

A Forrester Consulting  
Thought Leadership Paper  
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# How To Become An Insights-Driven Business



# Table Of Contents

- 1 Executive Summary
- 2 What Does It Mean To Be Insights Driven?
- 3 Bridging The Data-To-Insights-Driven Gap
- 4 Firms Must Make Data Management And Analytics More Agile And Flexible
- 6 Firms Must Find Insights Based On All Available Data
- 8 Firms Must Ensure Data Insights Are Contextual, Actionable, And Pervasive
- 10 Creating An Insights-Driven Process
- 11 Key Recommendations
- 12 Appendix

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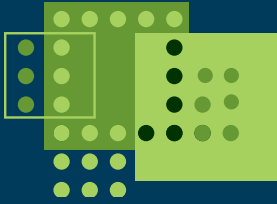
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# Executive Summary



Most companies today will tell you they're data driven: They're capturing performance metrics and big data from a variety of sources, and they understand the importance of having this abundance of data. However, advances in digital technology and a greater focus on the customer have permanently altered the way the market operates and have created a stronger need for companies to differentiate themselves. Being data driven is now the status quo, and companies looking to succeed must take their data practices to the next level by becoming insights driven — using data to inform all key business decisions — to ensure greater relevance and success in the changing market landscape.

In October 2017, SAP commissioned Forrester Consulting to develop thought leadership around how companies can bridge the gap from being data driven to becoming truly insights-driven organizations. To do so, Forrester leveraged data from an existing SAP-commissioned Forrester study (which can be found [here](#)), along with data from existing Forrester reports and data from Forrester's 2017 Business Technographics® Data And Analytics Survey.

## KEY FINDINGS

- › Becoming more insights driven is challenging, but there are three key capabilities that, when honed and enacted correctly, can help companies overcome common challenges.
- › Agility in managing data and conducting analytics efficiently and effectively allows companies to respond quickly to customers' ever-changing behaviors, expectations, and needs.
- › Companies need to make analytics pervasive throughout their organizations by supplementing traditional pull style analytics with a push approach, enabling analytics within transactional applications and processes to make insights more contextual and actionable.
- › New data management technologies and architectures like data lakes supplement rather than replace data warehouses.
- › Effective insights-driven companies exhibit five key traits that can be used as benchmarks for progress during the transition.

# What Does It Mean To Be Insights Driven?

Very few enterprises today run their business by intuition. Most enterprises are data driven, meaning they utilize big data from their customers, business performance metrics, products, etc., to help inform business decisions. However, that does not equate to being able to turn data into actionable insights and drive tangible business outcomes. In fact, 81% want to extract more value from big data, and 80% want to become more advanced in their ability to perform analytics.

To make the most of their existing data, companies must become insights driven by letting data insights truly transform their organization. Forrester published a report that highlights five principles which distinguish how insights-driven companies work and how they differ from data-driven organizations (see Figure 1).

## VALUE OF BEING INSIGHTS-DRIVEN

Forrester’s data shows that insights-driven firms are 39% more likely to report year-over-year revenue growth of 15% or more.<sup>1</sup> Forecasts show that these insights-driven public companies and startups based on digital insights will continue to grow an average of 27% and 40% annually, respectively — much faster than the projected global 3.5% gross domestic product (GDP) growth. It is projected that the collective revenues of the top 30 insights-driven companies will be \$1.8 trillion in 2021, which means they will be taking this business away from their less data and insights savvy competitors.<sup>2</sup>

## Five principles which distinguish how insights-driven companies work

- Creating operating models based on data insights.
- Ensuring data insights are actionable.
- Embracing continuous learning.
- Establishing a strategic focus for insights investments.
- Approaching insights collection and implementation as a group effort.

