

Research Insights Paper

Five Ways Data-driven Analytics Investments Have Digitally Transformed Businesses

Research-based Insights: How Analytics Maturity Correlates to Better Business Outcomes

By Scott Sinclair, ESG Senior Analyst; and Mike Leone, ESG Senior Analyst
March 2020

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The Rise of the Modern, Intelligent Business

Businesses are turning to data and the power of advanced analytics to redefine their industries and unlock countless new opportunities. As organizations transition from conducting descriptive analytics that describe what happened to predictive analytics that answer what will happen next, the emphasis on data accessibility, availability, and trust has never been greater. Organizations are looking to leverage as much data as possible, regardless of size, type, or the rate at which it changes to become data-centric through self-service empowerment. So, what types of data-driven initiatives are being embraced to support this revolutionary transformation of businesses and markets? Common initiatives involve:

- Implementation of modern, future-proof infrastructure foundations that effectively and efficiently support the increased demands of data-driven initiatives.
- Expedited delivery of new IT services leveraging the right data to support overarching business goals and specific end-user needs.
- Modernization of application development and deployment based on real-time insights derived from next-generation technology such as artificial intelligence and machine learning.

There is a general belief that increased adoption of analytics is better for organizations, offering higher levels of business insight. Insights generate more business opportunity, which translates into improved business outcomes with an eventual yield of more revenue. But does leveraging more and/or advanced analytics tools and technologies correlate to better business outcomes? Can organizational investments in analytics truly transform organizations, presenting a viable means to grow the business and enhance the bottom line?

The answer to both of those questions is a resounding yes.

Establishing Analytics Maturity Stages

ESG recently executed an in-depth research study to better understand and quantify the relationship between the use of advanced analytics/artificial intelligence workloads and positive business outcomes. For the analysis, ESG leveraged an established analytics maturity framework that enabled the grouping of respondents into three separate categories based on their responses about their analytics usage, investment, prioritization, as well as their supporting infrastructure environments.

Details on the research study as well as the methodology leveraged to define each group are explained in greater detail in the *Research Overview* section at the end of the paper. For the purposes of reviewing the findings, ESG divided participants into one of three groups based on their maturity in the use of analytics.

Mature (Stage 3) analytics organizations are 2.4x more likely to have increased revenue per employee over the past two years.

- Stage 1: The least mature in their usage of analytics (38% of respondents).
- Stage 2: In the middle group in terms of analytics usage maturity (39% of respondents).
- Stage 3: The most mature in their usage of analytics (23% of respondents).

Leveraging this process, ESG established a correlation between high levels of analytics maturity and positive business outcomes; examples include:

- *Stage 3* organizations are **3.2x more likely** than *Stage 1* to **outperform competitors on customer satisfaction**.
- *Stage 3* organizations are **2.4x more likely** than *Stage 1* to have **increased revenue per employee over the past two years**.
- *Stage 3* organizations are **2.7x more likely** than *Stage 1* to report **analytics investments had an extensive impact on shortening time to market for new products**.

This paper will highlight **five different areas** where increased analytics investment and maturity positively impacted the business, including **operational efficiency, product delivery/time to market, business revenue growth, customer satisfaction, and customer retention**. This paper will also review/highlight the investment tendencies of those mature, *Stage 3*, analytics organizations.

Analytics Maturity Drives Operational Efficiency and Improved Revenue per Employee

The more adept an organization is in utilizing analytics, the faster and more efficiently it can both investigate potential business opportunities and seize those opportunities. By improving operational efficiency in this fashion, a business can better achieve its ultimate goal: improved revenue growth and profitability.

During this study, ESG found mature *Stage 3* analytics organizations were **2.4x more likely** than *Stage 1* organizations to indicate that their organizations are in a **very strong business position to succeed competitively** (56% versus 23%). In other words, participants from these more mature organizations simply felt they were positioned to compete and succeed over the next few years in their specific market landscapes, but are those feelings justified? The answer is yes.

*Mature (Stage 3) analytics organizations were **2.7x more likely** to report analytics investments had an extensive impact on shortening time to market.*

