

Dashboards – Enabling Insight and Action

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EXECUTIVE SUMMARY

Introduction

Hurwitz & Associates has observed that business dashboards have become critical to the management of complex information environments – across industries and functional areas. Dashboards have also become an increasingly important component of a business strategy focused on improving corporate performance. We believe this growth in dashboard usage is based on the many ways that dashboards help users to visualize information across many data sources. The key benefits to business decision makers include the ability to:

- View performance information in a graphical format that enables the ability to quickly identify performance issues and study the root causes behind an anomaly.
- View performance information in an organized format aligned around key goals and objectives.
- Deliver more timely information by moving away from costly manually intensive methods of integrating and disseminating information.

Hurwitz & Associates contends that companies who have achieved the greatest value from their dashboard usage have developed their dashboards in a way that allows business users to view the information they need to make business decisions quickly and take appropriate action. In order to be action-oriented, dashboards need to:

- Link historical business information with real-time operational data.
- Alert stakeholders when metrics and indicators are out of tolerance.
- Provide connectivity to messaging systems and business processes.

Companies using a portal-based approach to developing their dashboards are able to deploy dashboards with these characteristics very quickly due to the modularity of the portal architecture. Results from the Hurwitz & Associates survey on dashboard usage detailed in this report indicate that over 80% of dashboard users have deployed their dashboards using a portal framework. IT executives are using a portal approach to implement their dashboards because they can implement them faster and they are able to easily provide business users with informational views tailored to their specific needs.

“...growth in dashboard usage is based on the many ways that dashboards help users to visualize information across many data sources.”



Survey Results

Hurwitz & Associates recently surveyed 113 IT executives from large companies, who had implemented or were planning to implement dashboards. The purpose of the survey was to understand the driving demand for business dashboards and assess corporate requirements for implementing them. The results of the survey support our general market observations about the importance of dashboards to companies, the value that dashboards provide, as well as provide a basis for requirements moving forward.

Key survey findings include the following:

Dashboard usage is widespread and growing.

- Results indicated that 90% of the companies using dashboards in their organization had over 200 users. And, this number is expected to grow over the next 18 months. In fact, over 50% of the respondents plan to add 500 or more users in this time period.
- Dashboard usage is cross industry and function. Respondents indicated that different types of dashboards were being implemented in their companies; including executive, HR, manufacturing, and financial dashboards. Dashboard usage is expected to increase in all of these functional areas.
- The majority of companies reported that dashboards represent 25-50% or more of their total performance analytics budget.

The need to integrate multiple data sources is a key driver for dashboard usage.

- Survey respondents noted that, on average, data needed for decision-making is coming from at least 6-10 data sources.
- Nearly 70% of companies that connect their dashboard with a data warehouse also integrate with other data sources such as spreadsheets, internal applications, external information services and stand-alone databases.
- The majority of the respondents planning to implement dashboards

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stated that 50% or less of their business needs are being met by their current methods of disseminating information.

□ **Key benefits of dashboard usage include improved decision making and elimination of manual work.**

- The survey indicated that dashboards are improving decision-making, driving operational efficiencies, and creating intellectual capital. In fact, respondents rated improved decision-making as the key benefit, with 56% of those respondents that had implemented dashboards rating the impact as significant.
- The ability to cut down on manual, administrative work was rated as one of the most important dashboard benefits by 67% of the respondents who had implemented dashboards.

□ **ROI is achieved quickly.**

- The value gained from implementing dashboards was also measurable. Over 50% of those that had implemented dashboards saved over \$500,000 to more than \$1 million.
- Approximately 50% have achieved ROI in less than one year.

□ **A portal framework has become the preferred deployment platform for dashboards.**

- The survey indicated that 83% of those who have implemented dashboards have done so using a portal framework.
- A portal framework is the optimal platform for meeting the following top-rated dashboard requirements:
 - To tailor dashboard views by function, geography, and other factors.
 - To view both historical and time sensitive operational data.
 - To quickly take action based on real-time information.
 - To collaborate with others across regions and functional areas.

“A portal framework has become the preferred deployment platform for dashboards. The survey indicated that 83% of those who have implemented dashboards have done so using a portal framework.”

