

August 2013

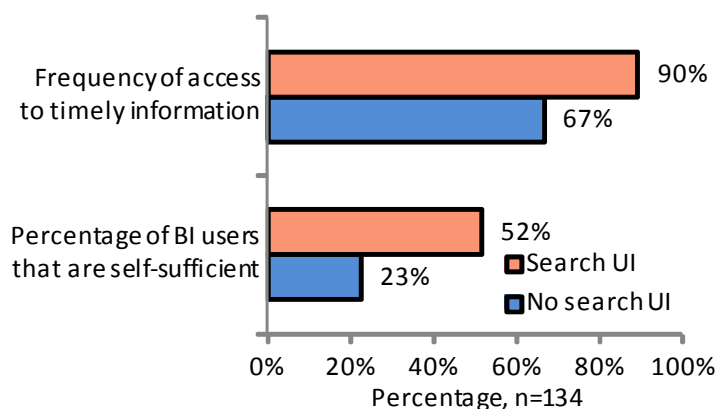
## Search: The Next Evolution in the Analytics User Interface?

Imagine the World Wide Web without search. A mind-boggling, almost laughable proposition. And yet, for generations that is how business intelligence has worked. This has been somewhat effective for many organizations, while the following three conditions held true: the data was reasonably well understood, the data volumes relatively small, and the business questions that needed to be answered were predictable. However, for many organizations that is no longer the case. For example, February 2013 research into data management (*Big Data Trends in 2013*) found that the average annual growth in data volumes was 56% — twice the growth rate of three years earlier. Similarly, recent Aberdeen research (*Agile Analytics: Staying Afloat on the Rising Tide of Information Needs*) found that 51% of survey respondents were under pressure to meet a growing and/or changing demand for management information. Just as search made a rapidly growing unwieldy public internet useful for millions of people, so it promises to do the same for analytics. Aberdeen's research found that a search-based user interface (UI), combined with the ability to interact and manipulate search results, could be a powerful way to enable business managers to find timely information, while reducing their dependence on skilled IT staff.

### The Most Important Metric in Analytics

Timely information — managers need it to be productive and efficient. Without it, important decisions can only be based on guesswork or gut instinct.

**Figure 1: 34% More Likely to Find Timely Information**



Source: Aberdeen Group, May 2013

### Analyst Insight

Aberdeen's Insights provide the analyst's perspective on the research as drawn from an aggregated view of research surveys, interviews, and data analysis.

### BI Definitions

Business intelligence solutions typically fall into one of three broad styles:

- ✓ **Managed reporting:** Information is often presented as tables of numbers, perhaps with the occasional chart. User interaction is limited or non-existent. Changes or enhancements must often be made by the IT organization.
- ✓ **Dashboards:** Presents information both numerically and graphically. The ability to interact with data — using “drill-down,” for example — is common. Usually, IT skills are heavily involved in the completion of dashboard projects.
- ✓ **Visual data discovery:** A rich, highly interactive, visual tool is provided to business users to allow them to manipulate and explore information directly. Although corporate IT is still involved, a large part of the responsibility for creating and accessing different views of the data falls on the business community.

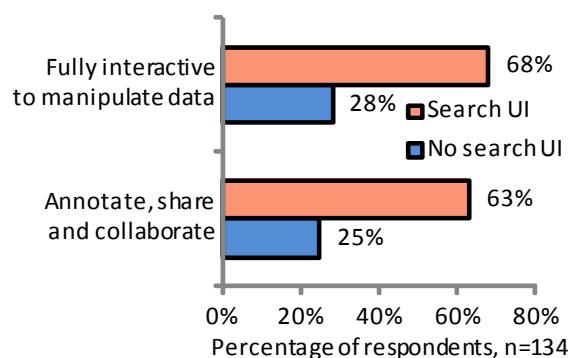
Aberdeen's research shows that managers in organizations that use a natural language interface with BI tools are much more likely than others to find the right information at the right time (Figure 1). This is the most important measure of the performance of any analytics solution. Without acceptable performance in this respect, any investment in business intelligence and analytics is wasted. As Figure 1 shows, in organizations that use a natural language search interface, managers are able to find the information they need when they need it, 90% of the time.

