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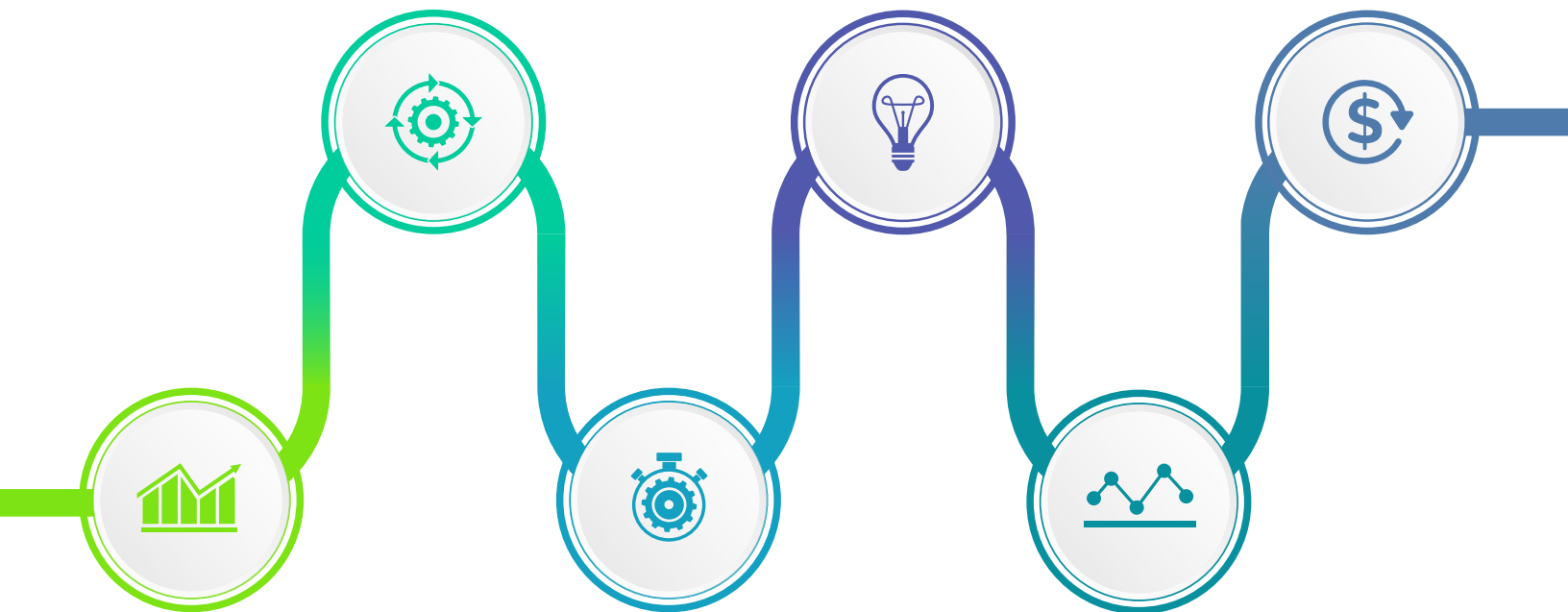
An Executive's Guide to Implementing Pragmatic Decision-Making with BI

Summary

Business intelligence (“BI”) has become a critical component of success in managing effective organizations. It is from the data produced by BI that we can look backwards at performance in order to course-correct and make decisions that lead to improvements in the future: In short, BI clarifies where we have been and informs us about where we are going. That is a powerful motivator for companies in a competitive marketplace.

Because of the realization that metrics are powerful and transformative, a \$90 billion dollar industry has sprung up to connect data in new and revealing ways. While there are many BI strategies, some are only departmental solutions that help individual managers have a better view of their organizations. But the BI strategy that we believe is the most transformative is one that pulls together interdepartmental data to create an overview of an entire organization. Seeing everything at once is where real transformation can begin.

This guide will walk you through our thinking on how BI delivered by way of real-time aggregation of data encourages business transformation by enabling executives and managers to be more pragmatic in their decision-making. In short: The right kind of BI enables you to stop seeing the numbers and start seeing the truth.



The Pulse of Modern Business: Analytics

To be competitive you need to know where you are in relation to where you have been. In modern business it is the ability to see accurate analytics that separates failure from success. With analytics you can see problems sooner and course-correct more quickly.