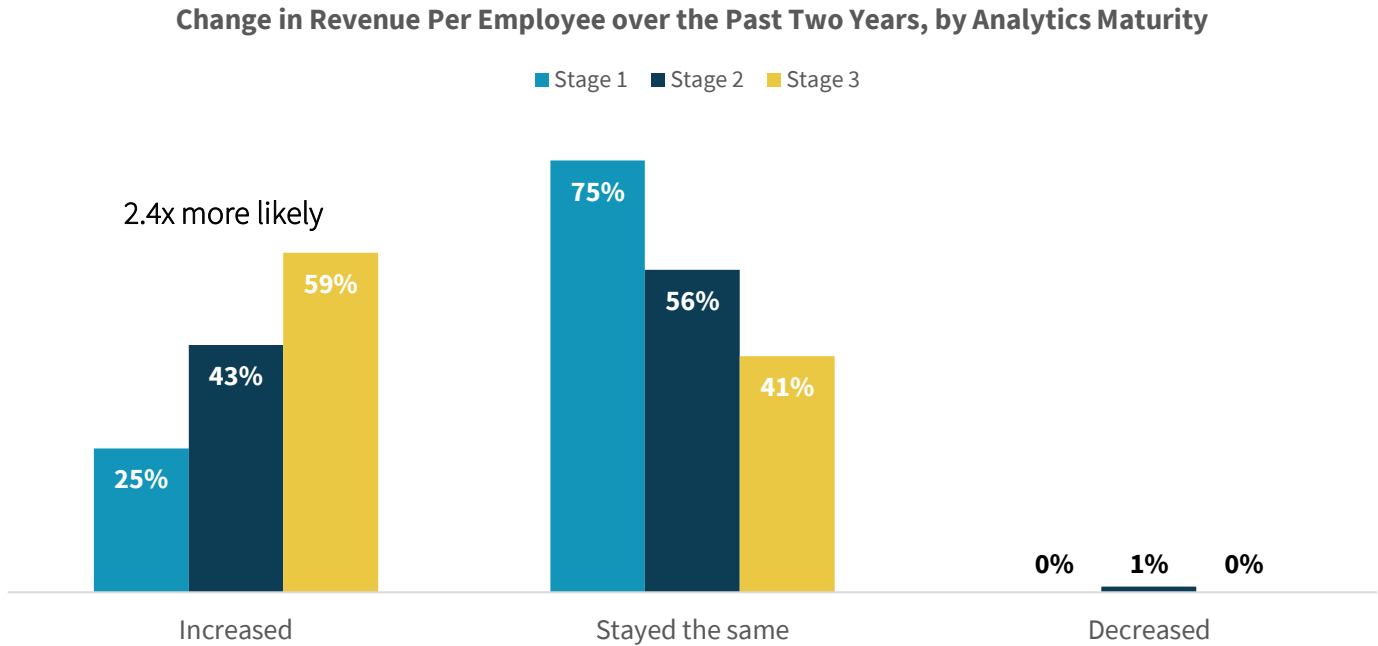
As part of this study, ESG found that accelerated decision-making correlates to superior levels of operational efficiency. ESG research showed that *Stage 3* organizations are **2.4x more likely** than *Stage 1* organizations **to report analytics investments had an extensive impact on operational efficiency**.

More importantly, accelerated decision-making also correlates to superior revenue produced per employee from the last two years (see Figure 1). *Stage 3* organizations were **2.4x more likely** than *Stage 1* organizations to **report an increase in revenue per employee over the last two years** (59% versus 25%). Moreover, **the average (mean) percentage increase in revenue** reported among all *Stage 3* organizations was **7.3x** that observed among *Stage 1* organizations (+19.2% versus +2.6%).

It is this last point that is arguably the most significant of them all. Analytically mature companies are not just more likely to grow revenue per employee, but the rate of growth is over seven times greater. That difference is staggering. Few, if any, business decisions offer the opportunity to dramatically accelerate revenue growth like the one presented by analytics maturity.

These findings on operational efficiency and growth in revenue per employee suggest that as the data-driven economy becomes more pronounced and established, **firms will be separated into the “haves” and the “have nots,”** and **analytics maturity will be a, if not the, deciding factor**.

*Among participants who saw an increase in revenue per employee, the average increase in *Stage 3* organizations was **7.3x** that of *Stage 1* organizations (+19.2% versus +2.6%).*

