

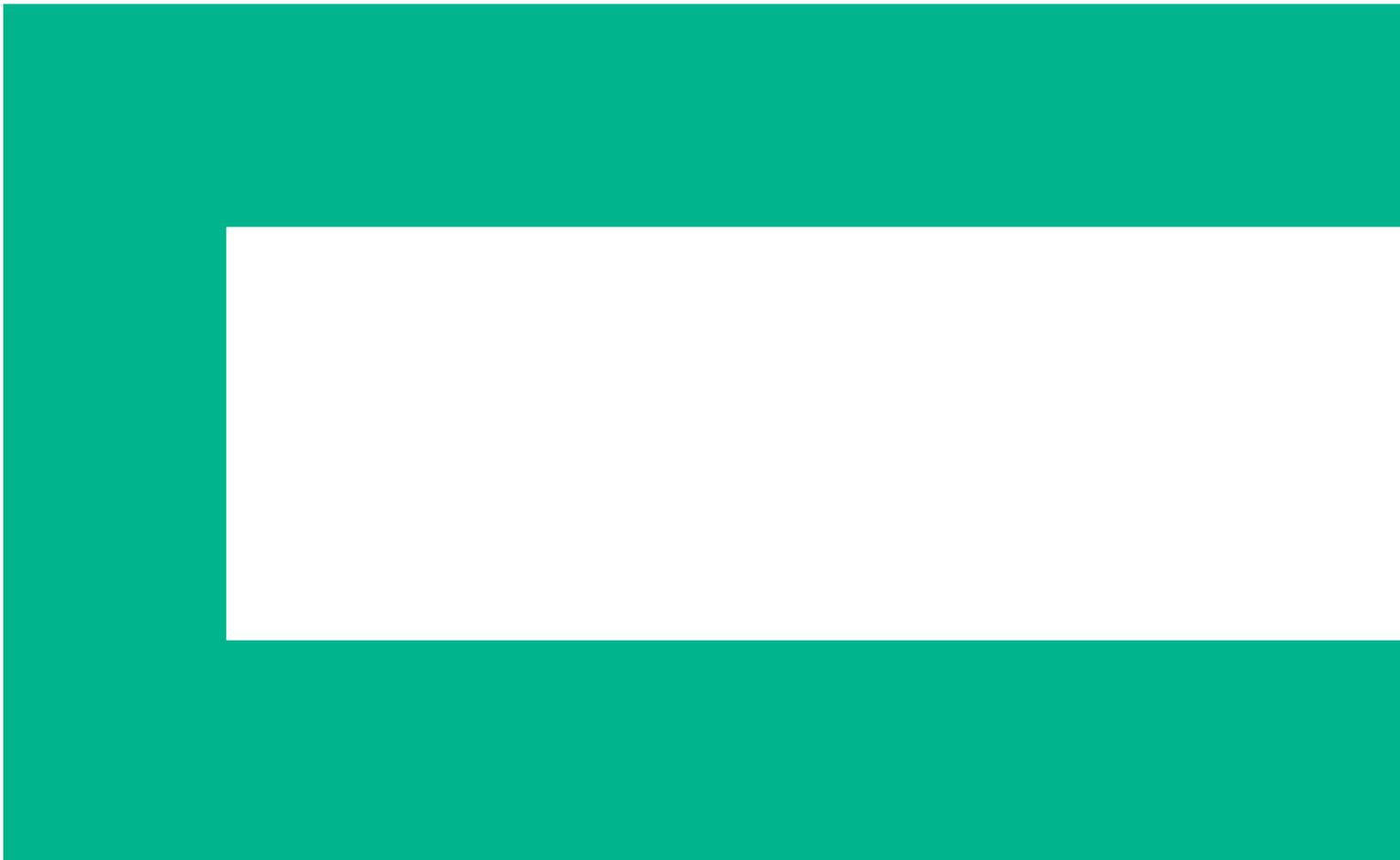


Hewlett Packard
Enterprise

Business white paper

Eight pitfalls to avoid when starting your Big Data analytics journey

HPE Software Big Data Solutions



Big Data analytics offers benefits such as improved business processes and operations, deeper insights, better risk management, and cost savings.