Simple Analytics vs. Complex Analytics

Accessing the most commonly requested data points ('metrics') is usually not complex because they are the foundation of the software platforms for which they were designed. For example, if the warehouse manager at Acme Widgets wanted to know the inventory of a particular product, he would just go to the system he uses to manage inventory, run a quick query, and have what he needs. That's simple analytics.

Compound Analytics is what is required when data must be incorporated from multiple sources or departments to get the answers needed. Getting to these numbers is much more time consuming to compile because you need to access data from multiple sources – like connecting data from MS Dynamics® with data from Salesforce®, incorporating results from sales reports, and then correlating all of that with per-deal spending from individual expense reports. Without a tool in place, that would be a very time-consuming report to deliver.

6.1

Average number of days it takes to get custom reports built with traditional BI tools. (Aberdeen Group)

If Compound Analytics are where the explosive potential for improvement lies, there really is only one answer: Do your homework and invest in a BI solution that checks the boxes for your organization. One well-designed BI implementation can do the work of tens or hundreds in the right scenario. In the case of crunching numbers in massive and complex datasets, machines are far superior to a whole department of analysts.

Four common problems companies create in the course of trying to get the data they need.

Before jumping ahead to discuss how BI is fundamentally different, let's look at some of the problems created in the pursuit of quantifying our corporate data. In the course of trying to get what we need to do our jobs, most executives and managers will push the 'easy button' to get the information that they need. There are four pitfalls that most companies tolerate in the course of achieving 'business knowledge' today to the detriment of the future.

#1. Increased Headcount

This is usually the most obvious tell of a company that is overwhelmed by its desire for actionable data: "Need data? Let's just hire a new person to do it manually." This is the scenario that results in ever-increasing headcount. When there is a gap in the ability to deliver the necessary metrics to management, many companies just add new staff members. This particular strategy to combat gaps in knowledge is like the boy putting his finger in the dyke as a solution to flooding: eventually you will run out of fingers. Once the 'extra fingers' solution is embarked upon, it becomes a patchwork quilt of fixes that is very hard to unravel. How can Acme Widgets let go of Don when he creates the reports for Sally who creates the reports for Ann? The ripple effect of any organizational change gets larger and more disruptive with each finger in the dyke.

#2. Data Silos

A data silo is any cluster of business data that exists outside of the infrastructure available to all key stakeholders. Almost any data source – even modern ones like cloud apps – can be a data silo. Once Acme Widgets hired Bob to create and manage the reports for Sally, they created a new dependency: Bob. Bob has become a new link in a chain that dictates how his company does business. In introducing Bob as a solution to the problem, Acme Widgets created a new critical link and additional complexity. Acme's solution to a short-term problem ('I need that data') was to introduce a long-term dependency.

#3. Data Domains

Data Domains are pockets of localized data and company knowledge that would be inaccessible if that department's employees disappeared. By our definition, a data domain is a dataset (or grouping of multiple data sources) that is 1) curated and managed by a single department, and 2) requires the owner department (e.g. 'Sales' or 'Operations') to participate in extracting information from it. It is the culmination of all of the strategies that created the data islands, but grown to a departmental scale. Consider it an archipelago of data islands. They are full of both data-storage and employee-level dependencies that guarantee brittleness in an organization and reinforce walled thinking that stymies interdepartmental initiatives. Instead of having 'a team', you end up with many teams, each being a de facto gatekeeper of their own proprietary data.

#4. Canned Formulas

Before we discuss this one, we should clarify that the old standard metrics that we use to oversee our businesses are still the gold standard for top-level analysis. Management teams will never request that you stop showing them Gross Revenue and we're pretty sure that watching the bottom line is not going out of style anytime soon. What we are going to convey is that there is a new level of analytics that is possible when you embark on a BI project that enables managers to better understand what is occurring in their departments, and that translates into better information being shared with management.

For many reasons, often including the lack of data (even though it is actually stored *somewhere*), most executives and managers craft queries to reinforce their view of what they assume to be reality (AKA 'cognitive bias'). For instance, a cognitively-biased sales manager that needs to show his team's effectiveness in closing deals will create a query that says:

SUM all SALES TRANSACTIONS by SALESMEMBER within THE LAST 30 DAYS

If the sales manager has an effective team, his salespeople will show up as having been relatively effective over the last thirty days. What that query does not show is under-performance of team members on other KPIs. Some metrics that would never show up in that query are the number of leads in the pipeline, how long those leads have been aging, Accounts Receivable aging by salesperson, or Travel & Expenses spending by salesperson by project. If you had a report that included all of those data points, you could interpret sales team performance much more effectively.

