



WHAT MAKES QLIKVIEW UNIQUE

A QlikView White Paper

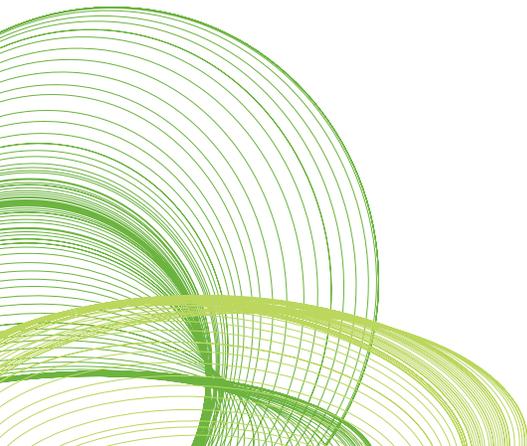
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WHAT IS BUSINESS DISCOVERY?

Business Discovery is user-driven BI that helps people make decisions based on multiple sources of insight: data, people, and place. Users can create and share knowledge and analysis in groups and across organizations. Business Discovery platforms help people ask and answer their own stream of questions and follow their own path to insight—on their own and in formal or informal groups. Business Discovery platforms deliver insight everywhere, an app model, mobility, remixability and reassembly, and a social and collaborative experience.

The QlikView Business Discovery Platform

“What is special about QlikView? How is it different from other software?” Some who ask these questions have experience with traditional BI (business intelligence) reporting solutions and want to understand QlikView in that context. Others have been exposed to standalone data visualization tools and want to know how QlikView is different. Still others are on a mission to put high-speed analytics in the hands of business users throughout their organizations and are curious about how Business Discovery can help.

This white paper is for information workers and business and technology decision makers who want to understand what makes QlikView unique. Read on to learn about the benefits of an information workforce being empowered to ask and answer *the next question* on their own, without having to ask a BI or IT specialist for help. Empowering information workers to derive insights from data helps organizations to streamline, simplify, and optimize decision making.

The Nature of Information Work: Following the Information Scent

What happens when you see a BI report or standalone data visualization? Typically, follow-up questions come to mind. Very often these are *new* questions – questions no one anticipated you might have. They are questions not answerable with the report or visualization. For example, imagine:

- **A report showing total sales in each region so far this year.** Seeing this report makes you wonder how bikes are selling in each region. If you could then get your hands on a report that showed how this product category was selling in each region, you might then want to know which specific bikes sold the best, or what quarters were the best performing for bikes, or which customer segments bought particular bikes, and so on.
- **A chart showing France’s monthly sales.** Imagine that as you evaluate a trend showing monthly sales for the last few years, you notice that France has not been profitable during the previous two Augusts. This raises new questions: “Why is this happening?” “Which product categories are eating away at our margins in France during the month of August?” “Are there other factors involved?”

This is the very nature of information work: following the “information scent.” Information workers go off in search of the data they need, using the tools they have at hand or create. They forage for information to help make the best possible decision. They follow an information scent, rather than a pre-determined path, as they go off on search for the data that will help answer their business questions.

It's All About the *Next Question*

As an information worker, if you were looking at a chart or graph or report showing data related to some aspect of your business, how would you prefer to get answers to your follow-up questions:

- **Ask a business analyst or IT pro to build you another report or visualization?** A standalone visualization shows a single view of data. A report shows a static view of data. Query-based tools, whether they are reporting or visualization tools, can help people answer pre-defined questions – questions someone thought of in advance. In other words: *old questions*. The report or visualization can be refreshed with updated data but it still just provides new answers to old questions. With BI reports and standalone visualization tools, when users have follow-up questions the only option is to build more reports or visualizations.
- **Or simply make more clicks?** With a QlikView app, even the least technically savvy person can answer question after question after question, moving along their own path to insight. Users are empowered to explore information freely by clicking on field values in list boxes, lassoing data in charts and graphs and maps, manipulating sliders, choosing dates in calendars, cycling through various charts and graphs, and more – all with the click of the mouse or tap of the finger on a touchscreen device.ⁱ Users learn something at each step along the way. Any time they come up with a follow-up question based on something they see in the data, they can make another selection in any object on any tab in the app to continue the process and get a new set of answers. With QlikView, the answers are already there, available through simple clicks.