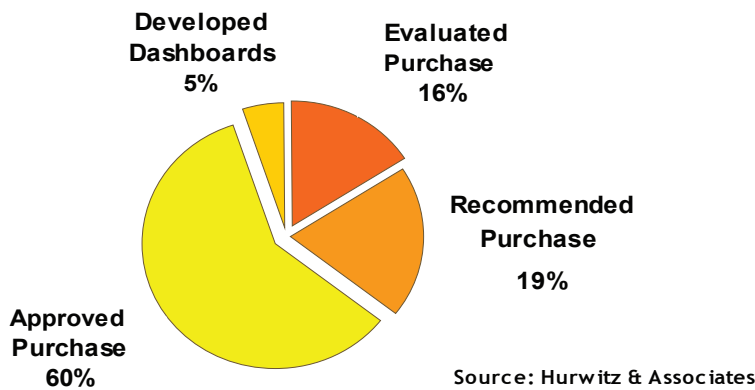
SURVEY METHODOLOGY AND RESPONDENT PROFILE

Hurwitz & Associates conducted an online survey of 113 US IT executives to understand what is driving the big demand for business dashboards and assess corporate requirements for implementing them. Survey respondents were IT executives from large companies (greater than \$100 million in revenue) who are directly involved in making decisions about dashboards for their company (Figure 1a). The respondents were split with 60% having implemented dashboards in their company and 40% planning to implement dashboards in the next eighteen months. Of those that had implemented dashboards, the vast majority had them in place for less than two years.

“Survey respondents were IT executives from large companies... who are directly involved in making decisions about dashboards for their company.”

Figure 1a: Respondent Profile

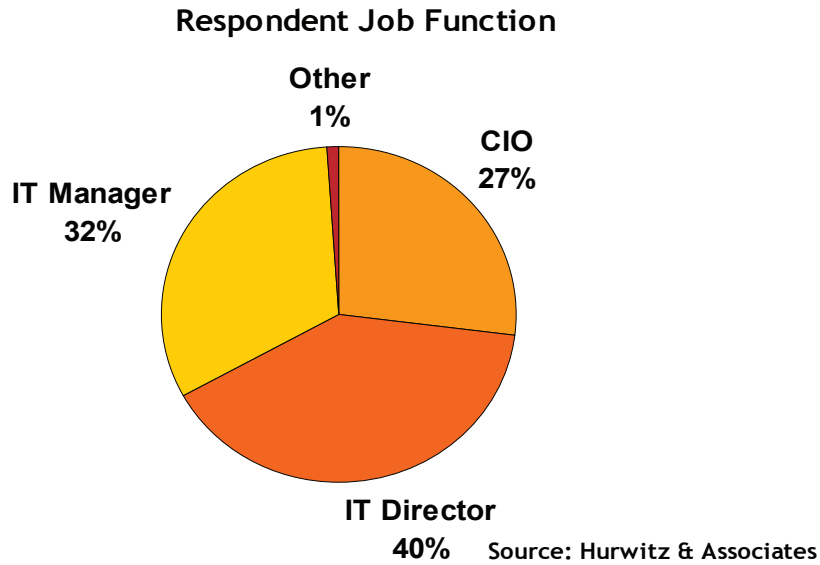
Respondents Primarily Approved Dashboard Purchases



Respondents were either CIO's or IT Managers and Directors as shown in Figure 1b on the following page.



