

# Is Quanvert Here To Stay?

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## Abstract

Quanvert has continued its dominance in the survey reporting space despite the release of other products by competing providers. But is its time coming to an end? Can it continue to deliver to the needs of users, or is it about to be superseded? The paper begins with an overview of the Quanvert application, and moves on to discuss a number of significant developments, which have changed the technological landscape and created new opportunities for taking a fresh look at how to address the needs of the market. It is *more* than just about replacing Quanvert functionality; it is about understanding the business processes around it. The paper will describe what SPSS has learnt – both from customers and competitors – and how it has responded in order to bring a real alternative to Quanvert to the market.

## Keywords

Quanvert; SPSS; Dimensions; analysis; reporting; online; interfaces; integration; Enterprise Feedback Management

## 1. Introduction

### Looking Back...

From its first introduction on to the scene in the mid-1980s, the capabilities of Quanvert and its underlying fast portable inverted<sup>1</sup> data format meant that companies rapidly adopted it and distributed it to their customers for their own use. Consequently, it has become a de-facto standard for the analysis of market research data and its functionality sets the benchmark by which other applications are measured.

At the time of Quanvert's introduction, any requirement for additional tabulations meant a request to a Data Processing professional, typically a day's wait, and often an incremental charge. Quanvert enabled instantaneous turnaround and eliminated the incremental charges. This allowed for a more iterative, thorough analytic process and a faster project cycle – it was a real leap forward.

<sup>1</sup> The production of tables is very fast due to the format of the database, which is known as an *inverted database*, i.e. data is grouped by question name or variable name rather than by respondent records.

Quanvert databases are created using Quantum, a leading package for handling all of the requisite data processing tasks that a project may require, including editing, weighting, and tabulating survey data. After writing the data processing specification for the survey, the Quantum scriptwriter runs the program to create a Quanvert database, which is then ready to send to the analyst/client. The recipient then uses the Quanvert desktop application to interrogate the data, create their own tabular reports, etc.

Quanvert is specifically designed to enable the market researcher to focus on the analysis of survey results without having to be a data processing or computing expert, or a statistician. If a survey requires more thorough statistical analysis, users can export from Quanvert to SPSS or similar statistical packages.

## 2. Key Requirements for Analysis and Reporting: Mid-1980s

The success of Quanvert has largely been because of its ability to meet the needs of a particular market at a particular time. These needs are split into three broad sections below covering the Technical, Functional and Implementation requirements for analysis and reporting applications. The Functional section is further subdivided into the five key steps that an analyst would encounter when they are working through the reporting phase. Each of these sections will be reviewed, along with a brief commentary about how Quanvert fulfils the requirements.

### A. Technical Requirements

The minimum system environment to run an application is a result of dependencies on the operating system, hardware and software requirements. Quanvert was originally released in the mid-1980s for UNIX, and then as a 16-bit application running on Windows 3.1 or MS-DOS version 3.0 in the early 1990s. The underlying nature of the inverted data structure meant that there was less reliance on processing and CPU memory when aggregating the data into tabular format.

### B. Functional Requirements

Five key steps have been identified that an analyst would encounter when they are working through the reporting phase. These form the basis of the functional requirements:

1. Utilize a variety of different data formats
2. Control the way information is expressed in the report
3. Allow users of all levels to rapidly build tabulations
4. Produce reports that are readable and understandable
5. Publish reports in the right format, for the right people

What makes Quanvert successful since its launch in the mid-1980s is its ability to provide all the features to meet these functional requirements.

#### **1. Utilize a variety of different data formats**

##### Q: Which kinds of data formats can I work with in Quanvert?

Data can be collected from respondents using a variety of different modes or channels (e.g. telephone, online, paper). The task of processing the data is undertaken by the Quantum scriptwriter, who writes the data processing specification to define the variables based on the

requirements for the survey, and then runs the program to create the native Quanvert 'packed' database, or .pkd file, which is then sent to the analyst/client.

The Quanvert user does not need to be a data processing or computing expert, or a statistician; they can simply open the database in Quanvert and start working with the data. In addition, they also have the option of being able to merge different data sets together when working with continuous tracking data. Where further statistical analysis is required, users can export the data to either SPSS or SAS format.

