

How Mid-sized Businesses Can Take Advantage of Big Data

Seven practical tips for getting started with data visualization



Contents

Introduction.....	1
Getting started with a data visualization solution.....	1
1. Build the business case	1
2. Collaborate and cooperate	1
3. Exploit your data	2
4. Ask for help	2
5. Don't ignore the need for speed	2
6. Look beyond dazzling graphics	3
7. Take advantage of the cloud	3
Data visualization at work	3
Marketing	3
Quality control	4
Finance	4
Human resources	5
The SAS® advantage	5

Introduction

More and more midsize businesses are taking a serious look at data visualization. In a survey of midsize companies, 80 percent of the respondents agreed that putting data to better use could help them improve product quality, uncover new business opportunities and speed up decision making. And 96 percent of those surveyed had big data projects either operational or starting up.¹

The reason for the increasing interest in data visualization is simple. It makes it easier to identify insights in the huge amounts of data that can now be tapped. But with tight budgets, limited IT resources and (for the most part) no highly trained data analysts on staff, many midsize companies aren't sure where to begin.

This paper offers some practical tips on how to get started with data visualization and how best to succeed. It also covers some specific business functions where visualizing and analyzing data can deliver results.

Getting started with a data visualization solution

1. Build the business case

Vague promises related to improved product quality or better customer service are not enough to justify an investment in a data visualization solution. If you want to move to data-driven decision making, you need to think through exactly what the business benefits of better data analysis will be and how much those benefits will be worth. This is not as complicated as it sounds.

For example, data visualization is very successful at growing the size of shopping baskets by analyzing previous customer behavior (plus other factors) and proposing the up- and cross-sell items that specific customers are likely to choose. A simple spreadsheet can show the dollar value of a 1 percent increase in basket size, a 2 percent increase and so on. The same sorts of questions can be posed for any aspect of a business: operations, engineering, human resources, finance and even IT.

What-if scenarios like these are not difficult to calculate, and they put the need for a data visualization solution on a solid business footing.

2. Collaborate and cooperate

Data visualization is an area where you just can't go it alone. The previously mentioned survey identified successful collaboration between business units and IT as one of the most important success factors in data analytics projects. The message is obvious: If you're a business manager, you have to get IT on board, and if you're in IT, you have to convince the business managers.

Another related success factor is obvious and well-documented but still worth stating: Buy-in from senior management is essential to success.

Data visualization makes it easier to identify insights in the huge amounts of data that can now be tapped.

¹ <http://software.dell.com/docs/roadblocks-crumbing-midmarket-companies-see-early-success-with-big-data-28864.pdf>

3. Exploit your data

Data visualization solutions were initially developed as a business tool for enterprises that could afford to hire business analysts, citizen data scientists and BI experts capable of performing sophisticated discovery and data analysis. Often, these experts functioned (and still do) as internal consulting groups. This model is too expensive, slow and clumsy for midsize businesses, and it should be avoided. If you're serious about making data-driven decisions a reality in your organization, you have to make the relevant data available without intermediaries - and in a useful form.

This is an area where having the right technology plays a huge role. Today's data visualization solutions not only serve the needs of experts, but can also be used by a wide variety of business personas. In essence, these solutions guide nontechnical users through self-service BI and analytical processes.

It's possible, for example, to systematically analyze data to see which variables are strongly correlated with desired outcomes or are not correlated at all. This eliminates the need for manual trial and error at the beginning of a project to determine what data is relevant and how to take advantage of it. Or, users can easily create reports and dashboards that they can interact with, understand and share. These solutions simplify the process of communicating insights by suggesting the best way to display data (e.g., with bar charts, pie charts, heat maps or scatter graphs).

A huge benefit is that such data visualization solutions go far beyond the capabilities of spreadsheets, without requiring specialized training.

4. Ask for help

Don't let a perceived lack of technical talent stop you from adding data visualization to your business intelligence and analytics arsenal. If you have a clear business objective, you can hire consultants on a limited basis to obtain the technical expertise you need as well as provide customized training for your users. This is a much more practical (and economical) approach than trying to hire permanent specialized talent, which may be hard to attract if your business isn't a large organization.

Additionally, you can engage your data visualization vendor as a partner as you begin to execute your vision. How-to videos, online demos and communities, documentation and how-to guides are all resources that vendors may provide to help you get started with implementation.

5. Don't ignore the need for speed

The speed of a data visualization solution isn't something that concerns only the IT department. A system's speed has two very practical business consequences.

First, there are managers trying to solve a particular problem in an agile manner. They don't want competitors gaining ground, which could result in lost customers or reduced market share. Problem-solving in the business world is an iterative process where each

Today's data visualization solutions not only serve the needs of experts, but can also be used by a wide variety of business personas.

answer leads to the next question. If each answer requires an hour of calculation, it's difficult for users to maintain continuity of thought. And managers are likely to abandon a system that requires days of waiting to produce useful insights and results.

There's another, more technical, reason why speed counts. A slow system simply can't process the vast amounts of diverse data, handle more users interested in using visual analytics or efficiently compute different types of workloads.

The value of data visualization is proportional to the number of people in an organization who can work with data directly, with no help from experts. The bottom line here is that you need a fast, responsive system. Slow systems will hamper value derived from visual analytics by many different types of users in midsize businesses.

