Final Deliverable

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North Carolina Procurement Transformation

Technology Workstream

Technology Improvement Options and Preliminary Technology Plan

February 11, 2011

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Executive Summary

Objective:

- To provide recommendations to the State regarding improvement options in the technology capability areas of Buying, Spend Reporting, Master Data Management, and Supplier Integration based on the Current State Assessment and the creation of this deliverable.

Approach:

- During the evaluation process, the team:
  - ☑ Developed recommendations for Master Data Management areas of improvement
  - ☑ Developed recommendations for Supplier Integration to close capability gaps
  - ☑ Developed high level requirements for spend reporting solutions
  - ☑ Reviewed questionnaire responses and demonstrations from key vendors in spend reporting to gain insight to current solution marketplace
  - ☑ Developed and presented the final recommendation

Scope:

- This document covers the Technology Improvement Options for the spend reporting, Master Data Management, and Supplier Integration capability areas
- The Technology Improvement options for the Buying tool were provided in a separate deliverable on December 15, 2010. (Technology Workstream - Ariba Buyer Recommendation)

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Master Data Management - Executive Summary

Master Data Management Recommendations:

It's recommended that the State:

1. ***Improve vendor management processes and tools.***
2. ***Implement synchronization of User Data between BEACON & eProcurement.***
3. ***Evaluate the current NIGP code structure and ensure that it is synchronized across all source systems and expand the adoption of the category taxonomy***

Guiding Principles	Rationale
Operational Efficiency	The State would benefit from improved vendor registration and management systems that creates a single source for vendor data and facilitate better interfaces with subscribing systems. This will reduce manual maintenance and increase consistency and accuracy of vendor data and facilitate better spend by supplier reporting in conjunction with the spend reporting tool.
Operational Efficiency	An interface from the BEACON HR system to eProcurement system would provide improved management of user attributes and tie user activation/deactivation with BEACON or NCID.
Operational Efficiency	The current NIGP Commodity Code structure differs between eProcurement and NCAS and should be updated or replaced with another code structure, enabling the State to utilize the latest code structure and will provide improved data quality in conjunction with the spend reporting tool.

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Supplier Integration - Executive Summary

Supplier Integration Recommendations:

It's recommended that the State:

1. ***Address outstanding concerns with punch-out catalogs (audit of items and pricing).***
2. ***Add new bid system features that allow vendors to submit bid responses electronically.***
3. ***Develop capabilities to accept invoices electronically to reduce effort in manual invoice processing and expand use of electronic document exchange for PO's & ship notices.***

Guiding Principles	Rationale
Compliance and Accountability	Implementing audit processes and tools to assist in review of vendor prices from punch-out catalogs will help ensure that State is paying contracted prices.
Customer Focus **Operational Efficiency**	Online bidding tools give vendors the ability to submit responses electronically reducing the State's and the vendor's manual efforts. These bidding tools also provide the ability to automatically score responses reducing the evaluation requirements for the State. In addition online bidding tools provide an electronic audit trail on bid submissions.
Compliance and Accountability **Operational Efficiency**	Electronic Invoices provide better automated matching of PO and invoice, ensuring the State pays what was committed to pay, for what was agreed to buy. Electronic Invoicing can also significantly reduce Accounts Payable data entry time and improve the accuracy of processing. Invoices can also be processed faster, ensuring that the State maximizes their payment schedule and fully leverages early payment discounts.

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Spend Reporting - Executive Summary

Spend Reporting Tool Recommendation:

It's recommended that the State conduct a formal sourcing process to procure a spend reporting solution with Software as a Service as the optimal delivery model.

