SAVANNA

WHITE PAPER

Analyzing Insurance Fraud with Savanna

Thetus Corporation, 326 SW Broadway, Portland, Oregon 97209, USA.

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EXECUTIVE OVERVIEW

Insurance fraud has existed since the beginning of insurance as a commercial enterprise and accounts for a substantial portion of all claims received by insurers. The insurance industry is diverse and all encompassing, and billions of dollars are lost annually due to insurance fraud. These crimes range from vaguely exaggerated auto claims to elaborate fraud rings deliberately causing accidents or damage for large payouts. The latter is a trend that investigators are seeing increase nationwide, and methods to identify and prosecute are needed to prevent fraud.

Investigators must make decisions based upon their present understanding of crimes, regardless of how imperfect the available information. Anecdotal knowledge provides spotty insights, commercial media is too broad, and quantitative data requires appropriate context. Yet by synthesizing these and other forms of data into a comprehensive narrative, corporate analysts can anticipate risks with accuracy and efficiency.

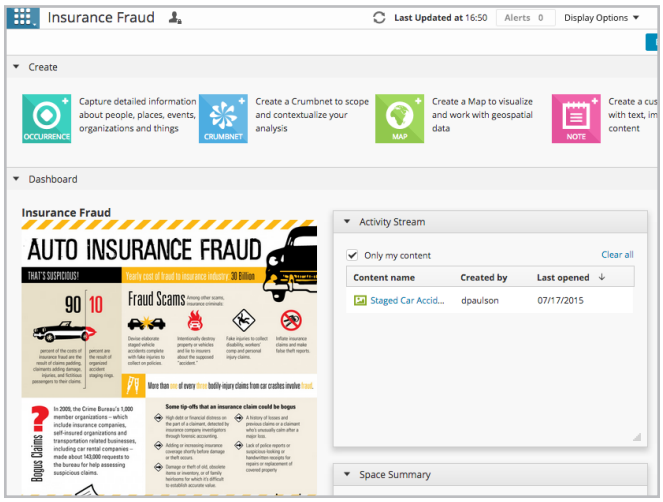
Employing models to extend the utility of qualitative information, and working within a single shareable, secure platform, analysts can further operationalize tacit knowledge and contextualize information, providing decision-makers with the insight needed to prepare for the unknown.

To address complex and constantly evolving problems like insurance fraud, enterprises are turning to big data analytics to detect and defend against fraud. However, the sheer volume of data reporting and false positive rates are daunting to analyze and require a solution to extend data results. Savanna's dynamic, all-source analysis environment gives investigators the ability to delve into each point of interest, discovering connections and evidence to implement strategies for prevention methods.

ANTICIPATING OUTCOMES WITH SAVANNA

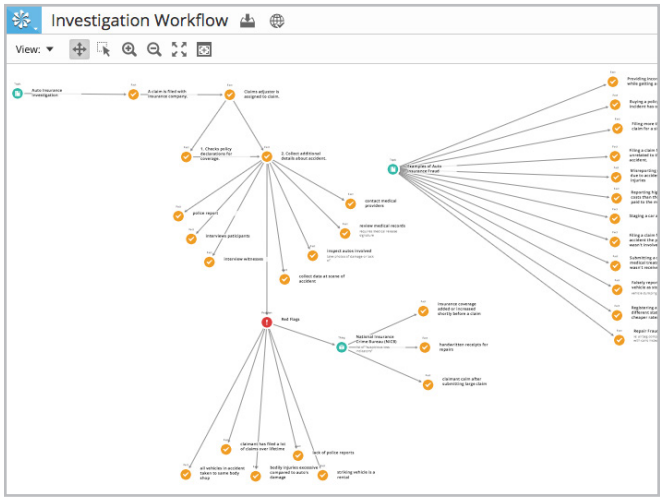
Complex, multi-faceted crimes like insurance fraud require a unique, multi-faceted approach to assessing and dealing with potential risks. With the appropriate tools and expertise, stakeholders can anticipate potential outcomes and prepare accordingly.

Savanna, Thetus Corporation's flagship browser-based analysis platform, enables analysts to model complex problems. By identifying key information and visualizing relationships between structured and unstructured data, Savanna users construct holistic narratives that convey known risks as well as information gaps.



