Data Visualization
Market Landscape Report

Table of Contents

Table of Contents 2
Executive Summary 3
Overview and Introduction 4
Methodology and Survey Overview 5
General Assumptions 5
Understanding Dashboards and Data Visualization 5
Where Dashboards Fit Within Business Intelligences 6
Data Visualization Market Overview 7
- *Targeted Solutions – Industry and Department Specific* 8
- *Target Audience* 10
- *Delivery Model* 11
- *Vendor Licensing Model* 12
- *Technical Requirements* 13
- *Feature and Functionality Breakdown* 15

Vendor/data Visualization Category Overview 16
Common Dashboard Applications – Case Studies 19
Dundas Data Visualization and Techrigy – enabling visibility into social media applications 19
- *Company overview* 19
- *Business Problem* 19
- *Solution* 19
- *Challenges* 20
- *Recommendations and Lessons Learned* 20

AccuRev implements self-service dashboards using InetSoft 21
- *Company Overview* 21
- *Business problem* 21
- *Solution* 21
- *Challenges* 22
- *Recommendations and lessons learned* 22

EMC uses Klipfolio to increase sales visibility 23
- *Company overview* 23
- *Business problem* 23
- *Solution* 23
- *Challenges* 24
- *Recommendations and lessons learned* 24

Zyme integrates QlikView into their offering to increase value to customers 26
- *Company Background* 26
- *Business Problem* 26
- *Solution* 26
- *Challenges* 27
- *Recommendations and lessons learned* 27

Conclusion and Recommendations 28
Appendix 1 – Overview of Vendor Participants/Competitive Landscape 29
Author 34
Sponsors 34
Media Sponsor 34

Executive Summary

Dashboards are becoming one of the most valuable tools for organizations to gain visibility into how they are performing as well as help develop ways for increasing overall efficiencies. Whether as part of a larger business intelligence (BI) solution or as a standalone solution, organizations are looking at dashboards to help solve their business problems. Unfortunately, the ability to sift through solutions and understand the nuances of the data visualization industry is not always easy. This report aims to provide an overview of the data visualization market by identifying what dashboards are, the value they provide, what offerings are provided by vendors, and the considerations organizations should take into account when looking at solutions.

To collect this information, a survey of solution providers was performed to identify industry trends, features and functionality, positioning, etc. Overall, 26 vendors participated in the survey. These include Dundas Data Visualization, IBM, InetSoft, Information Builders, Klipfolio, PivotLink, Tableau Software, Visual Mining, and QlikTech. In addition, industry research and interviews were conducted to provide a broad view of the data visualization industry and the value dashboards provide to the organization. Vendors were broken out into categories to help identify the types of solutions they provide. These include analytical, operational, Microsoft specific, and business performance management. In general, vendors fall into multiple categories.

Twenty-eight percent of vendors provide horizontal solutions to their customers letting them customize dashboards. The most targeted vertical solution is manufacturing at 32%, with high tech a close second at 28%. Marketing and operations are the most broadly targeted departments within an organization at 44% and 40% respectively. Sales dashboards come in a close third place with 36% of vendors offering sales dashboard solutions. Business decision makers are the largest targeted market related to decision makers at 80%, with finance being the lowest targeted audience at just 44% of data visualization vendors.

With cloud computing and Software as a Service becoming an important delivery model within BI and the overall software industry, it is not surprising that 17% of vendors offer on-demand models and that 43% of vendors offer both on-premise or Software as a Service solutions. As this model becomes more widely adopted within the market, solution providers that do not currently provide hosted solutions will begin to do so, giving organizations more of a choice when looking at the type of deployment option they prefer.

With technical advancements, the ability to provide a wide range of features and functionality is no longer a key differentiation when evaluating solutions. Consequently, vendors have also expanded their support and licensing structures to create more flexible solutions for their customers. This means organizations have the upper hand when looking at the dashboard solutions that best meet their business requirements.

Overview and Introduction

With so many options available within the BI and data management industries, the ability to sift through products and solutions to understand the value proposition of disparate categories within BI is not always intuitive. Consequently, organizations may end up with solutions that do not fully meet their business requirements. Alternatively, organizations might not even know where to start when looking to enhance their performance. In addition, many publications and research reports created focus on expanding current user knowledge of the market and target organizations that have already adopted some form of business intelligence, limiting what is available for organizations in the beginning phases of BI adoption. This report takes a different approach by targeting companies seeking guidance when looking at dashboards and data visualization to help enhance their decision-making ability.

Dashboards let organizations gain insights into their business, monitor key performance metrics, and help visualize information in a way that is easier to quantify. By understanding the value of using dashboards as part of a larger BI project or as a way to manage and monitor performance, the ability to attain buy-in and to understand the overall value of dashboards to the business increases.

The purpose of this report is to help organizations understand:

- what dashboards are and how they are applied within organizations,
- how dashboards fit within the world of business intelligence,
- the business value of using dashboards,
- what types of solutions are available and who the players are, and
- how these solutions differ from one another on a high level.

Organizations will understand the business value of deploying dashboards. Case studies will provide practical examples of how dashboards are used in organizations, the business value gained through dashboard use, and the lessons that organizations have learned that can benefit other organizations evaluating solutions.

In general, two categories of organizations exist within the data visualization/dashboard market. The first consists of those that are using business intelligence within their organization and have a good understanding of how solutions work. The second is those interested in learning more and getting value out of a solution but do not have the time or resources to sift through the plethora of solutions or to understand the nuances between industry-standard terminology and how it relates to the various solutions available. Unfortunately, because of the industry focuses on the advanced audience, there are few resources available for those trying to get up to speed on the industry, to justify the value of investing in BI, and to identify what solutions are available and how they differ on a high level. This report assumes little previous knowledge to enable all organizations to get the benefits of identifying the various types of solutions and how organizations can benefit.

Methodology and Survey Overview

The information collection for the market landscape report occurred in three general ways:

1. A survey was distributed to vendors to identify where they see themselves fitting in the market, the high-level feature and functions they provide, their service offerings, what other technologies they integrate with, etc. The survey includes 26 questions that identify a vendor's target vertical markets, licensing structure, main competition and key differentiators. The overall goal of the survey is to identify where each vendor fits within the overall data visualization market, how they compare and contrast on a high-level based on category placement, and give organizations a general overview of what solutions are available.

2. Case studies and end-user interviews were conducted to identify how organizations are currently using dashboards, what challenges they have encountered and what they learned in the process.

3. Industry research was collected, including secondary sources of research such as utilizing current market resources, interviews about the data visualization industry, and understanding how the market is seen from vendor and industry experts perspectives.

General Assumptions

1. The vendors in this report are a subset of total vendors within the data visualization space. The only vendors represented are those that filled in the survey completely and were willing to showcase their solutions and answer additional questions.

2. The graphs and charts presented are based on a subset of survey results.

3. The information represented is up to date as of Q2 2009.

4. The overall information presented is meant to give a high-level view of the data visualization market and the types of offerings available. In-depth explanations regarding technology or licensing, professional services, and support are outside the scope of this document.

Understanding Dashboards and Data Visualization

Many definitions exist within a continuing debate of what true data visualization entails. This ranges from data visualization simply being a display of information towards being the analytical representation of data. Despite these debates and different definitions of what data visualization is, for the purposes of this report, data visualization and the use of dashboards is the visual representation of data, whether that data comes from a data warehouse, is streamed from operational systems or is stored and updated using in-memory capabilities. Some solutions discussed within this report offer only a connection to analytical data and provide the look and feel so that end users can drill through and analyze their requirements; other solutions enable organizations to perform in-depth analytics on top of the dashboarding and visualization components, and others still, offer dashboards as a subset of offerings within overall product suites.

Because organizations have diverse requirements, various vendors within multiple categories will be included to help give organizations the information they need to help with decision making in regards to the type of solution required. This range of solution representation enables organizations to choose the type of solution that best meets their business requirements and also understand the additional components that may be required. For instance, a visual dashboard that displays information is not the same as an analytical dashboard. The former may require a back-end analytical engine as opposed to the latter that is more likely to be standalone in terms of requiring other business intelligence components.

The general purpose of dashboards and applying data visualization techniques is to help decision makers access and identify the right information, that when combined, provides additional insight leading to more informed decisions. Whether identifying sales performance against set targets, employee performance, or problem resolution rates, the fact is that dashboards have the flexibility to monitor and manage an organization's every-day performance leading to better management and planning.

Where Dashboards Fit Within Business Intelligences

To understand the value dashboards bring to the organization, it is important to first identify where dashboards fit within the application of analytics within the organization. When simplified, business intelligence can be broken down into four distinct layers:

1. Data infrastructure – this can be considered the backbone of the system. In many cases this includes a data warehouse, or other database that can be used to hold information separately from the information housed in the organization's operational systems. The reason data is stored in a separate system is twofold. One, many organizations do not want to affect production system performance by running complicated reports and queries against operational data. And two, within a data warehouse, data is stored at various points in time, leading to the ability to identify and analyze trends-based data and identify underlying patterns that would otherwise remain undetected.