Figure 1. High Analytics Maturity Drives Improved Revenue per Employee

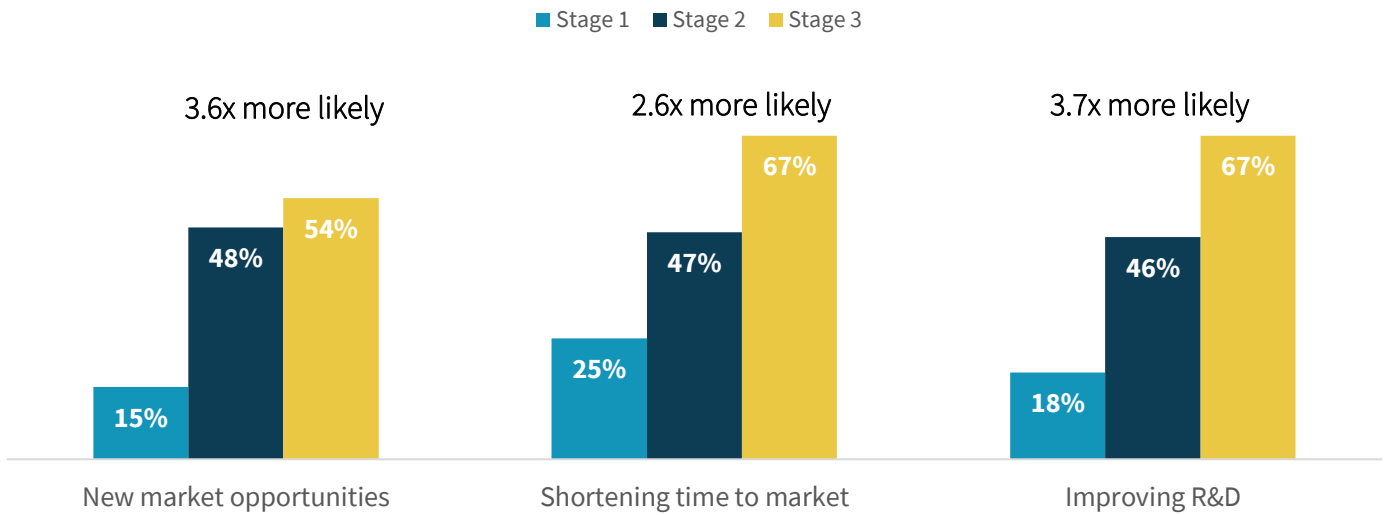
Source: Enterprise Strategy Group

Respondents were then asked to identify to what extent their organization is achieving success across multiple key performance indicators (KPIs), such as uncovering new market opportunities, shortening time to market, and improving R&D with its analytics investments. Figure 2 highlights the results, but key takeaways include that *Stage 3* organizations:

- Were **3.6x more likely** than *Stage 1* organizations to report analytics investments had an extensive impact on **new market opportunities** (54% versus 15%).
- Were **2.7x more likely** than *Stage 1* organizations to report analytics investments had an extensive impact on **shortening time to market** (67% versus 25%).
- Were **3.7x more likely** than *Stage 1* organizations to report analytics investments had an extensive impact on **improving research and development** (67% versus 18%).

Figure 2. Analytics Maturity Improves Product, Service, and Market Development

Impact of Analytics/BI on Uncovering New Market Opportunities, Shortening Time to Market, and Improving R&D, by Analytics Maturity (Percentage of respondents reporting "extensive impact")



Source: Enterprise Strategy Group

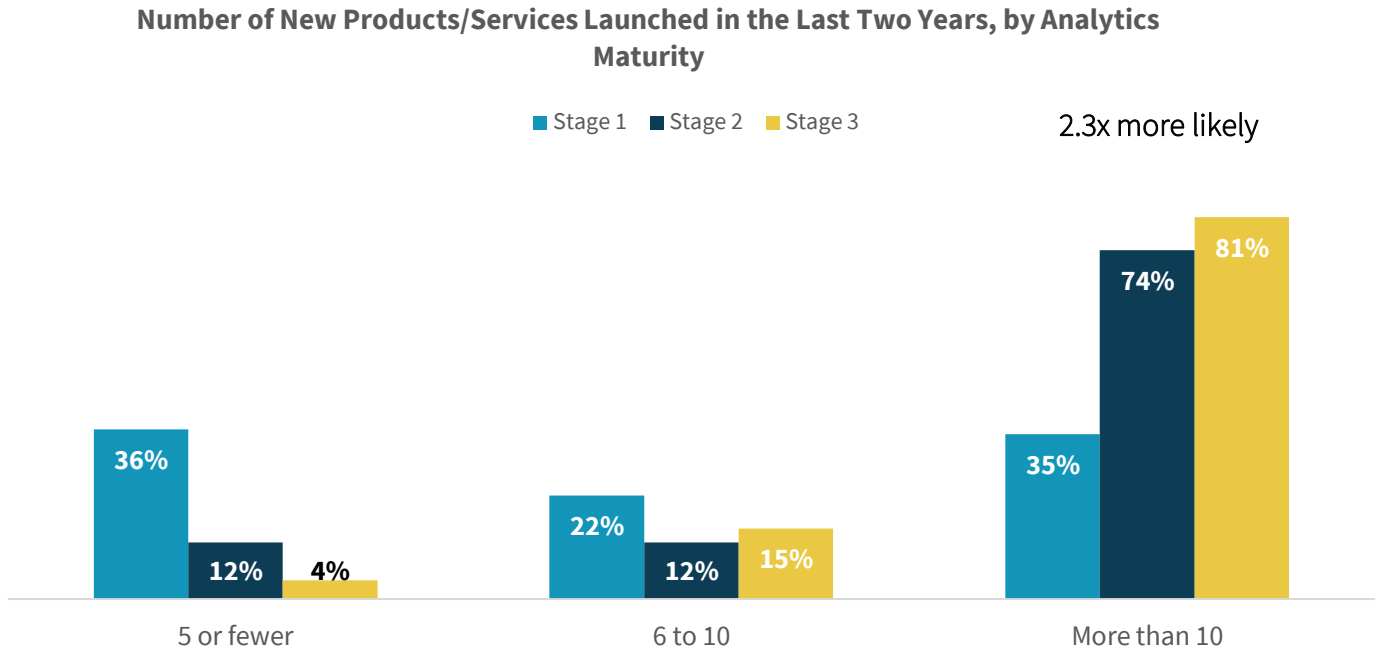
High Maturity Organizations Launch More Products, which Drive More Revenue