A world striving to harness data

“Big Data is big bucks, a 21st century gold rush—and to extend the metaphor, Big Data analytics is the modern-day equivalent of panning for gold.”¹

“IDC predicts that by 2020, organizations able to analyze all relevant data and deliver actionable information will achieve an extra

\$430 billion

in productivity benefits over their less analytically oriented peers.”

– Gil Press, Forbes⁴

Organizations around the globe are drowning in pools of data and volumes are doubling each year. Big Data benefits are significant. A typical Fortune 1000 company increasing its data accessibility by 10 percent can add more than \$65 million USD in additional net income.² For many, the decision to build a Big Data analytics program is a foregone conclusion.

Harnessing Big Data, analytics, automation, and artificial intelligence, however, is not easy. The chances are high that your Big Data journey will encounter substantial bumps and barriers along the way. Although the interest in Big Data analytics is climbing sharply, only about 13 percent of Big Data projects are realizing a solution that can be adopted corporate-wide.³

The goal of this white paper is to help keep your Big Data program on the right path. We've provided product and service tips to help you avoid eight common pitfalls encountered with Big Data analytics programs. These best practices have been formulated by HPE experts based on real-world interactions with customers. By sharing them with you, we hope they help you achieve your goals. We have also included a discussion on how other organizations are using Big Data analytics platforms to solve a wide range of business challenges.

Eight pitfalls to avoid

Whether you're in the early stage of planning or suddenly thrust onto the fast track, here are eight tips to help you avoid potential pitfalls in your Big Data analytics journey:

1



Taking an IT-centric approach

You've completed your research and cost-benefit analysis and you're moving from discovery to proof-of-concept. You've narrowed down your list of possible providers having undertaken a detailed technical evaluation. It's important to continue the collaboration and communication with line-of-business owners even though you're heavily focused on the technical delivery aspects of your analytics program. Business use cases may have changed with new requirements.

One organization, The Data Warehouse Institute (TDWI), created the Big Data Maturity Model assessment that includes 50 questions across five technical and business categories: organization, infrastructure, data management, analytics, and governance. These categories form a composite picture that includes people and organization as important elements in a Big Data analytics program.

Service tip: Transformative workshops conducted in partnership with IT and the business can help you understand the benefits with analytics-driven business insights, while being able to recognize the untapped business value of subsequent data flooding. An effective workshop can not only help you find the right processes and tools, it can also help with your proof-of-concept pilot process. Experts can assist you with the transformational changes within your organization, detect silos, and get all groups to understand and value data in the same way, and with common goals.

¹ “What are the numbers, facts and figures behind Big Data?,” by Ben Rossi, Information Age, March 4, 2016

² “Big Data: 20 Mind-Boggling Facts Everyone Must Read,” by Bernard Marr, Forbes, September 20, 2015

³ “A Guide to Achieving Big Data Analytics Maturity,” by Fern Halper and Dave Stodder, TDWI, July 2016

⁴ “6 Predictions For Big Data Analytics And Cognitive Computing In 2016,” by Gil Press, Forbes, December 15, 2015

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Moving forward without the right skills and experience

Big Data analytics requires coordinated efforts between IT, operations, management, and other lines of business, such as marketing. Not only do you want qualified data scientists with the right data and analytical skills, but others in IT and operations and throughout the business with a dedicated focus on Big Data analytics. Allow your activities to assess for both technical and business skills.

Service tip: The new breed of data scientists are using tools like Java, Python, and R to create predictive analytics. A trusted service partner can perform a gap analysis to see if people with the right skill sets are on your Big Data analytics project team. Specialized Big Data training and education for those from technical, business, and management areas should be considered.

3



Planning in a vacuum

Seek advice from trusted advisors who can fully assess your current capabilities, from both a technical and business perspective. Get help from strategic-level advisors who can incorporate best practices into your Big Data analytics planning and design. Determine if one of your existing third-party providers offers a well-regarded Big Data solutions practice. If you're on an expedited schedule, such services can help put your Big Data planning and implementation on a fast, yet well-architected track.