2. Data integration – activities within this category include taking data from one or various source systems and integrating that data into a data warehouse. In some cases, data is streamed directly into a reporting or front-end solution. However, for organizations looking to identify trends and use historical data to make forward-looking predictions, the use of a data warehouse to store this information becomes important. Data integration also includes activities such as data profiling, data quality and all of the extract transform and load (ETL) actions to make data ready to be transformed into valuable information.

3. Data analysis – this phase takes the data that lives inside a data warehouse and transforms it into actionable information that is seen on reports or on dashboards, scorecards and analytics tools. Analysis can include data mining or text mining to help uncover hidden patterns, algorithms used to report accurate sales values or virtually any other form of data combinations that can help increase overall visibility within the organization.

4. Data presentation – this is where data visualization fits within BI – on the top layer to help organizations present information in a way that is actionable. The goal of the presentation layer is to help decision makers understand where they stand regarding the targets they set, overall performance, etc.

Data Visualization Market Overview

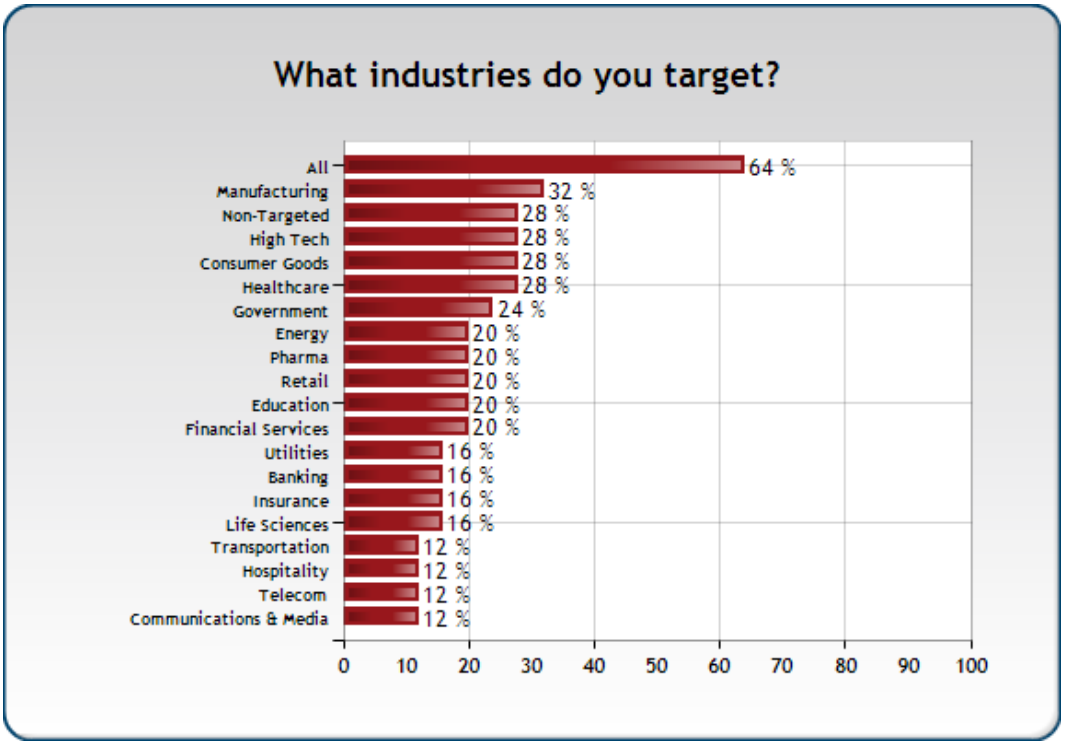
There is much debate over the intricacies of data visualization and dashboards. This includes design, delivery, metric development and any aspect included as part of their deployment. Consequently, it is not always easy to keep the discussion of a dashboard (its design and how it brings value to organizations) simple. For the purposes of this report, the definition of dashboards and data visualization will be contained within the role of dashboards and scorecards used as part of or as an extension of business intelligence applications. Essentially, organizations may use these solutions for multiple and varied purposes; the overall goal, however, remains gaining visibility into the overall performance of the organization and the transformation of data from being a roadblock to enabling decision making.

The goal of these applications is to visualize information so that data gathered can be better analyzed in a way that is easier to digest. For instance, reporting that a department has met 83% of its monthly sales target on the 15th of the month is less effective than showing a visual representation of a radial gauge with the arrow pointing at 4/5 of the way to 100% of the monthly target or amount. This example represents one of the many that, when combined with key performance metrics (KPIs), enable organizations to get more out of their data.

In the past, dashboards were generally deployed as a subset of a larger business intelligence solution. As technology advanced and as BI solutions become more flexible, dashboards have developed into their own niche market, with vendors offerings best-of-breed dashboard solutions to be used on top of current BI applications or alternatively on top of operational systems. This new and expanded approach allows organizations to get a daily or intra-daily view of how they are performing. Whether used as part of a larger business intelligence platform or independently, dashboard use is flexible and solutions can accommodate an individual organization's business needs.

Targeted Solutions – Industry and Department Specific

Dashboards now encompass more broad offerings including horizontal solutions that can be built and customized or those targeted towards specific business functions. In this category, offerings may include marketing campaign analysis, sales analysis or trending over time. Vendors generally offer solutions broken out over the following industries and departments.



To understand how vendors target their solutions towards specific vertical industries, it becomes important to understand the two ways industry can be differentiated:

1. Customer base, and
2. Packaged solution.

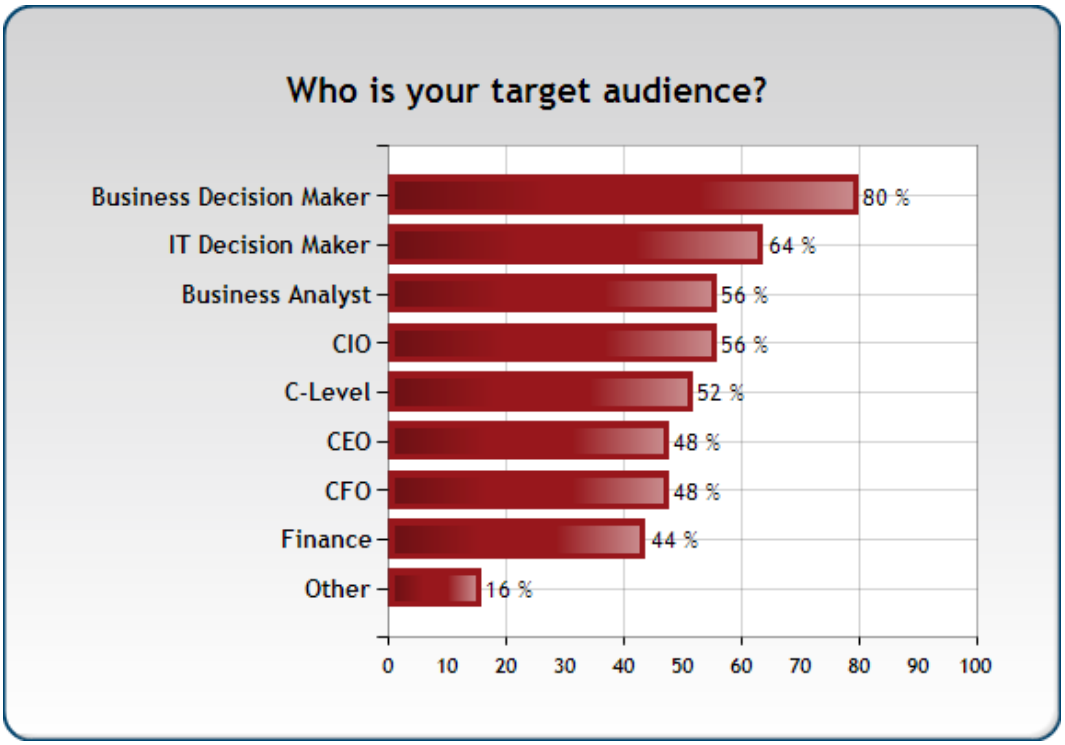
In many cases solution providers develop a customer based within a number of specific industries. This means they are well poised to understand the unique issues facing companies within those industries and they provide additional services to get the most value out of dashboard use. This expertise differs from vendors offering industry-specific packaged solutions. These vendors generally have large customer bases within one or numerous vertical markets and develop solutions that are pre-packaged with set metrics, business rules and functionality that enables customers to get more value out of these solutions more quickly. Even if these solutions do not provide 100% of what an organization requires, little customization is required to tweak the solution. Examples include healthcare (HIPAA compliance), communications, manufacturing, etc.