Figure 1

## Insights-driven businesses operate differently according to five principles

Insights-driven businesses set the pace for global growth

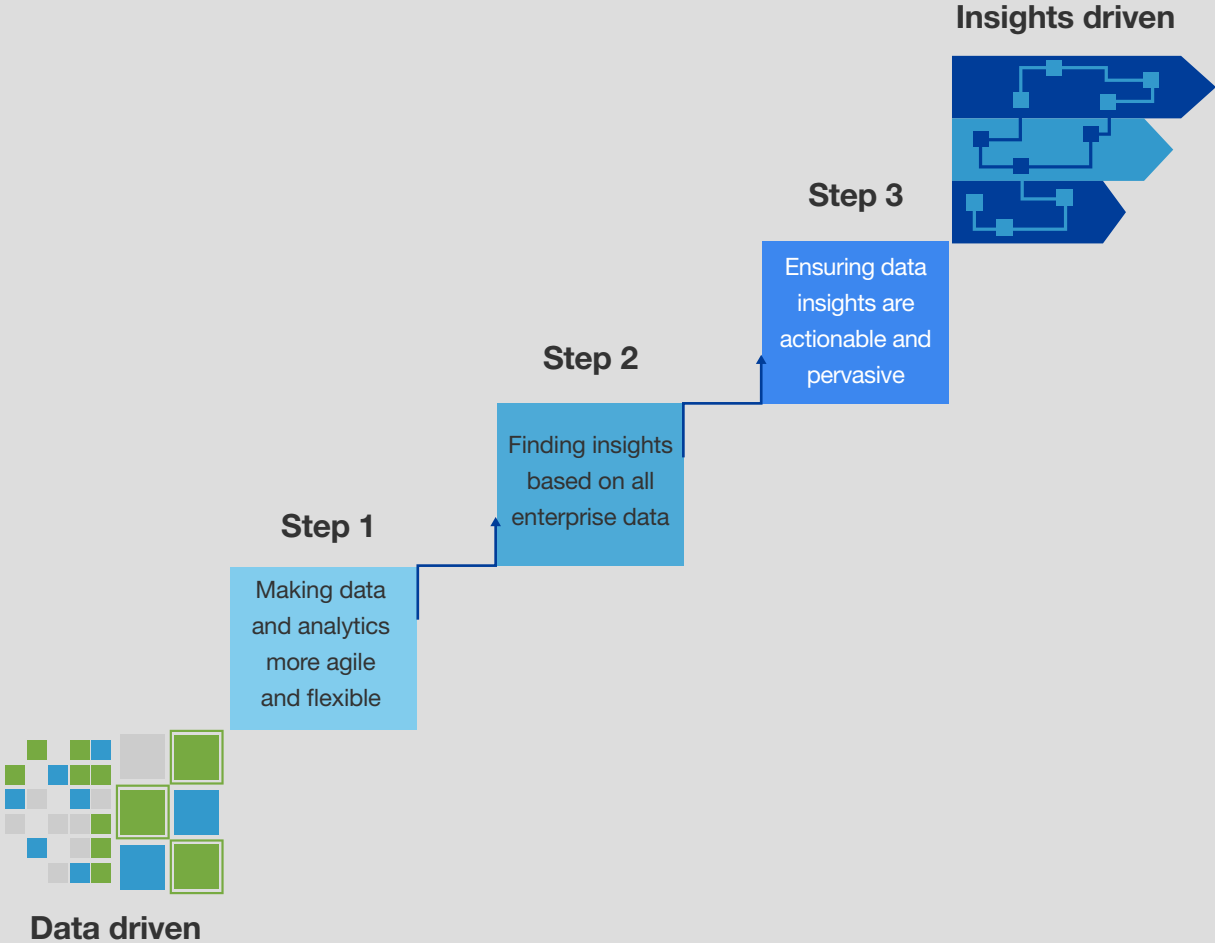
	Insights-driven principle	Data-aware firms . . .	Insights-driven firms . . .
	<b>Operating models are based on insights</b>	Support business decisions with data.	Build businesses that create specific competitive advantages through insight.
	<b>Insights must be actionable</b>	Know they have a lot of data but struggle to turn it into action.	Harness actionable insights from analytics, employees, and customers and then implement them in software to drive action.
	<b>Learning and experimenting are continuous</b>	Collect data slowly and use it in long-cycle business analytics decision making.	Purposefully measure the impact of applied insights, and then optimize in closed-loop, agile cycles of experimentation and learning.
	<b>Investments in insights capabilities are strategic</b>	Build data lakes and platforms and invest in self-service data tools in the hope that good things will result.	Invest to achieve businesses’ strategic objectives, which always include competitive advantage through insight.
	<b>Insight collection and implementation is a team sport</b>	Centralize reporting and advanced analytics functions to drive efficiency.	Build agile, cross-functional insights teams embedded in their businesses and accountable for clear, insights-driven outcomes.