Take this simple example for the fictional company, Acme Widgets:

Acme Widgets sells widgets B2B. Joe, the Sales Manager at Acme Widgets, has three salespeople; Mike, Amy, and Frank. Mike has been the 'Salesperson of the Year' for the last three years and has larger corporate customers. Amy is usually the second largest revenue producer and has a few big customers, but most of her business comes from middle-tier regional companies. Frank, from a revenue perspective, comes in a distant third by servicing a large volume of small accounts. By creating a typical monthly sales performance spreadsheet, Joe might generate a report that looks something like this:

Table 1- Joe's Monthly Sales Report

Salesperson	Quota	Gross Sales	% of Quota	Deals	AVG Sale Value
Bob	\$ 397,000	\$ 428,000	108%	12	\$ 35,667
Amy	\$ 325,000	\$ 333,256	103%	9	\$ 37,028
Frank	\$ 200,000	\$ 193,980	97%	21	\$ 9,237

According to Sales Manager Joe's monthly report, everyone is performing as expected. Bob is great, Amy is pretty good, and Frank is at his usual spot at the back of the pack. If we were given this one spreadsheet of

sales metrics and told we had to get rid of one person on the sales team, Frank would be the easy choice for elimination. Or is there more to the story if you account for information stored in other data sources?

Before we go on, let's dissect the way this report has been framed. If you look at the report critically, Joe has built a query that delivers the easiest metric to quantify in any organization ("Look at my guys generating Revenue. We're up 2% year over year...") and it delivers the message that the sales department is performing effectively.

64%

The percentage of business and technology decision-makers who have difficulty getting answers from their dashboard metrics. (Forrester)

What other factors might add clarity to the real story on this team's performance? From a pragmatic manager's perspective there are several metrics that would be illuminating, including:

- *What percentage of each deal's margin is offset by T&E spending?*
- *How much client turnover occurs by salesperson? Who is always prospecting to replace customers that never return? On the flip side, which salespeople have the greatest number of repeat customers?*
- *What is the Cost of Revenue for each deal when all factors are accounted for (manufacturing cost, salaries, commissions, T&E, support costs for the deal, delivery, installations, etc.)?*
- *How long does AR age by salesperson and by customer?*

If Acme's management team had the ability to stitch together the data from such diverse sources as human resources, accounting, customer service, and sales, and then correlate individual deals with itemized expense reports, the company could generate multi-dimensional metrics that told the entire story. The new table might look like this:

Table 2- BI Improved Sales Department Intelligence Reporting

	Old Data available from the original report			New Data with data integrated from multiple sources/departments				
	Deals <i>this month</i>	Gross Sales <i>this month</i>	AVG Sale (\$) <i>this period</i>	T&E AVG <i>per deal</i>	D-Cost-of-Rev ¹ <i>avg per deal</i>	AR AVG <i>age in days</i>	Comp <i>annual</i>	Commission <i>on net</i>
Bob	12	\$ 428,000	\$ 35,667	10.6%	18.6%	52	\$ 50,000	5%
Amy	13	\$ 325,000	\$ 25,000	3.2%	9.1%	30	\$ 40,000	3%
Frank	21	\$ 193,980	\$ 9,237	1.2%	5.3%	15	\$ 40,000	3%

¹ D-Cost-of-Rev (Departmental-Cost-of-Revenue) is a metric that shows only departmental costs associated with a sale. It is useful for a manager to see DCoR because it gives a full-spectrum view of both individual team member performance and departmental performance

SCoR= COGS + Direct Cost of Selling (salesperson salary & commission, T&E, shared departmental expenses)

A Pragmatic Analysis

That second report with the multi-dimensional data expresses texture and backstory. For instance, by connecting to HR data sources, we pulled in comp-plan information that reminds us that Bob is a more expensive employee in both compensation (\$50K vs. \$40K for Amy and Frank) and commission (7% vs. 5%). And though everyone knows about Bob's "wine and dine" strategy with his corporate client base, the cost of Bob's penchant for golf tournaments and long lunches has never been quantified on a granular level. Finally (and it is probably not Bob's fault), his clients pay much more slowly than the others, which puts an inordinate strain on cash flow. In summary, by accounting for the expense of T&E, we have a more pragmatic view of Bob's performance: he is still a great salesman who delivers big clients, but now we know at what cost.

On the other end of the spectrum, Frank's low T&E spending, extremely low A/R average, and high volume of local customers shines a new light on him as well. He's a solid performer that gives us a local foothold, and his deals are more profitable, too.