As an organization utilizes analytics to become more efficient, that efficiency should, in turn, deliver tangible improvements in business outcomes. Not only is there a strong correlation between operational efficiency and data-driven analytics, but the link between analytics maturity, product delivery, and time to market is significant as well.

For this study, ESG looked for measurable benefits that stem from time-to-market improvements by investigating the volume of products delivered over the last two years, and the revenue growth generated by those products. ESG asked participants to identify how many new products/services were launched in the last two years by their company. As shown in Figure 3, there is a discrepancy between Stage 3/Stage 2 organizations and Stage 1 organizations—with Stage 3/Stage 2 organizations outpacing their Stage 1 counterparts.

Not only is there a strong correlation between operational efficiency and data-driven analytics, but the link between analytics maturity, product delivery, and time to market is significant as well.

Figure 3. High Maturity Analytics Organizations Launch More Products



Source: Enterprise Strategy Group

While most *Stage 3* and *Stage 2* organizations (81% and 74% respectively) launched more than 10 new products/services in the last two years, just 35% of *Stage 1* organizations launched more than 10 new products and services. Conversely, 36% of *Stage 1* organizations launched five or fewer new products or services, versus *Stage 2* at 12%, and *Stage 3* at just 4%.

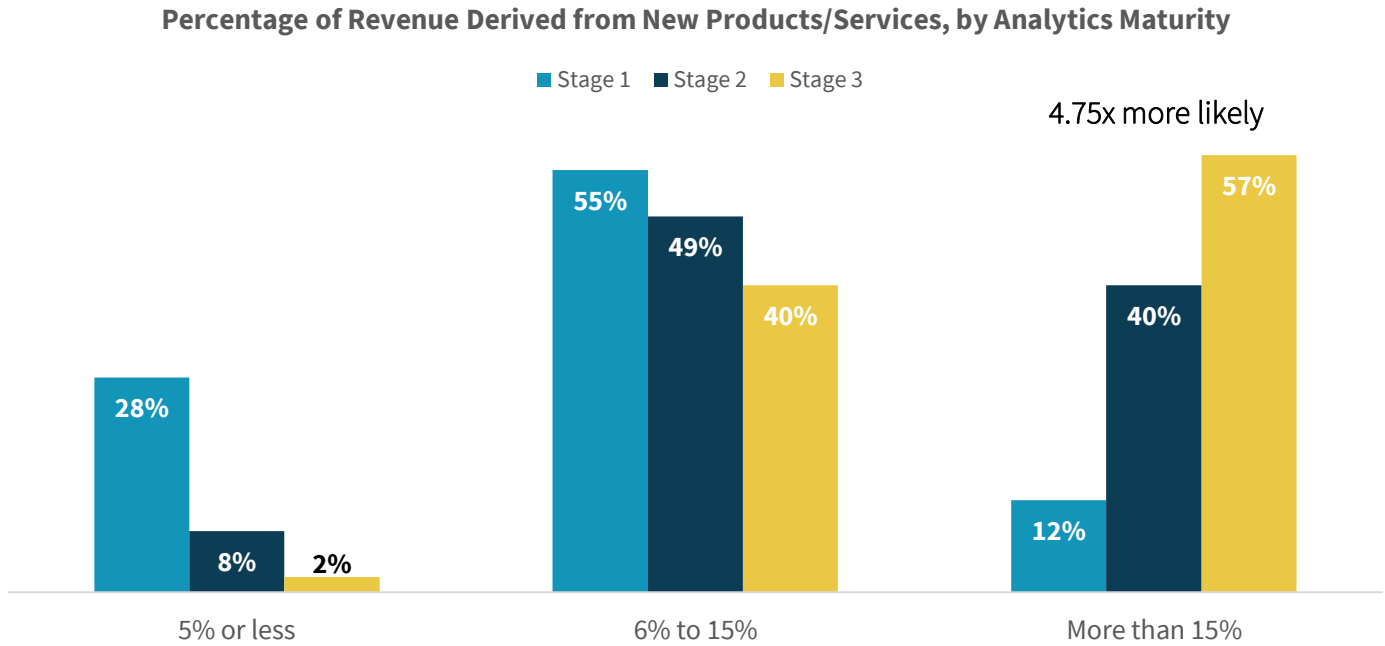
More mature (Stage 3/Stage 2) analytics organizations bring more products to market quicker and are also more likely to see higher returns.

