 20% improvement in data quality will result in a 9% improvement in delivering consistent quality to customers.

8 A 20% improvement in data usability will result in a 10% improvement in time spent on nonproductive tasks.

9 A 20% improvement in data accessibility will result in a 5% increase in sales of new products/services.

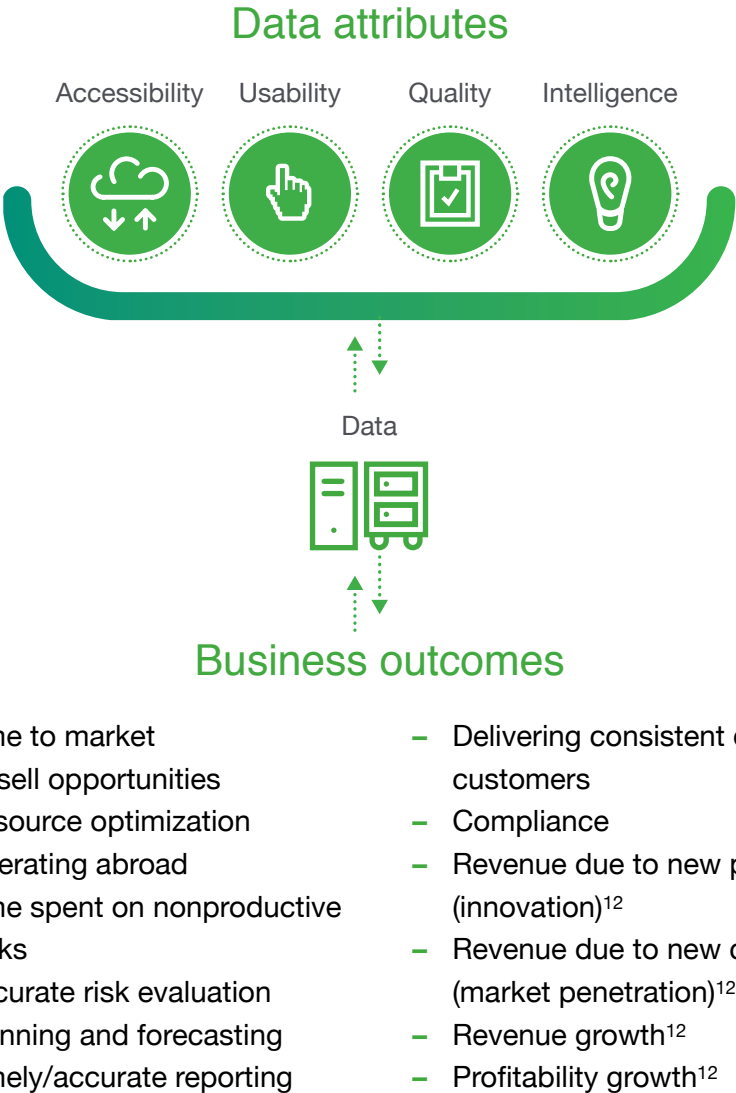
10 A 20% improvement in data accessibility will result in a 3% increase in sales to new customers.

11 Top-performing companies (defined as those in the top third for overall data attribute scores) achieved excellent company performance in enabling sales to process customer demands on the road 73% of the time compared to low-performing companies (defined as those in the bottom third for overall data attribute scores) at 18%.

# Conceptual model

This study of medium-sized businesses in North America and Europe set out to validate a relationship between improvements in data attributes including accessibility, usability, quality, and intelligence, and one or more business outcomes.

Figure 1 shows the conceptual model developed to assess the impact of data attributes on business outcomes. The components of the model are (i) data attributes and (ii) business outcomes.



**Figure 1:** Business outcome impacts from data attributes

<sup>12</sup>To assess the impact of data attributes on these specific financial business outcomes, researchers used distinct but related financial measures: total revenue, percent of revenue from new/existing customers, and revenue and profitability compared to previous year.

## Defining the data attributes

IDG Research Services studied four data attributes: accessibility, usability, quality, and intelligence. Within each of these multifaceted attributes are several separate, but related, characteristics that significantly affect the ability of decision makers to act quickly and effectively.