Finally, Amy looks firmly planted in the middle. She is not as expensive as Bob, she has a good mix of customers, and most importantly she has trained her customers into abiding by Acme's Net-30 payment terms. Whatever she is doing, it is an ideal mix of customer-facing tactics in conjunction with keeping her company's cash flow a top priority. A gambling sales manager might use this kind of insight to identify a new sales strategy: "We need more Amy's in our sales department."

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Percentage of BI leaders who say that reporting continues to be the **strongest driver of innovation** for their firm. (Forrester)

Takeaway

Through integrating interdepartmental, data we have a clearer view of the organizational dynamics at play at Acme Widgets. We have taken knowledge that was hidden on the back shelf and brought it to life in a way that adds depth to Acme's understanding of the sales team's profitability. In the course of learning, Joe the Sales Manager – and Al the CEO – have a newfound understanding that will enable them to make better decisions about hiring, firing, staffing, and sales tactics. More importantly, the sales team now realizes that there are other metrics that are just as important as Gross Revenue, and those metrics are being measured. In the future, Bob may exercise more restraint on his T&E spending, or communicate with his clients more effectively about getting invoices paid more quickly.

What have you implemented?

If you are like most SMBs (AKA "Small and Midsize Businesses"), you have taken advantage of the age of software delivered by way of the cloud, like Salesforce for oversight of sales processes, or Microsoft Dynamics for ERP and CRM. If you are a company that has been in business for more than 30 years, you probably also have legacy systems (like IBM AIX-based servers or obsolete Windows applications). What strategies has your organization embarked upon to get meaningful data from all of those disparate systems? How do you automate the integration of legacy data with cloud data and manually-created spreadsheet data?

In so doing, an organization can streamline oversight to the point where a department head can give an accurate accounting of where their own departments are in time, and that is tremendous progress. Even at this point, though, silos still exist. For instance, all of the sales pipeline data may be in Salesforce, but if all of the customer data is in Dynamics, then despite years of improvement, the company still requires constant manual intervention in order to combine its critical information in one place.

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Percentage of self-service BI projects **projected to fail** due to inconsistencies in the way existing data has been created and stored. (Gartner)

The goal of every BI implementation should include:

- **The elimination of Data Silos and reduction in the authority of Data Domains**

There is no way to sugar-coat this: When you own a bunch of data but cannot access it, it's not yours. It may be Rob the Junior Underwriter's or Judy the Marketing Assistant's data, but it's definitely not yours. Eliminating these islands should be a top priority in the planning phase of any BI project.

- **"Right-Sizing"**

The promise of a BI solution is two-fold: 1) to deliver metrics in a timely manner which in turn enables efficiency in increasing revenue, and 2) to enable companies to eliminate inefficiency and reduce spending. Ask your team, "Where can we save money if we implement this solution?" If yours is like most companies, there is a long list of legacy 'fixes' that could be eliminated if only a solution existed. Account for those in your decision-making.

- **Creation of a Living Dataset**

The creation of a living dataset is a transformative event for any company because it affects everyone in the organization. How? A properly planned BI solution actually does the analysis, so that employees can focus on collecting data while the BI tool does the bias-free analysis. The elimination of confirmation-bias will always pay rewards.

Swiss Army Knife of data integration.

Imagine for minute the ability to stitch together all of your existing data sources into one massive, living data set; updated every day seamlessly and delivering an almost up to the minute view of exactly what is working and where you need to course correct. That is what we do at Nowsight™. We take all of that data that is sitting in the corner and make it useful. We help companies take control and make better decisions.

Data sources that make up a typical BI universe

There are four methods that most companies utilize to store data; spreadsheets, legacy systems, in-house server software, and cloud services.

- **Spreadsheets**

You can find everything from project management to expense reports stored in spreadsheets. Spreadsheets are the ad-hoc data-silo maker of choice.

- **Legacy and Homebrew Solutions**

Often a company's data strategy becomes too mission-critical to touch for fear of breaking something. Sometimes they are mission critical applications, like the booking system for a major airline running on a mainframe. Other times they 'just work'.

- **In-House Server-Based Software**

These solutions are usually part of component-ized software systems from the biggest software companies, like Microsoft and Oracle. They typically offer methods for integrating their data using other costly software that they happen to have for sale. They charge using per-seat licensing models and are usually the biggest line item in a company's tech budget. Software lock-in and interdependencies make these especially difficult to minimize in a company's tech infrastructure.