In addition, the use of natural language can help to promote self-service analytics. In the past, the use of business intelligence in many organizations was heavily dependent on corporate IT. This dependence is a natural obstacle to the widespread use of BI within organizations. When skilled IT staff are needed to create, maintain, and enhance the BI assets used by the business this can be a bottleneck. There is a natural limit to the number of analytics uses that can be supported for any given IT resource. Analytics tools that allow business users to quickly and easily find answers to unanticipated questions can help to lift this limit. Companies that take advantage of a search-based UI have well over twice as many self-sufficient analytics users as those that do not (52% vs. 23%).

## More to the Solution than Search Alone

Natural language search can be a powerful way to help business users find information they need quickly. However, other capabilities come into play in order to maximize the advantages of a search-based user interface.

**Figure 2: Interactivity and Collaboration are also Key**



Source: Aberdeen Group, May 2013

As Figure 2 shows, companies that use natural language search are nearly 2.5-times more likely than other organizations to have analytics solutions that are highly interactive. The ability to interact with and manipulate data is directly related to the ability to find timely information. Managers who are presented with just static views of data that can't be manipulated (e.g., managed reporting) have an inherent roadblock in their decision-making process. That is old-style BI — information served up in forms pre-determined by corporate IT with the intention of helping users to answer

### Expanding Use with Self-service

Organizations that use a natural language interface have managed to get business intelligence into the hands of more employees. On average, 37% of employees have access to BI, compared to just 28% at other companies.

The more that BI users become self-sufficient and need less help from IT staff, the more time IT staff have to roll out BI to more areas of the business. Companies that use search-based analytics devote fewer resources to the maintenance of existing BI projects than other organizations (22% vs. 28%).

### More Intensive Analytics Use

Managers at firms that use a natural language interface have a more intensive and enduring relationship with analytics. Forty-seven percent (47%) of these managers use BI at least once per week, compared to 36% of managers at other companies. In addition, 36% of analytics users interact extensively with information, compared to just 14% of users in organizations that do not use a search-style UI.

anticipated questions. There is still a role for that style of business intelligence as discussed later.

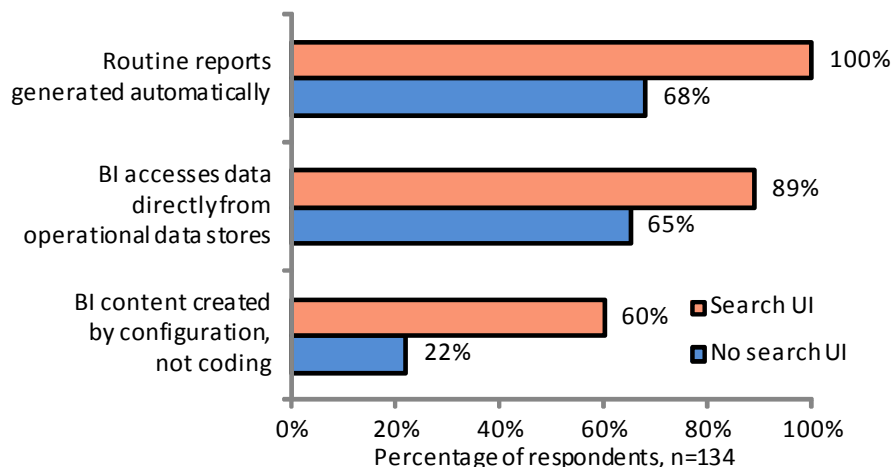
But, what happens when unexpected questions arise and only static views of information are available? Certainly, business managers can work with IT staff to try and find the information they need. Often, however, that process takes so long that the information can't be found in time to influence the decision at hand. Self-service analytics, where managers can interact with information, can help. Solutions that are highly interactive (referred to as visual data discovery in the sidebar on page one) are the current state-of-the-art as far as self-service BI is concerned.

Lubricating collaborative decision-making can also be important in some scenarios. Sometimes, sharing analysis with a second pair of eyes can provide additional insights — the whole is greater than the sum of the parts. Alternatively, when a manager gains insight through analysis, their recommended course of action may need to be approved by a senior manager. In these situations, the ability to annotate reports or charts, and then share that annotation with individuals or groups, can greatly accelerate decision-making. While 63% of the organizations using natural language search have this capability, only 25% of other organizations do so.

