



TAKING ADVANCED ANALYTICS TO THE NEXT LEVEL

Make Data Work Harder for Your Organization

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INTRODUCTION

In an increasingly data-driven marketplace, companies expect IT staff to leverage every aspect of the enterprise, from the information collected to the increasingly sophisticated data tools used to help them better understand that information. Attaining a more comprehensive appreciation of data enables organizations to identify, prioritize, and focus on their business objectives, and discover new ways of using data to achieve those objectives—and IT is expected to enable these initiatives.

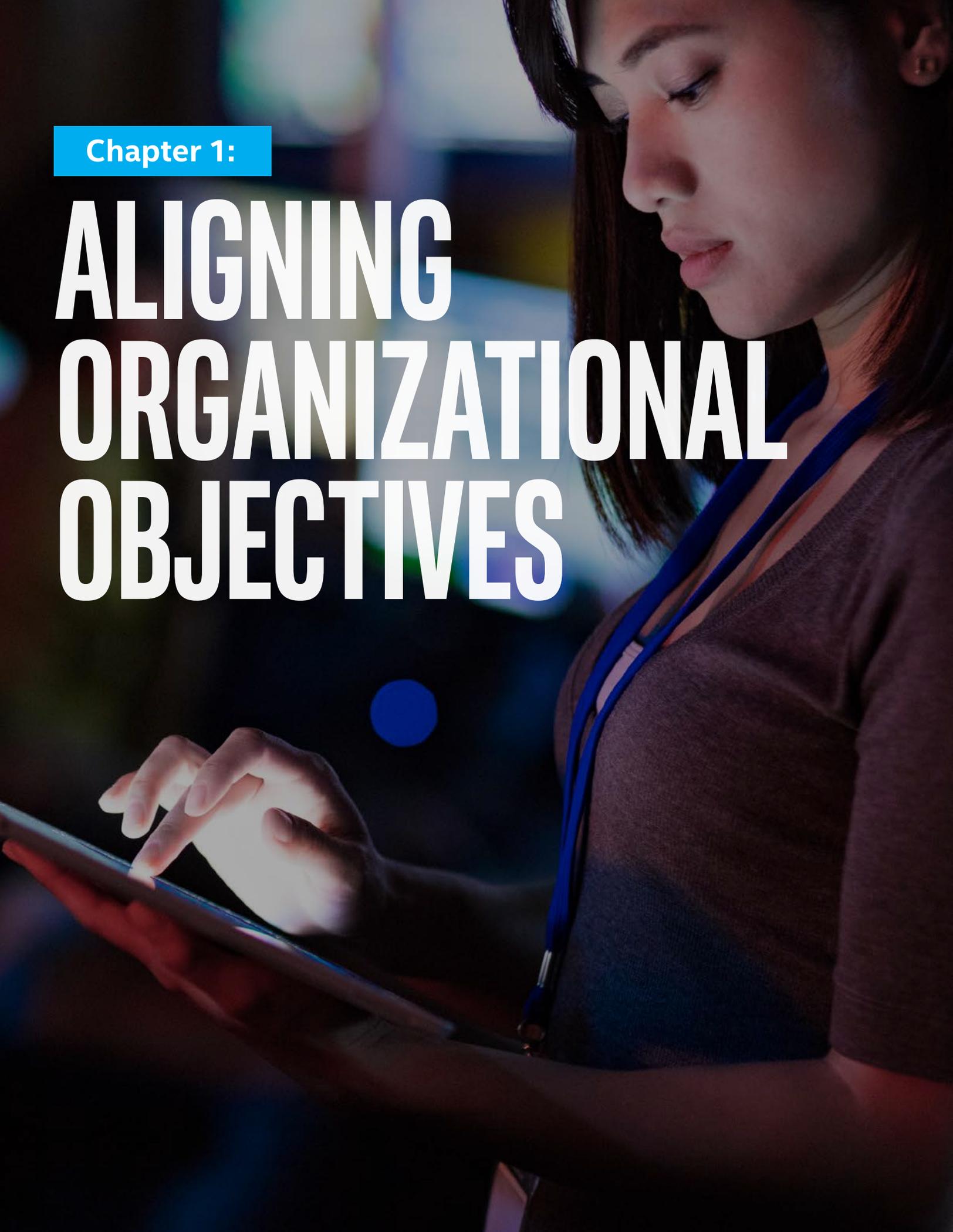
No matter what business you're in, rest assured, you're in the data business. And there's no time to waste. Now is the time to step up to the data challenge and ensure everyone in your organization is on board.