In addition to industry-based solutions, vendors develop departmental solutions as well. The premise is similar as that above – departmental or solutions offered targeting specific business units enable organizations to implement data visualization applications more quickly than having to spend time on customizations. Generally, this involves having metrics out of the box that match requirements within sales, marketing, operations, call centers, and the like. Out of the solutions available, marketing tops the list with 44% of vendors targeting marketing functions. Following close behind is operations at 40% and sales at 36%. Accounting, HR, and finance-oriented solutions are offered by 20% of respondents. In general, these solutions are not typical BI focuses, but as analytics and collaboration expands across the organization, these areas will also be increasingly applied within an organization's BI strategy.

Target Audience

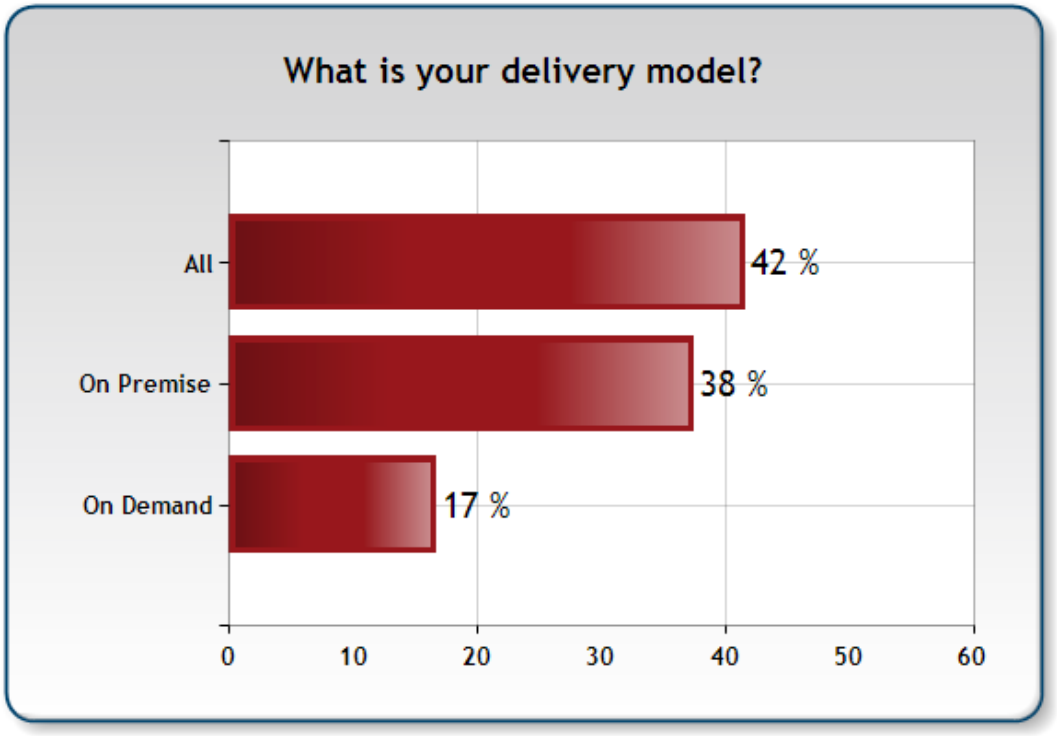
Aside from the type of solutions offered, many vendors target their solutions towards specific audiences within the organization. In some cases this means developing solutions for business analysts (or executives) and in other cases this means that marketing messages are targeted towards specific roles within the organization. In general, the trend of targeting roles within an organization is increasing and will continue to do so as dashboards become more intuitive and customizable at the end-user level.

At 80%, business decision makers are the most targeted with IT decision maker following close behind at 64%. Most decisions are made with collaboration between both groups. IT may implement and manage a solution, but the day-to-day users generally remain business decision makers or business analysts (at 56%). When looking at business analysts specifically, many solutions are targeted to address these roles within the organization because business analysts tend to focus on continuous business improvements.



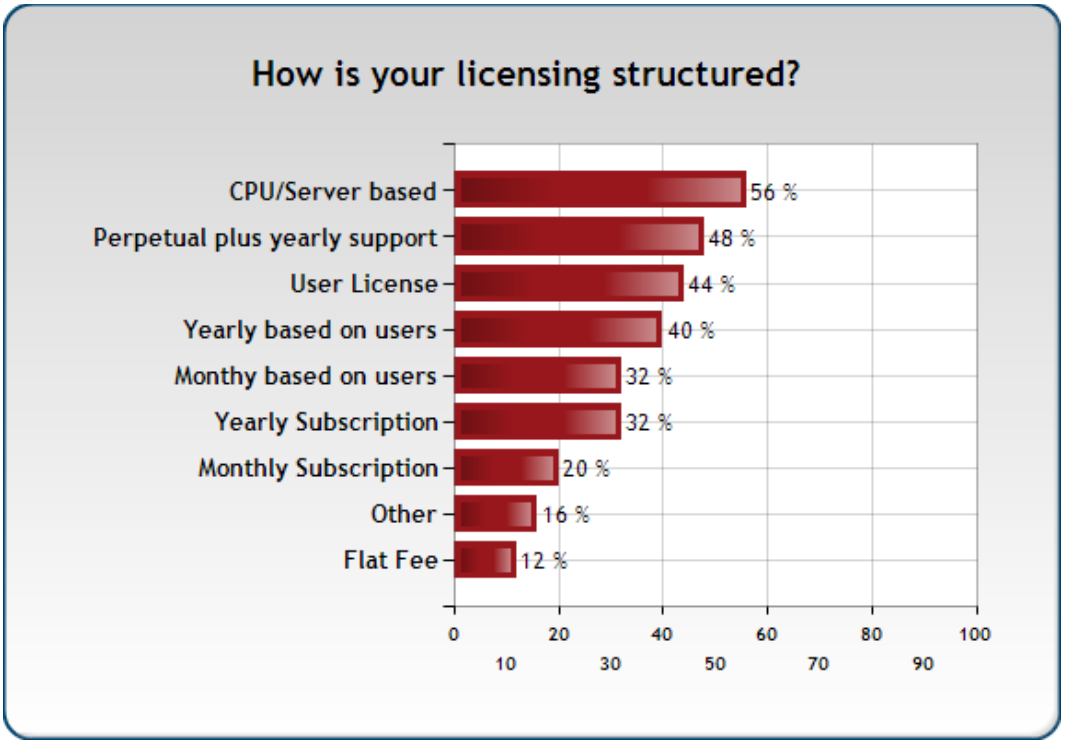
Delivery Model

The chart below identifies the number of vendors offering on-premise versus on-demand or Software as a Service solution delivery. Forty percent of vendors offer their solutions in house, whereas 17% of vendors provide their customers with a hosted services model. The remaining 43% offer both models. As Software as a Service and solutions in the cloud continue to gain momentum, more vendors may make their solutions available for both on-premise and on-demand deployments, giving organizations a broader range of options. For vendors offering only on-demand solutions, their customers are usually already familiar with the model by using other on-demand solutions such as Salesforce.com, or have their ERP, CRM, or HR solutions hosted.