Accessibility

- The extent to which users can access data remotely/outside the office
- The extent to which users can access data from mobile devices
- The extent to which salespersons can access customer data/process demands from a mobile device



Usability

- The extent to which users can personalize the way data is presented
- The ease with which data can be shared with external partners/stakeholders



Quality

- The extent to which data is accurate/error-free
- The extent to which data available is sufficient to cover most users' inquiries
- The extent to which data is received on time to take action/make decisions
- The degree to which data is up to date relative to the event(s) of interest



Intelligence

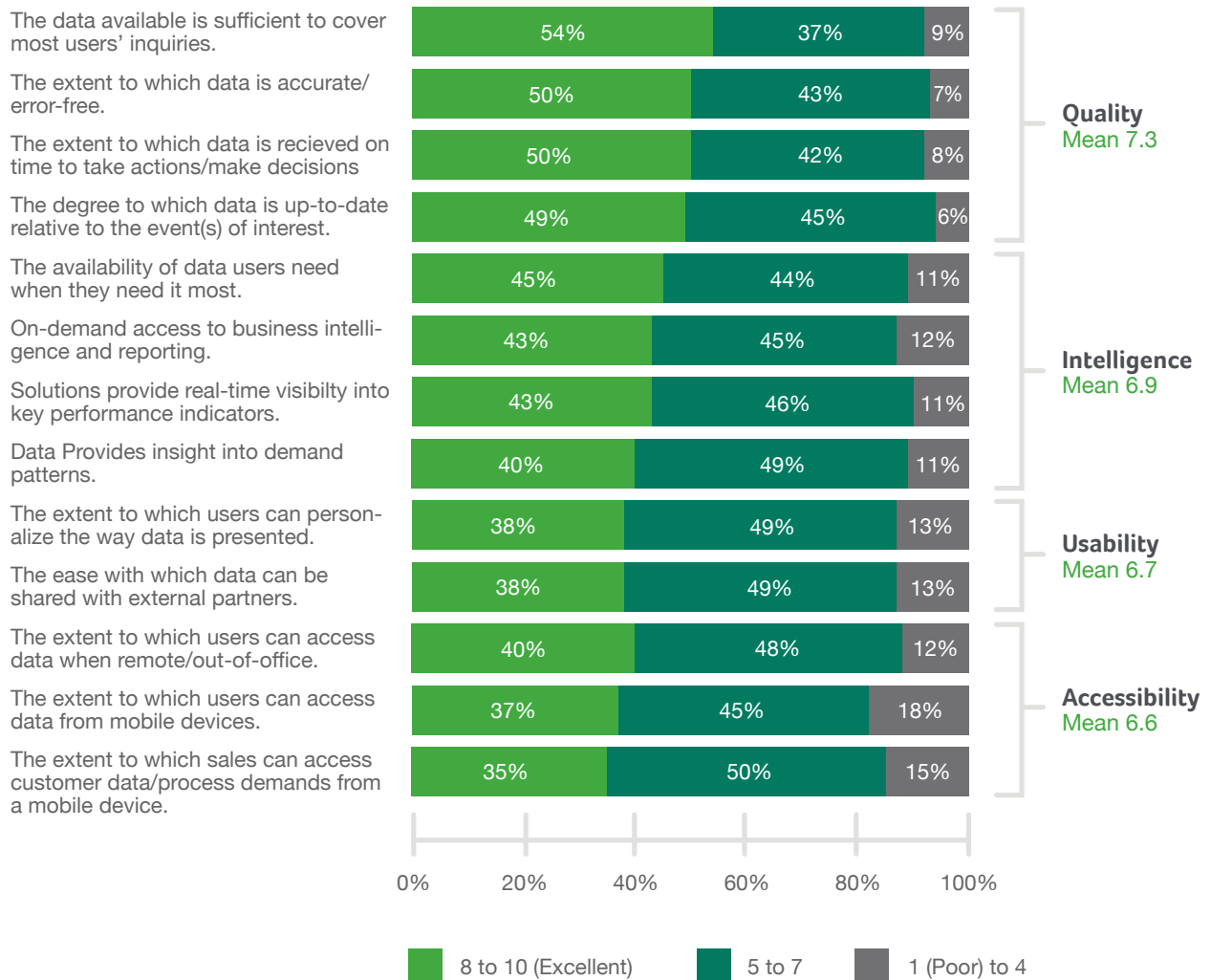
- The availability of data users need at the time they need it most
- Data provides insight into demand patterns
- Solutions provide real-time visibility into key performance indicators
- On-demand access to business intelligence and reporting

## Defining the business outcomes

The selected business outcomes reflect a comprehensive, well-rounded assessment of how well a business is performing across a variety of key measures, including financial performance, customer-focused issues, and operational effectiveness.