Companies that don't learn how to utilize advanced data analytics will not last against competitors who've learned to use analytics to their business advantage. It's just that simple.

This eBook explains the important considerations and actions required to get started on your analytics journey.

A 2017 Gartner survey of more than 2,500 CIOs found that spending on "business intelligence and analytics" was the top investment priority, in all types of organizations.

**ADVANCED ANALYTICS
IS EXPECTED TO BE A
\$76 BILLION
BUSINESS
BY 2020.¹**



Chapter 1:

ALIGNING ORGANIZATIONAL OBJECTIVES

The complexities of the methodologies, the increasing role of machine learning, and the sheer size and scale of data sets can make analytics challenging for any IT department. Executive leadership may prefer to leave data decisions to the “data experts,” but the strategy and execution of any organization’s data analytics processes have a substantial and growing impact on business.

That's why it's critical for IT leadership to understand and be able to clearly articulate:

- How data is transformed into actions
- Data analytics is important to everyone in the company
- Data analytics is not a top-down initiative
- Individuals in any department may spot a trend or data point that deserves exploration

Organizational transparency and alignment are important, but the key to enabling successful data analytics is finding the technology solutions best suited for the needs of the business. This often involves finding a partner with deep expertise in data analytics that offers a range of solutions that can be used individually or together to drive the desired business results.