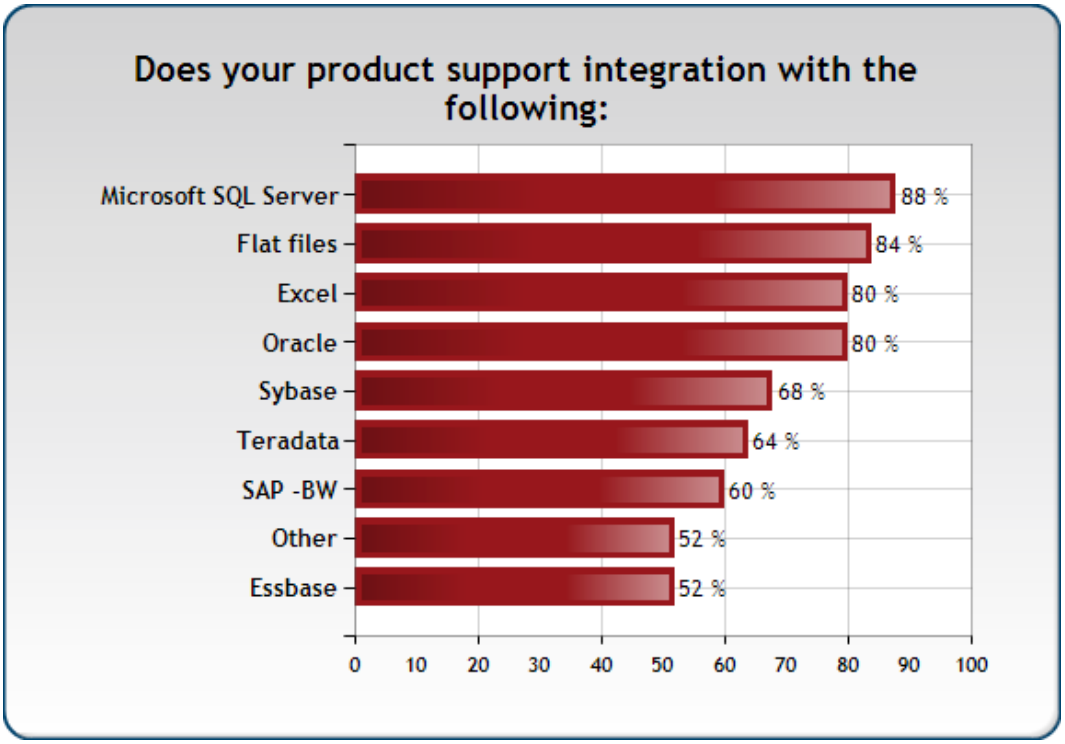
Vendor Licensing Model

The following graph identifies the licensing models offered by vendors. Because of the general flexibility within software delivery and deployment, licensing structures are also more broadly applied within organizations than they were in the past. This means that organizations can use the model that best meets their needs as opposed to having to conform to vendor offerings. The most common types of licensing are CPU/server-based at 56% and perpetual licensing with additional yearly support at 48%. Sixteen percent of vendors listed other in addition to the licensing structures identified. In these cases, the other category includes specific licensing for developers and concurrent users.



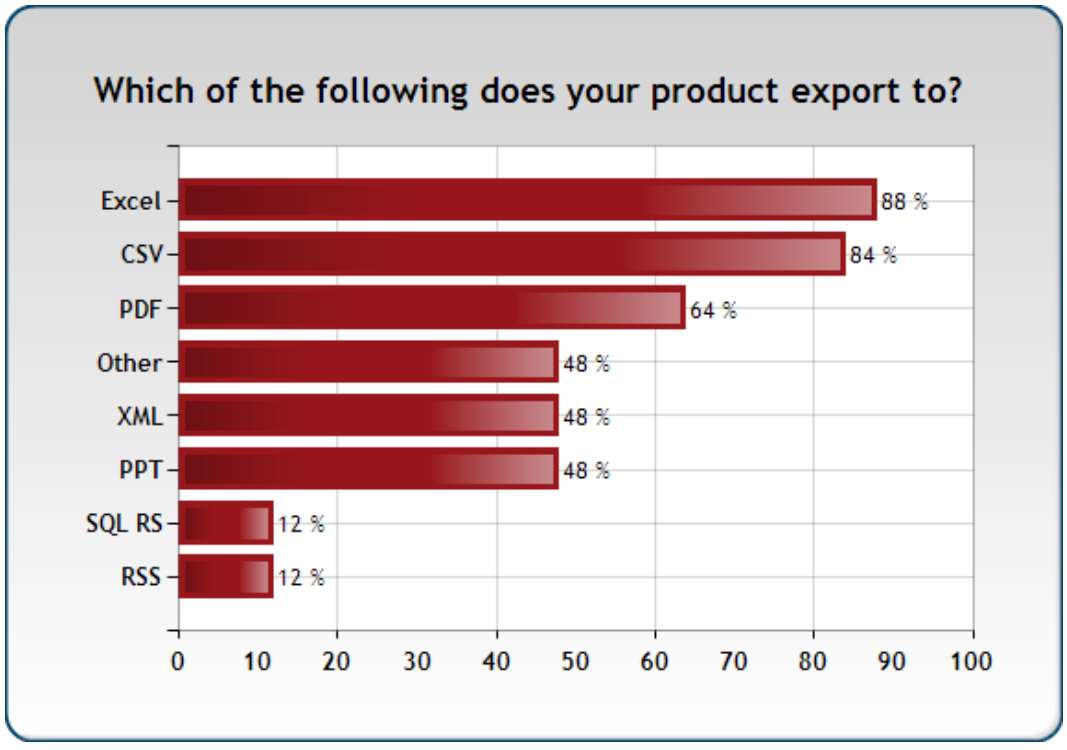
Technical Requirements

After looking at the types of solutions offered by vendors and factors affecting cost, such as licensing fees, organizations also look at integration and general features and functionality. One of the most important factors for many organizations is the time to it takes to implement a solution. The ability to integrate with an organization's internal data sources can affect the time it takes to implement a data visualization solution. The following graphs provide an overview of integration and vendor exporting capabilities.



The products supported by data visualization vendors most are Microsoft SQL Server at 88%, flat files at 84%, and tied for third place are Excel and Oracle at 80%. The Other category includes support for DB2, ODBC, JDBC, Web Services, map reduce, Salesforce.com and HTML tables. In general, most data visualization tools support integration with more than one type of data source to accommodate their customers who want to combine data from multiple operational sources. Certain vendors support only Microsoft environments, whereas others support multiple types of data.

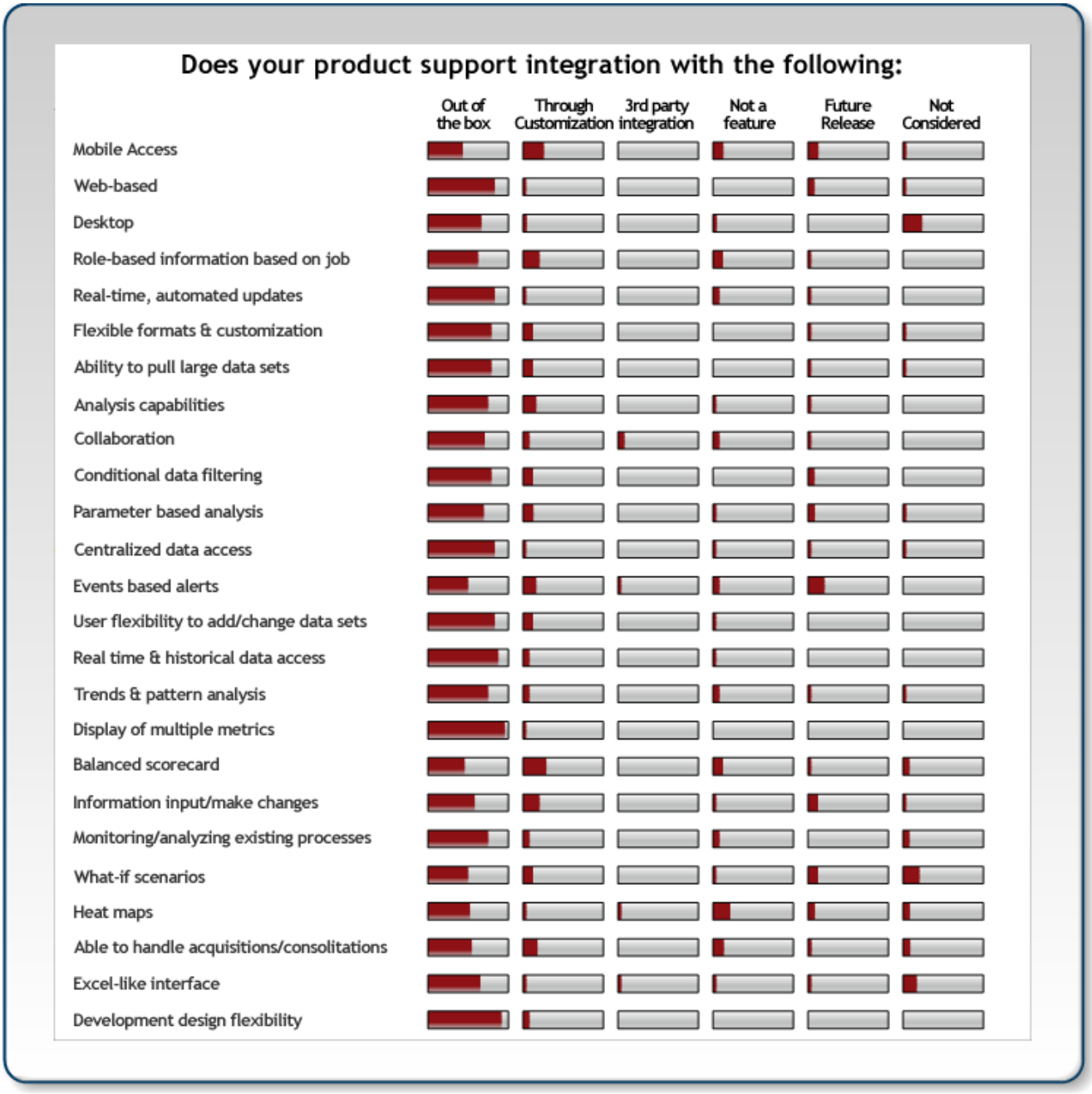
In addition to support, solutions import data from CSV files, Excel, RSS feeds, etc. as well as export data to allow decision makers to share information across the organization. The majority of supported exports are to Excel and CSV files at 88% and 84% respectively. Export to PDF is third at 64%. Sources such as RSS and XML are increasing in popularity as organizations expand their data analysis towards external and unstructured data sources. This expansion of supported exports becomes most obvious when looking at the fact that 48% of vendors export to non-traditional sources such as HTML, Microsoft Word, flat files, and images increasing the diversity and role of dashboard data beyond analytics.