## In the Search Interface Engine Room

Every organization that uses a natural language interface for BI also has a process in place to generate and distribute routine information fully automatically (Figure 3).

**Figure 3: Optimizing the Value of Search-based BI**



Source: Aberdeen Group, May 2013

Known as managed reporting (see sidebar on page one), this is a reliable way to ensure that routine information that needs to be updated and distributed periodically can be pumped out cost effectively to whoever might need it. But, as the sidebar opposite shows, providing answers to

### Limits of Managed Reporting

Managers in organizations that are dependent solely on managed reports are able to find timely information only **62%** of the time.

questions that were anticipated months or even years in the past can only take you so far. It's simple — BI solutions that allow managers to interact with data increase the odds that they will have the information they need, when they need it.

The way that business intelligence content (reports and charts — also referred to as BI assets) are created is important too. Companies that use search-centric analytics are over 2.5-times more likely than others to create all of their BI content through configuration (Figure 3). The alternative is to depend — at least partly — on programming or coding. This can have a direct impact on the ability of business managers to find the information they need, exactly when they need it. For example, some BI tools may require a SQL script to be constructed whenever a new report is created. Alternatively, some kind of scripting or programming may be necessary to periodically refresh charts and dashboards. In these situations, creating or editing a BI asset is likely to require skills that business users simply do not possess. Consequently, any enhancements needed to the BI solution must wait until skilled IT staff has time to make them. Given the backlog of analytics projects that many IT departments have, that decreases the probability that managers will have the right information when they need it.

However, if changes can be made simply by configuration, this may not be the case. For example, a new report may be created simply by dragging and dropping data items onto a template, in place of using a SQL script. Likewise, the refresh rate of the dashboard may be determined simply by using checkboxes, instead of programming. In these situations, creating or enhancing BI content may be achieved by business users directly, without any (or significant) assistance from skilled IT staff. Such an approach can have a direct impact on key metrics such as time to information. For example, if a business user is able to make changes to a report themselves, they can have access to the information they need within minutes. On the other hand, if IT skills are required to make that change, that new view of information may not be available for days or even weeks.

Another factor that can help to provide timely information is the use of an operational data store (or ODS, see sidebar, next page, for definition). At its simplest, the IT infrastructure for supporting analytics is little more than plumbing. Raw data is collected, funneled into an operational data store, where it can be accessed with reporting, dashboarding, or visualization tools. However, there is a trade-off here. While an ODS can provide rapid access to new data, they do not provide the type of aggregation and historical information typically found in a data warehouse.

## Key Recommendations

While analytics remains dependent on rarefied IT skills, the spread and adoption of analytics is always going to be limited. Technologies that can help to make business users, more independent and self-sufficient in their use of analytics can help in this respect. Based on our research data, Aberdeen suggests that organizations consider the following:

### Survey Demographics

The demographics of the 29 firms that use a natural language user interface for BI were:

- ✓ **Headquarters:** North America – 48%; Europe – 38%; Asia / Pacific – 13%; Middle East – 1%
- ✓ **Headcount:** Large (more than 1,000 employees) – 38%; midsize (between 101 and 1,000 employees) – 16%; small (100 employees or less) – 46%
- ✓ **Annual Revenue:** Large (greater than \$1bn) – 21%; midsize (between \$50m and \$1bn) – 21%; small (Under \$50m) – 58%
- ✓ **Industry:** IT consulting / services – 23%; software – 15%; education – 8%; government / public sector – 8%; computer equipment – 4%; construction – 4%; financial services – 4%; medical devices – 4%; industrial products – 4%; insurance – 4%; pharmaceuticals – 4%; real estate – 4%; travel / hospitality – 4%; utilities – 4%; other – 6%