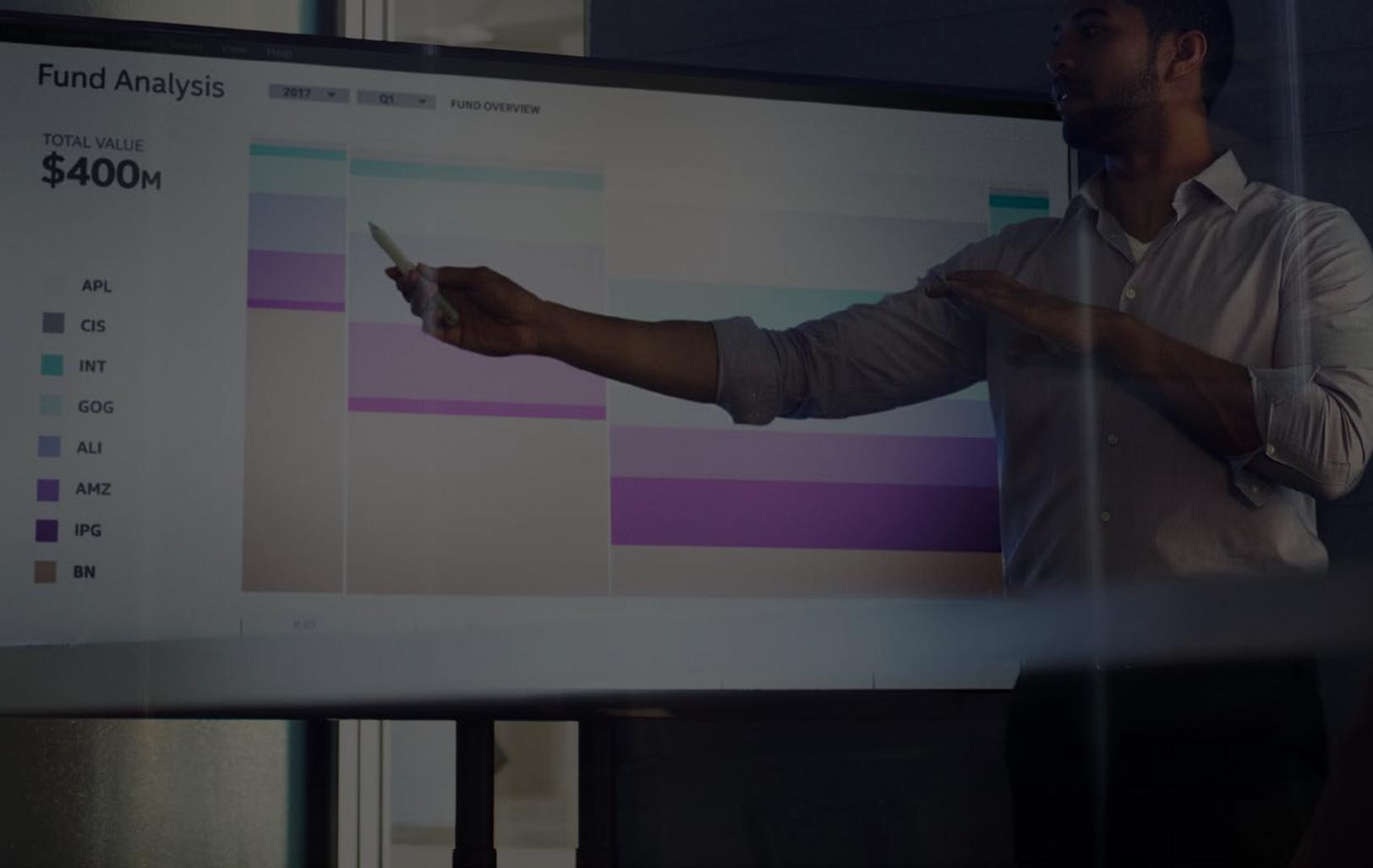


**IDC PREDICTS
WE'LL HAVE CREATED
180 ZB
OF DATA BY 2026,**

up from just 10 ZB in 2015. Collecting and analyzing this data will increasingly rely on emerging data analytics technologies like machine learning and artificial intelligence (AI).²

Chapter 2:

BEGINNING YOUR ANALYTICS JOURNEY



After your team is aligned on objectives, it's time to make big data work harder for your company. Follow these five basic steps to ensure that your organization's utilizations of data analytics get off to the right start.

STEP 1



FOCUS ON THE BUSINESS PROBLEMS YOU ARE TRYING TO SOLVE.

Identify and collaborate with business users to find the best business opportunities for big data analytics in your organization.

Consider the following questions:

- What are we trying to accomplish?
- Does this project align with strategic business goals?
- Will big data analytics provide more valuable insights than more traditional analytics?
- Can we deliver a 6- to 12-month time to value and realize a significant ROI?

STEP 2



UNDERSTAND HOW ANALYTICS WILL IMPACT YOUR CULTURE AND OPERATIONS.

One of the key priorities of implementing an analytics mindset within an organization is to make sure every member of every team understands not just the importance of analytics, but how they may have to evolve their workflows in order to get the best information from data.

This may require restructuring process flows and teams to make sure information is communicated efficiently and effectively in order to maximize that data. The key is to ensure your organization is connecting the right staff with the right data in the right sequence at each step of the analytical process—all with the goal of connecting that data analysis to actionable business objectives.

Consider the following questions:

- Do we have islands of individuals or workgroups that aren't communicating effectively?
- Is it difficult to keep track of the work different individuals are producing, and for what purpose?
- Do we need to alter any workflow processes to get better data?
- How can we measure and fine tune the effectiveness of new workflows?

STEP 3 IDENTIFY AND CULTIVATE REQUIRED SKILLS.

Understand the skills your organization will need from both a business and IT perspective.