The More Users, the More Questions

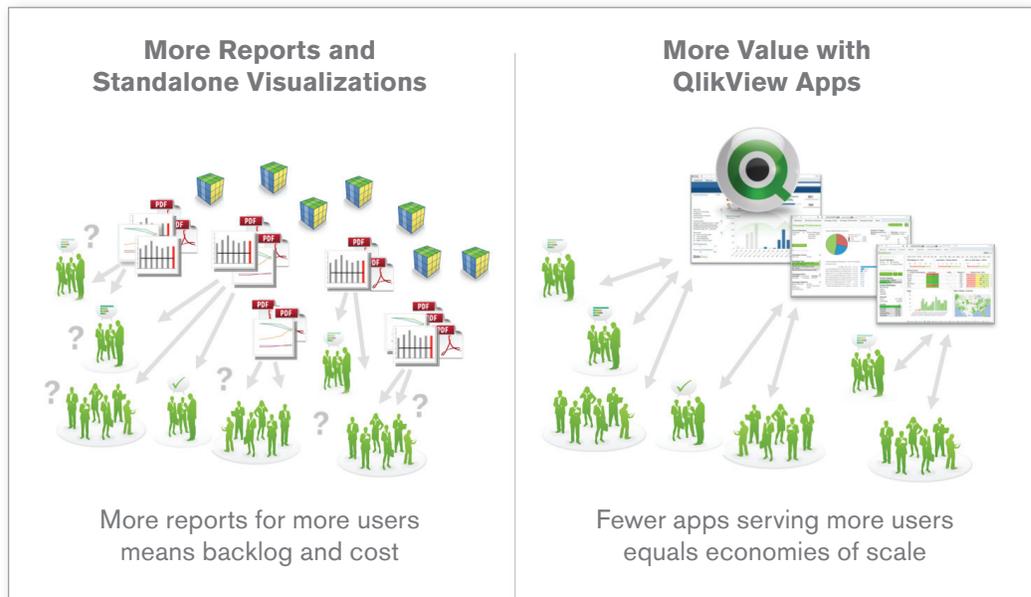
Think about what this concept of the next question means for not just one information worker, but an entire *information workforce*. Maybe ten, a hundred, or a thousand people see the report showing total sales in each region so far this year, or a chart showing France's monthly sales for the last few years. As the number of people who see the report or visualization increases, so do the number and variety of follow-up questions (see Figure 1).

- **Welcome to the reporting and visualization logjam.** Users submit requests for additional reports or visualizations, the backlog begins to grow, and users' wait time gets longer. Aberdeen Research found that the average time it takes for IT to complete BI support requests, with traditional BI software, is 8 days to add a column to a report and 30 days to build a new dashboard.ⁱⁱ For an individual information worker trying to find an answer, make a decision, or solve a problem, this is simply untenable. For an organization that is trying to differentiate itself on information innovation or data-driven decision making, it is a major barrier to strategy execution.ⁱⁱⁱ

- **With QlikView, fewer apps can deliver more value.** Tens or hundreds or thousands of information workers may have access to a QlikView app – let’s say a sales management and customer analysis app. This fully interactive app may contain a dashboard, a products view, a regional view, and a customer view, each on its own tab. A QlikView app can comprise many, many interactive visualizations (e.g., charts, graphs, list boxes, maps, etc.). All the visualizations are connected; when the user makes a selection in one, all the others instantly update dynamically to show a new view of the data.

The tens or hundreds or thousands of users can all click around in the app, any way they want to, asking and answering their own streams of questions. (Check out the blog post, “100,000 Questions,” about a jam session during which 17 QlikTech staff members spent 20 minutes together with one of our demo apps and came up with a list of 170+ questions the app could answer.)^{iv}

Figure 1: The More Users, the More Questions



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In addition, with QlikView’s collaboration capabilities, one person’s line of questioning may spark new questions in other people and multiple people can explore the data together as they move together toward insight and decision. The result? Massive economy of scale and improved decision making across the enterprise, compared to reporting and standalone visualization tools.

How Does QlikView Do It?

QlikView is known as a pioneer in in-memory BI. In-memory technology is important for BI, for performance reasons. But just being in-memory isn't all it takes to deliver a Business Discovery platform that dynamically calculates new views of information. It's what QlikView *does* with in-memory technology that makes it so special.