Source: “Insights-Driven Businesses Set The Pace For Global Growth” Forrester report

# Bridging The Data-To-Insights-Driven Gap

Making the transition from being data driven to insights driven can be challenging. Understanding what it *means to be* insight driven is not the same as actually *being* insights driven. Common challenges for many companies include too much data with too few insights, gaping holes between insights and business actions, and failure to learn and improve based on actions taken.<sup>3</sup> To overcome these challenges, companies should focus on three key capabilities to become more insights driven: 1) making data management and analytics more agile and flexible; 2) finding insights based on all enterprise data, not just partial data subsets; and 3) ensuring data insights are contextual, actionable, and pervasive (see Figure 2).

**Figure 2**  
**Three steps to bridging the data-to-insights-driven gap**



# Firms Must Make Data Management And Analytics More Agile And Flexible

Digital transformation has ushered in a new era in which customers expect, and can demand, more from the companies that serve them. Forrester defines this as the age of the customer, a time in which customers have more power than ever before. The pressure is on businesses to respond quickly to customer needs or risk becoming obsolete. The bottom line is this: If your company can't adapt quickly, customers will go elsewhere.

To respond quickly to changes in consumers' behaviors and expectations, business need to be more agile in two primary ways: managing data and conducting analytics.

## MANAGING DATA WITH GREATER AGILITY

Being more agile with data management requires companies to adopt new data management technology that goes beyond the traditional, highly structured methods for housing data, such as database management systems (DBMS). Many companies have recognized this and have already adopted or are planning to adopt new data management technologies that offer greater flexibility, among other benefits (see Figure 3).

Figure 3

### Firms are adopting more agile data management technologies

Technology	% of companies implemented or planning to implement	Outcomes/benefits
Federated query	71%	A.k.a. data virtualization or data fabric, which reduces the time and effort building physical data warehouses.
In-memory database	70%	RAM operations (reads and writes) are much faster than disk operations. It is also much easier to perform schema on read operations on an in-memory database.
Columnar database	70%	Data is stored in columns, rather than rows. There's less (or no) need for query optimization, and therefore less effort is spent on building indexes and aggregates.
NoSQL databases	68%	The data model (relational or other) is defined in real time, a.k.a. "schema on read." This allows greater flexibility and eliminates the effort of changing data models every time a new application or new query is needed.
Hadoop (or other distributed filing systems)	66%	It is often more efficient to mine, aggregate, and cleanse data stored in files, as not all enterprise data needs to be in databases.

Base: 1,023 technology decision makers

Source: Forrester Data Global Business Technographics® Data And Analytics Survey, 2017

## MAKING ANALYTICS MORE AGILE AND ACCESSIBLE

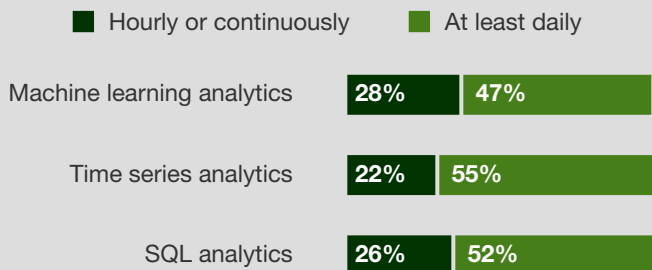
Companies need to process and analyze data faster. There is not enough time to create separate analytical stores as done historically. Running analytics once a month, week, or even day is not sufficient for maintaining an accurate pulse on how customers', and/or businesses', needs are changing. Companies today need more immediate, real-time insights to help guide decisions in a quickly changing business environment. When asked how often companies need to combine and update data from several sources, over a quarter of respondents reported needing to process data continually or hourly (see Figure 4).<sup>4</sup> There is a greater urgency around insights than ever before, and new types of data management platforms, such as translytical databases that combine mixed transactional and analytical workloads, are clearly needed to reduce or even completely eliminate the hourly or daily batch "windows" that earlier-generation databases and architectures often require.

Analytics can also be more agile by making analytical tools more accessible to business users (or "citizen" data scientists). Becoming more agile with analytics requires companies to be less dependent on data scientists, IT, or consultants for analytics, and instead put better tools in the hands of all knowledge workers for self-service analytics. To support this change, 79% of companies are implementing or planning to implement self-service BI (reporting and analytics) to drive greater use of data insights.

Figure 4

### Analytics need to be more agile

"How often do you need to combine data from several source systems or databases to run them?"



