

Business Analytics and Reporting Pilot Report to Leadership Executive Summary

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Texas Department of Information Resources

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1. Executive Summary

1.1. Overview

When the Texas Department of Information Resources (DIR) published the Legacy System Study in October, 2014, the results showed many agencies were utilizing systems which contained legacy components. House Bill [HB] 1890, 84R, signed into law on June 15, 2015, addressed this issue, and required DIR to develop and implement a shared business analytics and data reporting a service with appropriate security isolation that includes a combination of best practices and toolsets to provide state agencies deeper insight into operations and improved decision making and reporting capabilities. The legislation authorized DIR to initially launch the program as a pilot supporting a limited number of state agencies to validate solution options and structure.

A shared data reporting and business analytics service enables agencies to mature their data initiatives and support big data analytics. Why is big data analytics important?

Big data analytics helps organizations harness their data and use it to identify new opportunities, (which) in turn, leads to smarter business moves, more efficient operations, higher profits and happier customers...Big Data (brings organizations) value in the following ways:

1. Cost reduction. Big data technologies such as...cloud-based analytics bring significant cost advantages when it comes to storing large amounts of data – plus they can identify more efficient ways of doing business.
2. Faster, better decision making. With the speed of...analytics, combined with the ability to analyze new sources of data, (organizations) can analyze information immediately – and make decisions based on what they've learned.
3. New products and services. With the ability to gauge customer needs and satisfaction through analytics comes the power to give customers what they want...(and) with big data analytics, more companies are creating new products to meet customers' needs.

http://www.sas.com/en_us/insights/analytics/big-data-analytics.html

In 2016, DIR led a project to establish a pilot implementation of a shared Business Analytics and Reporting (BAR) platform. The pilot consisted of five pilot agencies, which included the Department of State Health Services (DSHS), the Texas Department of Licensing & Regulation (TDLR), the Commission for State Emergency Communications (CSEC), the Texas Alcoholic Beverage Commission (TABC), and DIR. The vendor selected via competitive selection to lead the pilot was Catapult Systems, Inc. (www.catapultsystems.com), and the platform utilized was Microsoft's Cortana suite. Pilot agencies contributed staff time for training, use case development, and analysis using the BAR solution. Project planning began in June 2015, Catapult was selected through a competitive procurement process in April, 2016, followed immediately by the project kick-off and project sprints, and finally concluding the BAR pilot in September, 2016. The artifacts and more in-depth information from the pilot (e.g., governance, identified required components, changes) can be found in separate BAR Pilot Technical Report. The knowledge and considerations learned during the BAR pilot will enable development, procurement, and establishment of a full BAR program service to be offered on a statewide basis.

1.2. Findings

To accommodate the compressed time period for the BAR pilot, the Catapult proposal utilized Scrum Agile project management methodology (www.scrummethodology.com), which produced tangible results for each pilot agency:

- The Commission for State Emergency Communications (CSEC), who does not possess any analytical tools, received insightful analysis on their Poison Control Network call costs, call load patterns, & call origination data.
- The Texas Department of Licensing & Regulation (TDLR) used data from Facebook and public emails for Sentiment Analysis & Call Center data to identify areas of heaviest demand and to forecast future demand.
- The Texas Alcoholic Beverage Commission (TABC) performed analysis on their criminal violations, complaint investigations, and alcohol license status data.
- The Department of State Health Services (DSHS) performed analysis on data from the Cancer Registry, and automated the Federal Medicaid Reimbursement file creation process, which reduced the time required from 24-40 FTE hours per month to 30 minutes.
- DIR generated analytical insight into their Telecommunications Help Desk ticket resolution performance.

1.3. Challenges

Several challenges were experienced during the BAR pilot, but none prevented the successful completion of the BAR pilot:

- The current restriction of government email use in the cloud required additional resources, and prevented testing of single sign-on access.
- Several agency participants had scheduling issues and limited available time, which prevented full participation during the BAR pilot. While these issues were not BAR scheduling issues, but participant work schedule issues, they did result in increased work efforts for the other pilot participants.
- Lack of a uniform process to formally share data between agencies limited the extent of data sharing across agencies.
- Pilot participants with lower levels of technical expertise required greater efforts from Catapult to achieve successful results.

1.4. Expectations of a BAR Service

DIR envisions a shared BAR implementation will:

- Provide agencies with consolidated, up-to-date, and vendor-maintained BAR environment and related tools.
- Provide agencies with technical services related to the selected analytical platform.
- Replace distributed reporting hardware with centralized and shared hardware.
- Provide standardized and powerful data cleansing, aggregation tools and analytics.

A shared reporting service will provide the following benefits for the state of Texas:

- Reduce the proliferation of hardware and software related to common reporting functions.
- Encourages sharing of data and establishment of master data across the state.

- Reduces the risk of reporting applications becoming legacy in the future.
- Allows for sharing of expertise and skills, both internally within agencies and externally between agencies.

1.5. Recommendations and Conclusions

Upon the conclusion of the BAR pilot, all pilot agencies expressed continued interest in utilizing the platform and a statewide BAR program service. The successful results have brought to light the potential demand for an on-going business analytics program, while also replacing existing legacy systems. Access to an analytics platform such as Cortana or similar product/platform is necessary to provide the analytical tools required by users to rapidly analyze large amounts of data, discover patterns, and propose analytical models to recognize and react to identified patterns. In addition to a robust technology platform, the pilot has shown successful analytical results were achieved by having access to the following technical resources:

- A Data scientist/data engineer/data analyst whose focus of analysis and problem solving relates to data, types of data, and relationships among data elements within business systems.
- A Project Manager who is responsible for managing integration, managing risk, managing quality, change management, and identifying and resolving issues.
- A Business Analyst who plays a critical liaison role between business and Information Technology (IT) on enterprise projects, systems development, and business strategy.
- A Data gateway, which manages and secures the behind-the-scenes communications between cloud and on-premises data sources.
- Technical resources with expertise in the platform.

DIR recommends a BAR program be established as a technology tower within the Data Center Services (DCS) program for platform provisioning and management, while leveraging the Managed Application Services (MAS) provider vendor for technical BAR services.