Realizing Business Value through Big Data

Federal, and State and Local government agencies agree that big data can save 10% or more from annual budgets[1].

State and local organizations store an average of 499 terabytes of data across sources[2]. They have a unique opportunity to generate actionable insights to become more connected with citizens and improve service delivery, become smarter with better decision making, and optimize operations and costs.

However, as agencies go about their big data adoption journey, they face many questions on realizing value through big data analytics, e.g. managing varied needs of business and IT teams, identifying changes in existing systems and architecture to enable quick analysis while generating the right outcomes, integration of right data sources, ensuring effective data governance, etc.

Infosys conducted a session with industry experts to discuss key considerations for successfully adopting big data. The purpose of the session was to share practical insights that can help agencies identify the right approach and the right solution to realize value through big data. Read on to learn more.

Speakers

R ‘Ray’ Wang, Principal Analyst and CEO, Constellation Research

Joseph A. di Paolantonio, Vice President and Principal Analyst, Constellation Research

Vishnu Bhat, Vice President and Global Head – Cloud, Infosys

Rajeev Nayar, Associate Vice President and Head – Big data, Infosys

Discussion

1. Data Warehousing: Is the traditional approach to data warehousing relevant in the big data environment?

Ray: Some approaches from data warehousing are key, like focus on data quality and information governance. The goal is moving from data to decisions.

Vishnu: A significant shift in mindset is required. Enterprise data warehousing (EDW) has to account for unstructured and semi-structured data. EDW will transform to augmented data warehousing or logical data warehousing very soon, and in a hurry.

2. Data Sources: Are organizations considering the complete spectrum of opportunities that big data presents?

Vishnu: Not really. So far we have seen the mindshare predominantly revolving around externally available social media data. The opportunity lies in harnessing unstructured data within the organization as well as structured operational data in backup tapes.

Joseph: Large, traditional enterprises are just beginning to see beyond the hype of big data by investigating newer approaches to data management and analytics for sales, customer service and retention, and operations. The full spectrum of opportunities have not yet been defined. The use cases are a huge data set themselves.

[1] “Big data and the Public Sector”, TechAmerica Foundation

3. **Business and IT Needs**: What’s the criterion to choose the right solution for big data to address the varied needs of both IT and business?

**Joseph**: The questions to be asked of the data sets set the criteria. As do the available talent and architectural fit.

**Vishnu**: The criteria should include speed, agility, self-service concepts, and connection to a variety of data sources. Other important criteria: does the solution enable fast discovery of insights from massive volumes of data? Does the solution minimize data extraction and movement?

4. **Data Governance**: What data governance aspects should organizations consider while implementing big data solutions?

**Joseph**: Big data and data science are about exploring data. Outliers can be important. Agile, iterative approaches to data cleansing, integrity, and master data management are vital.

**Rajeev**: Content governance on the other hand is different. Quality concerns remain but the solutions can be made tolerant to bad quality data by using statistical methods to normalize.

5. **Accountability for Insights**: Solutions available in the market today talk about faster insights and decisions. But how do you ensure implementation of those decisions?

**Ray**: When you focus on business outcomes and not the technology, you improve alignment for success. Success also requires alignment with business processes, as well as providing the right rewards and incentives.

**Joseph**: Implementation can be ensured with the right processes, training, and automation with regard to big data.

**Vishnu**: Solutions in the market today focus on analysis, but these are of no use unless organizations are able to institutionalize them. Organizations should look for big data solutions that enable rapid institutionalization. They should also put in place a process that ensures business leaders take accountability of insights and follow through to institutionalization.

6. **Adoption Roadmap**: What is the future of big data and how should organizations plan their adoption roadmap?

**Joseph**: Organizations need an even stronger emphasis on probability and statistics as even more complex data sources spring from the Internet of Things. All roadmaps must interweave — including machine-to-machine (M2M), machine-to-human (M2H), human-to-machine (H2M), and human-to-human (H2H). Decisions must be made at the right time, at the right place.

**Rajeev**: There will be two camps that clearly form in this space. One that will try to build the capabilities of existing data processing solutions into big data technologies. And the other that will subsume the big data processing model into the traditional databases.

7. **Service Providers**: What role can service providers play to realize business value through big data?

**Joseph**: Big data, data science, as well as data management and analysis (DMA) skills are in short supply. Also, traditional skills in enterprise data warehousing and business intelligence don’t translate to big data expertise. Service providers address both these needs.

**Ray**: Service providers can play a role in big data business models. Or they can help guide organizations as to which big data tools are worth the investment.

**Rajeev**: There will be a shift from product vendors and engineered system providers to system integrators who will engineer solutions. The service providers who do not evolve along this shift will be pushed down to the infrastructure space.
Key takeaways

Speed and outcomes are the two biggest priorities for realizing the desired value from big-data adoption. While it is evident that business and IT teams across organizations want to leverage big data insights, they are unable to find a solution that meets both their priorities. If turning data into revenue is the clarion call, organizations need:

- Real-time data discovery and aggregation
- Automated connector functions for new information sources
- Reusable algorithms to build insights in a few minutes
- Easy-to-use data visualization options
- A way to operationalize insights across the enterprise
- Prebuilt industry-specific scenarios