Base: Variable count of operations and IT professionals (global) with influence over big data decisions

Source: A commissioned study conducted by Forrester Consulting on behalf of SAP, December 2016

Seventy-nine percent of companies are implementing or planning to implement self-service BI (reporting and analytics) to drive greater use of data insights.

# Firms Must Find Insights Based On All Available Data

Data volumes have grown exponentially over the past few years, and leveraging all that data can be a challenge. Forrester data shows that the number of companies with over 1,000 terabytes (TB) of data nearly tripled between 2016 and 2017 alone (see Figure 5).

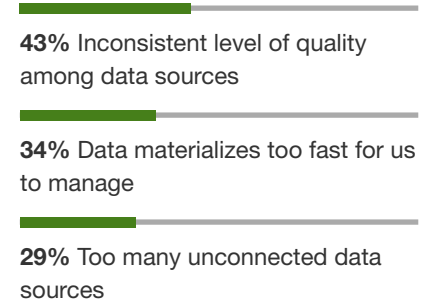
With this data influx, companies are challenged to make effective use of the data, citing the following challenges (see Figure 6):

- › Inconsistent level of quality among data sources.
- › Data that materializes too fast to manage.
- › Too many unconnected data sources.

On top of this deluge of data, all companies have additional pools of data-usage metadata, such as log files and process states, that are often unused. This metadata is critical for better honing and refining data operations because it contains information on how data is being used within the organization, ultimately leading to better insights and actions. That is why 77% of companies have implemented or are in the process of implementing process analytics (i.e., the analysis of business processes) to help augment their data analytics capabilities.<sup>5</sup>

Figure 6

## Key data/analytics challenges

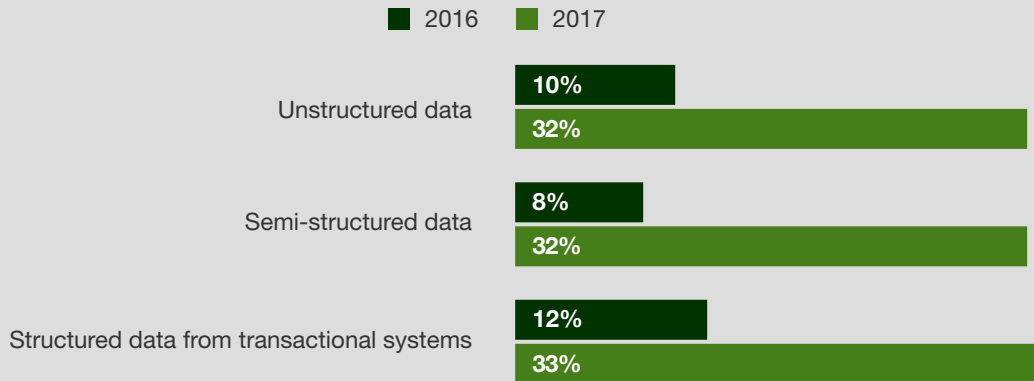


Base: 588 technology decision makers  
 Source: Forrester Data Global Business Technographics® Data And Analytics Survey, 2017

Figure 5

## Data volumes are skyrocketing

Percentage of companies with >1,000 terabytes (TB) of data



Base: 1,023 technology decision makers  
 Source: Forrester Data Global Business Technographics® Data And Analytics Survey, 2017