- **Cloud Services**

Every company has cloud platforms in use because they are simple to implement and offer accessibility to data from anywhere. Everything from sales management to accounting to marketing automation is now in the cloud. They use per-seat licensing and have varying degrees of interconnectivity with your other systems, made possible through proprietary APIs and data connectors.

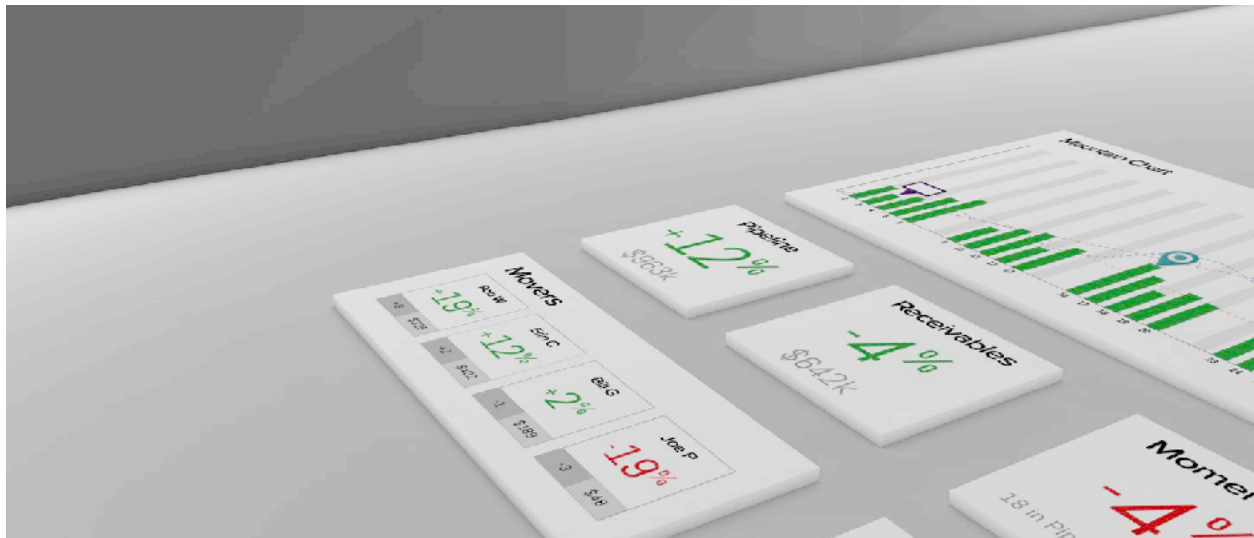
The right BI solution is one that can access every data source you have, regardless of department, and weave everything into one big data object. If you can only get to the easily available data sources (like the cloud apps and the legacy systems) but the spreadsheets contain the useful insights then the solution is not going to reveal anything new. It will just rehash the old paradigms.

Imagine what is possible with real-time BI

When you create a 'living dataset' by aggregating the data from multiple data sources into a singular data store object, the potential of BI as a transformative force is enabled. You are not just uncovering 'data'; you are uncovering knowledge.

1. Reporting becomes an inline process: it just happens in real time.
2. Combining departmental data sources in new ways gives a completely new perspective on the underlying reality
3. Creating new metrics that are meaningful to your organization leads to 'Magic Metrics', those personalized analytics that give your management team members new insight into the departments they manage.

About Nowsight™ | What we do.