Consider the following questions:

- Do we have the in-house skills or outside resources we need to accomplish your analytics initiative?
- Can we build and develop better skillsets with talent from within our organization?
- Will our analytics pros be part of the business or IT organization?
- Are we prepared and willing to hire new talent as needed?

STEP 4 KNOW YOUR TECHNOLOGY REQUIREMENTS.

Identify the gaps between current- and future-state capabilities so you understand what additional data quality requirements you will need for collecting, cleansing, and aggregating data into usable formats. Also, be able to identify the analytical queries and algorithms required to generate desired outputs.

Consider the following questions:

- What data governance policies need to be in place for classifying, storing, analyzing, and accessing data?
- Do we need to add specialized components like a NoSQL database for low latency lookups on large volumes of heterogeneous data?
- What additional infrastructure and memory capabilities will you need to process a steady stream of real-time data?
- Do we want to consider cloud computing? If so, what type of cloud environment will we use (i.e., private, hybrid, public)?

STEP 5 IMPLEMENT YOUR DATA SOLUTION.

Determine what is needed to ensure your solution can succeed, from staff capabilities to IT resources. You may also want to conduct a SWOT analysis to better understand what is required to achieve long-term success. It's important to consider the proficiencies and tools you already have in house, and how they can be utilized more effectively within your new solution to attain stronger data. Define KPI's for each team so everyone understands what defines success with your solution. You should also assemble an insight-focused, cross-organizational team to monitor and manage the progress of your solution.

Consider the following questions:

- Will your solution support predictive analytics or machine learning?
- Will your solution include advanced analytics, such as interactive queries and real-time data streams?
- What user adoption tools and strategies will improve the success of your initiative?
- How often will your solution be reviewed to determine effectiveness and optimization?



DON'T GET OVERWHELMED

by the sheer possibilities of data analytics; instead, focus on analyzing the data that will bring the most value to your organization as a whole.³

Chapter 3:

REFINING AND ADJUSTING DATA



Data value is only realized through the quantifiable results it can deliver by identifying and implementing value-driving answers. The insights unleashed by analytics should be at the core of your organization's approach to continually defining and improving performance.

Spread the knowledge

The most common excuse businesses use to ignore counterintuitive analytics insights is that the underlying data are not valid. This claim is much more difficult to make if accountability for data quality rests with the business, and if business leaders have ready access to that data.

Successful analytics organizations offer access to as many people, while making sure there is a single source of truth, so that employees can experiment with new ideas or discard approaches that are ineffective. Be sure to design effective data governance, specifying who is responsible for each area of data collection, curation, analysis, and access.

Data can also provide value in providing less precise "soft" data. While hard data points are the focus of most analytics initiatives, they also have their limits. In many cases, insights reside at the boundaries. Recognizing that softer, qualitative information can provide hard intelligence, organizations need to seek out hidden gems of data that may be nestled "in the weeds" of disparate data sets.



Chapter 4:

CREATING A CULTURE THAT EMBRACES DATA ANALYTICS



Understanding that valuable data can reside anywhere, and that any employee from any department might recognize previously overlooked data points, is crucial to spreading awareness on the potential value of all the data passing through your organization. Encourage employees to share instances where they identify data opportunities that others may have missed.

Empowering everyone to add value in the data analytics process is crucial. It's important that management communicate:

- Individuals should feel comfortable generating counterintuitive data
- Data points that don't pan out should be communicated early and without hesitation
- These are not “mistakes;” they're merely another resource point for examining the next wave of data

New analytics initiatives, software, and C-level support are not enough to foster and maintain a culture that embraces analytics. Companies need to also make sure employees can contribute and share in the success of data analytics programs that identify valuable insights.