It's apparent that *Stage 3/Stage 2* organizations deliver a considerably higher volume of new products and services than their *Stage 1* counterparts. It should be noted that if more options were made available at the upper end of the selection criteria (i.e., instead of more than 10 as an option, 10 to 15, and more than 15),

it is plausible that ESG would have observed a greater separation between *Stage 2* and *Stage 3* organizations.

Not only does analytics maturity aid in product development, but new products and services that stem from effectively leveraging real-time data should better align to end-user and market demands as well, delivering higher returns. Based on the research, this correlation likely exists, as *Stage 3/Stage 2* organizations not only bring more products to market quicker but are also more likely to see higher returns from those additional offerings.

Figure 4 highlights that *Stage 3* organizations are **4.75x more likely** than *Stage 1* organizations to drive more than 15% of their revenue via recently launched products/services (57% versus 12%).

Figure 4. High Maturity Analytics Organizations Drive More Revenue from New Products

Source: Enterprise Strategy Group

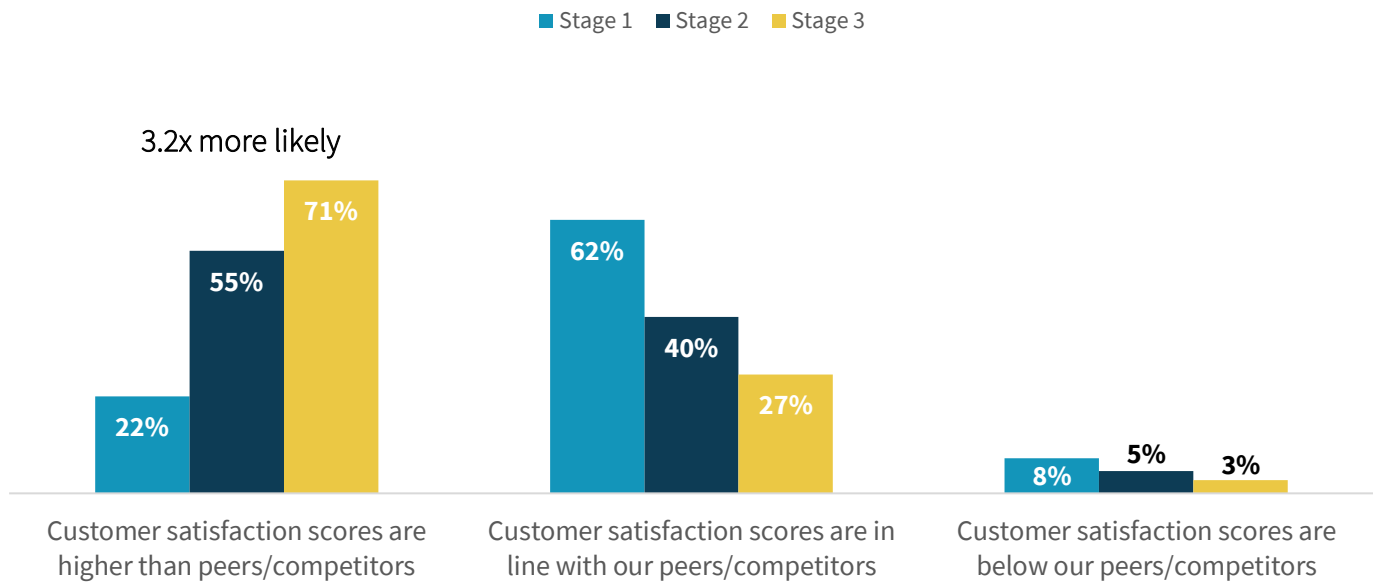
Customer Experience

The research also identified that analytics maturity has a positive impact on customer experience. Increased maturity with analytics allows organizations to collect more data and then leverage that data to gain insights into specific demographics and craft specialized offerings. As a result, customers see products that better appeal to them, improve their way of life, and/or address a specific, previously unmet need or desire. In other words, customer satisfaction can be at an all-time high.

This ESG research study investigated both the impact of analytics investments on customer experience initiatives and the relative success of those initiatives. For example, participants were asked to identify how their organization compares to its peers and competitors in terms of formal customer satisfaction measurements, e.g., net promoter score (NPS), customer satisfaction (CSAT), or similar metrics.

Mature (Stage 3) analytics organizations are 3.2x more likely to outperform the competition regarding customer satisfaction.