Service tip: Knowledgeable Big Data consultants can assess your systems and define the capabilities you need to make your Big Data platform initiative a success. It's imperative that your integrated IT strategy supports effective, secure data management and data mining. Specialized consultative workshops can offer detailed blueprints and roadmaps for transformation based on your specific requirements. Services can also help with your organization's data discovery and suggest solutions that deliver performance and usability requirements.

4



Forgetting about security

Don't let data security get lost in the shuffle. A breach with Big Data can become big trouble, especially where sensitive customer information is involved. Company reputations have been severely damaged with publicized breaches. Determine at early stages of planning how data will be protected throughout all its phases: where it resides, in transit, and as it's being analyzed.

Product tip: Choose the right tools to overcome security limitations inherent in Big Data platform technologies. Consider a center of excellence in order to fully demonstrate IT capabilities before rolling them out to the business. Also, be leery of organizational silos as security may be practiced unevenly in different departments. Data security is only as strong as the weakest link in the infrastructure.

“HPE Vertica helps block suspicious activities in real time and provides customer insights.”

– Peter Hanlon, CTO, Trader Media Group

“In many companies we find that organizational designs are still immature and executives don't always appreciate how analytics will fundamentally change business processes and human behavior. Our survey found that only 31 percent of companies have significantly restructured their operations to put data at the heart of their organization.”⁵

⁵ “Analytics Success Depends on People, Organizational Change,” by Chris Mazzei and Gaurav Gupta, DataInformed, July 16, 2016

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**Underestimating the complexity of data**

We live in an increasingly complex technological world, where today's modern data infrastructures create data from everywhere: business systems like CRM and ERP, sensors used to gather machine-generated data, tweets and other social media data, Web logs and data streams, gas and electrical grids, and mobile networks—just to name a few. With data coming from so many places, it's a struggle to simply store and manage these volumes, let alone perform sophisticated analytics on that data.

Service tip: Many organizations are dealing with complexity by creating special positions such as a Chief Data Architect. They select the right tools for the right job all along the data pipeline, which can come from the open source community or commercial organizations. Successful Big Data platform implementations adopt best-in-class solutions that incorporate the best stream processing and Extract, Transform, and Load (ETL) tools, build an event messaging bus, create a data lake and leverage a scalable Data Warehouse (DW) solution, along with choosing a user friendly business intelligence (BI) solution. Understand the evolution of these technologies and their interdependencies, so your data pipeline provides a scalable, robust solution with a lower cost of ownership, now and over time.

6

**Overlooking existing infrastructure and investments**

You've built up a fortune in an infrastructure to support business intelligence and data warehousing. Be sure your chosen solution can integrate with your current infrastructure and address all of your needs regardless of where the data is stored. Understanding the full capabilities of a Big Data platform can make or break your analytic efforts.

Product tip: Your Big Data analytics technologies will combine the known with the unknown to deliver value in new ways. Whether your chief business goal is data monetization or customer retention, consider your product platform as an integrated component of the broader Big Data ecosystem. Make sure it works seamlessly with your existing infrastructure to maximize investments. Data transformation and ETL or SQL-based visualization partners are one example. Data visualization providers might be another area that requires integration.

7

**Believing the hype**

The Big Data marketplace is large, noisy, and filled with hype. Decisions made from bad advice at a formative project stage can certainly tarnish your analytics program. The Big Data platform bandwagon may include peripheral players whose hype can mask true capabilities. Big Data is vibrant and confusing at the same time, even for experts.

Product tip: Be wary of claims that say all data challenges throughout your business can be solved by a single data tool or Big Data platform. Evaluate an analytics platform and its associated processes based on flexibility, continuous discovery, and integration. Look for a broad range of deployment and consumption models, including on premise, on Hadoop, and in the cloud. As your business use cases become more complex, availability of options is essential to obtain effective results and a maximum return on investment.