Access data via Savanna's web interface for easy file sharing

Savanna is browser-based, meaning that any authorized user with an Internet connection can access the Savanna platform and all public content created by other users on the network.

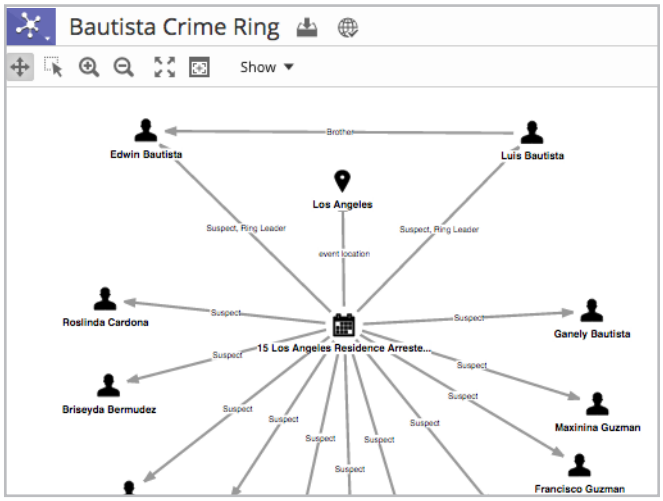


Contextualize and synthesize information with Crumbnet

Savanna Crumbnets serve as white boards for free-form analysis. Crumbnets allow analysts to capture questions, hypotheses, and assumptions to create an analysis narrative and place relevant data in context (e.g., Analyst's Notebook Charts, documents, images, other Crumbnets, videos, and much more). Analysts use Crumbnets to collaboratively ask and answer questions, pose hypotheses, note assumptions and state relevant facts to contextualize data. Crumbnets also serve as a navigation tool to guide audiences through the analysis.

Build interconnected information networks with Occurrences

Occurrences are the problem-specific building blocks of an information network that any Savanna user can access and quickly add new discoveries and pull on existing data to connect information. With Occurrence templates, analysts can set requirements, define important fields and identify information gaps. These templates capture problem-specific information in a uniform way, eliminating redundancy and creating a common analytical framework that analysts can build on. Occurrences are fully sourced and linked between related profiles, allowing users to easily navigate between connected information.

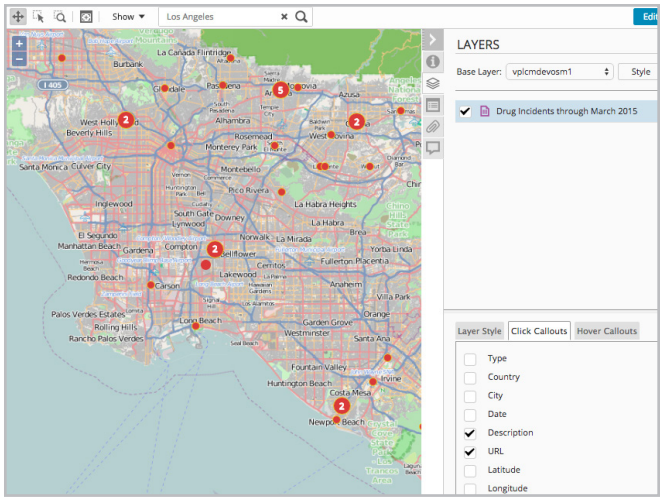


Visualize connections and relationships with Linknet

Analysts can add multiple Occurrences from the information network to a Linknet to view interconnected people, places, organizations, events and things by simply dragging and dropping. Occurrences in the Linknet are fully sourced, allowing analysts to easily access information about individual entities on the Linknet.

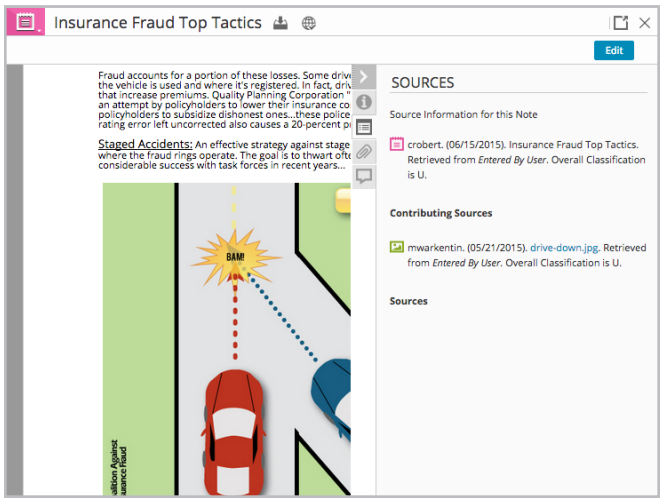
Temporally visualize information with Timeline