Some vendors that offer traditional BI reporting solutions based on queries and cubes are re-engineering their offerings to run in memory. These solutions may improve user response time. But as long as they are query- and cube-based, maintaining associations in the data and allowing for new calculations requires hand coding and rebuilds—and therefore lots of time and money. The same is true for query-based standalone data visualization tools.

QLIKVIEW'S PATENTED CORE TECHNOLOGY

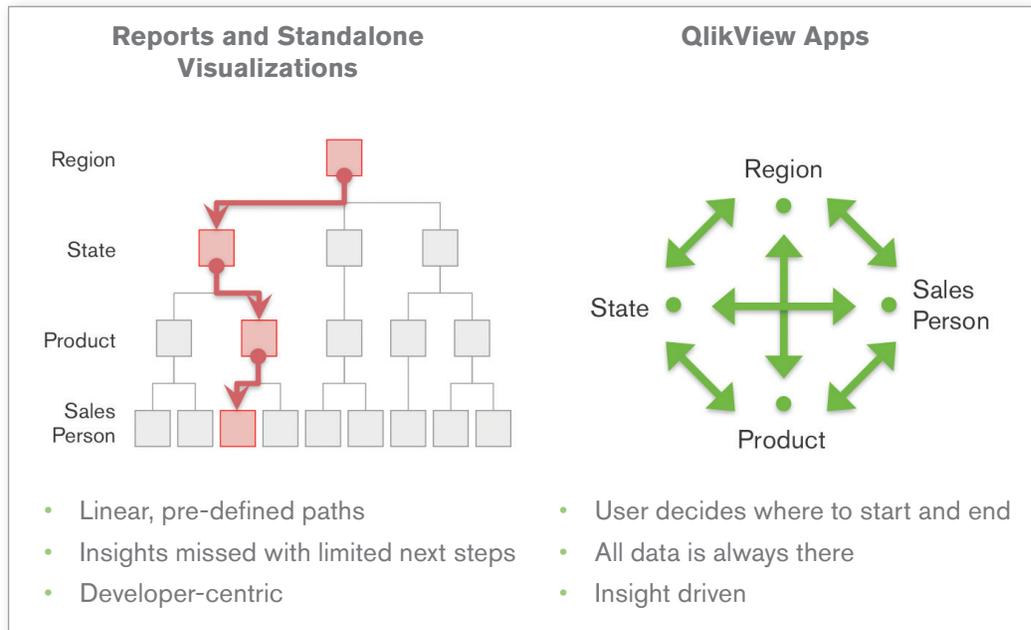
At the heart of QlikView is our patented software engine which generates new views of information on the fly. This directly benefits non-technical users, as they are not required to develop reports or visualizations – they just click and learn. Every time the user clicks, the QlikView engine instantly responds, updating every object in the app with a newly calculated set of data and visualizations specific to the user's selections.

The QlikView Business Discovery platform:

- **Holds data in memory for multiple users.** QlikView holds data needed for analysis in memory, where it is available for immediate exploration by users. Users experience zero wait time on in-memory data as QlikView performs the calculations needed to deliver the aggregations users request. The “rocket science” is in getting the calculations done quickly. QlikView is a multi-user, distributed environment; it stores common calculations and shares them among users so the calculations don't have to be redone every time someone needs them.
- **Automatically maintains associations in the data.** QlikView's inference engine automatically maintains the associations among every piece of data in the entire data set used in an application—neither developers nor business users have to maintain these associations. As a result, users aren't limited to static reports, pre-determined drill paths, or pre-configured dashboards. Instead, they can navigate their data up, down, and sideways, exploring it any way they want to (see Figure 2). QlikView's associative experience works across all the data used in the analysis, whether the data is in memory or left in place and accessed via Direct Discovery.