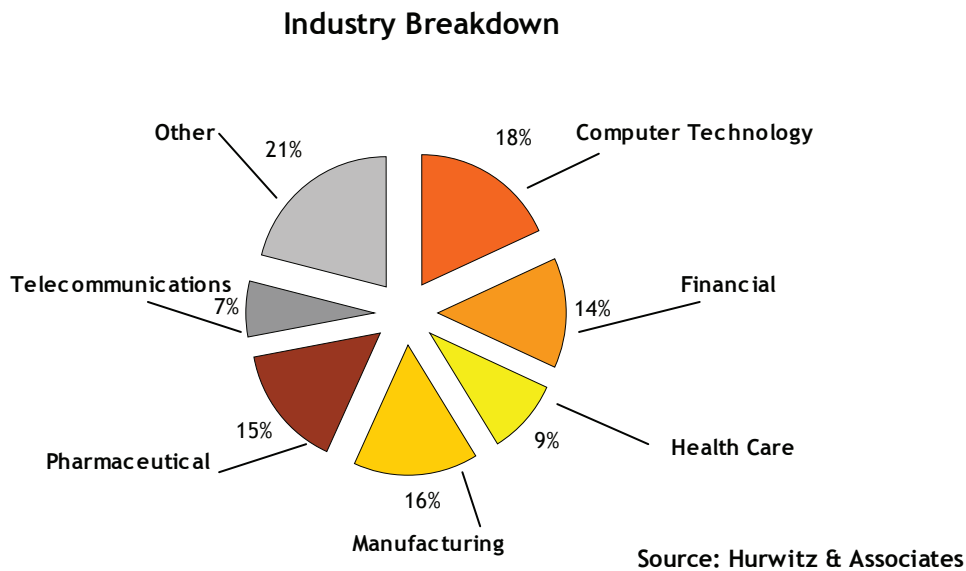
Figure 1b: Respondent Job Function



“67% of respondents were IT Directors or above.”

Respondents came from a wide range of industries (Figure 2) and are a good representative sample for analysis purposes.

Figure 2: Respondent Industry Profile



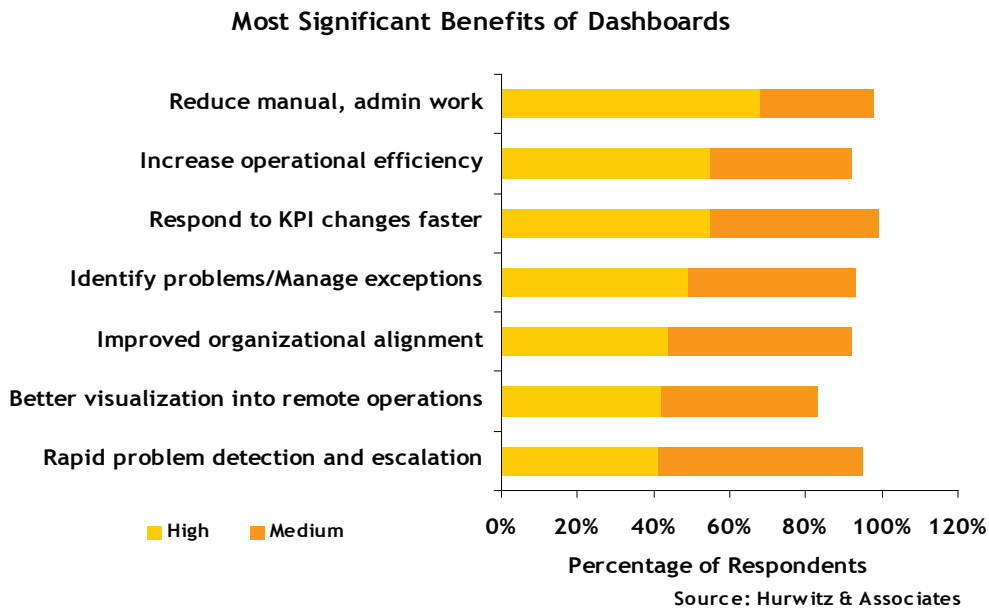
BENEFITS OF DASHBOARDS

Dashboards are enabling companies to fine tune their decisions and accelerate corporate performance. Companies are looking to dashboards, not only to help them make better decisions, but also to drive down costs associated with these otherwise manually intensive methods.

When asked about dashboard related benefits, 67% of the respondents who had implemented dashboards rated the ability to cut down on manual, administrative work as one of the most important benefits of dashboards. This was followed by improved operational efficiencies via more timely delivery of data, and the ability to respond faster to changes in Key Performance Indicators (KPI). This is illustrated in Figure 3.

“67% of the respondents who had implemented dashboards rated the ability to cut down on manual, administrative work as one of the most important benefits of dashboards.”