With Timeline, analysts can temporally visualize Occurrences (people, organizations, places, events and things) and their associated events by simply dragging Occurrences onto the Timeline. With Timeline, users can interact with Occurrence events by zooming, panning, drilling down for more specific information, and filtering with a temporal filter.



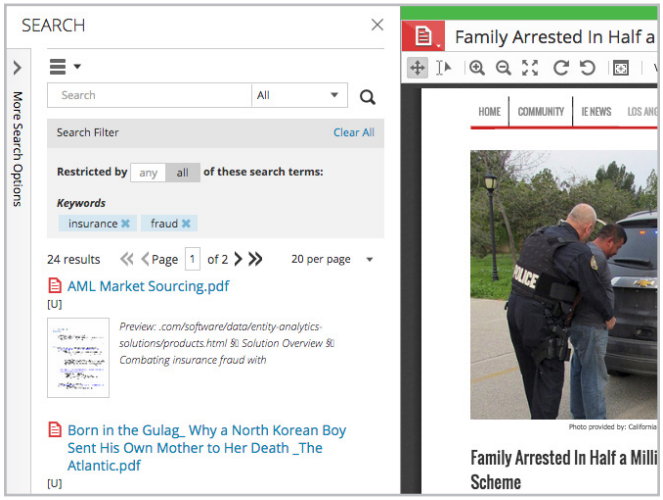
Visualize geographic data in Savanna's enterprise-level mapping tool

Using geographic data or a CSV file containing geographic coordinates, analysts can create and stylize maps to complement their analysis. Automated mapping of data sets facilitates visualization of large quantities of geographic information while customization tools allow the user to modify colors, base layers, and data visibility.



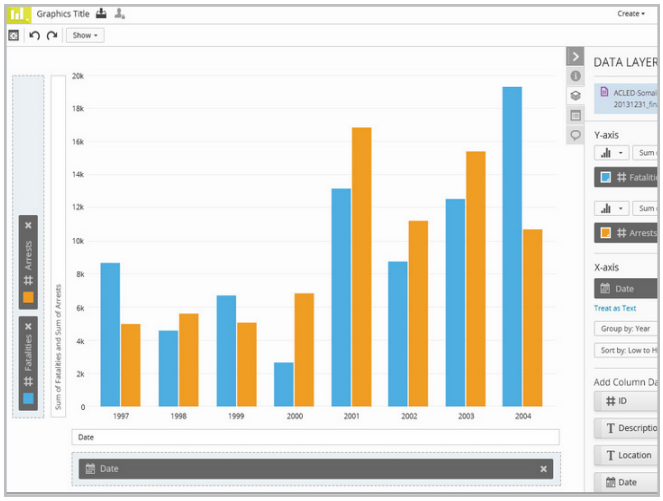
Support analysis conclusions with evidence created in Savanna and from other sources

Analysts collaborate on Crumbnets to support their conclusions with content created in Savanna, such as a screenshot image of a Map and relevant research. Viewers explore evidence in the form of documents, images, videos, maps, notes, quantitative data, and profiles of people, places and organizations.



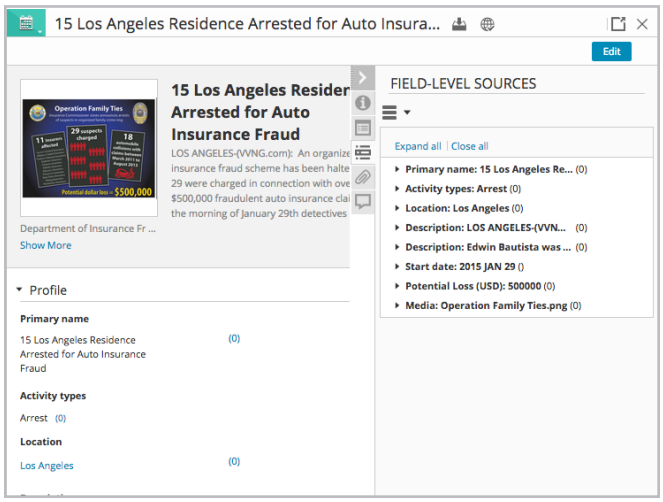
Discover external data and Savanna content through keyword search and filtering

Savanna's search capabilities enable analysts to find relevant data and model content among public material on the shared network through searching for keywords and other filters, such as file type and classification level. Search results can then be added to the user's Space and incorporated into their analysis. Searches can also be saved so that analysts can be alerted when new relevant content becomes available.