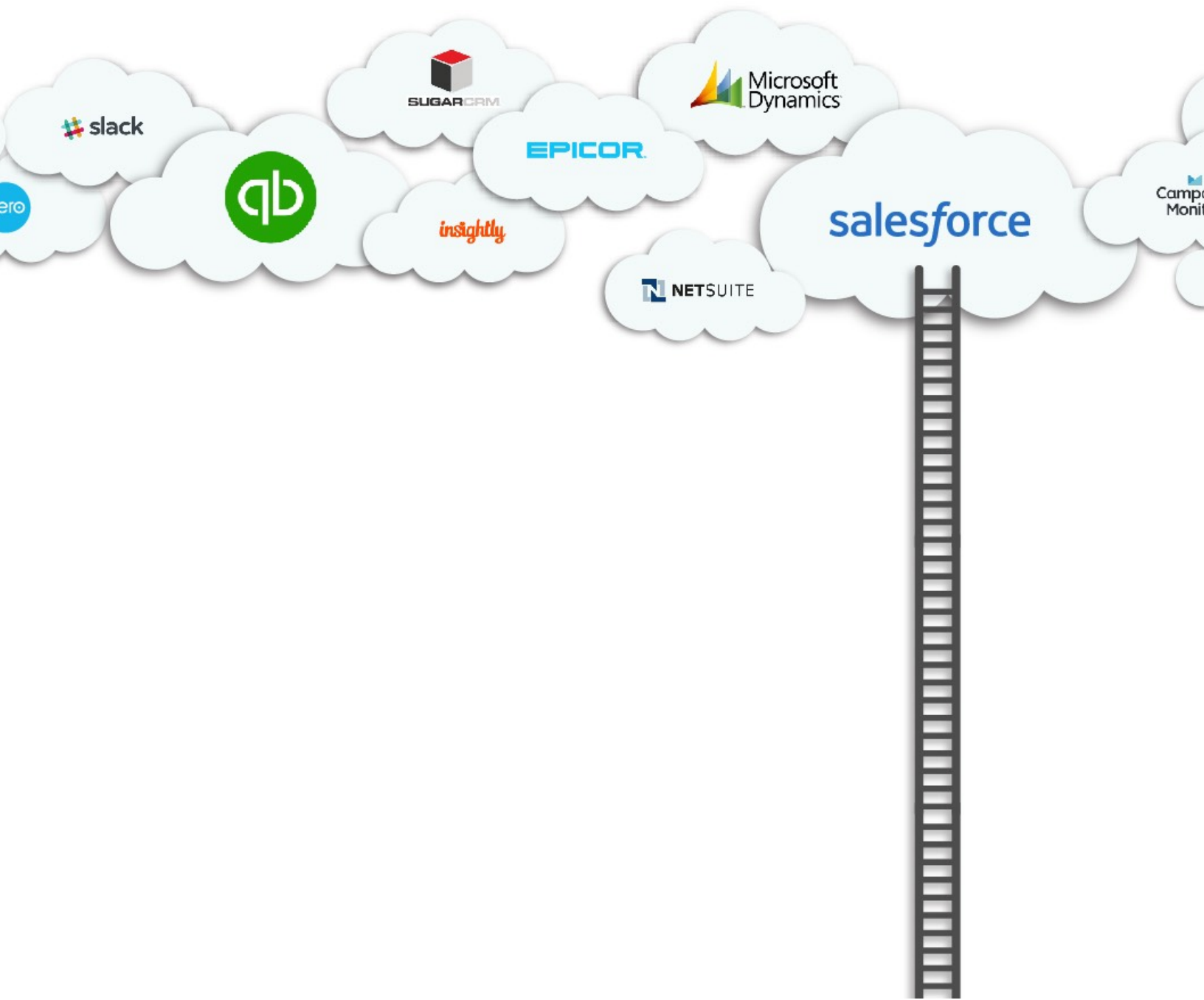


Nowsight™ helps companies stitch together their data into a living, real-time dataset that enables them to make better decisions faster. Our business and development teams research organizational requirements, design a system architecture, build connectors to get all of the data normalized, and deploy real-time data solutions. Through our libraries and frameworks, we deliver the exact metrics that effective teams need to act quickly.

At Nowsight™ we offer seamless solutions to complex data analysis needs.

- **We are business people.** We look at analytics as business people do, and we understand the value of getting the baseline analytics available as quickly as possible... but we are also very inquisitive. We will learn about your business, KPIs, and KOLs to help uncover things that you may not even realize are important.
- **We strive for non-disruptive system design and deployment** While full automation is magical, we also know that some data may reside in Excel files. That's why we have developed connectors that streamline the integration of data from spreadsheets. If you have certain BI tasks that are best captured by manual spreadsheet creation, we will work with in-house resources to figure out the best way to integrate that data.
- **We integrate custom best practices for your business.** Once all of a company's data is normalized and aggregated in a real-time data store, the potential to identify actionable events is unlimited. There are two methods that we use to create action: 1) we identify the KPIs and KOLs that are meaningful for your organization and build rules to alert key players when warnings are triggered, and 2) we identify the KPIs that you want to see every day, and send up-to-date information to your email every morning.

- **We deploy working solutions quickly.** Over the years, we have designed BI data solutions across many industries. In the course of development we have built a library of patterns that help us get a jump start on any project. A pattern might be a method and code to connect a legacy system to a cloud solution. In short, we have already solved the problems and developed many of the pieces and parts that help us move quickly in getting solutions deployed. And if we do not have the exact solution a client needs, we'll build it.





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