## **2. Control the way information is expressed in the report**

### **Q: How can Quanvert help me deliver targeted results?**

Quanvert offers complete control over the way information is expressed in a report, and allows the user the full capability to edit variables, define a filter, apply weighting and run statistical tests to verify the results.

The ability to edit variables is a fundamental requirement for reporting because often the way in which a question is asked in a survey may be quite different to the way it is presented in a report. For example, perhaps the responses to a question need to be grouped together (e.g. as nets) in order to produce a report at more of a summary level. In order to deliver targeted insights, the user needs to have control over the way in which the variables are used. Quanvert allows users to 'band' categories together for the display of summary results. When dealing with numeric questions, it is easy to include standard summary statistics like mean scores.

When producing a report, it is sometimes necessary to focus on a particular subset of respondents in the survey data. By applying a filter, the user can restrict the number of respondents eligible for inclusion in the results. A filter is defined by selecting the variable or variables that define the filter requirement, and then choosing the categories that define the exact filter condition. For example, a simple filter might be something such as sex=female that restricts the table to including female respondents only. This is easily achieved in Quanvert by applying a filter to the table so that those respondents in the table (or base) are drawn from the relevant group.

During the collection phase of a survey, if it is not possible to interview everyone, then only a sample of the population will be interviewed. If this sample group does not accurately reflect the proportions of various groups in the total population, the survey results may be biased. Weighting is another term for sample balancing whereby the responses in the survey can be weighted to reflect the actual balance in the population. Where a survey contains weighting information, the Quanvert user can choose whether to create weighted or unweighted tables by selecting the relevant variable.

After producing a table, a Quanvert user can then run the appropriate statistical test and check to see whether differences in the distribution of counts in tables are significant, or whether they are merely due to chance. Typically, in the case of testing columns in a table, the results of the test use letters from each column to display whether there is a significant difference between the results. This task may be achieved by manually setting the required parameters in the application.

### **3. Allow users of all levels to rapidly build tabulations**

Q: How does Quanvert empower users with different skill levels and different reporting needs?

When it comes to application usability, the design of the user interface directly affects the ease of access to core functionality in the product. When producing a report, the typical process is to first tabulate the data and then decide on an appropriate way to visualize the results before publishing the report. However, sometimes it is useful to be able to preview the data before building a table. In other circumstances, it is more appropriate to focus on respondent-level data to produce profile reports (e.g. when conducting analysis for account-level business-to-business research) or summarise a number of different variables in a single table (e.g. a mean score summary table).

All of these features, along with the ability to apply mandatory weighting to the tables, are available from within Quanvert.

### **4. Produce reports that are readable and understandable**

Q: How do I ensure that my reports have a consistent look and feel?

A report may ultimately be distributed as a standalone file that exists outside the reporting application (e.g. Microsoft® Office PowerPoint®). The tabulated data that appears in the report may be the result of some rigorous data management. Therefore, the report must contain the appropriate level of supporting information so that any business decisions made based on the report are well considered; several industry-standard guidelines<sup>2</sup> outline this requirement.

In order to produce reports that are readable and understandable, various elements in addition to the data must be controlled within the application. When defining these elements for a table (e.g. number of decimal places for percentage figures, default statistical tests, annotations that include the supporting information), it is useful if these key settings can be defined once and then stored in a template so that they apply as default for the entire report. This approach eliminates the need to start from scratch each time and ensures that the same consistency can be applied to subsequent tables. Quanvert users can define these elements once and save them as part of the specification file.

### **5. Publish reports in the right format, for the right people**

Q: What are the options for Quanvert users in terms publishing the results?

The report must be tailored to fit with the needs of the target audience. If the specification of the report can be saved, then the user should be able to send/publish this to an associate so that they can view the report using the same application. However, those people who do not use the same application will expect to receive results in some easy to understand format (e.g. Microsoft® Office Excel®). The Excel Viewer utility allows Quanvert users to produce tabbed Excel® output directly from Quanvert.

## **C. Implementation Requirements**

Quanvert is installed as a standalone desktop application and, as such, the implementation requirements are relatively straightforward. The application does not utilize any client-server technology and is controlled via a simple point-and-click user interface. If a project requires

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<sup>2</sup> For example, *ICC/ESOMAR International Code of Marketing and Social Research Practice; ISO 20252: Market, opinion and social research — Vocabulary and service requirements.*

tabulations to be scheduled via a batch program, it is possible to do this via setting up a *standing order*.