8



Losing sight of best practices

Once your solution goes into production, be sure to continue with the data management best practices that got you there. Business requirements will evolve, and so will your strategies. An analytically mature company will seek answers to questions such as: Whose data was it? Whose data is it? Where is it going? How long will it last?

Service tip: At a mature stage, you're continuously consuming analytics, resolving new business questions, and gaining deeper insights. In-depth program governance becomes key for your organization. A Big Data project management office and data steering committee guide your Big Data program from a companywide perspective to help keep existing and future Big Data projects on time, on budget, and on target with growth and competitive goals.

Learn from successful Big Data analytics users

Every day, we hear about new and novel uses for Big Data analytics. A North American telecommunications company uses analytics to understand customer interactions and resolve why customers have set-up issues with newly purchased products. A bank finds analytics can define certain buying habits across the customer lifecycle. A pharmaceutical company uses analytics to increase sales predictability with premier customers.

As business use cases become more diverse, enterprises are modifying how they manage Big Data analytics programs. A top 50 insurance carrier, instead of stretching current management teams, invested in a dedicated change-management team with a focus on employee training, internal communication, and organizational restructuring to create an effective analytics program.⁶ It resulted in 77 percent of engaged employees seeing favorable changes in the company that will help ensure success in their industry.

NASCAR

NASCAR needed a way to monitor and make sense of social, digital, broadcast, and traditional media conversation and coverage. It engaged HPE to provide an end-to-end solution comprising HPE services, HPE software, and HPE hardware to build a state-of-the-art Fan and Media Engagement Center (FMEC). The FMEC is NASCAR's sophisticated Big Data capture and analysis platform based on the HPE Interactive Media Command Center (IMCC) solution. It enables NASCAR to detect, analyze, and respond to online chatter in real time. It's a capability that's unique in the entertainment industry. For one, NASCAR monitors and analyzes about 14,000 online conversations per minute during races.

With HPE's long and successful track record within the communications, media, and entertainment industry, HPE offered the industry-consulting services NASCAR needed to help ensure the project would meet the company's functional requirements and launch on time.

"By far, HPE was the best end-to-end solution that we had out there," notes Steve Phelps, executive vice president and chief marketing officer, NASCAR. "And HPE's consulting services were better than anyone's."

⁶ "Analytics Success Depends on People, Organizational Change," by Chris Mazzei and Gaurav Gupta, DataInformed, July 16, 2016

You're not alone on this journey

Here are other HPE customers finding unique results from Big Data analytics:

- Intuit processes billions of transactions to deliver highly personalized and rapid returns for millions of TurboTax tax preparation users.
- Conservation International helps scientists assess the impacts of climate, people, and land use by comparatively analyzing sites and species on 86 million records in near real time.⁷
- Cerner uses 6,000 percent faster system performance to analyze clinicians' efficiency in the Electronic Medical Record (EMR) leading to improved quality of patient care.
- Supercell leverages real-time in-game analytics to understand user behavior, conduct product testing, and improve the gaming experience for 100 million players every day.
- The Democratic National Committee helped re-elect a U.S. president using data-driven marketing and predictive modeling to better understand and anticipate voter behavior.
- Guess delivers essential reports with 90–400x faster query performance to empower everyone—designers, buyers, planners, and retail store managers—to better serve customers.
- Criteo drives e-commerce sales using native, in-database predictive analytics to target advertisements for 1.1 billion Internet users per month with pinpoint accuracy.
- MTS India empowers marketing teams to run campaigns based on real-time analytics of customer satisfaction.
- Tapjoy leverages analytics to better understand how ads inspire user behaviors and to enhance ad performance.
- Finansbank uses analytics to facilitate high-speed baselining and profiling of user behaviors such as anomalies useful for building more robust security and fraud-protection processes.

“HPE Vertica Software helps expand the horizon into new business.”

– Krishan Kumar, IT VP, Mzi Healthcare

How can HPE help?

As seen in our discussion of how Big Data analytics pitfalls can be avoided, becoming a data-driven, agile organization requires a holistic approach. You need the right infrastructure and a trusted service partner with the right skills, knowledge, and experience. Hewlett Packard Enterprise is that partner that can help with your transformation. We can accelerate time to value through Big Data analytics and informatics without disrupting your legacy investments and processes. Here's a brief description of our HPE Big Data solutions that form a comprehensive approach to Big Data analytics.