Figure 3: Dashboard Benefits



But, companies want more. They want to understand their data within the context of their business – in a “single pane of glass.” This one pane view can provide companies with an accurate, timely way to interact with their information and make informed decisions. Not surprisingly, the survey indicated that, in terms of the impact of dashboards on achieving business benefits, respondents rated dashboards as having the greatest impact on their



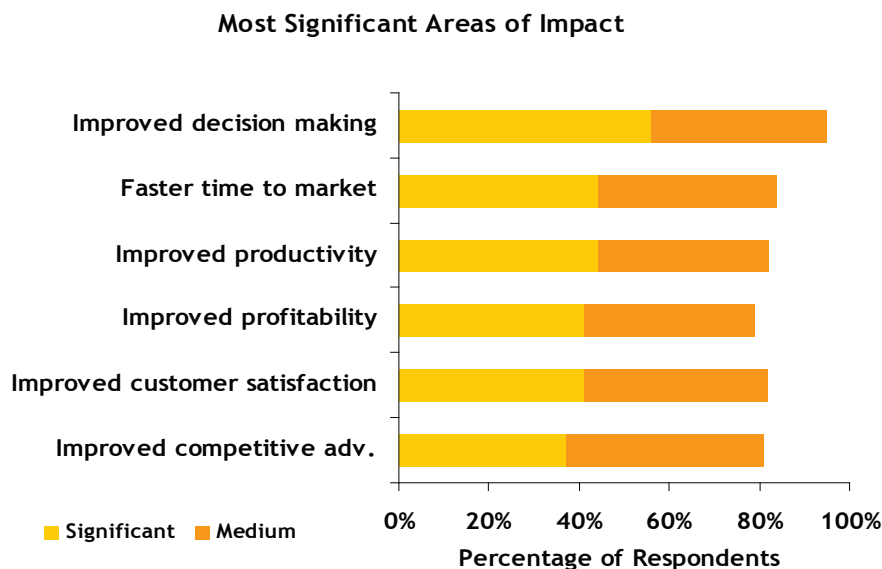
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ability to improve decision-making, with 56% of those respondents who had implemented dashboards rating the impact as significant (Figure 4). This was due to a number of factors including more accurate and current information, the fact that information is available in one place, everyone is operating from the same data sources, and the fact that dashboards can be tailored to a user's role. Some of these reasons are historical; companies know that operating off of multiple spreadsheets often causes data consistency and quality problems.

Additionally, companies know that it doesn't make sense to have one dashboard for everybody; for example, a CFO would look at different information than the financial analyst. It makes sense to show different users different views of the information.

“Not surprisingly, the survey indicated that... respondents rated improved decision-making as the key [business] benefit, with 56% of those respondents who had implemented dashboards rating the impact as significant.”

Figure 4: Dashboard Impact on Achieving Business Benefits



Hurwitz & Associates found that companies are actively measuring the value derived from their use of dashboards and their measurements indicate that benefits associated with dashboards are significant. Survey results indicated that greater than 50% of those that had implemented dashboards had achieved savings over \$500,000 to greater than \$1 million. In addition, approximately 50% have achieved a Return on Investment (ROI) in one year or less. These results are very impressive considering that, on average, these dashboards have been in place less than two years.

“...greater than 50% of those that had implemented dashboards had achieved savings over \$500,000 to greater than \$1 million.”



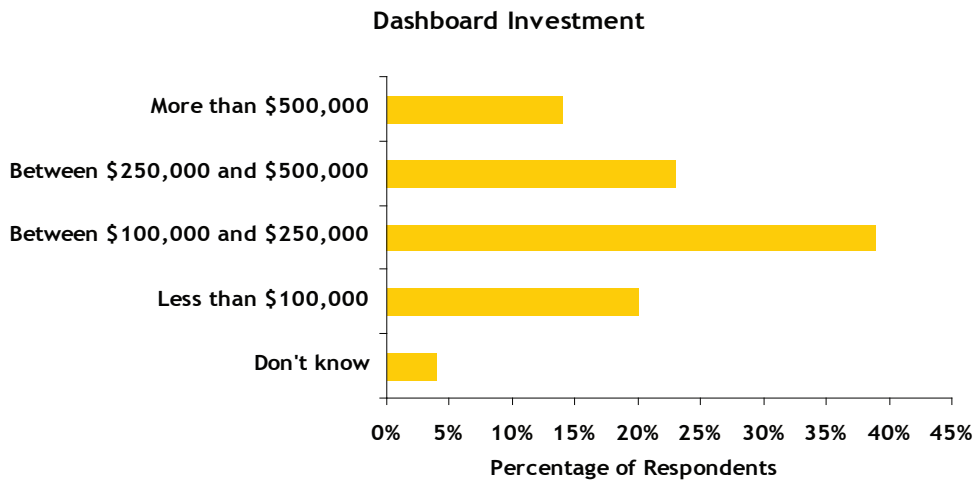
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The expectations in terms of time to implement dashboards and time to achieve ROI are aggressive. In fact, the majority of respondents who were planning to build a dashboard felt that dashboards should take less than 6 months to implement and they should achieve ROI in less than one year. Those that had already implemented a dashboard were also looking to implement their next dashboard more quickly.