### 3. New Challenges

Since the launch of Quanvert on to the market in the mid-1980s, there have been a number of significant developments, which have changed the technological landscape and created new challenges in terms of being able to meet the needs of the market.

#### Moving away from the Desktop and into the Online Realm

The growth of the internet in the 1990s and the associated rise in online survey methods made it easier for data to be collected from a geographically dispersed group of people. This growth also generated a demand for distributed reporting applications where the analysis and reporting of results moved from the desktop and into the online realm without requiring the user to have any software installed on their machine.

From a management perspective, this paradigm allows businesses to harness the benefits of a centralised system and have much greater control over the distribution of results. Software vendors recognize the power of the web, and for the first time, it is possible to deploy distributed applications over the internet without having to worry about managing the client desktop environment.

From a systems administrator standpoint, deploying an application using this distributed approach enables them to sidestep the administrative hassle of trying to keep track of the different versions of the software, which is unavoidable in the desktop space. Furthermore, if the application employs a *zero footprint* where the user is only required to have an internet browser and a reasonable connection to the internet, this makes it easier to deploy for larger organizations subject to strict security lockdown policies.

From a data management position, the centralised storage of data enables *one version of the truth* across the enterprise, and avoids the situation where users may be working with outdated versions of the data. Furthermore, if the data contains any personal customer information, then the organization must ensure that it is taking all of the necessary steps to adhere to data privacy legislation. If data containing personal customer information is stored on a laptop, then the organization may be subject to hefty fines if the laptop is stolen. In February 2007, Nationwide Building Society was fined close to £1M over security breaches following the theft of a laptop.

#### Providing Enhanced Interfaces

In the last five years, the market for survey reporting applications has matured and there are a number of vendors offering their own solutions to meet the needs of a business. However, the survey reporting market does not exist in a silo, and it is becoming increasingly important for applications to provide better interfaces to support the upstream (data collection) and downstream (dissemination of results) efforts.

With typical survey research, data may be collected via multiple modes or channels. For example, these channels may include interviewing respondents over the telephone, surveying respondents over the web, and face-to-face personal interviewing. For logistical reasons, an organization may acknowledge that different vendors have strengths in providing solutions

for different channels, and they may decide to use technology from different vendors for collecting the data. In an ideal world, reporting applications would have the ability to provide better support for the upstream data collection across a variety of channels, and would not be tethered to a proprietary data format.

When it is time to disseminate the results, the reporting requirements for today's organizations have moved beyond the standard *deck* of static tables. Results need to be accessible in a way that allows users maximum flexibility to analyse the data, uncover significant findings and publish the results in a timely fashion. In a world where there is an ever increasing amount of data being collected, and where a delay with making an informed business decision can have financial repercussions, organizations need to be able to publish reports in the right format for the right people. Often, the ultimate decision maker will expect to receive the report in a concise and easy-to-digest format. In order to provide better interfaces to support the dissemination of results, applications must be able to run pre-defined report definitions and output the results to a variety of standard file formats, e.g. Microsoft® Office PowerPoint®, Excel®. In addition, if a particular result is noteworthy and requires further investigation, the application must also support the user with this inductive line of enquiry and offer the full flexibility to slice and dice the data, and perform ad hoc analysis.

### Integrating with Management Reporting Structures

The growth of the internet in the 1990s also presented an opportunity for organizations to exploit the same protocol for their own *internal* management reporting needs. The various users with different roles accessing the different applications prefer to have a single access point to all of them over the internet. Portals provide a way for enterprises to provide a consistent look and feel and manage access control and procedures for multiple applications, which otherwise would have been different entities altogether.

Along with the demand for a single integrated view of the enterprise was the need to have enhanced data visualization. Based on the visual metaphor of the instrument panel in a car, digital dashboards provide at-a-glance visualization to support the monitoring of key performance indicators. Visual devices like traffic lights, gauges, and graphics are used to represent the high-level view and the dashboard will provide some level of interactivity in the form of drill-down capabilities where an item of interest can be selected to reveal the underlying data.