Guiding Principles	Rationale
Compliance and Accountability	The State's current spend reporting solutions are spread across multiple systems, typically only pulling data from a single source.
Compliance and Accountability **Operational Efficiency**	Currently the State can only report on less than 50% of its spend in one place.
Operational Efficiency	The current solutions are difficult to use, have limited user adoption and face significant performance challenges.
Compliance and Accountability **Delivery Excellence**	In order to meet the Compliance and Accountability goals of the Procurement Transformation, the State needs to manage and monitor more of its spend.
Operational Efficiency	In order to capture the majority of its spend, the State must pull spend information from disparate data sources into a single spend reporting tool.
Operational Efficiency	Spend data enrichment services can help the State correctly classify and consolidate the data from the disparate source systems to ensure data parity to improve quality and accuracy of the reports. (common market capability).
Best Value	Software as a Service will likely reduce the State's total cost of ownership, alleviating the need for the State to procure, maintain and monitor servers to run the spend reporting tool. Software as a Service models will include upgrades and service packs, system hardware and performance tuning, as well as eliminate the need for the State to develop or hire resources to manage the new application.

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Technology Improvement Options

- Assessment Approach
- Recommendations
  - Master Data Management
  - Supplier Integration
  - Spend Reporting

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Technology Workstream Overview

Objectives:

- Assess current buying tool, vendor registries and reporting systems.
- Identify opportunities to enhance/replace current procurement tools and system processes and provide recommendations on technology roadmap.

Scope:

- In scope assessment areas include:
  - Buying Tool
  - Spend Reporting
  - Master Data Management
  - Supplier Integration

Approach:

- The purpose of this activity was to make recommendations for the State to close the capability gaps identified during the Current State Assessment.
- The following slide summarizes the general approach used in completing the assessment, evaluation and recommendation.

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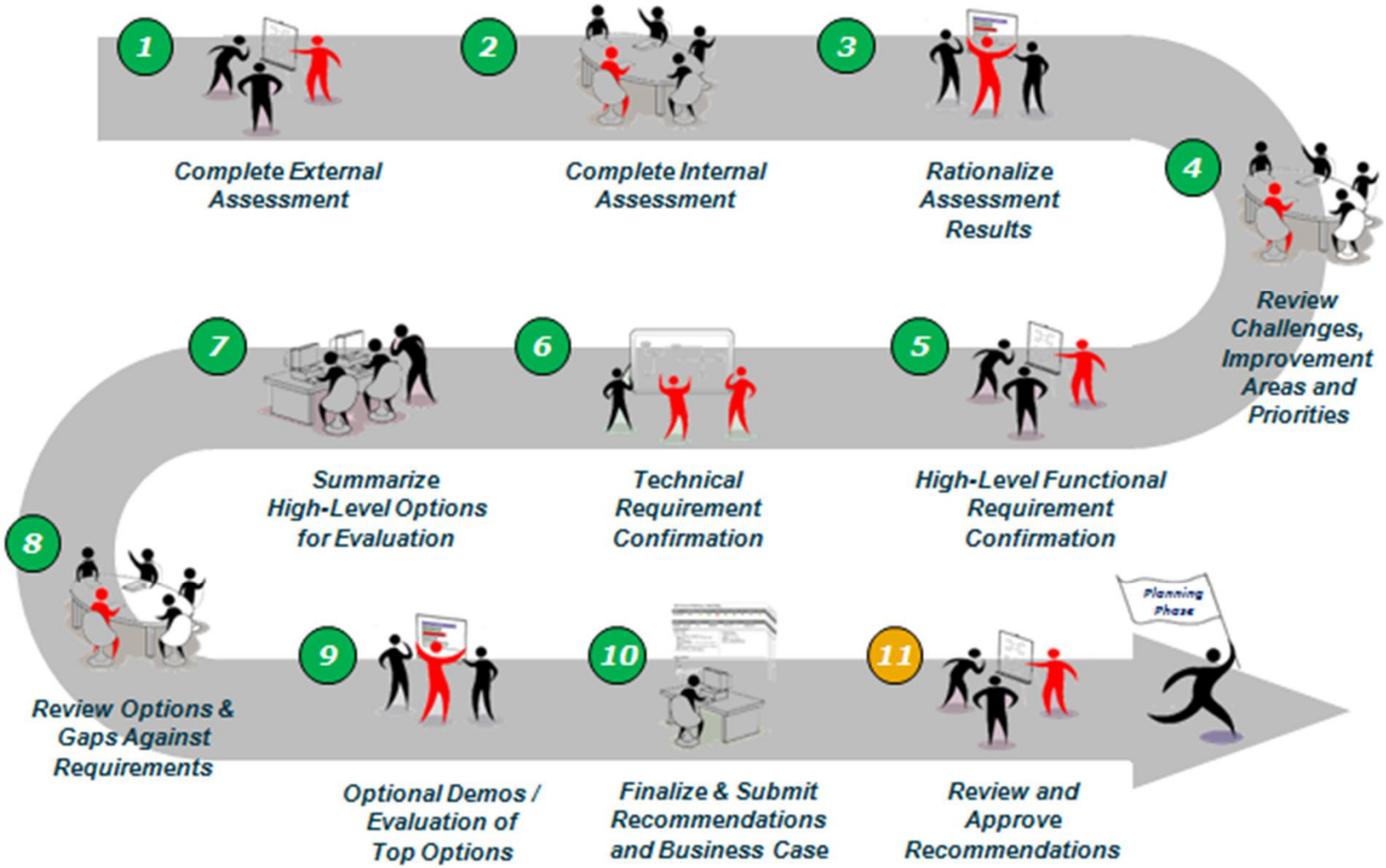
Assessment Approach