- **A natural language interface helps managers to find timely information.** Managers in organizations that have adopted natural language search as the user interface for business intelligence are 34% more likely (on average) to be able to access timely information when compared to their peers (90% vs. 67%).
- **Search without interactivity is likely to have a limited impact.** As noted, static reports have some very fundamental limitations. To wit, if they don't contain the information needed by business users they are of very little use. In a similar vein, search is often just the start of the analytics journey. What happens if the search results do not produce exactly the view of information needed? The ability to interact with and manipulate the result of a search is vital if managers are to quickly find the answers to unexpected questions. Managers at 68% of organizations using search-based BI are able to manipulate information interactively, compared to just 28% of others.
- **Companies with search are able to make good use of scarce IT skills.** Fifty-two percent (52%) of BI users at these companies are able to operate with little or no assistance from skilled IT staff. This is driven by three main factors. First, user interfaces don't come much simpler or easier to understand than search. If someone is using analytics, it's a pretty solid bet that person has run countless internet searches. Second, the ability to interact with search results (see above) promotes independence of business users from IT staff. If managers can find what they need, they are less likely to seek help to create new views of information. Third, 60% of the firms using search-based BI are able to create the solution they need without coding. Only 22% of the companies not using search-based tools are able to achieve this.
- **Don't overlook the latency inherent in data storage choices.** A data warehouse can provide a comprehensive record of historical data, comfortably storing millions or billions of transactions for rapid access. However, many data warehouses are only refreshed with batch updates — perhaps daily, but often weekly or even monthly. As a result, a data warehouse may not be the best option if business managers often need information that is so young it is still waiting to be moved into the data warehouse with the next batch transfer. Operational data stores (ODS) can provide a better option for accessing data that has only been recently created. Eighty-nine percent (89%) of the organizations using search-based analytics also use operational data stores.

#### Data Warehouse or ODS?

A conventional data warehouse may hold vast amounts of historical data, contain many calculated and derived fields, but only be updated periodically. On the other hand, an operational data store (ODS) typically only stores recent data that closely mirrors transactional systems. But, this type of store is typically refreshed more frequently than a data warehouse. If managers often need access to near real-time data, or information that has only been recorded in the last day, an operational data store may be a good choice.

For more information on this or other research topics, please visit [www.aberdeen.com](http://www.aberdeen.com)



### Related Research

[Visualization: Set Your Analytics Users Free](#); August 2013

[Self-Service Drives the Analytic SME](#); August 2013

[Agile Analytics: Staying Afloat on the Rising Tide of Information Needs](#); June 2013

[Software-as-a-Service Helps Deliver Satisfied Analytics Users](#); May 2013

[Decisions on the Move: Mobile BI 2013](#); April 2013

[A Simple Cost Justification for Self-Service Analytics](#); February 2013

[BI Without Tears: Analytics without Coding](#); October 2012

[The Grinning CFO: How to Get a Return on BI Projects in Less Than 4 Months](#); October 2012

[Operational Intelligence: Exorcising the Devil in the Details](#); October 2012

[Pervasive Cloud BI: Analyst, Advocate, Problem-Solver - All in One](#); September 2012

[Managing the TCO of BI: The Path to ROI is Paved with Adoption](#); May 2012

**Author: David White, Senior Research Analyst, Business Intelligence,**  
[\(david.white@aberndeen.com\)](mailto:david.white@aberndeen.com);

For more than two decades, Aberdeen's research has been helping corporations worldwide become Best-in-Class. Having benchmarked the performance of more than 644,000 companies, Aberdeen is uniquely positioned to provide organizations with the facts that matter — the facts that enable companies to get ahead and drive results. That's why our research is relied on by more than 2.5 million readers in over 40 countries, 90% of the Fortune 1,000, and 93% of the Technology 500.

As a Harte-Hanks Company, Aberdeen's research provides insight and analysis to the Harte-Hanks community of local, regional, national and international marketing executives. Combined, we help our customers leverage the power of insight to deliver innovative multichannel marketing programs that drive business-changing results. For additional information, visit Aberdeen <http://www.aberndeen.com> or call (617) 854-5200, or to learn more about Harte-Hanks, call (800) 456-9748 or go to <http://www.harte-hanks.com>.

This document is the result of primary research performed by Aberdeen Group. Aberdeen Group's methodologies provide for objective fact-based research and represent the best analysis available at the time of publication. Unless otherwise noted, the entire contents of this publication are copyrighted by Aberdeen Group, Inc. and may not be reproduced, distributed, archived, or transmitted in any form or by any means without prior written consent by Aberdeen Group, Inc. (2013a)