The demand for dashboards is large and budgets are in place to build more dashboards. The majority of the companies stated that dashboards account or will account for 25% - 50% or more of their performance analytics budget. On average companies are spending between \$100,000 and \$500,000 on each dashboard and they plan to continue spending at about that level (Figure 5).

“The majority of the companies stated that dashboards account or will account for 25% - 50% or more of their performance analytics budget.”

Figure 5: Average Investment in Dashboards



Source: Hurwitz & Associates

DASHBOARD USAGE

The survey indicated that dashboard usage is widespread across multiple industries and functions. Respondents who had already implemented dashboards cited executive, financial, sales, and human resources as the most

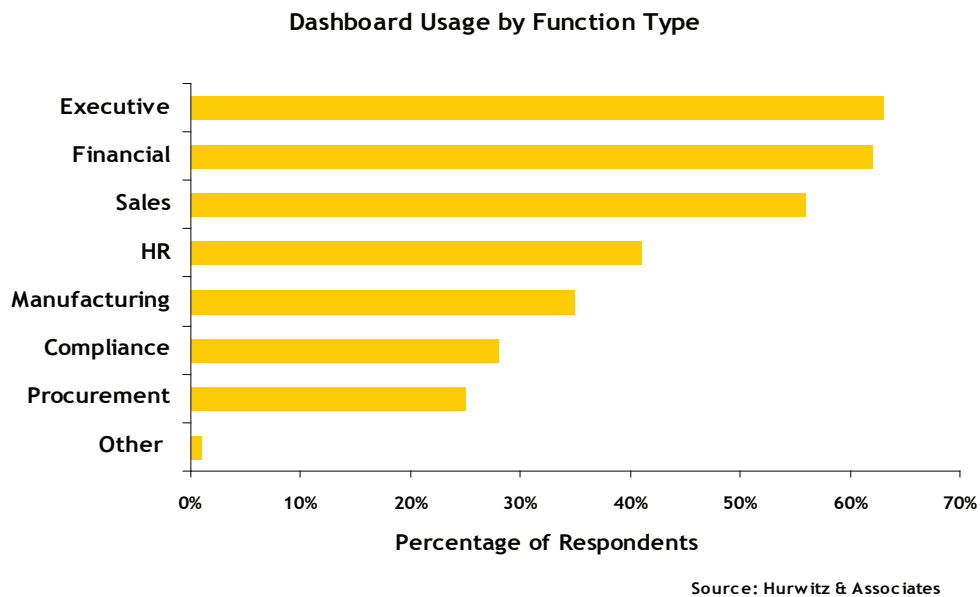


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widely deployed (Figure 6 below). These are the same four types of dashboards that those who have not implemented dashboards are planning to implement. Importantly, those companies that have implemented these kinds of dashboards are planning to implement more of the same.

The survey also indicated that companies are planning to implement procurement and compliance dashboards, as well, and this was particularly true for those companies that already had executive dashboards in place.

Figure 6: Dashboard Usage



“Respondents who had already implemented dashboards cited executive, financial, sales, and human resources as the most widely deployed.”

Although the majority of companies start with internally facing dashboards, a large majority of respondents stated that they also use dashboards to communicate outside of their company. In fact, 71% of companies surveyed are using dashboards to communicate with customers and partners.