Activities Remaining Activities that have been completed

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Workshop Summaries

Workshops were conducted with key stakeholders to assess the state of the current Spend Reporting, Master Data Management, and Supplier Integration environments. In addition a meeting was held with key stakeholders to review the Spend Reporting high-level requirements. Four Spend Reporting solution providers were also invited to provide demonstrations of their software to assist in the market analysis.

Workshop	Date	Attendees	Summary
Technical Requirement confirmation	Week of 12/06/10	Patti Bowers (DOA Office of the Secretary), Robert Zenkel (DOA MIS Division), Dell Pinkston (DOA MIS Division), Jim Macaulay (Office of the State Controller), Don Jerman (ITS Enterprise Architecture)	• Technical discussion to gather high level input to cover infrastructure, hosting, security, authentication, desktop standards , interfaces and other technical requirements
Internal Technology Assessment of Spend Reporting and Initial review of scores	1/06/11	Patti Bowers (DOA Office of the Secretary), Dell Pinkston (DOA MIS Division), Jim Macaulay (Office of the State Controller), Angie Dunaway (DOA P&C), Tina McLamb (DOA P&C), Sherri Garte (DHHS - Purchasing), Joel Sigmon (Office of State Budget and Management), Debra Wallace (Wake Technical Community College), Releata Baker-Jones(ITS Statewide IT Procurement), Karen Woodall (DOA P&C), Anne Bander, James Staton, Speros Fleggas, Sharon Rosado (Community College System Office)	• Facilitated walk through of the 33 questions about spend reporting functionality • State scored the current solution on each of the questions • Reviewed the summary of the scores • Revealed scoring by Accenture and discussed
Spend Reporting Assessment Rationalization and Challenges review session	1/12/11	Patti Bowers (DOA Office of the Secretary), Dell Pinkston (DOA MIS Division), Jim Macaulay (Office of the State Controller), Angie Dunaway (DOA P&C), Tina McLamb (DOA P&C), Sherri Garte (DHHS - Purchasing), Joel Sigmon (Office of State Budget and Management), Debra Wallace (Wake Technical Community College), Releata Baker-Jones(ITS Statewide IT Procurement), Karen Woodall (DOA P&C), Anne Bander, James Staton, Speros Fleggas, Sharon Rosado (Community College System Office	• Reviewed detailed scores with a 3.0 rating difference between Accenture and the State to arrive at a consensus score • Reviewed functional requirements, challenges, improvement options, and priorities