# Which attributes do medium-sized businesses consider most important to performance?

As illustrated in figure 2 below, quality ranks first, while accessibility ranks last.



**Figure 2:** Performance ratings medium-sized companies assign to their data attributes

# Key findings

The research findings validated the hypothesis: Improved data attributes do lead to superior business outcomes.

Business leaders know that data affects performance. But how strong is the association between the data attributes studied and important business outcomes? Here's what the research showed.

## Companies with more effective data grow 35% faster.<sup>13</sup>

Improving performance on all four data attributes drives positive financial returns. In fact, a high-performing company can expect to gain 35% more in incremental revenue year over year than a low-performing company.<sup>14</sup>

For example, the median annual revenue among the medium-sized businesses surveyed is \$42 million. Based on this median, a high-performing company can expect average year-over-year revenue growth of 8.9% or +\$3.75 million, while a low-performing company can expect average year-over-year revenue growth of 6.6% or +\$2.77 million. For the typical medium-sized business surveyed, moving from a low-performing to high-performing organization could result in a net gain of roughly \$980,000.

In addition to the positive financial impact, top-performing medium-sized businesses<sup>15</sup> consistently achieve higher performance on all operational and customer-focused business outcomes.

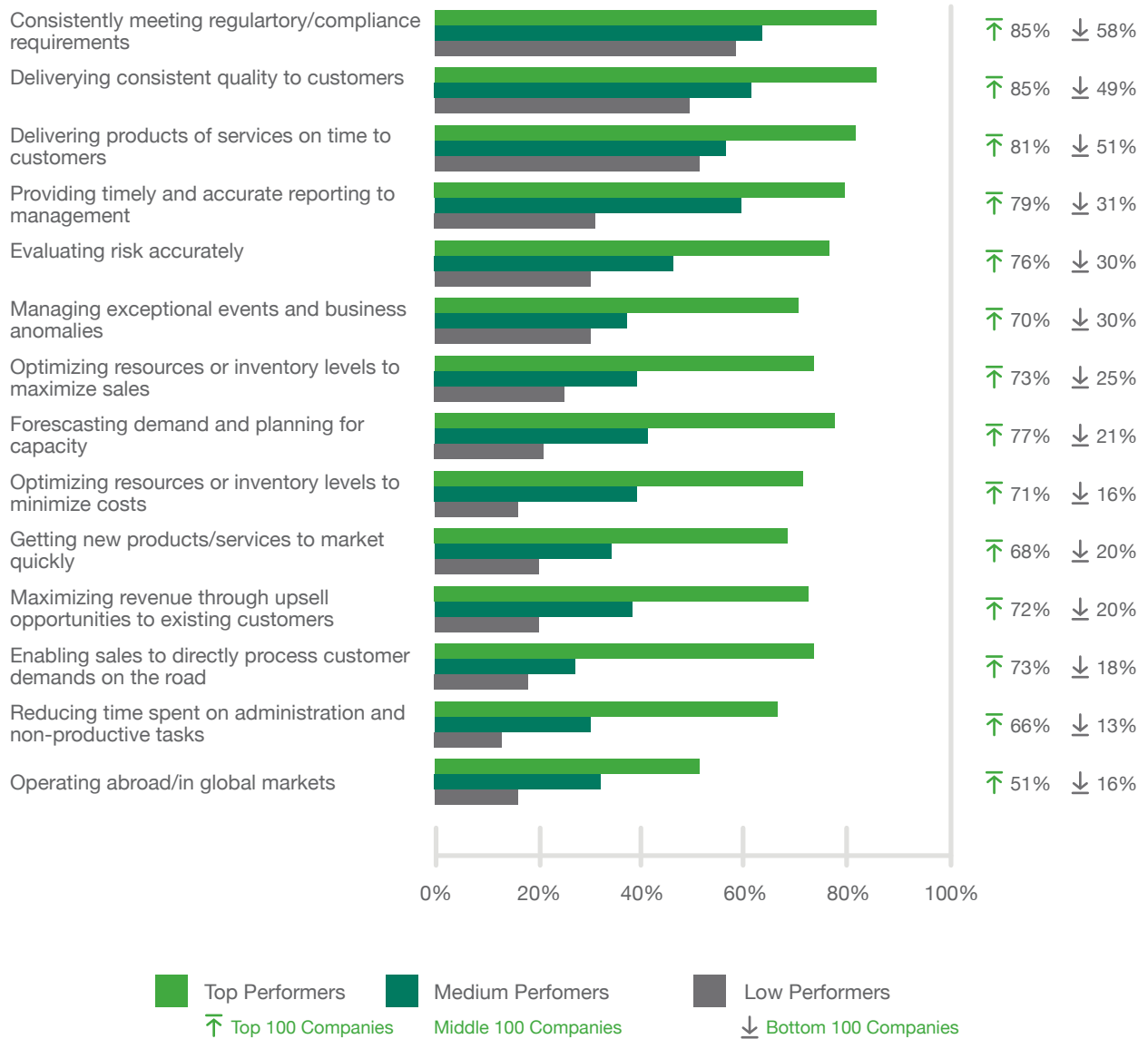
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<sup>13</sup> A top-performing company improving performance in data accessibility, quality, intelligence, and usability can expect a net gain of 35% more in incremental revenue year over year than a low-performing company.