Feature and Functionality Breakdown

With technological advancements, features and functionality are becoming less of a differentiation when looking at competitive solutions. Vendors are now required to provide value added services in order to differentiate themselves from their competitors. However, identifying what features are supported at a high level can help organizations understand where their requirements fit within the overall market and the number of vendors that support those features.

The following chart identifies 25 features and functions that organizations have identified as important factors when looking at data visualization solutions:



Vendor/data Visualization Category Overview

There are many options available for organizations looking to implement a dashboard. One way to break out what is available is to categorize solutions available based on the main premise of their offering. Although many vendors fit into multiple categories, this breakdown enables an organization looking for a dashboard solution to hone in on vendors that fit within the category desired:

Category	Description
Analytical	Offerings that include analytics as opposed to those that deliver data visualizations as a front end without the ability to use algorithms, etc. within the solution itself.
Operational	Real-time dashboards that are integrated into an organization's daily processes.
Microsoft specific	Solution offerings that are deployed within a Microsoft-only environment (targeted and interoperability).
SaaS/On-demand	Vendors that offer their data visualization services using a Software as a Service model.
Desktop	Dashboards that are deployed on the desktop vs. online or through some other channel.
Business Performance Management	Solutions that use visualization to tie into an organization's performance or that provide performance management software with targeted dashboard and/or scorecard offerings.
Charting	Vendors with a specific focus on charting capabilities.

The chart below identifies the categories in which vendors fit and are in no particular order.

	Analytical	Operational	Microsoft specific	SaaS/On-demand	Desktop	Business Performance Management	Charting
SAP							
Information Builders							
Lyzasoft, Inc.							
PivotLink Corp							
LogiXML							
Tableau Software							
Pentaho Corp.							
IBM							
KPIfix Inc							
QlikTech							
Strategy Companion							
Host Analytics							
Dundas Data Visualization							
VisualCalc							
Altosoft							
Visual Mining, Inc.							
BrightPoint Consulting Inc							
SiSense Ltd							
AnyChart							
PROPHIX Software							
Klipfolio Inc.							
Corda Technologies							
InetSoft Technology							
myDIALS Inc.							
Transpara Corporation							

In addition to identifying in which categories vendors fit, the graph below identifies the percentage of vendor revenue that is based on data visualization solutions versus other BI related solutions. In many cases, vendors within the business intelligence market offer separate dashboards and overall visualization solutions in addition to their analytics. Vendors with lower overall percentages generally offer a broader range of solutions, whereas those with higher percentages can be considered best of breed data visualization vendors.

What percentage of your overall revenue is based on your data visualization products?	
SAP	5
Information Builders	5
InetSoft Technology	5
IBM	5
BrightPoint Consulting Inc LogiXML	5
PROPHIX Software Tableau Software	15
Pentaho Corp.	25
Host Analytics	45
myDIALS Inc.	45
Altosoft	55
VisualCalc	65
Dundas Data Visualization	65
Klipfolio	75
Strategy Companion	75
LogiXML	75
KPIfix Inc	75
Visual Mining, Inc.	85
Transpara Corporation	85
Corda Technologies	85
Tableau Software	95
PivotLink Corp	95
AnyChart	95
SiSense Ltd	100
QlikTech	100
Lyzasoft, Inc.	100

Common Dashboard Applications – Case Studies

Dundas Data Visualization and Techrigy – enabling visibility into social media applications

Company overview

Techrigy offers SM2, a software solution designed for PR and Marketing Agencies that enables them to monitor and measure social media. SM2 provides visibility into social media outlets by identifying factors such as the demographics of who is talking online, what they are saying (i.e. sentiment analysis), how popular they are, and where they are present.

Business Problem

SM2 helps marketers look at social media and what is happening online. Because of the interactive nature of the software, marketers want to visually understand what is happening in social media by identifying and trending different brands. Therefore, SM2 required the functionality that would enable customers to graph and chart what is happening online instead of only providing numerical analysis, to let customers identify the number of brand mentions over a period of time within social media channels. This information can be flagged by marketers to identifythe disparity between mentions at the beginning of a marketing campaign and at the end of that campaign. In addition, Techrigy is concerned with staying ahead of the curve, so they wanted to develop an easy way for customers to access the more than 1.1 billion pieces of this type of information stored within their database. The key business issue became how to enable customers to analyze and take advantage of business intelligence functionality to help them make better marketing decisions.

Solution

To select the best OEM solution for SM2, Techrigy conducted a traditional selection process by using several free trials available online and matching product features to the needs of the solution. Techrigy looked at what features matched their criteria in addition to what documentation was provided with the solution. Product documentation and its quality was one of the most important factors because of the integration required with SM2. Andrew Newman, founder and president believes that even if"a solution may have all of the capabilities,if it is not documented well enough and if it is not supported then those features are useless. So looking at the documentation and the samples were important to make sure there was enough to support and implement their solution to make sure it could do what I wanted."

Dundas Data Visualization met these criteria by providing samples and strong documentation, as well as the required features, appealing graphs, and an ASP.NET control. Newman feels "that you usually get what you pay for and although other vendors were evaluated and offered similar features and functionality, they didn't provide the documentation and guidance we were looking for – or the examples and samples that go with it." Because Dundas gives general source code for 80 different ways to use their graphs, the ability to develop a customized solution was straightforward and helped achieve overall buy-in due to the ease of use. In addition, the look and feel of the product, design flexibility, and overall control of the solution gave the product evaluators a lot to work with.

Challenges

The main challenges for Techrigy were the use of Microsoft Silverlight, end-user training, and the use of AJAX. Techrigy wanted to use Silverlight to help enhance the overall functionality of the product. As Dundas was working on the beta version of integrating Silverlight into their product capabilities, Techrigy was unable to initially use these capabilities within SM2. Therefore, having to wait for the added functionality from Dundas created a challenge based on the extended time required to be able to improve their own solution offering.

Techrigy had trouble identifying which product version of Dundas would be implemented. The challenge was identifying the version that would best meet the needs of the company in order to provide the best end product for customers. Consequently, developing an approach to overall training took longer than expected because of the dependency on version choice.

Choosing ASP.NET over AJAX created a challenge as to which choice was most beneficial. In terms of looking at future development, the question of whether building AJAX tools would be beneficial is offset by the fact that AJAX can be very complex. In addition, by building solutions using ASP.NET, the question of whether it is possible to rebuild using AJAX creates a general challenge. Techrigy was required to weigh the benefits of overall product development with available technology. With SM2 being focused on social media analysis, the ability to offer customers a forward looking approach to data analysis while leveraging content on the Web remains a key strength and overall challenge.

Recommendations and Lessons Learned

Techrigy knew their project scope and developed specific goals surrounding Dundas functionality and how they were going to use the solution within their own product offering. Because of Dundas' ease of use, the development team felt that they could develop and continuously improve upon their offerings in a simple way. Even though making sure that data doesn't time out and that large sets of data coming from the database are denormalized first, the ability to work around challenges enables Techrigy to continue to enhance SM2 for their customers. In some cases, it is not the expansion of a BI or dashboarding tool that offers the most value, but the ability to constantly improve upon the design and interactive features being provided to customers.

AccuRev implements self-service dashboards using InetSoft

Company overview

AccuRev is a software vendor focused on optimizing and automating the software development process for organizations challenged with today's highly evolving geographically distributed, parallel and agile software development environments. More than 500 organizations around the world rely on AccuRev software to develop, release and maintain their mission critical applications. AccuRev eliminates the need for time consuming, expensive, and error-prone manual processes within an organization.

Business Problem

With sales that involve large dollar amounts and include 20 or more people, it becomes important to identify effective marketing campaigns and how the actual buying cycle works. As avid Salesforce.com users for five years, John Wall, Marketing Programs Manager and his team, were running many reports simultaneously to attempt to figure out how things work related to the success of marketing campaigns and the overall sales process. According to Wall, "it came to a point where I was probably spending more than 20 hours a quarter generating reports and extracting data and we really wanted to find a tool that would do that a little bit better and would carve a lot of the time out of getting those reports generated."

Solution

While attending Dreamforce, a three-day Salesforce.com conference focusing on cloud computing, John Wall used the exhibit hall as a catalyst to his search for a business intelligence solution. While visiting the InetSoft booth, Wall saw the power of the tool right away. " InetSoft had some bubble charts and they build those on the fly. So that grabbed me right away because bubble charts were part of the dashboard I was using in Salesforce. And the other thing is that a lot of InetSoft is self-service – users get trained on the tool and then are free to run the tool independently. In addition, we wanted to pay a flat expense out the door." Consequently InetSoft met all of AccuRev's key criteria.