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Workshop Summaries

Workshop	Date	Attendees	Summary
Internal Technology Assessment, Rationalization and Challenges review of Master Data Management and Supplier Integration	1/13/11	Patti Bowers (DOA Office of the Secretary), Dell Pinkston (DOA MIS Division), Jim Macaulay (Office of the State Controller), Angie Dunaway (DOA P&C)	• Facilitated walk through of the 11 questions about Master Data Management • Facilitated walk through of the 11 questions about Supplier Integration • State scored the current solution on each of the questions • Reviewed the summary of the scores • Reviewed detailed scores with a 3.0 rating difference between Accenture and the State to arrive at a consensus score
Review of High Level Spend Reporting Functional and Technical Requirements	02/02/11	Patti Bowers (DOA Office of the Secretary), Dell Pinkston (DOA MIS Division), Jim Macaulay (Office of the State Controller), Angie Dunaway (DOA P&C), Tina McLamb (DOA P&C), Releata Baker-Jones(ITS Statewide IT Procurement), Karen Woodall (DOA P&C), James Staton (DOA P&C), Rick Baskett (DOA HUB Office)	• Facilitated walk through and confirmation of the high level functional and technical requirements • Described high level functions of spend reporting solutions
Market Analysis – Spend Reporting Vendor Demonstrations	02/04/11	Ariba – John Hall Zycus – Arthur Raguette Emptoris – Jim Meagher, David Crow SAS – Eric Hunley, Mark Craver Laurence Leung (NC Community College System Office), Duane Maxie (NC Community College System Office), Ralph Edelberg (DOA P&C), Sharon Rosado (NC Community College System Office), James Staton (DOA P&C), Tina McLamb (DOA P&C), Jim Macaulay(OSC), Bob Zenkel (DOA MIS), Joel Sigmon (OSBM), Andy Whalen (OSBM), Melinda Coleman (NCDA & CS), Patti Bowers (DOA), Eric Boyette (DOT), Donnie Thorne (DOT), Karen Woodall (DOA P&C), Angie Dunaway (DOA P&C), Releata Jones (IT Procurement), Sherri Garte (DHHS), Dell Pinkston (DOA MIS), Leroy Kodak (IT Procurement), Kristen Burnette (IT Procurement), Shannon Clegg (UNC-Greensboro), Randy Duncan (UNC-Charlotte), Martha Pendergrass (UNC-CH), Anne Bander (DOA), Speros Fleggas (DOA)	• Ariba, Zycus, Emptoris, and SAS provided demonstrations of the spend reporting solutions • Each vendor spent 60 minutes demonstrating their solutions • The attendees had 30 minutes to ask question of each vendor

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Technology Improvement Options

- Assessment Approach
- Recommendations
  - Master Data Management
  - Supplier Integration
  - Spend Reporting

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Master Data Management - Recommendations

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Master Data Management - Recommendations

Area	Challenges / Opportunities	Recommendations
Master Data Mgmt - Vendor Data	• The State has multiple vendor management systems (e.g. IPS, eProcurement vendor registration) • In addition to self-service vendor data, vendors are also maintained manually in NCAS (direct pay vendors), DOT, University systems, etc.	• Implement a single vendor management system for registration and vendor data maintenance self-service capabilities that incorporates in one place the data capture currently being performed in IPS, eProcurement and related systems. • Automate vendor updates (new vendors & changes) with primary procurement and invoicing systems to reduce manual maintenance and increase consistency and accuracy of vendor data. *These recommendations should be considered in the Supplier Management assessment area that was deferred from the first phase of assessment activities.*
Master Data Mgmt - Vendor Data	• Data interfaces have limitations due to data model challenges. For example, NCAS accepts new vendors, but not changes or deletions from the eProcurement Vendor Registration application. Also, some values such as bank account details are captured, but not passed to NCAS where needed.	• Once the State identifies a single master vendor management system for registration and vendor data maintenance self-service, update the current interfaces to support all data updates and applicable data attributes such as bank account information. • The State should define a central set of requirements for capturing vendor data to include data needed to: 1. Issue orders to vendors 2. Make payments to vendors 3. Appropriately classify vendors 4. Communicate procurement opportunities to vendors • Once the requirements have been identified, the State should define the master source for each component and identify an approach to consolidate or develop interfaces to leverage the master source of data across all impacted systems.