<sup>14</sup> A low-performing company is defined as one among the bottom third of companies for performance on all four data attributes combined.

<sup>15</sup> A top-performing company is defined as one among the top third of companies for performance on all four data attributes combined.

## % Rating company performance 8, 9 or 10 (where 10=excellent)



**Figure 3:** Comparison of the performance ratings that top-, medium-, and low-performing medium-sized companies assign to their business outcomes.



**Increases in year-to-year revenue and profitability are associated with improvements in each of the data attributes.** Companies with high levels of data effectiveness are likely to have increased revenue (or profitability) from one year to the next. This includes both low-revenue and high-revenue companies.

**The single data attribute with the strongest positive relationship to revenue/profit growth: intelligence.**

According to the research, each of the data attributes has an impact on various business outcomes.

- **Accessibility:** Direct and positive impact on innovation and market penetration
- **Usability:** Direct and positive impact on time spent on nonproductive tasks, resource optimization to improve sales, and operating abroad
- **Quality:** Direct and positive impact on delivering consistent quality to customers, compliance, risk evaluation, and timely/accurate reporting
- **Intelligence:** Direct and positive impact on revenue and profitability growth, time to market, mobilizing sales, planning/forecasting accuracy, and upsell opportunities

**It's important to note that there is some degree of interdependency among the four attributes.** Data accessibility, for example, does not occur in a void and often occurs in conjunction with usability, quality, and intelligence. The close relationship among the four data attributes means that all four will play a role in building a successful environment.

**Furthermore, ERP solutions that improve data attributes will have a positive impact on the business in key customer-focused or operational outcomes (i.e. time to market, upsell opportunities, or innovation).** The right ERP solution can improve data accessibility, usability, quality, and intelligence, enabling businesses to analyze performance and identify opportunities to enhance customer relations or operational efficiency.