AccuRev selected InetSoft and uses the solution to generate interactive reports and dashboards that steer their marketing strategy. Dashboards are used to identify which marketing campaigns are effective so that marketing budget can be allocated to the most beneficial programs. For instance, because these campaigns and programs touch many people in prospective organizations, yet signing a contract only occurs with one person, these dashboards allow Wall to provide a broad view of campaigns across client and prospect bases enabling AccuRev to drop marketing campaigns that aren't effective after a specific period of time. As use of InetSoft becomes more mature, the use of dashboards has expanded towards looking into the quality of individual campaigns and into specific vendors to look at the sources of leads that AccuRev buys or gets through events to compare those across the board and identify overall performance.

In addition to ease of use, generating buy-in was straight-forward because of the decreased number of hours spent building reports and the increased ability to get more value out of the data coming out of Salesforce. In addition, the low price point enabled AccuRev to implement InetSoft without having to get permission from a committee or the impression of being a large expense.

Challenges

AccuRev's interaction with InetSoft was fairly seamless, and challenges that did exist were related to data issues and technical savvy.

No matter what the circumstance, dashboard initiatives will bring data issues to the forefront. John Wall remembers that "when we built it we said: let's just capture the data and worry about the rest of it later. Now we are looking at the data and now we're seeing that specific fields need to be pick lists, others need to be required fields, etc. so it generates more work as far as the whole procedure." In general, the quality of data directly relates to the success of a dashboard and the ability to analyze data. This means that organizations are required to ensure the integrity, validity, and completeness of their data in order to get the most value out of their analysis capabilities.

Even though InetSoft is easy to install, it requires database analysis skills to understand how features such as joins work. With Salesforce, any salesperson can figure out what to do because of the standard Web-based user interface. However, it is not possible to develop the complex dashboard required. Consequently, transferring to a more robust but multifaceted solution required a bit of a learning curve.

Recommendations and lessons learned

The general implementation and running of InetSoft was a smooth transition from using Salesforce dashboards and reports. InetSoft has enabled AccuRev to get a more in-depth view of marketing and sales operations. However, looking back on the implementation, attending training may have quickened the time to value of the overall solution.

For Salesforce users, it can be beneficial to deploy a solution on top of Salesforce to get more value out of the organization's data. For example, with Salesforce reports are static, whereas with InetSoft, checkboxes and sliders are used to update and change data dynamically. This enables more data exploration and what-if analyses intuitively. In general, best of breed dashboard solutions can provide organizations with more insight than using analytics within a CRM or ERP solution.

The choice to attend end user training in the beginning of an implementation is one that many organizations face. Reflecting back, John Wall feels that, "there was always the question of whether it would have been better to learn more about database analysis before playing with the tool, because had to learn things on the fly. For instance, the fifth and sixth iterations of the reports do not look anything like the first rounds." However, even though initial training would have lowered the learning curve, Wall is still satisfied with the advancements made since first implementing InetSoft.

EMC uses Klipfolio to increase sales visibility

Company overview

EMC is a software solutions company that helps private and public-sector customers worldwide make the best use of their information assets. They work with clients of all sizes – from start-ups to Fortune 500 companies – to design, build and manage flexible, scalable, secure information architectures that lessen risk and reduce the cost of managing valuable information resources.

Business Problem

Like sales people everywhere, the managers of EMC's EMEA Sales Operations are under constant pressure to increase sales and maintain a competitive edge. But with administrators providing sales data to some sales managers, and other managers accessing it for themselves, the sales team wasn't getting a single picture of their operations based on timely information that they could easily analyze and share.

To help them perform better, EMC needed to increase the visibility of their sales data, so that personnel could identify sales performance and progress toward goals on a continual basis.

Solution

Initially, Eoin Haberlin, part of EMEA Sales Operations within EMC, heard about Klipfolio's desktop dashboard and decided to implement a trial version. The initial trial was successful and the idea of a desktop dashboard gained momentum within the organization. Even so, EMC decided to conduct a general software evaluation to make sure that they were choosing the right solution for their organization. "Even though we were pleased with Klipfolio and the additional enhancements we had to make such as adding drill through capabilities," said Haberlin, "we wanted to satisfy ourselves by making sure that this was the premium solution that would most suit our business requirements."

EMC conducted a general evaluation to see if other solutions could better meet their needs, which included a proof of concept to help attain buy-in for the overall process. Even though the use of a desktop dashboard was not an initial requirement, EMC began to see the advantage of its use and felt that Klipfolio could best meet its needs. Some of these benefitsincluded easy to consume information and the ability to drive business processes when plugged into other applications (i.e. Salesforce.com), thereby increasing the effectiveness of EMC's CRM investment.

Although Klipfolio has not changed the way business is done within EMEA Sales Operations, itallows individuals to become more valuable to the organization because they spend less time accessing information. Information is available more readily, enabling end users to highlight daily issues and identify problems more quickly to enable a more proactive approach to doing business. This allows the EMEA Sales Operations group to constantly expand their dashboard use – from operations towards sales management, and the expansion towards additional sales regions.

Challenges

In any implementation, challenges exist. At EMC, part of the challenge was internal rather than with Klipfolio's solution. The wide diversity of employees and job functions at EMC meant it took time to get buy-in from the solution's intended users. Personnel weren't used to having constant access to up-to-date information. As a result, and despite the obvious advantages of this kind of data access, it led to some initial resistance and slow user adoption. Adoption was also hindered because users were initially unsure of the accuracy of the information Klipfolio provided. Once they realized the advantages of the solution, and the quality of the data it provided, adoption increased, and employees began to use their desktop dashboards regularly.

There were a few functionality limitations, including the kind of drill-through capabilities EMC wanted. To address this and other feature-based issues, EMC commissioned Klipfolio to enhance their solution, or found workarounds.

Recommendations and lessons learned

Recommendations include:

- not underestimating the importance of working with the solution provider to help customize the application,
- identifying features and functions that might not be used initially but will benefit the company as solution use expands, and
- involving stakeholders to enhance end user buy-in.

The fact that a particular vendor does not possess each feature desired by an organization should not stop the organization from considering that vendor, providing the potential to integrate these features exist through customization. In general, a perfect solution does not exist. Organizations should weigh the importance of what is available out of the box including additional support and services, with additional expenses they may incur when customizing solutions. If the benefits outweigh the extra time and cost associated with making specific changes, then it is probably still beneficial to take advantage of the preferred offering, even though the time to fully implement will increase.

In addition, EMC felt that Klipfolio's ability to query data directly as well as additional features that Klipfolio is piloting (e.g. interfacing with Salesforce.com) are beneficial even though the company is not currently taking advantage of these offerings. However, the ability to integrate them into future use remains appealing. In many cases, organizations do not take advantage of every feature or benefit offered with a product. Over time, when solutions expand within the organization, the benefits of these features may become a main ingredient of future use and should be kept in mind when looking towards future and expanded use.

EMC believes that had they enhanced their communication in advance to get buy-in and provided rationale and justifications for the new solution, end user adoption would have occurred more quickly. EoinHaberlin feels that, "with a new tool, it is important to be proactive with getting feedback and enhancing communication to get adoption. This includes when sending out information to identify the value of the solution and to alleviate concerns." Overall, organizations are required to understand that buy-in occurs at both management and end user levels and requires both sets of stakeholders to be involved in the process.

Zyme integrates QlikView into their offering to increase value to customers

Company Background

Zyme provides channel data integrity services for global technology companies who sell through indirect channels. Zyme processes and validates millions of private POS and inventory transactions each week from nearly 2000 distribution and retail channel partners in 175 countries, on behalf of leading technology companies. Zyme supports their customers by verifying channel sales and inventory data for mission critical business processes like revenue recognition, SOX compliance, incentive and rebate payments, sales commissioning, and supply chain planning. Theyoffer their services using a Service-ON-Software model that combines a best-in-class channel data processing software platform with domain-deep analyst teams.

Business Problem

Zyme's initial service model was to provide data back to their customers allowing customers to populate their own BI systems. After using this model for a year or two, Zyme's customers began see that the data could be used more broadly to develop additional insights into channel activity and requested more in-depth analyses. Because of the complexity of developing these insights in-house, several customers made requests for additional analyses within Zyme's systems and data warehouses. Such requests gave Zyme an incentive to embark upon a selection process to add a BI platform within their overall service offerings to increase the value offered to their clients.

Solution

Zyme's goal was to give clients Web-based access to very large volumes of data and related analyses in a timely fashion within an easy to use environment. Being a services company means that they had to accomplish this using a seamless interface that would not require additional training to teach clients how to use the new tools. Keeping this in mind, Zyme evaluated the major BI players, installed several trial versions of software offerings, and sat through a number of sales presentations. Because of a self-imposed deadline the overall decision to implement QlikView was made very quickly.