- **Calculates aggregations on the fly.** The QlikView engine calculates aggregations on the fly based on selections the user makes (which we call the “state” of the app). Users aren't limited to predefined calculations and hence preconceived insights based on data joins made by IT or a business analyst. Users can define whatever view or type of insight they want and QlikView dynamically calculates the answer. QlikView calculates just the aggregations the user asks for; it does not pre-calculate aggregations the old queries-and-cubes way. It processes calculations instantaneously, as they are needed.
- **Compresses in-memory data to as little as 10% of its original size.** QlikView achieves a significant reduction in the size of the in-memory data used for analysis with a data dictionary (a hash table) and by using only the number of bits required. The more redundancy in the data values, the greater the compression. For example, a “day of the week” field has only seven possible field values. Each value is stored only once in memory, regardless of how many records contain the value. With this compression, QlikView can scale to handle very large data sets without driving up hardware investment costs just to move an entire data set into memory.
- **Fully utilizes the power of the hardware.** QlikView distributes the number-crunching calculations across all available processor cores to maximize the performance experienced by the user. Unlike technologies that simply “support” multi-processor hardware, QlikView is optimized to take full advantage of all the power of multi-processor hardware, thereby maximizing performance and the hardware investment.
- **Offers enterprise class capabilities for Business Discovery.** Unlike lightweight visualization tools, QlikView offers enterprise capabilities on par with major stack vendors, but in the context of a business discovery platform. QlikView provides the robust security, scalability, data governance, and systems management capabilities demanded by world-class organizations. QlikView's governance dashboard allows administrators to quickly understand user activity and data lineage, allowing companies to identify and expand high value apps more quickly. And with QlikView Expressor, organizations benefit from a common semantic layer for reuse of data definitions in expanded app deployments.

Figure 2: Start Anywhere, Go Anywhere with QlikView

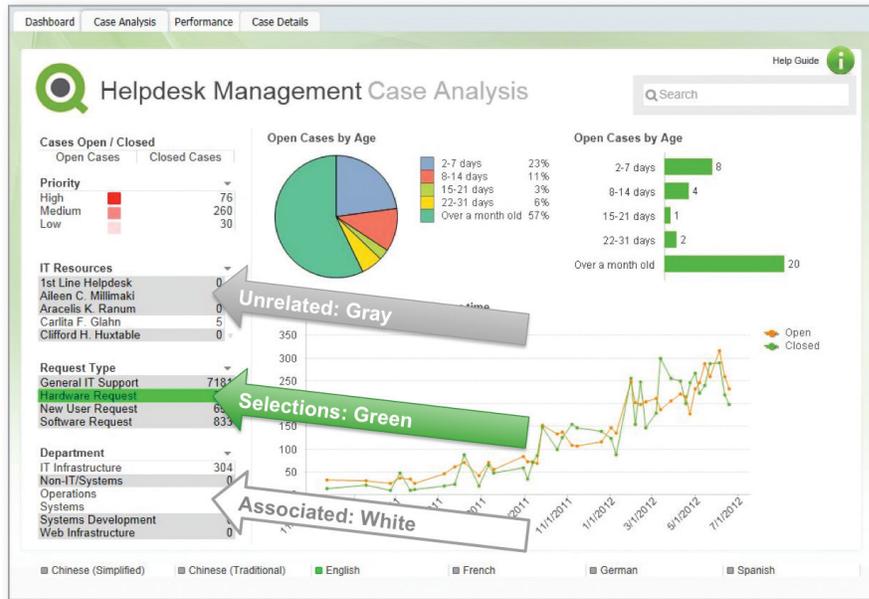


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THE ASSOCIATIVE EXPERIENCE

Unlike reporting and standalone data visualization tools, which only offer pre-defined drill paths and limited interactivity, QlikView enables a user to start anywhere and go anywhere. This fundamental user experience is what we call the associative experience, and it's possible because of the dynamic nature of the QlikView engine. The engine automatically manages the relationships in the data, calculates new information on the fly, and presents information back to the user using a "green/white/gray" metaphor (see Figure 3). The user's selections are highlighted in green, associated data is represented in white, and excluded (unassociated) data appear in gray. This instant feedback encourages users to think of new questions and continue on their path of exploration and discovery. They are given just enough guidance to lead them down a relevant path, without limiting them to a pre-defined one.