## How data can address business pain points

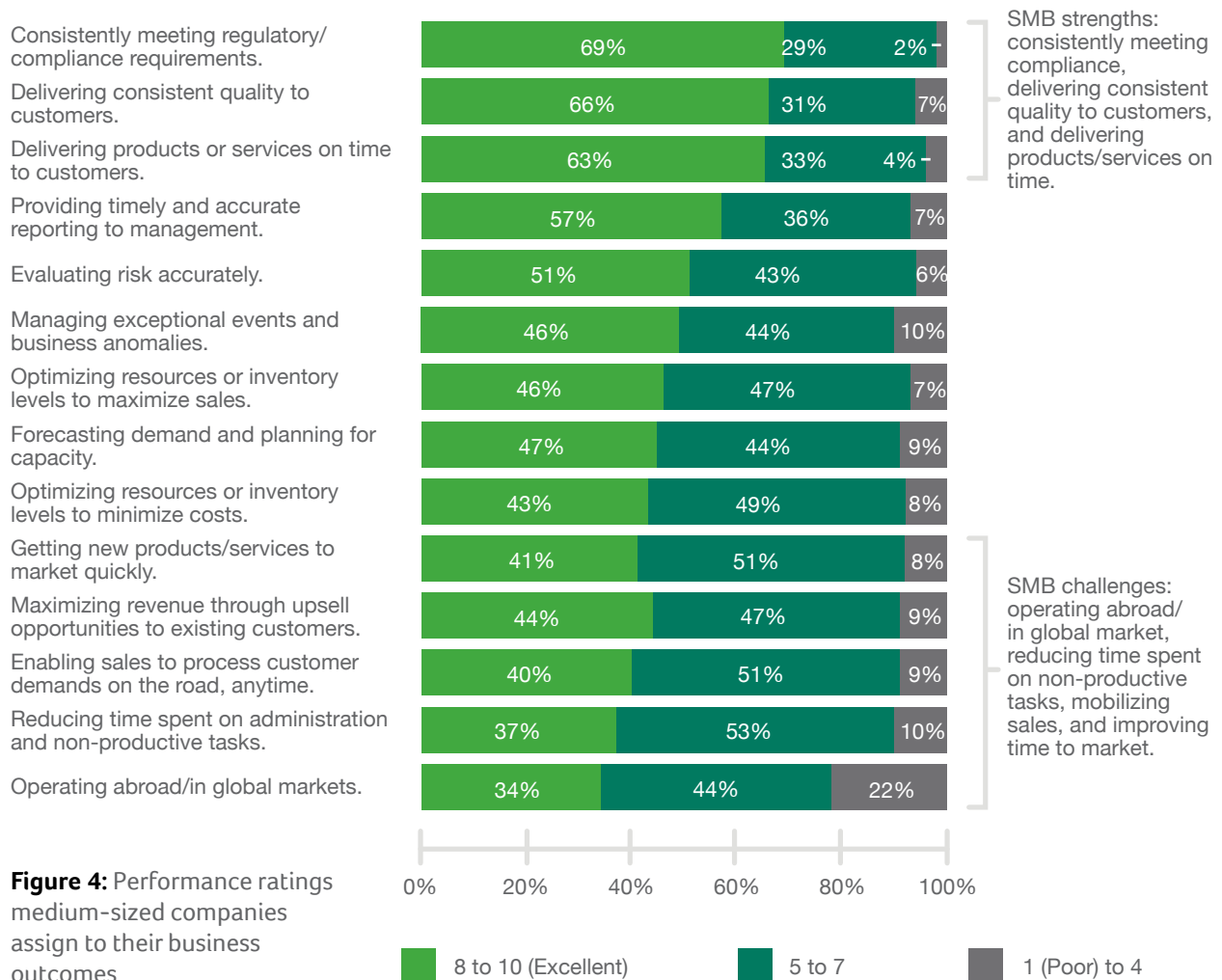
According to the research, medium-sized business strengths include consistently meeting compliance, delivering consistent quality to customers, and delivering products/services on time. Their challenges?

Operating abroad or in the global market, reducing time spent on nonproductive tasks, mobilizing sales, and improving time to market.

Understanding which data attributes positively impact business outcomes can help address the challenges and pain points of medium-sized companies.

Only 40% of companies rate their ability to process customer demands on the road as excellent.<sup>16</sup>

### Ratings of SMB performance on key business objectives:



<sup>16</sup> 40% of companies rate their performance of enabling sales to directly process customer demands on the road, anytime as excellent.



# Data intelligence

How does improved data intelligence affect business outcomes at medium-sized businesses?

Of the four data attributes, intelligence positively impacts the broadest set of business outcomes, including revenue and profitability growth, time to market, mobilizing sales, planning/forecasting accuracy, and upsell opportunities.

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**A 20% improvement in data intelligence<sup>17</sup> will result in:**

**2.6% increase in year-over-year revenue.**

This increase is solely due to improved data intelligence and is in addition to changes in year-to-year revenue that may have occurred due to other factors. Based on the average revenue per employee of \$354,482 for medium-sized businesses in the sample, a 20% improvement in data intelligence results in an increase of \$9,216 in revenue per employee year over year.