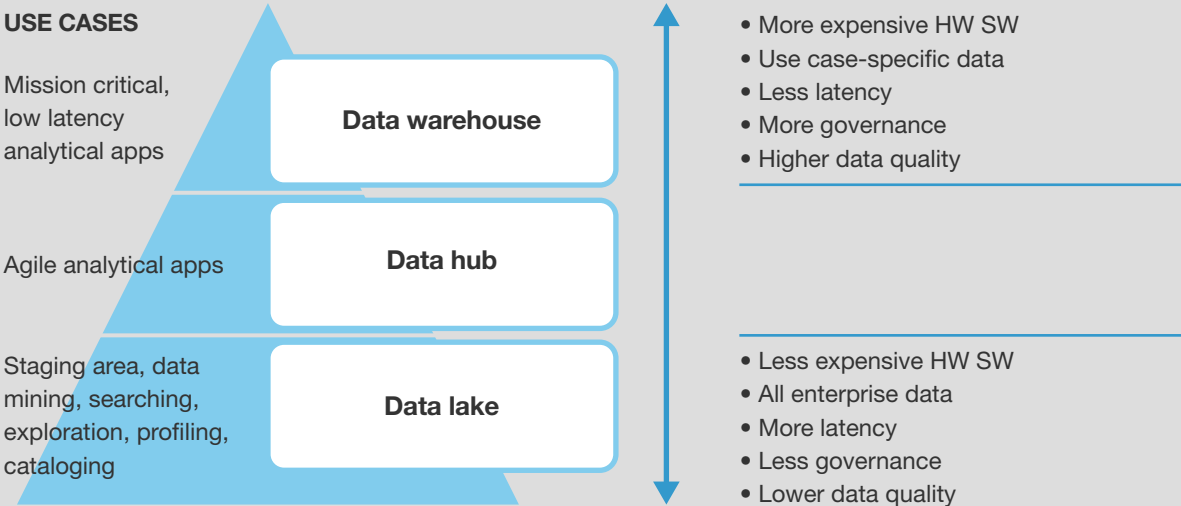
**NEW DATA ARCHITECTURES CAN MAKE YOUR MOST VALUABLE DATA TYPES MORE ACCESSIBLE**

Anecdotal evidence shows that, on average, companies manage to govern, process, and utilize only 20% to 50% of all their enterprise data for insights and decisions. The rest is sitting in undocumented and poorly integrated data silos, often unavailable for analysis. In order to break through this barrier, Forrester recommends implementing the following:

- › **Multitiered analytical data architecture.** More modern analytical architectures are based on a realization that not all enterprise data has to be treated the same way. A tiered approach, where data in each tier is treated differently, allows companies to manage and extract insights from all data, not just a subset. Companies can then apply different data treatments to each tier, such as governance, latency, and data quality (see Figure 7). However, companies must build this framework correctly, because when done wrong, it can lead to failure.
- › **Knowledge management techniques.** The root causes of insights gaps are not just outdated technology and architecture, but also lack of awareness. One of the best practices — documenting all enterprise data (including all data silos) via data catalogs, knowledge management portals, and other techniques — can close these knowledge gaps. While knowledge management techniques do not address data curation, they at least make knowledge workers aware of all of the data that exists and is available to be analyzed or curated.

Seventy-four percent of companies we surveyed told us that their firms will have invested in data lake architecture by 2018. However, Forrester predicts that one-third of enterprises will take their data lakes off life support in 2018.<sup>6</sup> Most data lakes are run by the CIO’s team and thus deliver only the benefits meaningful to that one business area, such as reduced costs. This highlights a disconnect between expensive big data projects and tangible business outcomes; the value of certain data relationships is being narrowly defined and not mutually identified in conjunction with broader business objectives.

**Figure 7**



Source: Forrester Research, Inc.

# Firms Must Ensure Data Insights Are Contextual, Actionable, And Pervasive

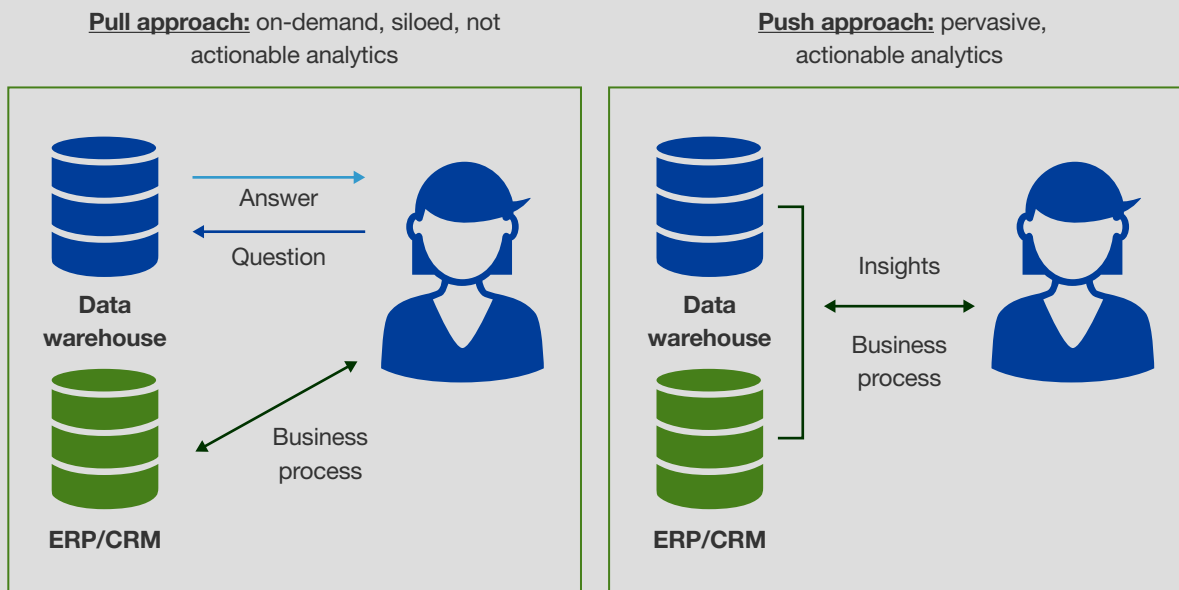
Data insights are not effective if they are: 1) not relevant to specific customer or business needs; 2) unable to be linked to a business action; or 3) tangential to current business processes or inconvenient to utilize. To make insights more relevant, companies need to adopt more of a push versus pull approach with their data analytics.