Management decisions based on the results of survey research are often balanced alongside sales and marketing metrics. In order for the results to be actionable, there needs to be tighter integration with existing management reporting structures, and while a single vendor may be able to provide a suite of products, which integrate seamlessly together, the reality is that it may not be feasible for a business to rip and replace all of their current systems. There is no single boilerplate solution that will meet everyone's needs – businesses need a reporting solution that is open and flexible to the specific needs of their own customers and stakeholders in order to gain maximum return on investment.

### Question: Is Quanvert Ready for the Challenge?

As noted above, it is *more* than just about replacing Quanvert functionality; it is about understanding the business processes around it. Quanvert emerged out of the need to serve the reporting requirements of the market research industry. As a standalone desktop reporting and analysis tool, Quanvert presents a viable solution for those organisations looking to

address the analysis and reporting requirements of a niche user base working with survey data. However, changes in the technological landscape have catalysed the emergence of three core themes: (a) a move away from the desktop and into the online realm, (b) greater emphasis placed on providing enhanced interfaces to support upstream and downstream efforts, and (c) transparent integration with management reporting structures. In its current incarnation, Quanvert is *not* ready for the challenge.

#### 4. Enter Dimensions

The Dimensions survey research platform was released in 2000 and is built on the Dimensions Data Model, a data access architecture that separates data storage and handling from the rest of the survey research process, providing easy access to the data regardless of how the information is stored. mrStudio, which is part of the Dimensions suite of products, is an integrated development environment (IDE) for developing scripts for data management and the creation of utilities. The mrStudio scriptwriter can write data management scripts and then use the add-on Tables Option to create tables and charts.

Data can also be made available to the analyst/client so that they can create their own tables and charts through a drag-and-drop interface using mrTables (online) or Desktop Reporter (desktop). Further work is progressing towards enabling Dimensions technology to feed management reporting technologies.

SPSS has listened to its customers and, in response to those challenges mentioned in the preceding section, the company has realigned how it positions the analysis and reporting tools in Dimensions to meet the needs of the market.

At the beginning of the paper, the five key requirements for analysis and reporting were outlined. These must now be revisited and the definition of each requirement broadened to incorporate the new challenges above.

#### 5. Key Requirements for Analysis and Reporting: Looking Forward

##### A. Technical Requirements

The minimum system environment to run an application is a result of dependencies on the operating system, hardware and software requirements. The emergence of distributed applications in the 1990s has shifted the onus of aggregating the data and processing the results onto the server. A clear advantage with this approach is that running the application is not wholly reliant on the processing power of the desktop machine. However, on occasion, there will be times when a user needs to be able to perform the same tasks without being connected to the internet.

Reporter is currently provided as a Desktop application, and the upcoming version 5.0 release will see the launch of the web based version. Both desktop and online versions of the application take advantage of the latest Microsoft® WinForms technology.

##### B. Functional Requirements

At the beginning of the paper, the following five key steps that an analyst would encounter when they are working through the reporting phases were provided:

1. Utilize a variety of different data formats
2. Control the way information is expressed in the report
3. Allow users of all levels to rapidly build tabulations
4. Produce reports that are readable and understandable
5. Publish reports in the right format, for the right people

These steps are still valid, but the definition of each step needs to be broadened to take account of the new challenges.

### **1. Utilize a variety of different data formats**

#### Q: Which kinds of data formats can I work with in Dimensions?

With Quanvert, the task of processing the data is fulfilled by the Quantum scriptwriter, who writes the data processing specification based on the requirements for the survey. This created a linear dependency where data first had to be processed by Quantum before it could be read in to the Quanvert application. SPSS acknowledges that customers may already be using different data collection technologies, and that there will be times where a snapshot view of the project will be useful to track progress with data collection, rather than having to wait until the end of the fieldwork.

To address this requirement, Reporter has been designed to work with almost a dozen different file formats, including the Triple-S file format, which is the data interchange standard for transferring data between different software packages (e.g. SNAP, Nebu, Pulse Train, and ConfirmIT). Reporter can also be pointed to those projects using Dimensions for collecting data over the web, or using telephone and display topline results.

In addition to opening different sorts of data files, Reporter allows the user to merge cases from multiple survey data files, as well as merge variables from one source file with another survey data file. Furthermore, because the application is built using the Dimensions Data Model, users can merge data from different formats.

In the case where the survey data needs to be exported to another file format, Desktop Reporter builds upon the functionality already offered in Quanvert and enables users to export to half-a-dozen different data formats, including Triple-S, SAS, and the new SPSS Dimensions Data File.