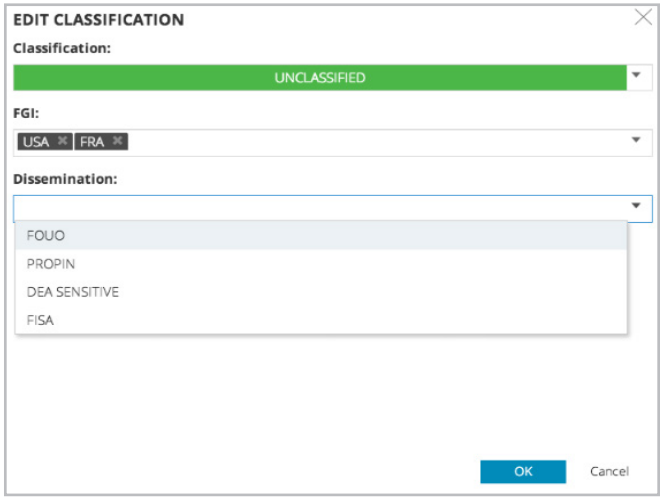
Visualize structured data as charts

With the Graphic tool, users can visualize structured data inside Savanna as charts (pie, bar, scatter, line) by simply dragging and dropping datasets onto the Graphic background. With Graphic, analysts can pick multiple columns of data to visualize on the chart, and choose custom style settings to visually differentiate the data.



Understand how information changes over time by tracking provenance and lineage

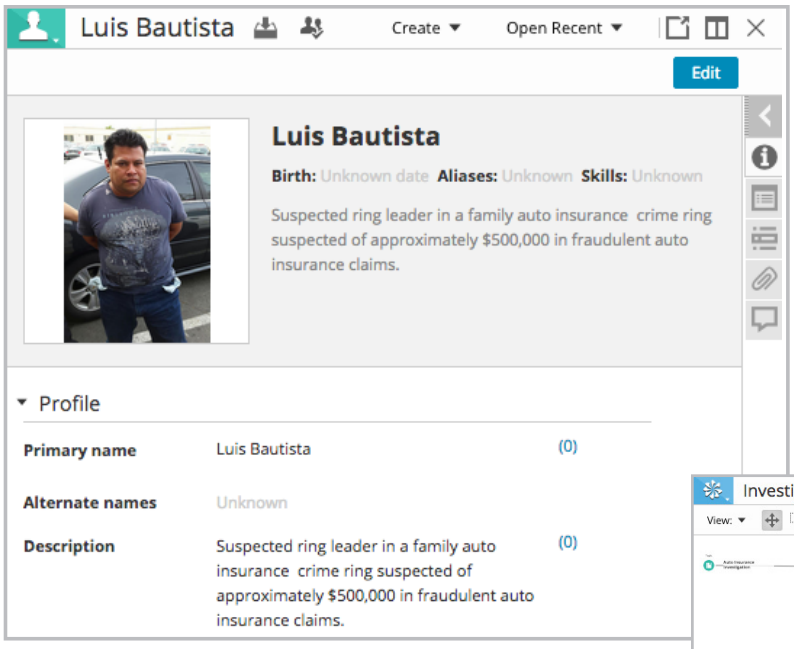
Savanna users have multiple options to describe information, including adding citation details, linking to contributing sources, attaching reference materials, and organizing related information in a Space. Savanna automatically captures details like citations and user activity for content created within Savanna.