As shown in Figure 5, **nearly three-quarters (71%)** of *Stage 3* organizations **reported customer satisfaction scores higher than those of their competitors**, while 55% of *Stage 2* organizations and 22% of *Stage 1* organizations reported the same. In general, with an increased impact of analytics investments on customer experience initiatives, *Stage 3* organizations were far more likely to enjoy higher levels of customer satisfaction than their peers/competitors.

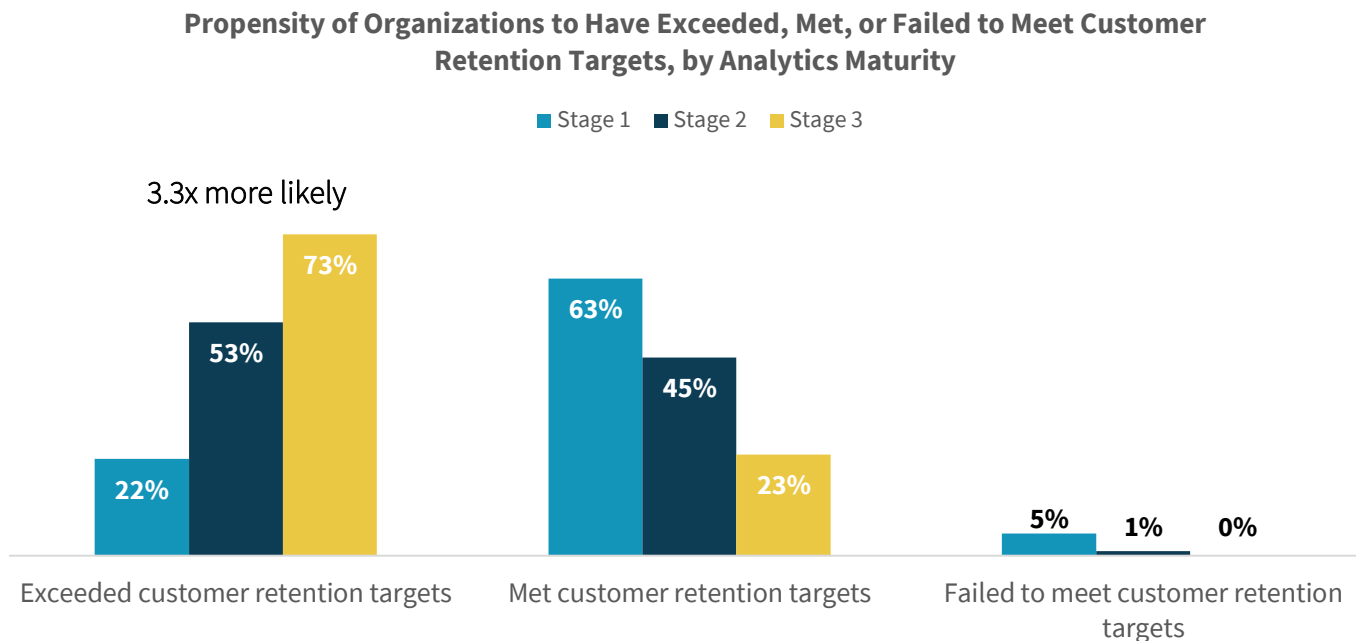
Figure 5. High Analytics Maturity Correlated with Competitive Success in Customer Satisfaction**Organizations' Performance on Customer Satisfaction Metrics, by Analytics Maturity**

Source: Enterprise Strategy Group

These gains in positive customer experience are just the start. What additional benefits do organizations gain with happy customers? Existing customers buy more products and new products. New customers embrace a more personalized, analytics-based customer experience, enabling the mature organizations to leave their lesser data-driven competitors behind. And customer retention is no longer a challenge but an advantage.

Analytics Maturity Helps Organizations Exceed Retention Targets

As a natural extension of the direct correlation between analytics maturity, enhanced customer experience, and increased customer satisfaction, ESG research also indicates a correlation between analytics maturity and customer retention. In fact, Stage 3 organizations are **3.3x more likely than Stage 1 organizations to exceed customer retention targets**, with nearly three-quarters (73%) of Stage 3 organizations indicating a propensity to exceed customer retention targets, surpassing the responses for Stage 2 (53%) or Stage 1 (22%) organizations.

Figure 6. High Analytics Maturity Correlated with Customer Retention Success


Source: Enterprise Strategy Group

The Unprecedented Risk of Neglecting Analytics

In addition to understanding the opportunity, it is equally important to look at the risk involved with not investing in becoming an analytically mature company. If a business elects to not pursue analytics, not only will operational efficiency, product and service delivery, customer experience, and customer retention likely suffer, but the chance to capture any significant rate of revenue growth is incredibly small as well.

Among *Stage 1* companies, only one in every four identified an increase in revenue per employee, and across the whole category, the mean growth rate is +2.6%. This is essentially the rate of inflation or about the same yield as a U.S. Treasury Bond. If you are in *Stage 1*, even if you win, chances are you are just staying in place and likely losing share.