6. Look beyond dazzling graphics

Good looks can only take you so far. A variety of report generators are available that can build impressive charts, graphs and even dashboards. While these products might do a good job of more effectively communicating what you already know, they cannot tell you what you don't know unless they are backed by robust analytical capabilities. Only with interactive data exploration and easy-to-understand analytics that are relevant and simple to use can your business users get the fact-based answers needed to take action and create real business advantage.

Interactive data discovery lets you look at more options. So, at minimum, look for the ability to interactively drill down into the data and easily ask new questions that enable those aha moments.

7. Take advantage of the cloud

You don't have to invest in an on-premises system to reap the benefits of data visualization. SaaS cloud-based solutions offer rapid deployment, with no burden on the IT department to implement and provide ongoing maintenance for yet another system. They also can have a positive financial impact - with no CAPEX costs and, in most cases, a lower total cost to the business. There's no hardware footprint and no software installation. An added bonus is the ability to adjust the number of users as needed.

Data visualization at work

Marketing

The fundamental challenge in marketing - connecting the right product with the right customer at the right time and with the right price - hasn't changed in the last 50 years. What has changed is the ability to more precisely define these four key elements in the marketing equation. "Right customer" is a good example. Not too long ago, customers were defined by gender, age, household income, ZIP code and little more. Now, literally dozens of other factors can potentially be taken into account, ranging from detailed transactional data such as purchasing histories to recent online behavior.

The key to leveraging all this customer data is determining what's important and what's not, or, more precisely, identifying correlations between specific customer attributes and product sales. That's where data visualization comes into play. It lets you quickly examine relationships between various classes of data and visually displays strong correlations, weak correlations or even negative correlations.

This sort of analysis can be expanded to include factors like sales channel, seasonality, marketing approaches (focus on price, certain features, etc.) and others. It's also possible to explore correlations to see, for example, if a preference for wool sweaters vs. cotton sweaters is national or regional.

Data visualization not only provides insights, it also displays them in ways that make it easier to identify opportunities and communicate those opportunities within an organization. Heat maps, for example, can display geographical information in ways that no set of numbers or a simple pie chart can match.

Quality control

Improving quality is an ongoing effort for all types of operations, but there are a huge number of variables that affect quality metrics, like first-pass yields, defects per unit or fill rates. These variables can include the vendors supplying the input materials, the amount of training invested in the employees, ambient conditions at the time of production and a dozen or more other factors. The ability to analyze all these variables enables managers to target root causes with tangible actions (e.g., eliminating a particular supplier) to quickly solve quality problems.

Utilization rates are another area where data visualization can help. For example, many midsize manufacturers are under heavy pressure to maximize utilization of expensive machines. Data visualization tools can provide dashboards that map the physical layout of a factory with dials, thermometers or traffic lights to track utilization of specific machines and give managers a comprehensive overview of operations so they can quickly spot bottlenecks. Even more important, production data can be integrated with other supply chain data so that the causes of slowdowns can be identified and eliminated.

Finance

The data that's available to CFOs is unique in that it relates to every department in the company. Because it spans the silos of sales, marketing, operations and so on, it has the potential to provide a global picture of a company's health and, equally important, to reveal hidden relationships that can be exploited to improve profitability.

For example, a company's sales department can easily rank the products in its portfolio in terms of revenue, but most likely has little information about the cost of production for each of those products. In contrast, operations knows how much products cost to make, but little data about how well they sell. If marketing knew that product A had a lower expense rate than products B or C, it could focus marketing efforts on product A and increase overall profitability.

Both finding and conveying information like this isn't easy when it's buried in spreadsheets or other rows-and-columns reports. In contrast, visual analytics can easily reveal such insights.

Human resources

For most midsize companies, payroll is the highest single, controllable expense. Nonetheless, midsize companies are all too often in the dark about basic questions related to workforce issues. Which candidates for sales positions are most likely to succeed? Which assembly line workers are least likely to have an accident? Which training programs yield tangible business results like improved productivity and how much do those results cost per individual? What are the primary causes of employee turnover? Data visualization solutions can provide reliable, data-driven answers to questions like these - and the answers are often unexpected.

A data-driven approach by HR enables companies to pick winners, boost output per employee, improve attendance, reduce turnover and maintain workforce stability. Moreover, visual analytics can help HR professionals clearly communicate workforce issues that could affect the bottom line to other departments, adding a strategic component to their current administrative functions.

The SAS® advantage

SAS is a pioneer in bringing the benefits of self-service data visualization and analytics to businesses of all sizes. SAS Visual Analytics offers an affordable on-premises or cloud-based solution specifically designed to meet the needs of line-of-business managers, BI users, analysts, as well as citizen data scientists. Interactive data exploration, visualization and reporting are combined with easy-to-use analytics so everyone can get timely insights.

Subscribing to SAS Visual Analytics for SAS Cloud provides self-service access to all of the power and capabilities of SAS Visual Analytics, without the hardware headaches or installation issues. And it has options for small, medium and large user implementations.

By combining dashboards, reporting and visual data discovery, SAS Visual Analytics is the one tool that can meet your current and future data visualization needs. However deeply you want to explore your data, SAS Visual Analytics provides the capabilities to take you there. And with years of practical experience and ultrafast in-memory processing technology, SAS is the ideal partner for midsize businesses that want to exploit their data for competitive advantage.

The best way to understand the power of data visualization is to try it for yourself. To get started, go to sas.com/va to browse sample reports or explore data on your own with an interactive demo. To contact your local SAS office, please visit: sas.com/offices.

SAS is the ideal partner for midsize businesses that want to exploit their data for competitive advantage.

To contact your local SAS office, please visit: sas.com/offices