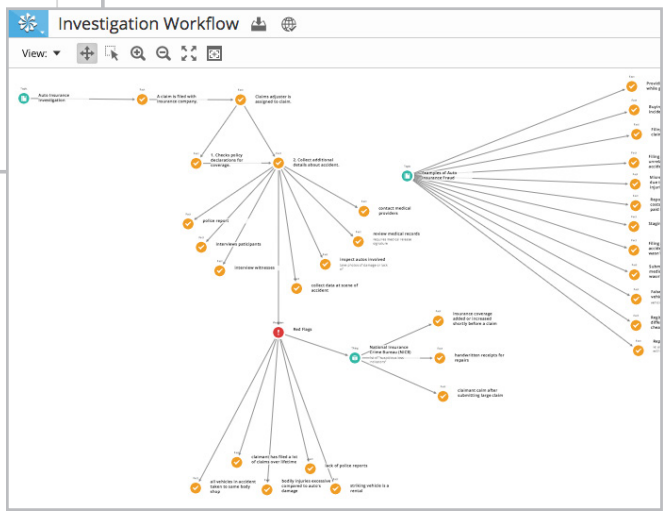


Manage privacy settings to control access to classified information

Administrative controls enable careful management of user access to information. Users select private or public settings for material they create or upload. They can also mark information according to its classification level, thereby permitting public view of the information only for those users whose accounts are set to the same classification level.

SPOTLIGHT: INSURANCE FRAUD RING





When a hit and run auto collision report uncovers a fraud ring operating out of Los Angeles, investigators use Savanna to track and connect knowledge to build a cohesive case for arrest.

The investigators begin by framing the problem in a Crumbnet, by outlining the insurance investigation workflow, including the steps involved in fraud investigations and red flags that arise to gain more understanding of resources needed to prevent insurance fraud.

With Savanna's dynamic Occurrence dossiers, the analysts create a Person Occurrence to profile Luis Bautista, the suspected ringleader in a family auto insurance crime ring. Within each Occurrence, they can quickly add new discoveries and pull on existing data to connect information. For example, under Events, they add the existing knowledge of when Bautista was first arrested for insurance fraud.

Then, they use a Linknet (Savanna's link charting tool) to add multiple Occurrences from the information networkto find connections between each suspicious person and add it to the Insurance Fraud Investigation Space (Savanna's content management tool) for later use.

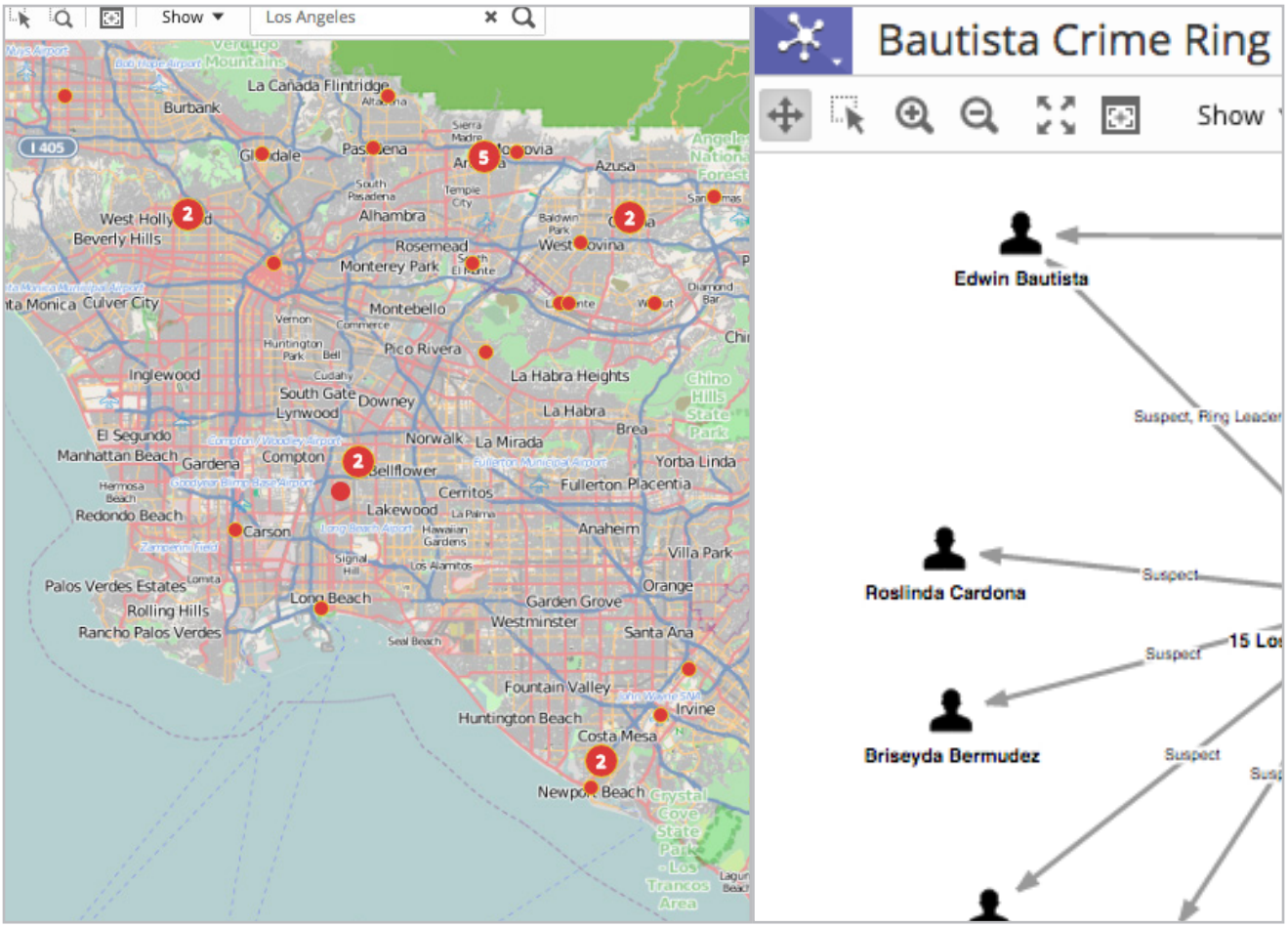
In Timeline (Savanna's temporal visualization tool), investigators can drop multiple Occurrences, such as various members of the family crime ring Person Occurrences, to see similar activity and movement between various crime ring members.