### **2. Control the way information is expressed in the report**

#### Q: How can Dimensions help me deliver targeted results?

Quanvert presents the user with a sufficient feature set to help them gain control over the way information is expressed in the report. Options allow the user to edit variables, filter and define rules for suppression, run statistical tests and apply weighting to the data. However, while the application offers a fine granular degree of control in terms of working with the results, it does not offer any inroads for *managing the total volume of information*. In the previous section, the paper highlighted the issue with an ever-increasing amount of data being collected, and where a delay with making an informed business decision can have financial repercussions.

Reporter allows users to identify those significant results via one-click sorting. In addition, a special table can be created using the Product Difference Test. With this test, the user can apply statistical testing (using the column proportions or column means test) to all combinations of categories across a number of variables and produce a table showing on those significant combinations. There is also a one-click option for modifying an existing table to show only those results that are significant.

### **3. Allow users of all levels to rapidly build tabulations**

#### Q: How does Dimensions empower users with different skill levels and different reporting needs?

When it comes to addressing different reporting needs, summary information is useful, but it is not always enough. Quanvert does a sufficient job of allowing users to preview the data before building a table, produce standard summary tables, or focus on respondent-level data to produce profile reports. Therefore, in terms of addressing different reporting needs, Quanvert can provide different inroads based on the requirements of the user.

However, when it comes to application usability, Quanvert is a hostage to its 16-bit architecture. The design of the application user interface directly affects the ease of access to core functionality in the product. Users who work with Microsoft® Office applications like Word and PowerPoint® expect a degree of flexibility with regard to the ability to drive the application via the user interface (drag-and-drop, right-mouse click for options, double-click to activate, show/hide toolbars, etc). Reporter is built with Microsoft® WinForms – the Microsoft®.NET framework API – which allows the developers of the software to employ the same types of standard controls found in modern application design. For the novice user, standard functionality is easily accessible via the clean interface. Users are not presented with a barrage of options to choose from, rather, more advanced features are accessed via supplementary menus. By adopting this design approach, supported by context-sensitive help (i.e. where a user can hit the F1 key and be presented with relevant help on the task at hand), it has been found that users can quickly become familiar with the core functionality of the product, and can then focus their efforts on producing the right information for the right people.

Earlier in the paper, some of the inherent advantages with moving away from the desktop mode and into the online realm were discussed. Nevertheless, there will be times when it is simply not feasible to be online. By taking advantage of the Microsoft® WinForms technology, SPSS has implemented an application design that is *modally agnostic* and addresses the needs of both the desktop *and* online user scenarios. That is, the user has access to the same feature set and the ability to drive the application via the user interface in the same way.

Implementing a product that is both intuitive and easy to learn and one that employs a common feature set regardless of whether the mode of access creates a knock-on benefit with training. The initial learning curve is gentle enough for beginners to get up and running with the standard functionality and they are not required to learn a different version of the product when switching modes.

### **4. Produce reports that are readable and understandable**

#### Q: How do I ensure that my reports have a consistent look and feel?

There are obvious benefits with being able to define key settings and store these in a template. Quanvert users can already define these elements once and then save them as part of a specification file or template. However, because of its desktop implementation, there is no adequate mechanism for managing the distribution of these templates across a group of geographically dispersed users.

Where a group of users from the same organization is busy working on producing a report for a particular project, there needs to be proper management of the templates to enable a

consistent look and feel. Using Reporter, it is possible to set up project templates such that the group of users working with the data will produce reports have a consistent look and feel.

### **5. Publish reports in the right format, for the right people**

#### Q: What are the options for Dimensions users in terms of publishing the results?

Publishing the report is reliant on the ability to have sufficient control over the aesthetics, include appropriate data visualization (e.g. charting the results) and finally export the report in the right format.

The ability to manage the aesthetics of a report in terms of specifying the layout and style will enable the user to create more visually appealing output. For instance, rather than displaying a plain table of data, a user may wish to format the output and adjust the size of the font, select a suitable colour for shading the cells and include the company logo on the report. Instead of embedding the aesthetic control into the actual content of the report, modern day web design uses Cascading Style Sheets to enable the separation of document content from document presentation. This separation allows for greater control over the look and feel. Reporter uses the same technology to control the way information is displayed. Users have the option of working with one of the existing CSS style sheets, or they can build their own style sheet to align with corporate marketing regulations.