More intelligent data means more revenue—a 20% improvement brings \$9,216 more per employee.<sup>18</sup>

**2.2% increase in year-over-year profitability.**

A medium-sized business with an annual profit of \$2 million would see a \$440,000 improvement in profits year over year.

Companies with better data intelligence are 2.2% more profitable.<sup>19</sup>

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<sup>17</sup> An improvement of 2 points on a 10-point scale where 1= poor and 10=excellent

<sup>18</sup> A 20% improvement in data intelligence will increase year-over-year revenue by 2.6%. This increase is solely due to improved data intelligence and is in addition to changes in year-to-year revenue due to other factors. Based on average revenue per employee of \$354,482 for medium-sized businesses in our sample, a 20% improvement in data intelligence increases year-over-year revenue by \$9,216 per employee.

<sup>19</sup> A 20% improvement in data intelligence will result in a 2.2% increase in year-over-year profitability.

### 11.6% improvement in time to market.

Based on this data, a company that currently takes 12 months to launch a new product or service could expect to reduce that time by 42 days.

In addition, improvements in data intelligence positively impact outcomes<sup>20</sup> such as:

- Enabling sales to directly process customer demands anywhere, anytime.
- Improving planning/forecasting accuracy.
- Optimizing resources/inventory levels to minimize costs.
- Maximizing revenue through upsell opportunities to existing customers.

Companies with better intelligence are four times more likely to optimize inventory levels.<sup>21</sup>

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<sup>20</sup> For each of these, a 2-point improvement in data intelligence on a scale of 1 to 10 will result in roughly a 1-point improvement on a scale of 1 to 10 for each outcome.

<sup>21</sup> Top-performing companies (defined as those in the top third for overall data attribute scores) achieved excellent company performance in optimizing resources or inventory levels to minimize costs 71% of the time compared to low-performing companies (defined as those in the bottom third for overall data attribute scores) at 16%.



# Data quality

How does improved data quality affect business outcomes at medium-sized businesses?

Data quality directly and positively impacts several important business outcomes—in particular, delivering consistent quality to customers, compliance, and reporting.

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**A 20% improvement in data quality<sup>22</sup> will result in:**

**9.0% improvement in delivering consistent quality to customers.**

A medium-sized business that delivers consistent quality to customers 70% of the time could expect that to increase to 76% with better data quality.

**6.4% improvement in consistently meeting regulatory/compliance requirements.**

A medium-sized business that consistently meets 85% of regulatory/compliance requirements now could raise that to 90%.

In addition, improvements in data quality positively impact outcomes<sup>23</sup> such as:

- Increasing risk evaluation accuracy.
- Improving reporting timeliness and accuracy.

Companies with better data improve consistent quality delivery to customers by 9%.<sup>24</sup>

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<sup>22</sup> An improvement of 2 points on a 10-point scale where 1= poor and 10=excellent

<sup>23</sup> For each of these, a 2-point improvement in data quality on a scale of 1 to 10 will result in roughly a 1-point improvement on a scale of 1 to 10 for each outcome.

<sup>24</sup> A 20% improvement in data quality will result in a 9% improvement in delivering consistent quality to customers.



# Data usability

How does improved data usability affect business outcomes at medium-sized businesses?

Improving the ability to personalize and share data directly and positively impacts productivity, resource optimization, and inventory management.

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**A 20% improvement in data usability<sup>25</sup> will result in:**

**10% improvement in time spent on nonproductive tasks.**

A medium-sized business employee who spends a third of his monthly work hours—about 53 of 160 hours—on administrative or nonproductive tasks would cut that time to 48 hours. In addition, improvements in data usability positively impact outcomes such as optimizing resources or inventory levels to improve sales and operations in global markets.

**Companies with more usable data increase productivity by 10%<sup>26</sup>**

In addition, improvements in data usability positively impact outcomes<sup>27</sup> such as optimizing resources or inventory levels to improve sales and operations in global markets.