Across the other metrics in this study, such as operational efficiency, uncovering new market opportunities, shortening time to market, improving R&D, customer experience, and customer retention, the bulk of *Stage 1* organizations report as maintaining the status quo, meeting targets and rarely exceeding them. These metrics, however, are typically self-created by the organization and can present a false sense of safety when simply gauging success on whether it “meets expectations.” While some might argue that this suggests that *Stage 1* organizations are doing well, just not as well as their *Stage 3* counterparts, the more accurate interpretation is that whether a firm exceeds expectations is a more appropriate measure of gauging success and that the revenue per employee metrics tell the real story, which is that *Stage 1* organizations are falling behind. Ultimately, the risk of not investing or underinvesting in analytics is significant, and vastly outweighs the risk associated with accelerating analytics investments to improve maturity.

Investment Tendencies Among Mature Analytics Organizations

Likely influencing the stark differences in business outcomes among companies based on their analytics maturity, IT application and infrastructure investment tendencies vary between *Stage 3* and *Stage 1* companies. ESG research identified multiple investment differences.

In contrast to their *Stage 1* peers, *Stage 3* organizations support a greater variety of analytics types (real-time and streaming). For example, *Stage 3* organizations:

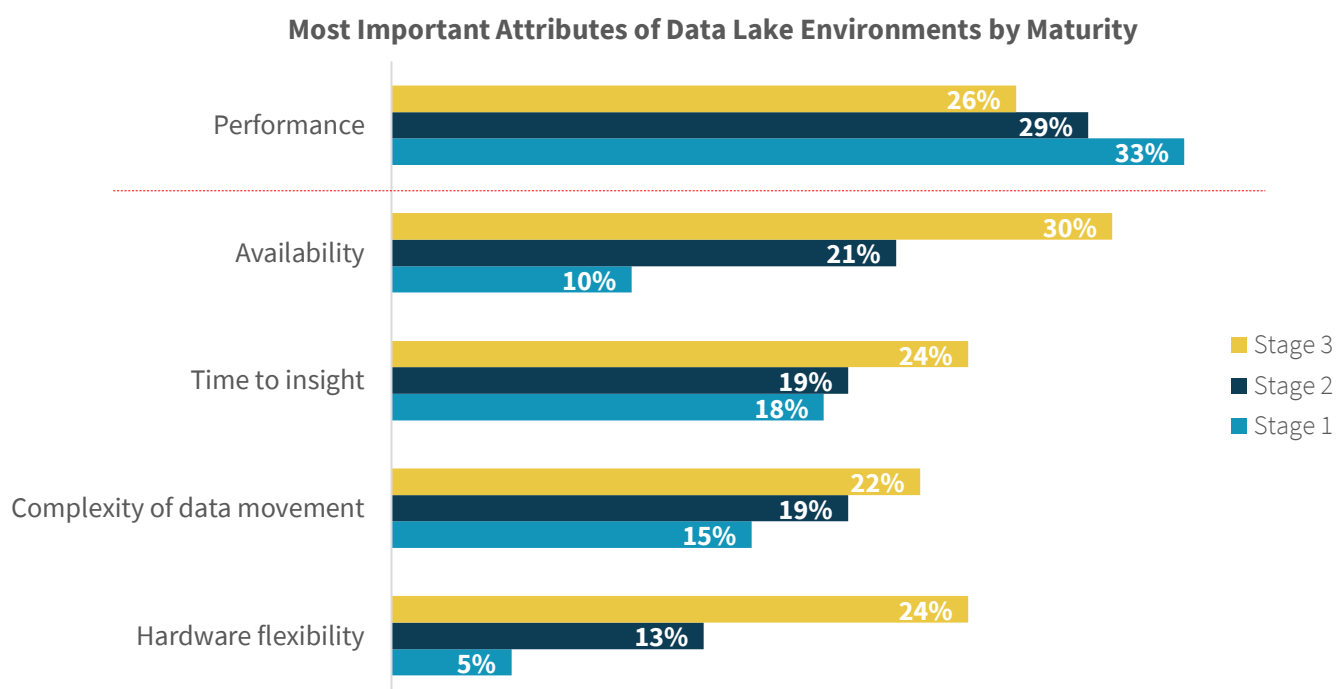
- Were **1.6x more likely** than *Stage 1* organizations to **leverage real-time or streaming analytics** (81% versus 52%).
- Were **2.1x more likely** than *Stage 1* organizations to **be currently using a data lake** (64% versus 30%).