The choice to implement QlikView was easy for the decision making body. Once a trial version of the software had been downloaded, the evaluation team was able to get value out of the software within days. Because the speed of implementation was very important, Zyme felt the quick implementation time could translate into a ready to deploy and easy to customize dashboard that clients could get use of quickly and easily. In addition, QlikView scaled to the large data sets being collected from customers. With no training required, Web based access, and easy development of reports and graphs that clients could easily drill through; QlikView met the requirements defined by Zyme.

Zyme developed a series of dashboards to correspond to their service offerings and types of information provided to their clients. These dashboards are now part of varied services offered to customers. Because the dashboards are designed and customized by Zyme and provided as a service clients no longer need to develop their own front-end applications. For customers that require additional customizations, Zyme can spend the time to tweak a system to make it match a company's product hierarchy, etc. or to develop completely different dashboards as part of a separate service. Currently, about 70% of Zyme customers use dashboards as part of their service.

Challenges

Challenges faced by organizations embedding technology into their current product or solution offerings may differ from those implementing BI internally. For Zyme this was the case when trying to attain buy-in from customers based on the use of an extra BI solution as well as perceived security issues because of the hosted delivery model.

Attaining internal buy-in was not a problem because of the size of Zyme's organization and the perceived immediate value of selecting QlikView. When dealing with customers, however, attaining buy-in became a challenge. In many cases, IT departments are involved in the overall process due to the management of any solution that will be brought into the organization. Generally, IT department do not want to manage another BI solution. Therefore, Zyme works with IT departments by advising them that they can use the tools that best meet their needs, and that until they get the information up and running internally using their existing BI solution, they can use the dashboards provided by Zyme. In addition, Zyme offers dashboard subscriptions on a monthly basis to expand client options.

Because Zyme provides its services in a hosted environment and the sensitive nature of the data delivered across the Internet, Zyme has strict information security policies. Consequently, some challenges existed to make sure organizations' firewalls were set up correctly and that the appropriate access and security was set up. In some cases, this meant engaging security groups within IT, which required more time and effort than if the solution wouldn't have been offered as a hosted solution.

Recommendations and lessons learned

As with most implementations, it becomes important to consider ease of use for end users. When developing a solution for external customers, the ease of development and expertise regarding the intricacies of the solution is best accomplished through training. Initially, Zyme used QlikView for the first eight months to dump data into the tool and create some drill throughs. At this point, Zyme took advantage of QlikView training to help accelerate their in-house expertise of the solution. As the use of QlikView became more mature, the embedded solution included metrics and getting deeper insights into the data by using it to identify key trends, etc. Zyme can now implement sophisticated business rules easily within the QlikView environment. This maturity would have occurred more quickly had Zyme taken advantage of QlikView's training earlier on in the process.

Finally, BI solutions are meant to be interactive and help organizations gain deeper insights into their data. In some cases, customers requested access to a general reporting solution to provide daily glimpses into performance. As QlikView is not designed to deliver daily static reports, this request was not easily granted. Therefore, it becomes essential to understand the purpose and functionality of a solution to identify its strengths and capabilities as well as features that are external to the overall scope of the solution.

Conclusion and Recommendations

Choosing a data visualization solution is no easy task. Vendors offer products that include dashboards, analytics, and overall business intelligence suites. Selecting the right solution for the organization can mean the difference between a successful project or the inability to meet project expectations.

Aspects to consider beyond features and functionality include targeted departmental or vertical solutions, licensing structure, time to implement and supported technology. Although there is no one-size-fits-all approach to data visualization and dashboard deployments, organizations can identify the solution that most fits their requirements by identifying the business problem they are looking to solve and by matching their requirements to vendor solutions and value added services. Additional considerations for organizations include:

1. The data visualization category – for organizations that want operational dashboards or information streamed in real time looking at vendors who offer operational dashboards are the best fit as a starting point. Not all organizations require real-time information or analytics capabilities. Knowing the requirements that are essential for the organization will help limit the amount of work involved in the evaluation process.

2. Best-of-breed versus broader solution – for organizations looking at dashboards for the first time or looking to expand their current applications within the organization, it becomes important to look at whether best-of-breed solutions will meet the growing needs of the organization. For organizations that choose to implement various components or use dashboards based on operational data stores, best-of-breed solutions may offer the best solution. For organizations looking to expand towards a full business intelligence solution, it may be more beneficial to evaluate solutions based on their ability to meet a broader range of BI functionality as well.

3. Integration – in addition to time to implement, organizations should understand their integration requirements and select vendors that have plug-ins to the organization's current IT infrastructure. Otherwise, integration complications can extend an implementation needlessly. This includes identifying future requirements to enable dashboard use within the organization to expand as the organization's requirements expand.

Appendix 1 – Overview of Vendor Participants/Competitive Landscape

The following chart provides an overview of the vendors included in the survey. These do not represent all vendors in the data visualization market but offer general insights into the wide variety of offerings and types of solutions available within the data visualization market. Vendors are listed in alphabetical order.

Vendor	Data Visualization category/details
Altosoft Altosoft provides business intelligence while integrating business process optimization and collaboration. Their business process state engine enables organizations to use process monitoring and analysis within their dashboard environment. In addition, their SharePoint integration and MS Office integration pack lets customers use Altosoft within a collaborative portal environment. Altosoft products include separate modules for reporting, dashboards, analysis and incident management	Delivery: on premise Mobile: through customization Alerting: desktop popup, Email, SMS, inline Export: Excel, PDF, CSV, PPT, XML Balanced Scorecard: yes Differentiator: Business process state engine for process intelligence
AnyChart AnyChart is an Adobe Flash-based solution that lets customers create their own charts, dashboards, reports and general visualizations. In addition, dashboards can be deployed both online and on the desktop creating an overall flexible environment. Following a Software as a Service licensing model, organizations can subscribe to AnyChart on a yearly basis, or get developer licenses. In addition, AnyChart offers a version of their solution for SharePoint, enabling organizations to create visualizations and dashboards that can be used in a collaborative environment.	Delivery: on-demand, on premise Mobile: through customization Alerting: email Export: PDF, images Balanced Scorecard: through customization Differentiator: cross-platform solution
Corda Technologies Corda offers best of breed data visualization solutions focusing on performance dashboards. Their main solution CenterView provides dashboards with the ability to collect data from multiple data sources, through the use of their patented product DataFunnel, and present it over the Web or via mobile applications. Corda also offers customers a series of server-based applications can be used to create charts, visualizations, and geographic mapping. Corda Builder, their design tool, in addition to the extra professional services and consulting they offer, gives them the ability to cater to organizations that want a self-service model as well as those that require extra help.	Delivery: on-demand, on premise Mobile: yes Alerting: desktop popup, email, PDF Export: Excel, PDF, CSV, PPT, XML Balanced Scorecard: yes Differentiator: DataFunnel, patented data integration within overall solution

Vendor	Data Visualization category/details
Dundas Data Visualization Dundas offers data visualization solutions for .NET, SQL Server Reporting Services and SharePoint. Dundas provides separate products to enable the development of charts, key performance indicator (KPI) analysis, general dashboards and scorecards, and geographic data analysis. Dundas also provides consulting services to complement their software offerings so that organizations that do not want to build solutions in-house can use Dundas expertise.	Delivery: on premise Mobile: through customization Alerting: developer defined Export: Excel, CSV, PPT, RSS, XML, Microsoft Reporting Services Balanced Scorecard: through customization Differentiator: highly customizable
Host Analytics Host Analytics is a Software as a Service performance management solution. Their dashboard and scorecard solutions target finance departments to help with budgeting, forecasting, and consolidation requirements. Host Analytics offers several modules based on the types of performance management desired, and offers licensing models for small, mid-sized and enterprise organizations.	Delivery: on-demand Mobile: no Alerting: desktop popup, email Export: Excel, PDF, CSV Balanced Scorecard: yes Differentiator: Ability to attach high level action plans to KPIs/groups of KPIs that impact the budget
IBM IBM Cognos Software is a full business intelligence and performance management suite. Dashboards and data visualization provide the front end of a much larger solution suite that spans across multiple departments and vertical industries. IBM offers a broader range of hardware and business software with Cognos providing the intelligence layer of the overall IBM stack.	Delivery: on premise, on-demand Mobile: yes Alerting: email, SMS, inline, web portal based events Export: Excel, PDF, CSV, PPT, RSS, XML, HTML Balanced Scorecard: yes Differentiator: Access to both structured and unstructured data; support of multi data sources simultaneously
InetSoft InetSoft offers business intelligence features and functionality using high-level data visualization and reporting functionality to bring analysis to decision makers. Their goal of offering customers a self-service model with the ability to include data mashups within their dashboards gives organizations the opportunity to include a variety of information that extends beyond the delivery of key performance indicators.	Delivery: on-demand, on premise Mobile: not a current consideration Alerting: email Export: Excel, PDF, CSV, PPT, DOC Balanced Scorecard: yes Differentiator: end- user defined mashups
Information Builders Information Builders is a business intelligence vendor with iWay Software representing the integration components of the overall suite. WebFOCUS is based on the premise of business intelligence for the masses by providing reports and visualizations that are widely deployed within the organization, moving BI away from being a back office or super-user tool towards providing value to all decision makers within the organization.	Delivery: on-demand, on premise Mobile: yes Alerting: email, SMS Export: Excel, PDF, CSV, PPT, XML, DOC, Flash, RTF, etc. Balanced Scorecard: yes Differentiator: scalability and breadth of data access