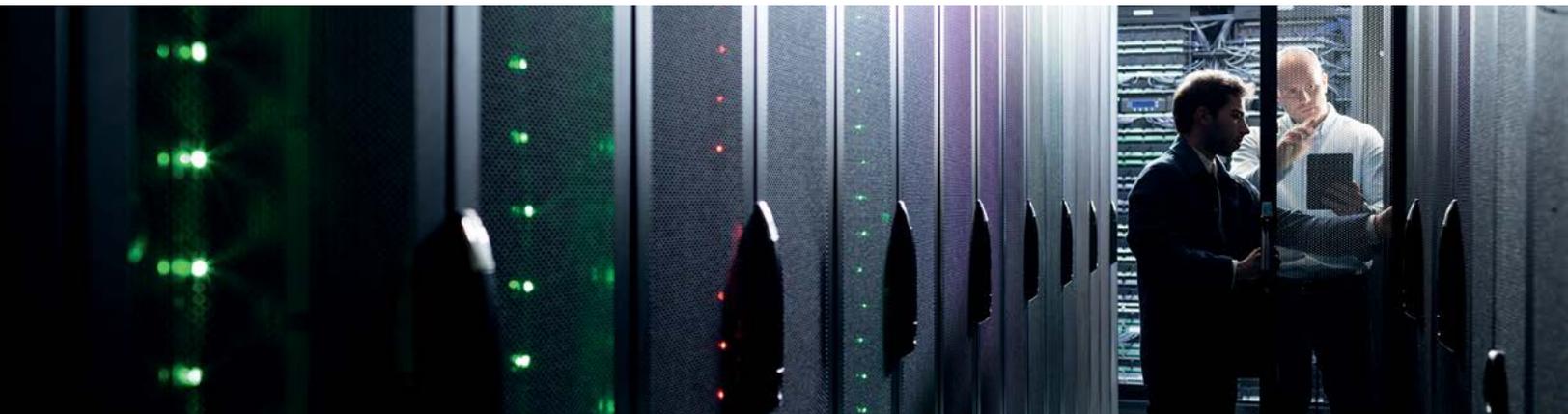
People buy into change when they understand it and feel they are part of it. The quest to identify viable analytics solutions therefore needs to be user led from the start, with clear executive support.

Consider appointing a “translator” in the organization—someone who not only understands the data science but also how it can be applied to the business.

Every failure is a learning opportunity

Match talent with tasks and encourage those who are enthusiastic about data analytics to pursue their passion. Identify high performers with a quantitative background, such as statisticians and econometricians, then design a capability-building program to extend their analytics skills. You can make use of adult-learning principles when designing these programs, combining methods like on-the-job training, in-person learning, and online refresher courses. This provides recognition and creates a common language and set of standards.

These steps all contribute to building a culture that embraces advanced data analytics. People need to be comfortable with constant change, and receiving or delivering bad news must be seen as part of business as usual. Set clear, realistic parameters for investment, even while accepting that most efforts will fail, and then increase investment size as milestones are achieved.



A person wearing a red long-sleeved shirt is seen from the side, working on a server rack in a data center. The server racks are filled with various components, and the person is holding a tool or a component. The background is a dark blue server rack with many rows of equipment. The overall scene is dimly lit, with a blue tint.

Chapter 5:

CHOOSING THE RIGHT DATA ANALYTICS PARTNER

Any successful advanced analytics initiative demands an infrastructure that delivers the performance and scalability that will support business requirements while enabling your organization to dynamically respond to the challenges and opportunities of tomorrow. Intel's suite of analytics technologies is designed to support any business use cases, regardless of industry. You'll benefit from a broad range of analytics-optimized solutions you can use to make analytics a competitive differentiator.

Work with a data analytics expert

Intel helps organizations to identify and utilize valuable data. With the help of Intel experts and data solutions, IT can help organizations realize the competitive advantages of maximizing the value of their existing data, and be prepared to realize more value by continually optimizing how data is collected and analyzed.