In addition to broad functionality being deployed at companies, the number of dashboard users in a company is also increasing. Approximately 90% of the respondents stated that more than 200 people at their company are using dashboards and 58% reported having over 500 dashboard users. This number is expected to grow; respondents stated that this number would roughly double in the next eighteen months.



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Companies are using various means to build their dashboards. While a large majority of those companies that have already built dashboards received help from their internal IT groups, they also worked with outside service providers such as application vendors and systems integrators. Those companies planning to deploy dashboards are also looking for help from outside vendors.

DASHBOARD REQUIREMENTS

There was solid agreement among respondents regarding requirements for their dashboards. Interestingly, while companies wanted the ability to integrate across multiple data sources, as previously discussed, as well as provide analytic capabilities, they were also interested in a number of other requirements that point to the need for a portal framework for scalability (Figure 7 on the following page).

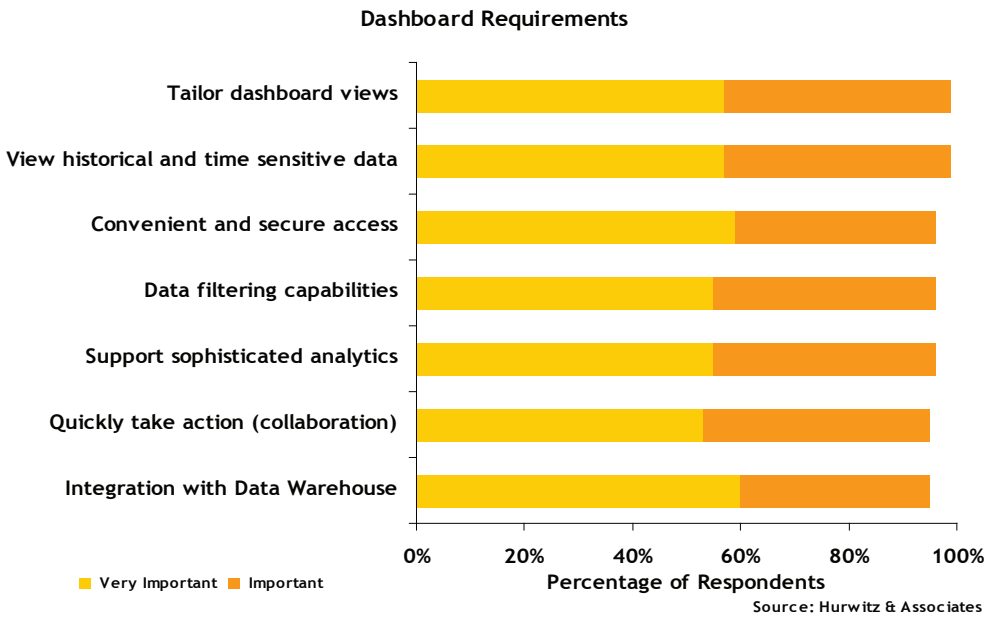
These include:

- **Access to both historical and time sensitive information.** Companies are looking to access time sensitive operational data as well as the historical data. Approximately 70% of the companies that connect their dashboard to a data warehouse also integrated with enterprise applications, stand-alone databases, and spreadsheets.
- **Tailor views.** Another key requirement is the ability to tailor dashboard views; 98% cited tailored dashboard views for different users; i.e. by role, organization, geography, access privileges, etc. as very important or important to have in a dashboard.
- **Collaboration.** Users also wanted the ability to take action utilizing built-in collaboration capabilities and the ability to kick-off cross-application business processes.
- **Security.** Companies also want to be able to provide convenient and secure access to information, which means dashboards should have an easy-to-use user interface and should provide a single sign-on capability. These capabilities as well as other valuable software services are provided in a portal framework.