Figure 3: The QlikView Associative Experience



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Users can gain unexpected insights with QlikView because it:

- Works the way peoples' minds work.** With QlikView, discovery is flexible. Users can navigate and interact with data any way they want to—they are not limited to just following predefined drill paths or using preconfigured dashboards. Users ask and answer streams of questions on their own and in groups and teams, using QlikView's collaborative capabilities, all the while forging new paths to insight and decision. With the QlikView Business Discovery platform, users can see hidden trends and make discoveries like no reporting or standalone visualization tool on the market.
- Illuminates the power of gray.** With QlikView, users can literally see the relationships in the data. They can see not just which data is associated with their selections—they can just as easily see what data is *not* associated. And sometimes it's the gray that delivers the "a-ha" experience. As an example, when a user selects the in-store sales channel and the year 2012, QlikView instantly shows everything in the entire data set that is associated with these selections (highlighted in white)—as well as the data that is *not* associated. The result is new insights and unexpected discoveries. In this example, the user might see that the company has sold no fenders or wheels during this period (these are highlighted in gray) and might begin an investigation into why.

- **Delivers direct—and indirect—search.** With QlikView search, users type relevant words or phrases in any order and get instant, associative results. With a global search bar, users can search across the entire data set. With search boxes on individual list boxes, users can confine the search to just that field. Users can conduct both direct and indirect searches in list boxes. For example, if a user wanted to identify a sales rep but couldn't remember the sales rep's name—just details about the person, such as that he sells bike components to customers in Germany—the user could search on the sales rep list box for the region “Germany” and the product category “components” to narrow the results to just sellers associated with those criteria.
- **Delivers answers as fast as users can think of questions.** Users can ask a question in many ways such as lassoing data in charts and graphs and maps, clicking on field values in list boxes, manipulating sliders, and selecting dates in calendars. Instantly, all the data displayed in the app updates around these selections to share what is associated and what is not. Users can continue to click on field values in the app, further refining their view of the data based on additional questions that come to mind. Users can quickly and easily see relationships and find meaning in the data, for a quick path to insight.
- **Offers Direct Discovery for Big Data investments.** For datasets too large to fit in memory, QlikView accesses the data in place using a built-in feature called Direct Discovery. Big Data sources are fully integrated into the Associative Experience, providing a unique hybrid capability to explore in-memory and direct discovery sources in tandem, with seamless flexibility and power.

COLLABORATION AND MOBILITY

QlikView delivers further flexibility and additional value by enabling users to incorporate insights from people and place, in addition to data, in their decision making. By nature:

- **Decision making is a collaborative activity.** Humans are inherently social beings. We work with others to complete our missions. We like storytelling and value getting and giving insights and input. With QlikView, users can communicate with each other in the context of their decision making through annotations (threaded discussions and shared snapshots), shared co-browsing sessions, and shared bookmarks.^v
- **Information workers are mobile.** They head to conference room in the building next door for planning sessions with colleagues. They go out on the road and meet with customers and suppliers. And while they're out on location they navigate a vastly complex information environment to find the relevant nuggets of value. They bring insights gleaned while away from their desks into their decision-making process. With QlikView, people can ask and answer streams of questions, on their own or with their colleagues, wherever they happen to be working.^{vi}

Simplifying Decisions for Everyone, Everywhere

QlikView's raison d'être is putting the ability to create insights from data in the hands of information workers everywhere. Here are a couple of great customer examples:

- **Immediate, mobile data access helps Illes deliver a better customer experience.** At Illes Seasonings and Flavors, sales reps used to have to email or call the customer service department to get answers like sales projections, sales history, order transactions and status. This led to delays that lasted from several hours to more than a day. Customers suffered because the sales reps were unable to give immediate to customers' answers. Now, with QlikView on iPads, sales reps out in the field can access their data themselves, immediately, and share it with customers. Sales reps can access customer or product information from a high-level trend perspective all the way down to the transactional level. Customer satisfaction has increased because when the sales rep goes to the customer site, the rep has everything they need to be able to identify and communicate any delays as well as order status, manufacturing, and shipping details.^{vii}
- **Incremental sales boost of £300k in three months at Greencore.** Prior to using QlikView to analyze point of sale data coming in from one of its largest customers (retailer Marks & Spencer), prepared foods manufacturer Greencore was only able to get weekly reports on KPIs (key performance indicators). As a result, Greencore was often slow to react if a product wasn't selling well. Stockouts occurred in some stores while other stores threw away food. Now, with a QlikView app members of the commercial team at Greencore can easily access information on a self-service basis. The result? At Marks & Spencer, on-shelf availability of Greencore wrap sandwiches is up by 20%, resulting in incremental sales of £300,000 in the first few months. Greencore attributes this 20% improvement in availability of wraps directly to the use of QlikView.^{viii}

For more QlikView customer success stories, check out the customer references section of our web site at www.qlikview.com.

