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RESEARCH NOTE MAKING WEB SITES STICKIER WITH TABLEAU

THE BOTTOM LINE

When Nucleus examined the features and functionality of the Tableau product offering, analysts found significant benefits were available to Web-based content publishers. By providing a Web-based approach to the interactive publication of data and visualizations, Tableau enables content providers to improve the Web site metrics that lead to higher revenues. The offering also enables publishers to avoid deployment costs, especially hardware, while achieving high Web site performance levels.

THE CHALLENGE

With the commoditization of information by search engines such as Google, Web-based content providers are finding it difficult to make money. One problem is costs. With so many outlets providing content free of charge, people are often unwilling to purchase subscriptions or pay for downloads. Another problem is data delivery. Although the Web is awash in freely available data, the tools for exploring that data are relatively limited. Some of the business models that are now challenged as a result of the ubiquity of data include:

- News outlets. The news business still hasn't fully recovered from the arrival of the Internet. With the availability of free online news and the near demise of the paper-based subscription model, many outlets responded to revenue reductions with successive reductions to their newsroom staffs. The result was a sameness of content at many sites, which led to further reductions in readership and advertising revenues and a vicious circle. Although many news sites retain a core population of visitors and subscribers by providing localized content, most struggle to differentiate themselves.
- Popular content sources. For any given hobby, sport, or political outlook, there are multiple outlets competing for both subscribers and advertisers. Like news outlets, popular content outlets also compete for the best content and writers, some of whom work for free, such as the bloggers at Huffington Post.
- Scholarly organizations. Academic institutions and think tanks, which are often not-for-profit entities, now find it harder to achieve their mission and retain funding sources. If these organizations are merely aggregating data or publishing content, their mission and funding may be imperiled if they are not able to add value to the content they deliver.

TABLEAU

Tableau Software is a provider of business intelligence applications. Although the company focuses on providing analytical tools for business users, Tableau's products have features and functionality designed to help content providers

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improve their data publication and visualization capabilities. Components in the Tableau offering include:

- Tableau Public is a free product designed for bloggers. It enables users to publish their data on the Web and display it using a broad variety of interactive visualizations. This version has a 50 megabyte limit on storage space for data.
- Tableau Server also enables data publication and a broad variety of interactive visualizations, but can store up to two gigabytes of data. Tableau Server also supports authentication and security, making it appropriate for corporate analytics deployment, unlike Tableau Public and Tableau Digital.
- Tableau Digital has the same publication and visualization capabilities as the Public and Server versions, but has no restrictions on the volume of data published. Although Tableau Digital enables Web-based publication of the underlying data so that the public can interact with it, this edition enables suppression of publication of the underlying data.

Because all of the products are Web based, users do not need to purchase the hardware necessary for data storage or the functionality that lets the public interact with the data or the visualizations. By using the Web to publish data and visualizations, users can also get faster performance than is possible with on-premise hardware, especially when Web site hit volumes spike. All Tableau analytics offerings are compatible with a large number of commonly used data sources from vendors such as IBM, Oracle, Microsoft, SAP, Netezza, and Progress Software.

BENEFITS OF TABLEAU

When Nucleus analysts examined Tableau, benefits were identified in two areas. First, users of Tableau Digital and Tableau Public can improve the site performance metrics that lead to increased revenues and funding. Second, Tableau's Web-based approach enables users to avoid deployment costs such as hardware, while achieving high Web site performance levels.

INCREASED WEB SITE TRAFFIC

Analysts found that increased subscription volumes, higher advertising revenues, and better funding positions are significant benefits when organizations use Tableau to improve their end users' experience when interacting with data. Nucleus analysts found that Tableau enabled organizations to create visualizations that were:

- Content rich. Analysts found Tableau was used to create visual depictions of a large number of data sets in various combinations. The Seattle Times uses Tableau Digital to publish a snapshot of the Seattle economy on a monthly basis. The visualization contains five panels related to jobs, spending, real estate, and travel and transport, and a summarized "big picture". Within each panel are four graphical presentations of key economic indicators, using time-series data and bar charts.
- Interactive. In the Seattle Times visualization, hovering a mouse over a data point causes more detail on that data point to be revealed in a balloon. Visualizations typically enable viewers to modify a graphic so that only one data set, or a subset of data sets, is revealed in the visualization.
- User friendly. Tableau visualizations are also extremely easy to use. Although the visualizations are interactive and contain depictions of a large number of

data sets, they are highly intuitive and do not require technical or subject-matter expertise.

Content providers indicated that the ability to publish content that was richer and more interactive led to financial benefits. One of the Tableau Digital customers analyzed by Nucleus is a not-for-profit which aggregates and publishes data related to military conflicts. A user at the organization said, *"By using Tableau to give our users the ability to explore and analyze the data, we are now more able to achieve our mission of providing highly vetted and objective data on military conflicts, which makes our donors happier."* This user also said, *"Our subscription rate is up for a number of reasons, including Tableau. Although I don't know how much tableau contributed to the uptick, I know it has. Mentions of us on Twitter are up and press inquiries are up by about 200 percent since we started using Tableau."*

AVOIDED DEPLOYMENT COSTS

Analysts found that organizations using Tableau were able to avoid deployment costs for two reasons. First, the cloud-based approach of Tableau enabled organizations to avoid investments in hardware. By using the cloud to give Web-site visitors highly interactive analytic tools, Tableau users are able to avoid investments in hardware for the storage of both data and application software. Tableau's Web-based approach also enables content providers to achieve significant scale. Although content providers routinely publish new material for their Web-site visitors, traffic volumes can be highly volatile. For example, New Scientist, a science-related weekly magazine and Web site, used Tableau to publish visualizations related to worldwide nuclear sites and experienced a dramatic spike in site visits after the tsunami in Japan. Had New Scientist relied on their own hardware to publish these visualizations, the organization would have had to either invest in new server capacity or risk server overloads and poor Web site performance, which would have hurt their brand.

The second area of avoided costs is software. Nucleus analysts have examined numerous applications of Tableau which incorporate a variety of features and functionality that would typically require multiple software investments with separate vendors. Examples of tools incorporated in many applications include data extraction capabilities, visualization assets which create graphics ranging from heat maps to bar charts, and applications which correlate existing data with geospatial coordinates. One Tableau user said, *"To do what we're doing now in Tableau would probably require at least three applications. I'd have to combine things like FusionCharts with geographic visualization tools."* This user also avoided investing in annual license maintenance and ongoing internal application support.

CONCLUSION

A significant opportunity exists for Web-based content providers to go beyond just publishing the content that they create or acquire. Tableau Software enables content providers to make their end users' experience more entertaining, intellectually rewarding, and productive by publishing visualizations that are richer and highly interactive. Another benefit of Tableau is its Web-based approach, which enables content providers to avoid hardware investments, but still publish visualizations with extremely rapid refresh speeds that are difficult to achieve with on-premise hardware.

Although the primary benefit of Tableau is a better end-user experience, Nucleus analysts found the most significant benefits to be the increases in revenues and funding that can be achieved when Web site metrics improve. Many of the content providers examined by Nucleus indicated that they were able to increase the key performance indicators that enable improvements to financial condition. Visualizations that are more compelling and useful lead to longer site visits and higher click-through rates, which are trends which can be used to improve advertising revenues. Better user experiences can also lead to increased subscribership and renewal rates by end users. Finally, scholarly organizations can use improvements in key Web-site performance metrics to prove the accomplishment of their mission, making it easier to raise funds and retain donors.