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Master Data Management - Recommendations

Area	Challenges / Opportunities	Recommendations
Master Data Mgmt - User Data	• There is currently no interface between the eProcurement and HR systems. An interface would allow user activation/deactivation to be tied to user management in the HR system. For example, an employee that resigns should be deactivated in eProcurement automatically.	• As part of the planned eProcurement upgrade project, consider implementing an automated interface to add, change and deactivate users in the eProcurement system based on employee changes in BEACON. • Move to enterprise directory service (e.g. NCID) for authentication of State employees. Using NCID for authentication simplifies password management and ensures that as employees leave the State, they're deactivated quickly in all systems.
Master Data Mgmt - User Data	• If a user changes organizations, they may have to have two or more eProcurement IDs to keep transactions aligned.	• As part of the eProcurement upgrade project, these requirements should be further analyzed and addressed to ensure that documents can be managed by others in an organizational entity (e.g. State agency) as they transfer roles. Implementing this may impact the level of cross-agency security that has been built into the existing eProcurement system.
Master Data Mgmt - Other Non-Interfaced Data	• NIGP code needs to be updated and same version should be used across different systems. (eProcurement and NCAS have different versions)	• Adopt the category taxonomy structure developed by Accenture. • Complete a cost / benefit analysis to synchronize the NIGP code to a consistent, current version across primary State systems used for procurement and invoicing (e.g. eProcurement, NCAS, DOT, etc.)

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Master Data Management - Key Considerations

The State has an opportunity to improve Master Data Management interfaces and processes as part of the Procurement Transformation. The following areas were considered in the review:

- **Vendor Master Data**
  - Are there self-service tools available to allow vendors to register and maintain their data? Leading practice is to provide a single tool to capture all data relevant to the State (e.g. contact info, diversity attributes, payment info, etc.)
  - Is there currently a single source of vendor master data that feeds updates to all subscribing systems? A single system reduces manual maintenance and increases consistency and accuracy of vendor data.
- **User Data**
  - Is there a data interface between the State's HR system and eProcurement system to synchronize user data? Leading practice is to use an organization's HR system as a master data source (where possible) to automate adding, updating (e.g. agencies, supervisors, email addresses, etc.) and deactivating users.
  - Is there a centralized authentication system used by the eProcurement and similar systems to improve user data management? Use of a central authentication service can simplify password management and ensure that as employees are deactivated, they're access is quickly removed in all systems.
- **Accounting Data**
  - How effective is the current interface of accounting data between the core financial system(s) such as NCAS and eProcurement systems? The State is currently doing well with effective accounting interfaces already in place.
- **Other Master Data Sets (e.g. Commodity Codes, Addresses, Payment Terms)**
  - Is there a single commodity code structure (e.g. UNSPSC or NIGP) that is current and used consistently? The State does use NIGP codes across its systems. There is the opportunity to ensure that the code structure is used consistently across the organization.
  - Is there a single set of payment terms used consistently between systems (e.g. eProcurement and NCAS)? Payment term data is distributed between State systems.
  - Are there tools available to more easily maintain address data where a master source doesn't currently exist? The State is currently managing address data effectively.

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Technology Improvement Options

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Supplier Integration - Recommendations

Area	Challenges / Opportunities	Recommendations
Supplier Integration – Bids / Solicitations	• The current systems don't support acceptance of electronic bid responses from vendors.	• Implement a new solicitation / bid system or update the current system to allow vendors to submit bid responses electronically. Allowing for electronic bid submission provides a more efficient process for vendors, significantly reduce paper use and storage requirements and can ensure efficient audit and tracking of bid submission dates and times. *This recommendation should be included in the "Sourcing, Quote and Solicitation" assessment area that was deferred from the first phase of assessment activities.*
Supplier Integration – Catalogs	• The current systems and processes don't support regular audit of available products and pricing for punch-out catalogs against vendor contracts.	• Refine or reduce number of available products on contract and therefore in catalogs through structured strategic sourcing initiatives, including punch-out catalogs as well. • Punch-out catalog use should be limited to catalogs where product and pricing change frequently (e.g. daily or weekly) or the vendor site offers unique configuration / build capabilities (e.g. PC providers). • Implement audit process and/or tools to assist in review of vendor prices from punch-out catalogs, either periodic online audit or price comparison of actual prices from purchase orders. • Improve processes and internal service level agreements to ensure catalogs are loaded in an appropriate manner for new contracts. • Keep catalog content up-to-date and track expiration dates to ensure catalogs are effective during their lifecycle.