With Map, they can geospatially visualize data showing where fraudulent auto accidents staged by Bautista occurred over the last few years.

To provide more supporting evidence, the investigators use the Search tool and find a PDF uploaded by another Savanna user outlining the tactics Bautista used to accumulate over $500,000 in fraudulent auto claims.

Now, with supporting documents and models, they're ready to build a report in Savanna's Note tool detailing the process of detecting and analyzing insurance fraud to determine alternative prevention methods. In Note, they compile their findings, such as an image of the Timeline depicting overlapping events perpetrated by the Bautista crime ring. Once complete, they can share their findings with team members or create a PDF to send to investigators and decision-makers for further action.

BENEFITS



Decision-making insight

Whether reviewing content from a bird's-eye view or focusing on a detailed event profile, decision-makers gain the critical insight they need to determine when to adjust organizational strategy in response to growing risk indicators.

Agility

Using Savanna's dynamic information management capabilities in coordination with Analyst's Notebook's data analysis tools, organizations can maintain current intelligence needed to respond to rapidly evolving situations and perspectives.

Productivity

Savanna eliminates the time required for integrating analytical output and sharing and formatting files, resulting in more time to devote to analysis and review.

Expanded source material

The ease of uploading and manipulating diverse forms of data frees analysts from technological limits to incorporating all relevant information. Should a growing conflict present incomplete or fuzzy data, analysts can utilize such information in Savanna and update it as clarifying details emerge.

Reduced exposure

Savanna minimizes exposure to error resulting from bad information by offering users the ability to annotate all source material and analysis products. Automatic updates documenting user activity further assign ownership while privacy settings maintain protected data.

CONCLUSION

Complex problems require multi-part solutions. With the rise of tools to mine large data sets, businesses have reaped greater knowledge from structured data[1]. However, complex challenges like identifying and stopping insurance fraud require a more nuanced understanding of context.

Only by viewing problem spaces through multiple lenses and exposing inconsistencies can companies identify—and begin to quantify—risks. In doing so, alternatives become clear, imperatives become known, and negative consequences are avoided.

ENDNOTES

1. Furrier, J, "Big Data Is Big Market & Big Business - $50 Billion Market by 2017," Forbes, last modified February 17, 2012, accessed September 25, 2014, from http://www.forbes.com/sites/siliconangle/2012/02/17/big-data-is-big-market-big-business/.