Vendor	Data Visualization category/details
Klipfolio Inc. Klipfolio provides desktop dashboards to customer within IT/helpdesk, sales and marketing, operations and internal communications. By being visible on the customer's desktop, Klipfolio feels that they have a competitive advantage due to the relative ease in which information is accessed by constantly being visible. Consequently, desktop dashboards offer an alternative to their Web-based counterparts by taking a portion of desktop screen real estate to deliver constant updates to decision makers within the organization.	Delivery: on-premise Mobile: future release Alerting: desktop popup , inline, audio Export: Excel, CSV, RSS, XML, text files Balanced Scorecard: through customization Differentiator: key metrics always visible on the desktop
KPIfix KPIfix bases its product on an on-demand balanced scorecard offering targeted to small and mid-sized organizations looking for an easy way to achieve their performance management goals. End users enter their information into the solution, which acts as a standalone dashboard application to manage performance based on financial, customer, internal processes, and learning and growth perspectives.	Delivery: on demand Mobile: yes Alerting: user specific messages shown at login Export: PDF in future release Balanced Scorecard: yes Differentiator: Standalone Web based system
LogiXML LogiXML offers business intelligence solutions in the form of three products: Logi Info for developers, Logi Ad Hoc reporting for end users, and Logi 9 the full BI suite. Solutions can be designed and deployed online creating a quick time to implement. Because solutions are available that target both developers and business users, solutions are transferable within the organization.	Delivery: on demand, on premise Mobile: through customization Alerting: email, SMS Export: Excel, CSV, PPT, RSS, XML Balanced Scorecard: through customization Differentiator: Simple to start – Super element concept
Lyzasoft Lyzasoft is a desktop analytics and data visualization vendor that targets solutions towards an organization's business analysts. This role-based solution enables business analysts to work through problems using the same logic they would using rational problem solving techniques and enabling them to change their analysis based on how people think through solutions.	Delivery: on-premise Mobile: future release Alerting: email – future release Export: Excel, PDF, CSV, images, flat files Balanced Scorecard: no Differentiator: collaboration tools and step by step workflow
myDIALS myDIALS is an on-demand dashboard solution that focuses on interactive visual analysis. myDIALS enables users to perform value stream analysis and integrate their processes within their dashboard environment. Also, by offering dashboards as a service, implementation involves turning the solution on without the involvement of an internal IT staff.	Delivery: on-demand Mobile: through customization Alerting: email, dashboard KPI alerts Export: Excel, XML Balanced Scorecard: through customization Differentiator: interactive visual analysis

Vendor	Data Visualization category/details
Pentaho Pentaho is a commercial open source BI solution that offers full BI capabilities including reporting, data integration, analytics, dashboards, etc. Their wide range of professional services in addition to their open source version of BI allows Pentaho to provide customers with a broad range of professional services that complement their product offerings.	Delivery: on premise, cloud based deployment Mobile: yes Alerting: email, Web-based dashboard alerts Export: Excel, PDF, CSV, HTML, Rich Text Balanced Scorecard: through customization Differentiator: scalable architecture, simplicity of use
PivotLink Prophix is a business performance management vendor with dashboards embedded into their product offerings. Organizations can use their dashboards and scorecards separately or as part of an overall financial- based application that include forecasting, budgeting, planning, etc. In addition, their product is horizontal and does not target specific vertical markets making it a good fit for organizations that are looking for combined performance management functionality and KPI related information.	Delivery: on premise Mobile: future release Alerting: email Export: Excel, PDF, CSV, PPT, XML, Microsoft Reporting Services Balanced Scorecard: no Differentiator: all in one performance management solution with simple user interface
QlikView QlikView business analysis software from QlikTech, is a horizontal business intelligence solution, meaning that its products are generic to enable any type of company to take advantage of its functionality. QlikView is built on the premise that analysis should mirror the way the human mind works and mimic the way people build their analysis. Through the use of in-memory analysis, calculations and algorithms can be applied as end users work through their questions to solve business issues.	Delivery: on premise Mobile: yes Alerting: desktop popup, email, inline Export: Excel, PDF, CSV, PPT, XML Balanced Scorecard: through customization Differentiator: in-memory architecture and linear scalability
SAP SAP Business Objects is a business intelligence portfolio within SAP's larger solution set. SAP offers solutions for different verticals, departments, and company sizes that include overall business intelligence suites as well as reporting solutions (Crystal) and interactive dashboards (XCelsius). These dashboards can be deployed independently or as part of a larger BI solution.	Delivery: on premise, on demand Mobile: yes Alerting: email, visual components on screen Export: Excel, PDF, CSV, PPT, XML, Portals Balanced Scorecard: yes Differentiator: flexible dashboard design, integration with BI infrastructure (Business Objects)
SiSense SiSense is a desktop dashboard solution that uses in-memory data access to enable on the fly analysis. SiSense targets small companies, with a monthly or yearly subscription model, making it easily accessible to organizations that are on a tight budget. With the ability to model data and provide OLAP analysis without a data warehouse or back end design, SiSense Prism offers a more traditional BI type dashboard offering.	Delivery: on premise Mobile: no Alerting: no Export: Excel, PDF, CSV Balanced Scorecard: no Differentiator: connection to data in memory, Excel like interface

Vendor	Data Visualization category/details
Strategy Companion Strategy Companion leverages Microsoft technology to provide front-end analytics, dashboards, and reporting for customers using Microsoft's BI platform. By combining analytics with dashboarding capabilities, Strategy Companion provides performance management capabilities and monitor business processes. In addition, by leveraging Microsoft's platform and the ability to integrate with SharePoint, organizations looking for more advanced BI functionality within a SQL Server environment.	Delivery: on premise, on-demand (hosted by customers for deployment to their customers) Mobile: no Alerting: email, inline Export: Excel, CSV, XML, HTML Balanced Scorecard: through customization Differentiator: ease of use and targeted to non-technical business users
Tableau Software Tableau Software provides data visualization solutions to enable better data analysis. With a variety of solutions targeted to run on the desktop and server, with an additional reader, enables solutions to be developed independently or more broadly across the organization. Tableau has strong visualizations and is easy to use.	Delivery: on premise Mobile: through customization Alerting: no Export: Excel, PDF, CSV, PPT, Microsoft Reporting Services, text files, MS Access Balanced Scorecard: yes Differentiator: downloadable from the Web; creation of visualizations in minutes
Transpara Transpara is a best- of- breed operational dashboard solution that focuses on real-time mobile delivery. Their product Visual KPI is designed for any screen whether in-house or on the road and organizations use their solutions for both mobile and on-premise applications. Currently, manufacturing and utilities embody a large portion of Transpara's customer base due to their ability to offer dashboards and KPIs on handheld devices, mobile devices or through a company portal.	Delivery: on-premise Mobile: Yes Alerting: Email, SMS Export: Excel, CSV Balanced Scorecard: Yes Differentiator: no screens or programming to maintain
VisualCalc VisualCalc offers customers pre-formatted online calculators to help manage financial processes as well as dashboard solutions. VisualCalc also offers a public dashboard site that pulls together public information in various vertical markets that can be used by consumers for additional analysis. In addition, AdWords Dashboards enable organizations to identify how they are performing online and increase the online marketing strategy.	Delivery: on-demand Mobile: no Alerting: no Export: Excel, CSV Balanced Scorecard: no Differentiator: pre-configured dashboards that are customizable by end users
Visual Mining Visual Mining offers customers a broad- based dashboard solution offering that provides flexible deployment and pricing structures. In addition, separate solutions exist for developers and business users to enable easy deployment through a four-step process that walks end users through the process of dashboard creation and customization.	Delivery: on premise, on-demand Mobile: yes Alerting: inline, highlighted alerts in dashboard Export: Excel, XML, RDMS Balanced Scorecard: yes Differentiator: embedded analytics and extensive chart library

Author

Sponsors

Media Sponsor

© 2009 by Wise Analytics and Dashboard Insight. All rights reserved. Product and company names mentioned may be trademarks and/or registered trademarks of their respective companies.