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Supplier Integration - Recommendations

Area	Challenges / Opportunities	Recommendations
Supplier Integration – Purchase Orders	• Incremental vendor fees for ASN use of end-to-end electronic order methods such as XML and EDI. • Low adoption of ASN use. As a result, order confirmations and advance ship notice capabilities are not used today.	• Consider implementing a supplier enablement program to move vendors with the highest volume of orders to electronic document exchange. • Using the ASN to send Purchase Orders electronically via XML or EDI, direct to suppliers' order entry systems, helps eliminate manual entry by the supplier which increases accuracy and reduces processing time to get required items to the State. In addition, these suppliers can also use the ASN to provide confirmations and ship notices which are pulled into Ariba Buyer to provide better visibility to order status.
Supplier Integration – Invoicing	• Electronic invoices are not accepted today resulting in all invoices having to be keyed manually. • Vendor's don't have "self-service" ability to check status of invoices and payments on-line	• Consider implementing a supplier enablement program to move vendors with the highest volume of invoices to electronic invoicing, allowing invoices to be posted directly into the State's invoicing systems. • Utilizing electronic invoicing can significantly reduce Accounts Payable data entry time and can improve the accuracy of processing. Invoices can also be processed faster, ensuring that the State can maximize their payment schedule and fully leverage early payment discounts. • The State should look to utilize an electronic invoicing solution that provides vendors the ability to check the status of invoices and payments, online, reducing the effort of managing vendor follow-up calls . *This recommendation should be included in the "Invoice and Payment" assessment area that was deferred from the first phase of assessment activities.*

Supplier Integration - Key Considerations

The following areas were considered in the review of Supplier Integration capabilities:

- **Bid / Solicitation Notifications and Responses**
  - Do current systems allow vendors to receive bid notifications via email, as well as reviewing online?
  - Does the bid/solicitation system allow vendors to submit their bid responses online? Electronic bid submission is often more convenient for vendors, reduces paper use and storage requirements and can ensure proper audit and tracking of bid submission dates and times. Electronic bid submission also allows vendors to confirm that their bids have been received and accepted.
- **Catalogs / Punch-out**
  - Do vendors submit new and updated catalogs to the State electronically, allowing for more efficient processing and online validation and approval? The State is currently using the Aravo tool to manage the catalog process and to allow vendors to submit catalogs electronically.
  - Does the current system provide catalog punch-out support and if so, how well are the punch-out catalogs managed to ensure product and price accuracy against established contracts?
- **Purchase Orders and supporting updates such as order confirmations and advanced ship notices**
  - Do vendors have the option to receive electronic purchase orders and are the vendors with the highest transaction volumes encouraged to move to electronic order receipt? Leading practice is to utilize electronic document transmission for PO's, confirmations and ship notices to reduce processing time and increase order accuracy and status information available.
- **Invoicing**
  - Does the State accept electronic invoices from vendors that can provide them? Accepting invoices electronically can significantly reduce Accounts Payable data entry time and can improve the accuracy of processing. Leading practice provides the vendors with the ability to check the status of invoices and payments, online, reducing the effort of managing vendor follow-up calls .

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Technology Improvement Options

- Assessment Approach
- Recommendations
  - Master Data Management
  - Supplier Integration
  - Spend Reporting

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Spend Reporting - Recommendations

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Spend Reporting - Recommendations