When you think about the analytics solution stack, Intel is involved in nearly every layer, from providing big data infrastructure to contributing to open-source projects. Intel works with ecosystem partners to provide technologies that power comprehensive, advanced analytics solutions:

-  **Performance:** Workload-optimized processors power servers and the cloud, providing solutions to help your organization harness big data and meet business goals. This gives you the ability to gain better insight from your data.
-  **Storage:** Advances in storage solutions and technologies, such as high performing solid-state drives, provide fast, dependable storage for enterprises. Additionally, Intel® architecture is often used as the baseline for new server-based storage (SBS) systems at the heart of new software-defined storage (SDS) products and solutions.
-  **Networking:** Intel architecture powers many of the robust network appliances that make the modern enterprise and cloud run efficiently, including new network and fabric options. Intel® Omni-Path Architecture offers lower TCO with high bandwidth, low latency, and scalability for AI, analytics, and HPC. This allows you to spend less on interconnect and to afford more servers.
-  **High Performance Computing (HPC):** You'll need the power of HPC to extract deeper business insights from massive and complex data sets using emerging technologies like AI. Intel's HPC foundation, based on Intel® Xeon® Scalable processors, includes critical platform innovations in memory, storage, and acceleration technologies to address diverse HPC workload requirements.
-  **Security:** Intel's commitment to security begins with hardware and software security tools that help block threats, identify compromises, and expedite remediation. Intel® Advanced Encryption Standards New Instructions (Intel® AES-NI) boosts cryptography, which helps keep your enterprise, its data, and the connections between them safe.

Intel plays an important role as the core technology engine at the heart of an analytics infrastructure, making analytics cost-effective, easy to deploy, and broadly usable across all layers of the data analytics platform stack.

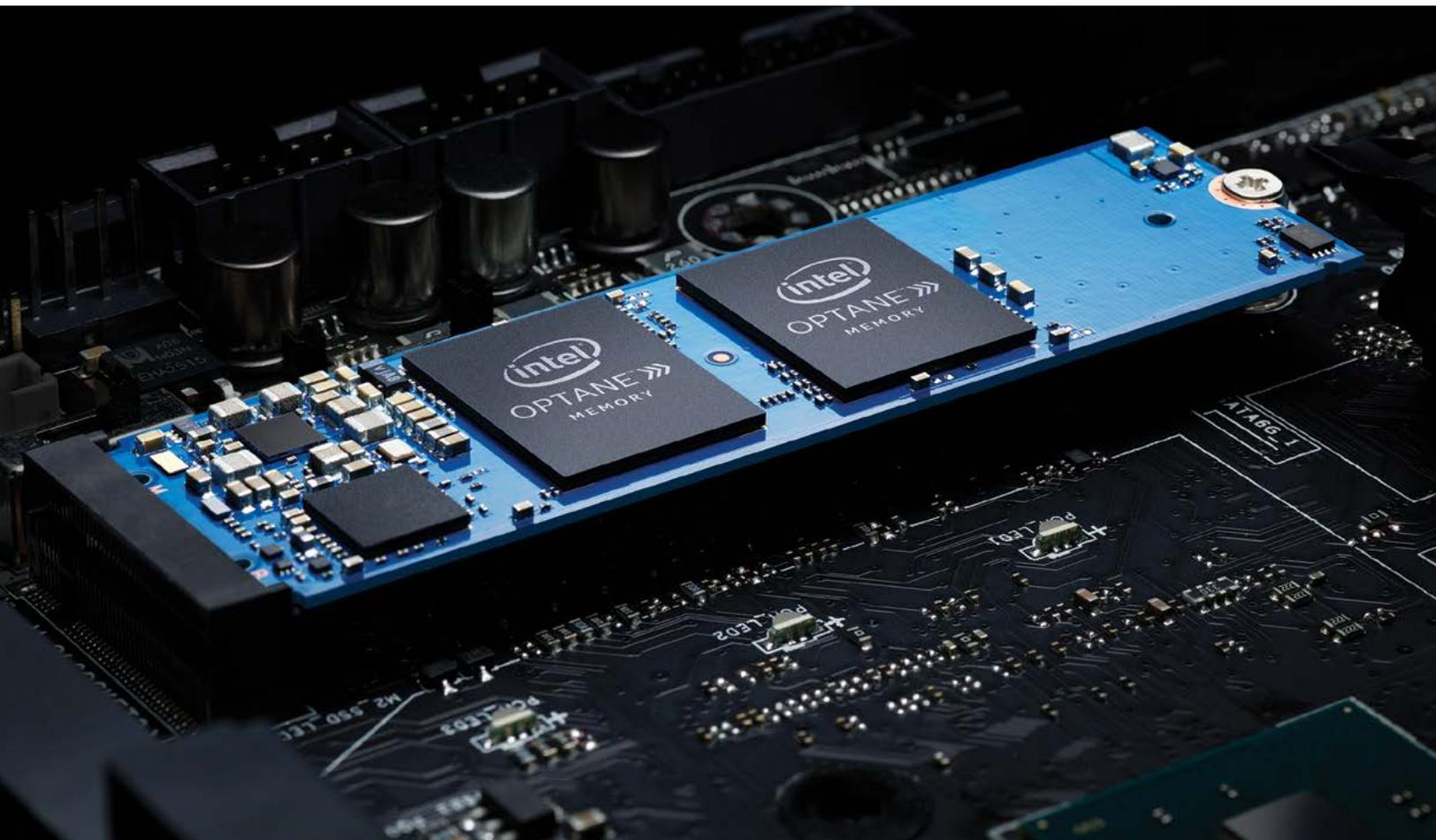
High-performance, workload-optimized silicon