Appendix

RELATED QLIKVIEW WHITE PAPERS

The “QlikView.next” Product Scenarios, October, 2012

<http://bit.ly/UrGvAa>

The Vision for “QlikView.next,” March, 2012

<http://bit.ly/MfFeb4>

Social Business Discovery: Optimizing Decision Making, October, 2011

<http://bit.ly/q0PVap>

Business Discovery: Powerful, User-Driven BI, July, 2011

<http://qlik.to/qbA9wv>

RELATED QLIKVIEW BLOG POSTS

“100,000 Questions,” November 2, 2012

<http://bit.ly/SDuCEV>

“Would You Rather Go Exploring Alone . . . Or Together with Others?” September 18, 2012

<http://bit.ly/S5fhwd>

“The Elephant and the Cheetah: Episode 2 in the ‘Potholes of BI’ Series,” September 6, 2012

<http://bit.ly/P3a0Ei>

“Video with Anthony Deighton: QlikView Associative Search,” August 28, 2012

<http://bit.ly/OpRthG>

“A Dozen Reasons to Love QlikView,” August 23, 2012

<http://bit.ly/RGk6Oj>

“How We Used QlikView to Transform QlikTech Customer Support,” July 24, 2012

<http://bit.ly/LMMQRZ>

“Video: The Business Discovery Difference, with Donald Farmer,” July 19, 2012

<http://bit.ly/MstfnL>

“The Dark Matter of Data,” June 5, 2012

<http://bit.ly/Md2RPi>

“Green Is the Colour,” May 18, 2012

<http://bit.ly/J5K3i6>

“QlikView and the Data Pool,” April 19, 2012

<http://bit.ly/HSWDQ9>

“Many Ways to Ask Questions with QlikView,” April 17, 2012

<http://bit.ly/HKhogu>

"New Manifestos for the CIO and Business Discovery," April 5, 2012
<http://bit.ly/Hj2NOX>

"How About a Piece of Apple Pie," March 30, 2012
<http://bit.ly/Hoi3Dh>

"I Want This Song"—An Analogy for Business Discovery," July 7, 2011
<http://qlik.to/rmOAaQ>

End Notes

- ⁱ You can ask questions in many ways using QlikView, all with the click of a mouse or a tap of the finger on a touchscreen device. See the post and video on the Business Discovery Blog, "Many Ways to Ask Questions with QlikView," at <http://bit.ly/HKhogu>.
- ⁱⁱ Aberdeen Research conducted a survey of 237 organizations on the topic of agile BI in March of 2011. See the report, "Agile BI: Complementing Traditional BI to Address the Shrinking Decision-Window," November 2011 (available to subscribers only).
- ⁱⁱⁱ Advanced analytics will automate many management decision-making processes, which will allow managers to focus more on strategy setting and business innovation. At the same time, developments in machine learning and in-memory computing will enable people to analyze masses of unstructured data. And, finally, collaborative and social technologies will enable more employees to participate in decision making, improving the quality of management decisions. For more information see the March 27, 2012, Gartner report, "Information Innovation Will Revolutionize Decision Making" (available to subscribers only).
- ^{iv} During the "100,000 Question" jam session, 17 QlikTech staffers logged into the Sales Management and Customer Analysis app on our demo site (<http://bit.ly/Xqmo5T>). On the count of three we began to identify and write down questions we could ask and answer with the app, with simple clicks. See the post, "100,000 Questions" on the Business Discovery Blog, at <http://bit.ly/SDuCEV>.
- ^v For more information about QlikView's collaboration capabilities see the QlikView white paper, "Social Business Discovery: Optimizing Decision Making," at <http://bit.ly/q0PVap>.
- ^{vi} For more information about QlikView's mobile Business Discovery capabilities see the QlikView white paper, "QlikView on Mobile: Beyond Reporting," at <http://bit.ly/xKFyf1>.
- ^{vii} For more about Illes Seasonings and Flavors' use of QlikView, see this video interview with Les Howell, Illes' Executive Director of IT: qlik.to/Zv2wwV.
- ^{viii} For more information about Greencore's deployment of QlikView to optimize distribution and sale of prepared foods for Marks & Spencer stores in the UK, see this success story: <http://bit.ly/UjGSqu>.