HPE Vertica Analytics Platform

The HPE Vertica Analytics Platform is consciously designed with speed, scalability, simplicity, and openness at its core and architected to handle analytical workloads via a distributed compressed columnar architecture. HPE Vertica Analytics Platform provides blazingly fast speed (queries run 50–1,000x faster), petabyte scale (store 10–30x more data per server), openness, and simplicity (use any BI/ETL tools, Hadoop)—at a much lower cost than traditional data warehouse solutions.⁸

⁷ [youtube.com/watch?v=ox-QtXq4mac](https://www.youtube.com/watch?v=ox-QtXq4mac)

⁸ techvalidate.com/tvid/B9F-BA0-073



Table 1. HPE Vertica Analytics Platform

Provides customers with:

- Complete and advanced SQL-based analytical functions to provide powerful SQL analytics
- A clustered approach to storing Big Data, offering superior query and analytic performance
- Better compression, requiring less hardware and storage than comparable data analytics solutions
- Flexibility and scalability to easily ramp up when workloads increase
- Better load throughput and concurrency with querying
- Built-in predictive analytics via Python and Ruby
- Less intervention with a database administrator (DBA) for overhead and tuning

Offers consumption model options including:

- On premise (HPE Vertica Enterprise [Premium and Express Editions])
- In the cloud (HPE Vertica on Amazon, via our Amazon Machine Image [AMI] Edition)
- On demand (HPE Vertica OnDemand)
- Data stored in Hadoop (HPE Vertica SQL on Hadoop) for native Hadoop node analytics

Only HPE Vertica offers this extensive spectrum of consumption modes all featuring Vertica's core capabilities to deliver best-in-class performance and scalability. HPE Vertica is designed to work seamlessly in a complex Big Data ecosystem, offering visualization choices, data integration and ingestion options, and connectors for all forms and sources of data.

“With Vertica, we are able to provide insights into Big Data in a predominantly ad hoc environment at the speed that other systems could only dream of.”

– Ben White, Architect, TK Consulting

HPE Big Data Software Services

HPE Big Data Software Services is committed to customer success and can help achieve business results faster, lowering IT development and maintenance costs, and giving customers a competitive edge in the marketplace. HPE Big Data Software Services acts as a partner in every stage of the Big Data journey and provides a variety of offerings tailored to the requirements of the customer. Services include the following:

- Assessment and strategic advisory services that include workshops, planning, and consultative road mapping
- Software installation, capacity planning, hardware specifications, security model, and governance
- Data Source to Data Consumer Expert Services meet customer needs for obtaining the right skills at the right time at a predictable cost, and highly skilled, multi-faceted senior-level resources that can handle Big Data integration and other long-term consulting and integration projects
- Post production and deployment services termed “Solution Management Services (SMS),” includes the following:
 - Reactive Services (single point of contact for incident and problem management across the entire solution)
 - Operational Services (operational request fulfillment and ongoing maintenance to keep the solution healthy)
 - Enhancement Services (continuously improve the solution through enhancements that increase value and adoption)
- Health Check Service provides a detailed assessment of solution infrastructure deployment and includes an audit with multi-point system review of the operating environment, and recommendations to maximize value from the software platform

About Hewlett Packard Enterprise

Hewlett Packard Enterprise creates new possibilities for technology to have a meaningful impact on people, businesses, governments, and society. The world’s largest technology company, Hewlett Packard Enterprise brings together a portfolio that spans printing, personal computing, software, services, and IT infrastructure to solve customer problems. More information about Hewlett Packard Enterprise (NYSE: HPE) is available at hpe.com.

To get further details about HPE Big Data solutions, contact your local HPE representative or partner, or download the TDWI “A Guide to Achieving Big Data Analytics” available at hpe.com/software/bigdata

Learn more at
hpe.com/vertica
hpe.com/services/bigdata



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