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<sup>25</sup> An improvement of 2 points on a 10-point scale where 1= poor and 10=excellent

<sup>26</sup> A 20% improvement in data usability will result in a 10% improvement in time spent on non-productive tasks.

<sup>27</sup> For each of these, a 2-point improvement in data usability on a scale of 1 to 10 will result in roughly a 1-point improvement on a scale of 1 to 10 for each outcome.



# Data accessibility

## How does improved data accessibility affect business outcomes at medium-sized businesses?

Improving data accessibility—specifically out-of-office and mobile access—directly and positively impacts the ability to innovate by selling new products and services and to penetrate new markets.

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### A 20% improvement in data accessibility<sup>28</sup> will result in:

#### 5.0% increase in sales of new products/services.

On average, among the businesses surveyed, 29% of annual revenue or \$12.2 million is derived from sales of new products/services. Based on this data, companies that improve data accessibility by 20% could expect a \$610,000 increase in sales from new products/services.

Companies with mobile access to data increase sales of new products by 5%.<sup>29</sup>

#### 3.0% increase in sales to new customers.

On average, among the businesses surveyed, 29% of annual revenue or \$12.2 million is derived from sales to new customers. Improving data accessibility by 20% would increase market penetration, resulting in an incremental \$366,000 in revenue from new customers.

Companies with access to data sell 3% more to new customers.<sup>30</sup>

Successful companies are 4 times more likely to process orders remotely.<sup>31</sup>

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<sup>28</sup> An improvement of 2 points on a 10-point scale where 1= poor and 10=excellent.

<sup>29</sup> A 20% improvement in data accessibility will result in a 5% increase in sales of new products/services.

<sup>30</sup> A 20% improvement in data accessibility will result in a 3% increase in sales to new customers.

<sup>31</sup> Top-performing companies (defined as those in the top third for overall data attribute scores) achieved excellent company performance in enabling sales to process customer demands on the road 73% of the time compared to low-performing companies (defined as those in the bottom third for overall data attribute scores) at 18%.

# Conclusion

This study of medium-sized businesses in the North America and Europe validated the theory that even marginal improvements in the accessibility, usability, quality, and intelligence of data have a direct and positive impact on critical business outcomes.

Moreover, companies with ERP systems that provide more usable and accessible data are more likely to realize these outcomes; in other words, companies with highly effective ERP solutions will be more profitable, enjoy a sharper upswing of revenue growth, and benefit from improvements in key customer-focused or operational outcomes such as time to market, upsell opportunities, or innovation with new products or services.

From revenue and profitability gains to new customers, better quality, and increased operational efficiency, businesses ranking in the top third for overall data attribute scores consistently achieve higher performance—a fact that should be noted by other companies looking to improve their performance. Considering that modest mean values for each of the data attribute scores—accessibility 6.6, usability 6.7, quality 7.3, and intelligence 6.9<sup>32</sup>—there is considerable opportunity for data improvement. The return on investment (ROI) in an ERP system that maximizes these data attributes would be significant given the potential impact on business outcomes.

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<sup>32</sup> On a 1-10 point scale



# Appendix: methodology and analysis

**The methodology of the study involved three steps:**

- Operationalization of data attributes, survey design, and testing
- Data collection
- Analysis

## Operationalization of data attributes

IDG Research Services designed the questionnaire for the study based on input from key stakeholders at Sage.

Respondents were asked a series of questions related to the above dimensions of data and asked to rate data attributes on a 10-point scale, where an increase of 1 point represents a 10% increase in the perceived level of a data attribute.

The margin of error is +/- 5.6% with a confidence level of 95 percent. Any respondents who didn't meet all requirements were terminated to ensure all questions were answered by all respondents.

## Data collection

Research was conducted online among North American and European-based respondents employed at companies with 100 to 500 employees. Qualified respondents were in a senior management role (director level or higher titles) in IT or LOB functions (accounting, purchasing, sales, marketing, inventory/warehouse management, manufacturing). While a cross-section of verticals was surveyed, quota sampling was employed to ensure that a minimum of 50% of responses were in manufacturing, process manufacturing, distribution, and business-services industries.

The sample for this survey was sourced from IDG panels and/or third-party panels. Individuals meeting our target specifications were sent an email, including a link to the survey, inviting them to participate; participants were offered an incentive for completing the survey. This was a blind data collection effort. Sage was not identified as the survey sponsor.