The traditional pull method of doing analytics — asking a question and getting an answer from an analytical application — has significant gaps. Analytics in such a case are not contextual — a standalone analytical application is not aware of the process context, such as what customer record or customer segment is currently being worked on (see Figure 8). Companies cannot start from scratch every time they want to run new analytics on a data set, as the rapid pace of the digital world will likely render those insights obsolete by the time they are reached. As a result, only 31% of companies strongly agree they can obtain insights in a timely manner.

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Figure 8

## Companies need to make analytics more pervasive



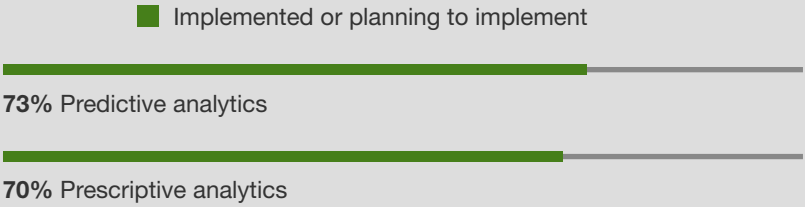
Next, insights derived from a standalone analytical application are not actionable, unless one integrates analytical and transactional applications — a significant effort. Lastly and most significantly, standalone analytical applications do not address the “I don’t know what I don’t know” dilemma, since neglecting to ask a question or asking it incorrectly will result in a lack of answers or incorrect answers.

A push approach to analytics can provide companies with more contextual and actionable insights by supplementing earlier-generation approaches and architectures. Enabling analytics within relevant transactional applications and business processes will make analytics contextual, actionable, and pervasive. Because insights are pushed to recipients at every relevant point in their daily routine, they will indeed know “everything they need to know.” This is becoming more essential as 72% of companies are in the process of implementing, or have already implemented, this method of analytics.

**THE DATA-TO-INSIGHTS-DRIVEN JOURNEY REQUIRES PREDICTIVE AND PRESCRIPTIVE ANALYTICS**

Part of making data and insights more relevant to businesses and customers is using the data to anticipate or predict future behavior as a way of creating more relevant outcomes. These capabilities, enabled through machine learning, will help companies uncover insights that will yield more actionable outcomes. Forrester data shows high interest and adoption of these machine-learning based analytics, such as predictive and prescriptive analytics, which 73% and 70% of companies, respectively, are adopting or planning to adopt (see Figure 9).<sup>7</sup>

**Figure 9**  
**Companies are pursuing more sophisticated analytics**



Base: 1,023 technology decision makers  
Source: Forrester Data Global Business Technographics® Data And Analytics Survey, 2017

New analytics capabilities are enabled through machine learning and will help companies uncover insights that will yield more actionable outcomes.

# Creating An Insights-Driven Process

An important part of becoming insights driven is establishing what Forrester calls “systems of insight” to help guide business decisions. Systems of insight are defined as:

*The business discipline and technology to harness insights and consistently turn data into action.*<sup>8</sup>

This is not a specific technology, but rather a business strategy and ecosystem designed to discover and apply data insights in meaningful ways, an approach which 51% of companies are already looking to embrace. The older-generation, three-step BI process — ingest, curate, and analyze — only gets you to the data-driven level of maturity. Your business needs a more comprehensive six-step process — experiment and learn, identify outcomes, gather (more) data, develop insights, implement insights in applications and processes, and measure the results and refine insights — all in a continuous learning and improving loop to get to the next level, becoming insights driven (see Figure 11).