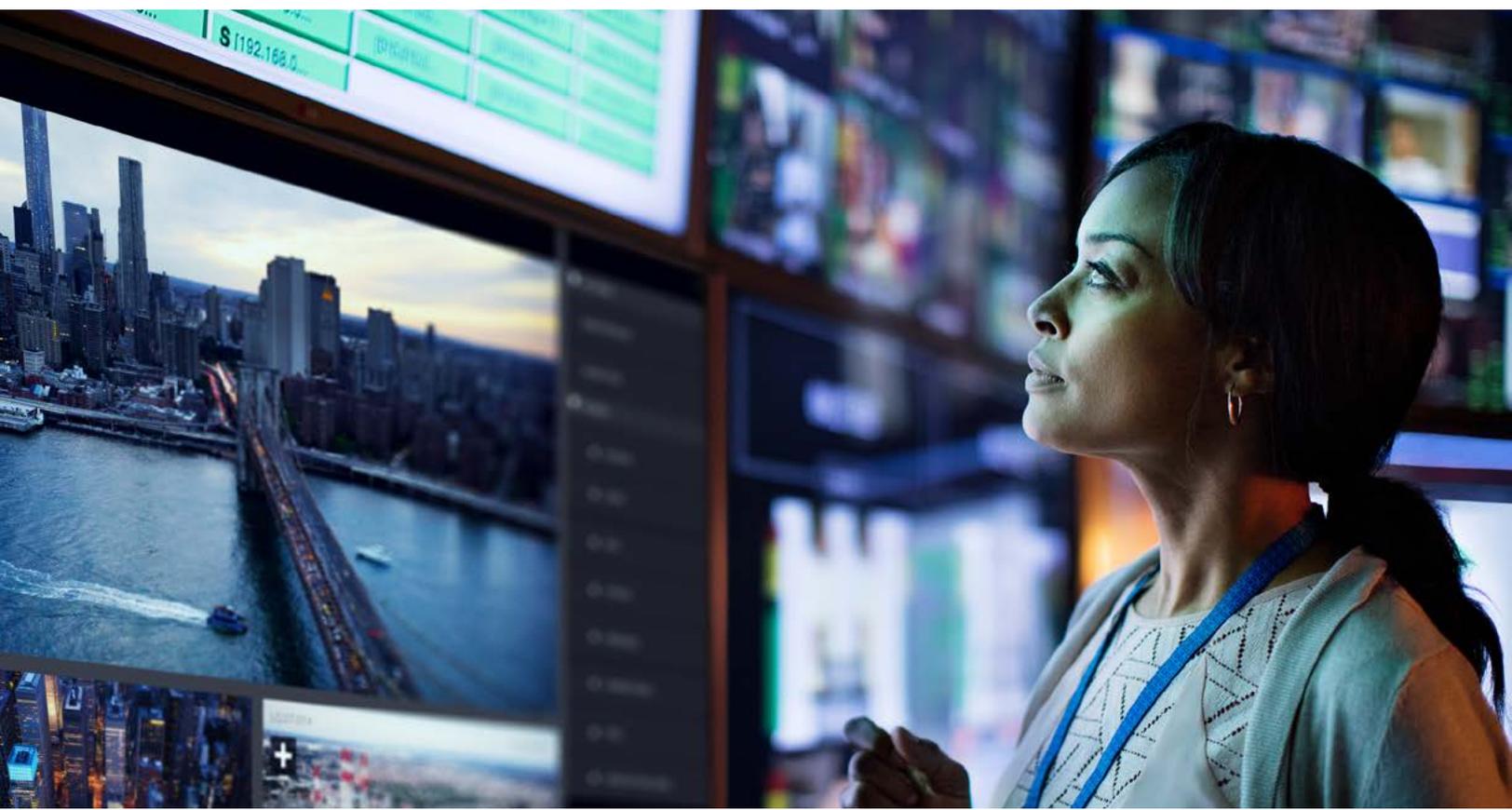
The latest [Intel® Xeon® Scalable processors](#) have been designed to accelerate analytics workloads from traditional models to real-time, in-memory computing (“scale up”), highly distributed workloads like Hadoop (“scale out”), and even combinations of these models such as streaming analytics. [Intel® Xeon® Scalable processors](#) deliver highly scalable performance for a wide variety of analytics, AI, and other data center workloads. This proven, integrated platform offers the lowest TCO for batch deep learning inference and classic machine learning workloads.