If a picture speaks a thousand words, then using a visual device like a chart might be the preferred mechanism for conveying the results of a survey. Choosing the right chart is dependent on the information to be charted and the selection of available chart types. Quanvert Reporter users may choose from a selection of different chart types in Reporter, or build their own custom chart type to use.

Exporting information from an application and into another file format is often the simplest way to make the report accessible in a concise and easy-to-digest format, e.g. Microsoft® Office PowerPoint®, Excel®. In survey research, this output may have been appropriate for standard studies where the project was designed as a standalone piece of work where analysis of the results takes place *within the boundaries of the study*. However, initiatives like Enterprise Feedback Management<sup>3</sup> acknowledge that in order for results to be actionable, there needs to be tighter integration with the existing management reporting structures. Report results in the form of table definitions must be managed centrally with the ability to publish the results to a corporate portal, where the information may be combined with other sources of data to present a more complete view.

## **6. Conclusion**

Quanvert was specifically designed as a desktop tool to enable the *user* (e.g. market researcher, analyst) to focus on the analysis of survey results in order to produce *reports*. However, since its introduction in the mid-1980s, there have been a number of significant developments, which have changed the technological landscape and created new opportunities for taking a fresh look at how to address the needs of the market.

First, the definition of *user* has expanded out from the traditional desktop space and into the online realm. Meeting the needs of a globally distributed audience requires a different

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<sup>3</sup> For more information, refer to the Gartner Research paper *Make the Transition From Surveys to Enterprise Feedback Management*.

approach. Organizations acknowledge that moving away from the desktop space and centralising the system offers clear advantages in terms of managing the distribution of results, reducing the time to rollout an application, and with instilling greater faith in the data by enabling *one version of the truth* across the enterprise. SPSS accepts that there will be times when it is simply not feasible to be online, and has embraced a product design that is both intuitive and easy to learn and one that employs a common user interface regardless of the mode of access.

The reporting process does not exist in a silo, and SPSS recognises the importance of providing better interfaces to support the upstream and downstream efforts. Since data is collected via multiple modes or channels, the interfaces have been expanded to work with almost a dozen different file formats, in order to support the upstream data collection. When it comes to supporting downstream dissemination of results, SPSS has listened to the market and established that the definition of what constitutes a *report* has broadened to include presentations, documents, online reporting, web based delivery, non-web based electronic reporting, static reporting and interactive data visualisation. Reporting applications can run pre-defined report definitions and output the results of a survey directly to a variety of standard file formats as well as offering the full flexibility to slice and dice the data, and perform ad hoc analysis.

Historically, the task of producing analysis and reports was handled by heritage applications like Quantum (for processing the data) and Quanvert (for analysis and reporting). This process relies on a linear and manual series of tasks where the data is first tabulated into *decks* of tables, key findings are manually extracted, and the insight is ultimately turned in to single document and delivered to the client as a static report. Because management decisions based on the results of survey research are often balanced alongside sales and marketing metrics, there needs to be tighter integration with existing management reporting structures. Some organizations are already forging ahead with centralized systems that allow them to fully engage with their current (or prospective) customers through targeted feedback programs. The information is then utilized throughout the organization to drive business improvement.

In conclusion, the key tenet of this paper argues that when trying to determine if Quanvert can continue to deliver to the needs of users, the scope must be widened to take into account the broader significant developments, which have changed the technological landscape. It is *more* than just about replacing Quanvert functionality; it is about understanding the business processes around it. In the new world of requirements, one product in one environment is simply one component of a *full* reporting solution. While SPSS provides a next-generation product that Quanvert users will embrace, it is only part of a broader solution that (a) combines with customers' Microsoft® Office® automation tools and statistical engines to form a well-integrated analytic workbench, and (b) plays well with customers' online and offline reporting capabilities, digital dashboards, OLAP tools and so on.

Many successful organizations – including businesses and sports teams – agree that analyzing data, and incorporating the results into the decision-making process, leads to better decisions<sup>4</sup>. In order to drive the widespread use of data in decision-making, a full reporting solution will provide the right information, in the right format, to the right people.

<sup>4</sup> See *Competing on Analytics: The New Science of Winning* by Thomas H. Davenport and Jeanne G. Harris

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