Figure 10

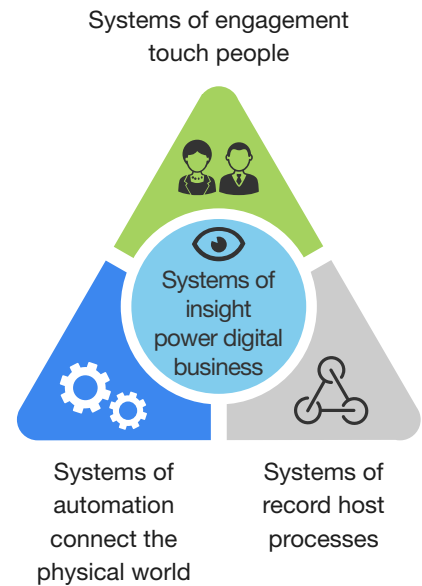


Figure 11

## 2. Identify outcomes and interim metrics

Find metrics for every outcome. Instrument and measure processes, decisions, and outcomes.

## 3. Gather (more) data

Start with the data you have, but add new sources and kinds of data as you learn.

## 6. Measure results and refine insights

Courageously assess and share the results. What did you expect to happen?

## 1. Experiment and learn continuously

Question every process and decision. Run experiments to learn.

## 4. Develop insights

Apply analytic and artificial intelligence methods to develop potential insights.

## 5. Test and implement insights in software

Run insights experiments in software, processes, and decisions.

- Process currently present in BI
- Process new for systems of insight

Source: “Insights-Driven Businesses Set The Pace For Global Growth” Forrester report

# Key Recommendations

Becoming insights driven often requires companies to embrace new capabilities and technologies that, in many cases, may demand significant integration effort. However, Forrester recommends that organizations looking to make this change do the following:



**Make sure your strategy embraces modern technology that's ready for your future needs.** As the amount of data grows exponentially and the need to turn data into insights in near real time becomes a key competitive differentiator, make sure your technology and architecture can scale to the demands of the 21st century.



**Unify your data around a single, but multitiered, data platform for greater efficiency and visibility.** Your competitors are investing hundreds of millions in building actionable unified views of their customers, products, and operations. Don't fall behind your competition; leapfrog them by deploying multitiered data architecture to get you closer to the 360-degree view of your business.



**Adopt more sophisticated self-service predictive capabilities for "citizen" data analysts and scientists.** More advanced analytics, such as predictive, can yield great insights, but those insights are limited if only highly trained data scientists are able to perform the analytics. Strive to make analytics easy by making it part of everyday processes and applications so that insights are pushed to users in real time rather than requiring them to pull data through traditional Q&A processes.



**Don't reinvent the wheel.** Each leading data management and analytics vendor has invested billions (!) of person-hours into building modern platforms. You cannot replicate that in the months, weeks, or days you need to deploy enterprise analytics. Concentrate on solving business problems and increasing your top and bottom lines by attracting, serving, and retaining customers. Leave the actual modern technology, which already has thousands of accumulated best practices and lessons learned built in, to the platform vendors.

## Appendix A: Endnotes

- <sup>1</sup> Source: “What You Need To Go From Data Rich To Insights Driven,” Forrester Research, Inc., November 14, 2016.
- <sup>2</sup> Source: “Insights-Driven Businesses Set The Pace For Global Growth,” Forrester Research, Inc., October 16, 2017.
- <sup>3</sup> Source: “Digital Insights Are The New Currency Of Business,” Forrester Research, Inc., May 19, 2015.
- <sup>4</sup> Source: “A Single Processing Platform Can Tame Data Sprawl,” a commissioned study conducted by Forrester Consulting on behalf of SAP, December 2016 (<https://www.sap.com/cmp/dg/single-processing-platform-on-hadoop/index.html>).
- <sup>5</sup> Source: Forrester Data Global Business Technographics® Data And Analytics Survey, 2017
- <sup>6</sup> Source: “Predictions 2018: The Honeymoon For AI Is Over,” Forrester Research, Inc., November 9, 2017.
- <sup>7</sup> Ibid.
- <sup>8</sup> Source: “The Anatomy Of A System Of Insight,” Forrester Research, Inc., March 22, 2017.