When it comes to infrastructure design and investment, mature analytics organizations are more likely to leverage higher performing, i.e. flash, infrastructure. For example, *Stage 3* organizations:

- Were **2.9x more likely** than *Stage 1* organizations to identify that **their data lake comprises all or mostly flash storage** versus hard disk drives (HDDs) (90% versus 31%).
- Were **2.7x more likely** than *Stage 1* organizations to identify that **their data warehouse comprises all or mostly flash storage** versus HDDs (88% versus 33%).

When selecting infrastructure, *Stage 3* organizations are also more likely to have a different list of top priorities than *Stage 1* organizations. Figure 7 highlights these differences with a list of prioritized attributes for data lakes. While organizations across all three maturity stages prioritize performance, the more mature *Stage 3* organizations are far more likely to prioritize availability, time to insight, complexity (or simplicity) of data movement, and hardware flexibility in their data lake technology decision process. The likely explanation for these differences is that *Stage 3* organizations place greater demands on their data lake environments. *Stage 3* organizations are also likely more experienced with and more knowledgeable about what infrastructure attributes are going to be the most influential in determining success for mature data lake environments.

Figure 7. Mature Analytics Organizations Prioritize Data Lake Infrastructure Attributes Differently



Source: Enterprise Strategy Group

The Bigger Truth

The value of data analytics initiatives is enormous. Multiple facets of the business realize substantial benefits—from operational efficiency to enhanced product delivery and time to market; from customer satisfaction through customer retention; to business revenue growth. Together, these significant benefits produce an overall competitive advantage for the whole organization.

Conversely, businesses that neglect analytics investments willingly, or unwillingly, accept immeasurable levels of risk. It is worth repeating that only one in four *Stage 1* companies saw their revenue per employee increase, and as a group the gains were miniscule (+2.6%, on average). If you choose not to invest, or to underinvest, in analytics, you can expect your business to stagnate. The results are compelling: Ignore analytics at your own peril.

Seldom are business decisions this clear-cut. ESG research shows that mature analytics organizations have a clear lead over less mature analytics peers. It is still early enough, though, for less mature analytics organizations to get in the game and embrace data-driven initiatives. The data-driven economy has introduced a new variable, analytics maturity, in the equation that defines what makes a successful business. Luckily, there is still time to decide which group you want to be in.

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Research Overview

Establishing Analytics Maturity Stages

ESG recently executed research to better understand and quantify the relationship between the use of advanced analytics, artificial intelligence workloads, and data-centric workloads and positive business perception and success. ESG focused on larger businesses for this study in order to obtain a more accurate understanding of business impacts. The research consisted of a survey of 340 IT decision makers in North America (US and Canada) who are familiar with technologies and processes for consolidating, integrating, and analyzing their business data, and who are directly involved in purchasing or managing databases, data warehouses, business intelligence (BI) solutions, and/or analytics solutions. Respondents are employed at organizations with at least 500 employees and with \$50M+ in annual revenue.

Analytics Maturity

As part of ESG's comprehensive survey delving into the relationship between high levels of expertise and usage of analytics and positive business results, ESG leveraged an established analytics maturity framework that enabled ESG to group respondents into separate categories based on their responses about their analytics usage, investment, prioritization, and their supporting infrastructure environments.

From a process standpoint, organizations prioritizing the use of data-driven analytics were credited with more maturity points in the framework. In total, an organization could earn a maximum of 20 maturity points, broken down as follows: Those organizations that earned 10 points or less (38% of respondents) were categorized as Stage 1 (the least mature in their usage of analytics); those that earned between 10 and 14 points (39% of respondents) were categorized as Stage 2; and those that earned more than 15 points (23% of respondents) were rated as Stage 3 (the most mature in their usage of analytics).

ESG leveraged several pillars to assess the relationship between analytics maturity and other aspects of an organization's IT environment. As an example, organizations that aligned to *Stage 3* and proved to be highly mature based on their analytics expertise and usage should be:

- **Rich in data.** These organizations will tend to have a greater volume of data feeding analytics applications than less mature organizations, and that data will come from several disparate sources.
- **Heavily invested in next-generation analytics technologies.** High analytics maturity organizations will be ahead of their peers when it comes to investing in artificial intelligence/machine learning (AI/ML) technologies. These organizations will also spend a greater percentage of their IT budgets on analytics compared to their peers.
- **Focused on analytics.** These organizations will place analytics initiatives among their top five business priorities—with a number indicating analytics are the *top* business priority.

Additionally, characteristics of organizations classified as **Stage 3** include the following:

- High analytics maturity correlates to more predictive, real-time analysis. Analytics end-users at *Stage 3* organizations **consume 31% more predictive analytics** than their counterparts at *Stage 1* organizations.
- High analytics maturity correlates to increasing levels of “extensive” (analytics) impact across a spectrum of business areas. Analytics end-users at *Stage 3* are **7x more likely** to consume 40% or more real-time analytics in their day-to-day jobs than their counterparts at *Stage 1* organizations (35% versus 5%).

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