# Analysis

IDG Research Services utilized a crosstab and variance analysis to help understand the associations between overall effectiveness of the ERP infrastructure and business profitability, revenue, projected growth, and so on (that is, how do key business outcomes change as accessibility, usability, and insight into business information improves).

**Specifically, the analysis examined the following:**

- The accessibility and usability of business information in medium-sized companies
- How ERP usage improves access to and usability of business information
- Whether companies with better data accessibility/usability generally have higher revenue growth, profitability, or sales per employee
- The quality of business information in medium-sized companies
- How ERP software improves insight into business information
- If companies with better insight into business information generally have higher revenue growth, profitability, sales/employee.

Field Work	February 7 –24, 2014
Total Respondents	300
Qualifiers	Director-level and higher titles in IT and LOB functions at medium-sized companies with 100-500 employees. Quota sampling was employed to ensure 50% of aggregated responses were from manufacturing, business/professional services and retail/wholesale/distribution verticals.
Geography	North America (150) Europe (150)
Methodology Collection	Online questionnaire
Number of Questions	15

# The research team

## Janet King, SVP/GM

A market research professional for 24 years, Janet has extensive experience in the design, analysis, and presentation of both quantitative and qualitative research programs. She has designed and executed studies in the U.S. and globally for clients in technology, media, and consumer markets. Janet has an in-depth understanding of research methods including multivariate techniques and analysis. Recent engagements have included market insights studies on IT service delivery, best practices in cloud innovation, managed services, unified communications, data center innovation, business intelligence/analytics, big data/data management, and more. Janet holds a B.S. degree from Alfred University, and a MBA from the Franklin W. Olin Graduate School of Business at Babson College.

## Jen McKean, research director

Jen is an experienced quantitative research professional who is familiar with key technology trends facing enterprise organizations today. She has designed and executed numerous research programs to help position clients as thought leaders in white papers, supplements, and custom publishing programs. A key contributor to the development of AdGauge®, IDG's readership recall study, Jen possesses a unique blend of research expertise, market knowledge, and creative thinking. A member of the IDG Research Services team since 1997, Jen holds a B.A. in Economics from the University of Rhode Island.

## Perry Laberis, research manager

Perry joined IDG Research Services after working for analyst firm Enterprise Strategy Group (ESG). At ESG, Perry conducted primary and secondary market research, developed market sizing models and forecasts, and created and produced ESG reports and briefs. Perry has supported research project requirements across a variety of IT topic areas including virtualization, security, networking, and cloud computing, among others. Perry is no stranger to IDG, having worked as an associate research analyst at IDC prior to joining ESG. He has also authored several articles and white papers for IDG on a variety of business and technology topics for global IT vendor clients. Perry holds a B.A. from Trinity College.

## About IDG Research Services

Founded in 1987, IDG Research Services is a full-service research provider specializing in the conduct of marketing and media-related research for B2B marketers in the technology sector. This focused, industry-specific approach allows the company to tailor its research approaches, methods and techniques to suit each client's unique research needs. As a division of International Data Group (IDG), IDG Research Services brings the resources and experience of a large, global company to its clients in the form of an agile, customer-focused business. Research ranges in scope from single country or US-only efforts to global programs encompassing multiple countries and regions. Recent clients include, among others, VMware, Progress Software, Dell, SAP, HP, Qwest, Numara, and Oracle. For more information visit [www.idgresearch.com](http://www.idgresearch.com).

## About Sage Software, Inc.

Sage provides small and medium-sized organizations with a range of easy-to-use, secure, and efficient business management software and services—from accounting and payroll to enterprise resource planning, customer relationship management, and payments. Sage customers receive continuous advice and support through a global network of local experts to help them solve their business problems, giving them the confidence to achieve their business ambitions. Formed in 1981, Sage was floated on the London Stock Exchange in 1989 and entered the FTSE 100 in 1999. Sage has over 6 million customers and more than 12,700 employees in 24 countries covering the UK & Ireland, mainland Europe, North America, South Africa, Australia, Asia, and Brazil.

For more information about Sage in North America, please visit the company website at [Sage.com](http://Sage.com).