Area	Challenges / Opportunities	Recommendations
Spend Reporting Solution – Spend Data Sources	• There is not a single system that combines order, contract, and payment data for reporting. • Currently the State is only able to report on less than 50% of total State spend including Agencies, Universities, Community Colleges, and LEAs.	• The State should gather requirements to determine which source systems to pull spend data from. • The State should focus on "Spend" data, defined as what the State has paid for. (e.g. Paid Invoices, PCards, Direct Payments) • Procurement Data (e.g. POs, PCard transactions, vendors, and contract data) should be used to supplement the spend data.
Spend Reporting Solution – Spend Data Quality	• The State has gaps in the quality of the spend data across the organization. • Contract information tied to spend data is not available or is often incorrect. • Category coding is not available on all spend transactions. • Vendor data may be inconsistent between source systems.	• The State should investigate the quality of the source system data across the disparate sources. • The State should look to implement a Contract Management repository to distribute a common set of contract numbers across multiple source systems. • The State should adopt and expand the use of the Accenture provided Category Taxonomy (Groups and Categories) in conjunction with an updated commodity coding structure (e.g. NIGP, UNSPSC). • The State should expand the use of classification coding (NIGP) to additional State spend data (e.g. Direct Payments in NCAS). • The State should improve their vendor registration processes and solutions in order to provide a consistent set of vendor data across source systems.

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Spend Reporting - Recommendations

Area	Challenges / Opportunities	Recommendations
Spend Reporting Solution – Data Enrichment	• Some source spend data may not contain all the information needed to effectively report and manage it. • Vendor information from PCards, invoices, and payments from multiple source systems may not be consistent. • Spend data may not be classified correctly or at all by category taxonomy and classification codes.	• After assessing the sources of spend data and its quality, the State should evaluate spend data enrichment offerings from the spend reporting vendors. • These solutions and services can resolve discrepancies between source systems and provide the State spend data that is usable and consolidated on a consistent periodic basis.
Spend Reporting Solution – Ease of Use	• Current tools are difficult to use and have restricted user adoption and roll-out. Current systems also lack advanced ad-hoc reporting capabilities.	• Ease of use is a key consideration for the spend reporting tool. • The solution should readily facilitate for procurement professionals to find opportunities and identify compliance issues. • Ease of use will increase user adoption and facilitate a smoother rollout.
Spend Reporting Solution – Total Cost of Ownership	• The State has limited financial, procurement, and technical resources to implement a spend reporting solution.	• The State should look to minimize its total cost of ownership for the spend reporting solution to deliver economic value for North Carolina taxpayers. • The Software as a Service delivery model eliminates the need for the State to procure hardware and hire or train resources to maintain and performance tune a spend reporting solution. • Software as a Service solutions have the potential to reduce the cost to the State for product upgrades. Solution version rollouts are included as part of the service fee.

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Spend Reporting - Recommendations

Area	Challenges / Opportunities	Recommendations

Spend Reporting Solution – Spend Specific Solution	• The State has significant challenges in reporting on its spend data.
	• Current solutions do not provide a comprehensive picture of what the State is purchasing.
		• The State should start the process to select a spend reporting solution as soon as possible to support the overall procurement transformation
		• The first step of the process is for the State to confirm their high level requirements, including finalization of the source data systems and the amount of data (# of years worth), and develop their key criteria for selecting the best solution for the state.
		• The second step is for the State to investigate the quality of the source system data across the disparate sources. This will help the State provide sufficient information to the vendors during the selection process, allowing the vendor to effectively price the solution and data enrichment services.
		• The third step of the process is for the State to conduct a competitive bid process for the spend reporting tool.
		• During the selection process the State should consider:
		  • Vendors that provide spend specific reporting solutions are focused on development of functionality for procurement professionals. This reduces the need for the State to create and manage reports and spend reporting objects.
		  • Adopting a Software as a Service delivery model may reduce the total cost of ownership.
		  • The State needs to review potential providers to ensure that security requirements are covered if selecting Software as a Service as an approach.

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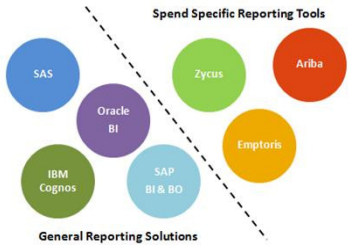
Market Analysis Methodology

Initial Vendor Identification

Stage 1



Initial vendors for the spend reporting market analysis were selected from Tier 1 providers in the spend reporting and business intelligence capability area.