[Intel® Optane™ Solid-State Drives \(SSDs\)](#) eliminate data center storage bottlenecks and enable bigger, more affordable data sets. By providing an unparalleled combination of high throughput, low latency, high quality of service, and high endurance, Intel® Optane™ technology is helping organizations to accelerate applications, reduce transaction costs for latency-sensitive workloads, and improve overall data center TCO.

[Intel® Select Solutions](#) simplify and accelerate the process of selecting and deploying the hardware and software needed for today’s broad, complex array of workloads and applications. Intel® Select Solutions enable organizations to make confident choices in deploying data center infrastructure that is pre-defined and purpose-built for key workloads.

Take your advanced analytics initiatives to the next level with Intel as your guide, ensuring that your infrastructure and solutions deliver the performance and scalability needed to succeed on every analytics project.





CONCLUSION

As mastering advanced data analytics becomes a “must have” for competing in today’s increasingly data rich marketing environment, knowing how to collect, analyze, and leverage your data will be vital to your business success.

The key to extracting deeper, faster, more valuable insights from your data is making sure

that you have a modern infrastructure in place that’s optimized and scalable for advanced analytics, as well as able to grow and adapt over time. Implementing analytics is not a ‘once and done’ initiative—the type of analytics you need depends on business priorities and budgets. As your business evolves, so will your analytics environment.

[LEARN MORE](#)

Explore how you can get more from your data today and learn how to turn data into insight with advanced analytics.



For additional information, explore the following assets:

- White paper | [How to Tame the Data Deluge](#)
- White paper | [Five steps to the data-driven business](#)
- White paper | [Data In, Value Out](#)
- Planning guide | [Getting Started with Advanced Analytics](#)

Sources

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