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Figure 7: Importance of Dashboard Requirements Reported by Companies Currently Using Dashboards

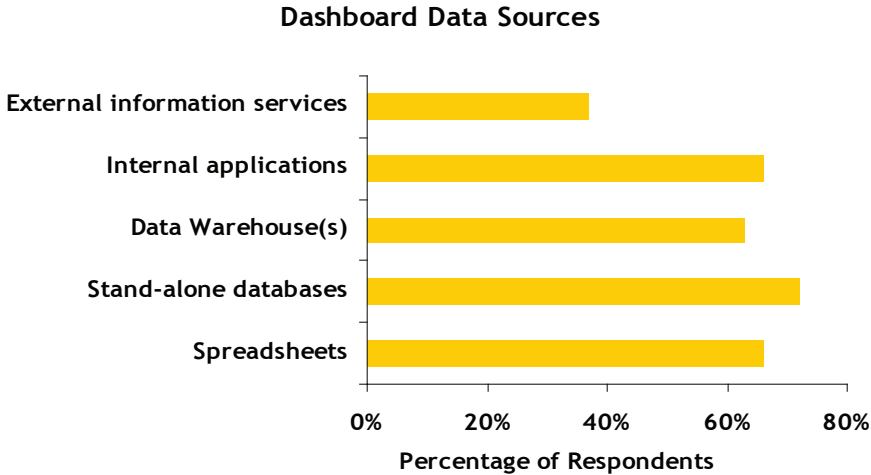


“Another key requirement is the ability to tailor dashboard views; 98% cited tailored dashboard views for different users...”

As corporations continue to search for ways to improve their performance, understanding and leveraging their corporate, customer and partner information becomes increasingly more important as well as more complex.

Companies want to analyze management and operational data as quickly as possible, using current information from multiple sources to increase their responsiveness to changing business conditions. This information is often located in a wide variety of data sources such as spreadsheets, stand-alone databases, data warehouses, internal applications, and external information services (Figure 8 on the following page). In fact, the results of the survey indicated that companies are typically integrating, on average, 6-10 data sources to build their dashboards.

Figure 8: Dashboard Data Comes From Multiple Sources

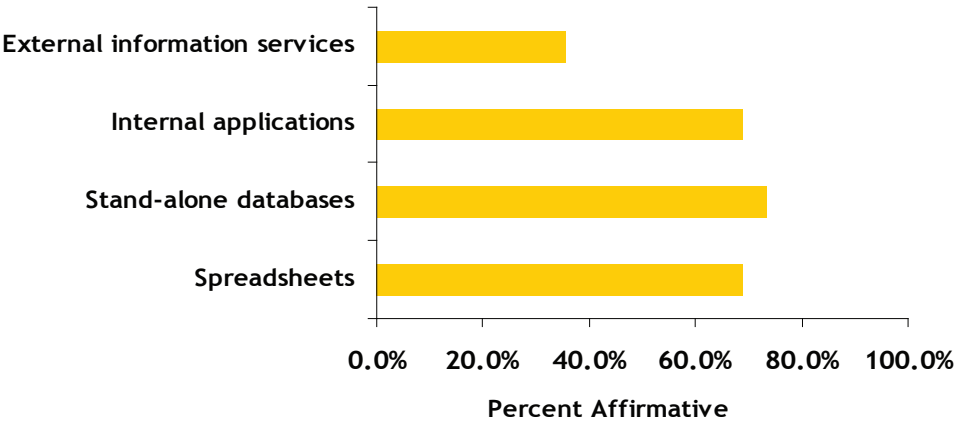


Source: Hurwitz & Associates

“...70% of the companies surveyed that have data warehouses in place also needed to access information from other data sources including spreadsheets, internal applications, and stand-alone databases for their dashboards.”

In fact, as shown in Figure 9 below, about 70% of the companies surveyed that have data warehouses in place also needed to access information from other data sources including spreadsheets, internal applications, and stand-alone databases for their dashboards.

Figure 9: Companies Utilizing Data Warehouses Also Use Other Data Sources



Source: Hurwitz & Associates



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Currently, many companies obtain this information by pulling data manually from their information sources, running ad hoc queries, and distributing multiple reports. Our survey showed that IT executives planning to implement dashboards felt that less than 50% of their business needs were being met by their current information dissemination methods.

Given these requirements, it is not surprising that, of those companies who have deployed a dashboard 83% are using a portal framework. For those planning to implement a dashboard, almost half of the respondents are planning to use a portal framework today and the other half would consider using it.

There are a number of reasons companies choose to deploy dashboards on a portal framework:

- Dashboards can leverage generic application capabilities provided by the portal framework, such as user access control, presentation management, personalization, content search, and application integration capabilities (for example, portlet-to-portal communication).
- A portal framework with personalization capabilities allows companies to customize the information displayed by their dashboard based on the particular requirements of individual users or departments.
- Dashboards need to present information from multiple sources; therefore, self-contained portal components (portlets) that can easily integrate with different data sources are ideal.

“Our survey showed that IT executives planning to implement dashboards felt that less than 50% of their business needs were being met by their current information dissemination methods.”

SUMMARY AND RECOMMENDATIONS

In a recent online survey of 113 IT executives, Hurwitz & Associates found that management's use of business dashboards in large companies is growing and is widespread across industries.

Almost 80% of those surveyed were responsible for recommending or approving dashboard purchases at their companies. They are using dashboards to manage multiple functions: executive, finance, sales, and HR. Importantly, 71% of companies in the survey are also using dashboards to communicate with customers and partners.

In our survey, IT Executives considering implementing dashboards reported that 50% or less of their business needs were being met by their current methods of disseminating information. Many companies are using manual methods of collecting and grouping data from non-integrated information sources so the data can be viewed and analyzed in one place. This process is cumbersome, time-consuming, and often leads to inaccurate results.

Based on the value dashboards are creating for current users, more than half of the IT executives surveyed are planning to add 500 or more additional business dashboard users within the next eighteen months. Dashboards provide a visualization value to information that improves management decision-making by enabling a more rapid response to changes in key performance indicators.

Of the IT executives surveyed, 95% said dashboards are a way to provide the consistency, reliability and accuracy necessary to improve decision-making. Most of the companies are integrating data from 6 or more different data sources. Management has benefited in many ways by using dashboards to aggregate the data coming from different sources and viewing the information in one place. The following benefits of dashboard usage were rated as moderate or significant by 80% of the executives:

- Faster time to market.
- Improved productivity.
- Improved profitability.
- Improved customer service.

“Of the IT executives surveyed, 95% said dashboards are a way to provide the consistency, reliability and accuracy necessary to improve decision-making.”



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- Competitive differentiation or advantage.

Corporate intellectual capital is created from the integration of multiple data sources and views tailored to different roles, geographies and functions. Dashboards tighten relationships with partners and customers as well as increase internal collaboration. The implementation of business dashboards often leads to improvements in operational efficiencies and improvements in business processes.

While the benefits of dashboards were significant, respondents did note a number of challenges. The top three challenges that companies faced when building dashboards included:

- Defining Key Performance Indicators.
- Accessing data from multiple data sources such as operational systems and spreadsheets.
- Tailoring different views by role, geography, department and other variations.

Additionally, survey respondents would like to build and implement dashboards faster, incorporate both historical and time sensitive information on their dashboards, and utilize data from more sources.

Companies are looking at portal frameworks as a way to address some of these issues. In fact, 83% of those respondents who had implemented a dashboard are using a portal framework. The portal framework enables modifications and changes to specific details without having to do extensive programming. The framework allows for customization across a large number of different users by ensuring consistency of critical information and the scaling necessary to meet changing corporate requirements. Specifically, portal frameworks provide the ability to:

- Tailor dashboard views.
- View historical and time sensitive data.
- Provide convenient and secure access.
- Take quick action and collaborate between constituents.

“To take advantage of the flexibility inherent to a portal framework, Hurwitz & Associates believes developers will need to make use of composite applications.”



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Although a portal framework becomes an excellent foundation to build on, dashboards may still provide only static information. To take advantage of the flexibility inherent to a portal framework, Hurwitz & Associates believes developers will need to make use of composite applications.

Composite applications link together the right parts of applications in the right way to initiate a new business practice without having to start from scratch. Composite applications are most important when organizations are focused on creating new business processes across different constituents. When a company needs to create a new process for doing business with partners, suppliers, customers, or employees, they need to be able to take the value they already have in their systems of record and use them differently.

Hurwitz & Associates believes dashboards enable management to be more proactive by understanding the complex relationships behind their organization's data and by viewing their data within the context of their business and across multiple applications. Composite applications can play an important role for companies who are integrating their business processes allowing them to become more flexible and adaptable. Composite applications in a portal framework are a smart choice for companies looking for the scale, flexibility and consistency needed to address changing business conditions.



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