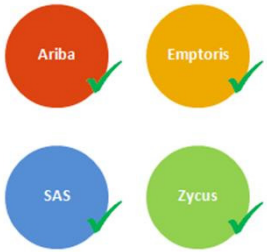
Vendor Selection for Analysis

Stage 2

Based on confirmation of this direction with the State, the initial list of vendors was filtered down to procurement specific report solutions and the State's current eProcurement reporting solution.

Market Analysis

Stage 3



Vendors were asked to complete a questionnaire as well as deliver a demonstration to Accenture and the State.
The questionnaire results and demonstrations were used to enhance market analysis for spend reporting solutions options.

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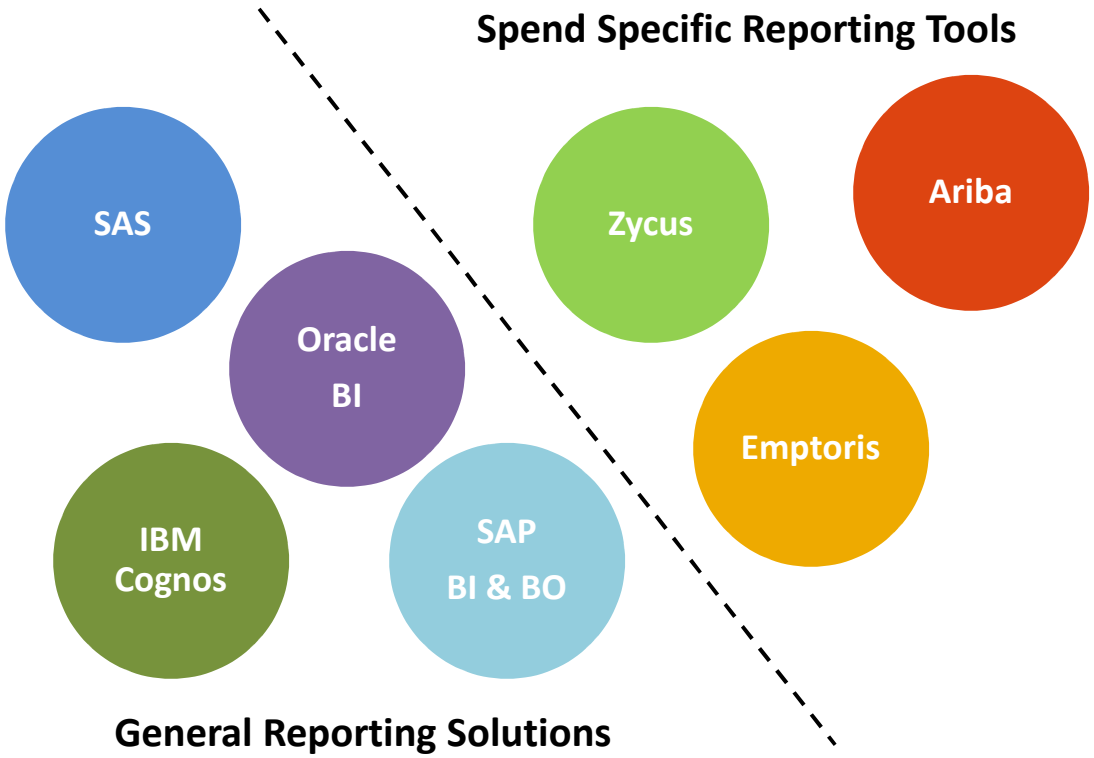
Market Analysis – Initial Vendor Identification

Initial Vendors were selected for review based on being Tier 1 spend reporting vendors or leading vendors that provide that provide general business intelligence solutions.



Key Points

- Ariba, SAP, Oracle, and Emptoris are Tier 1 providers for overall procurement functionality.*
- Ariba, Zycus, and Emptoris provide highly rated Spend Specific Reporting tools.
- SAS, IBM Cognos, Oracle BI, SAP BI and SAP Business Objects (BO), provide general business intelligence tools with spend reporting capabilities.

* *Through ongoing Accenture research and analysis of procurement solutions and providers, Accenture's Procurement Excellence and Technology Enablement (PETE) team identifies Tier 1 solution providers and provides that list to individual teams doing Procurement Technology Assessments.*

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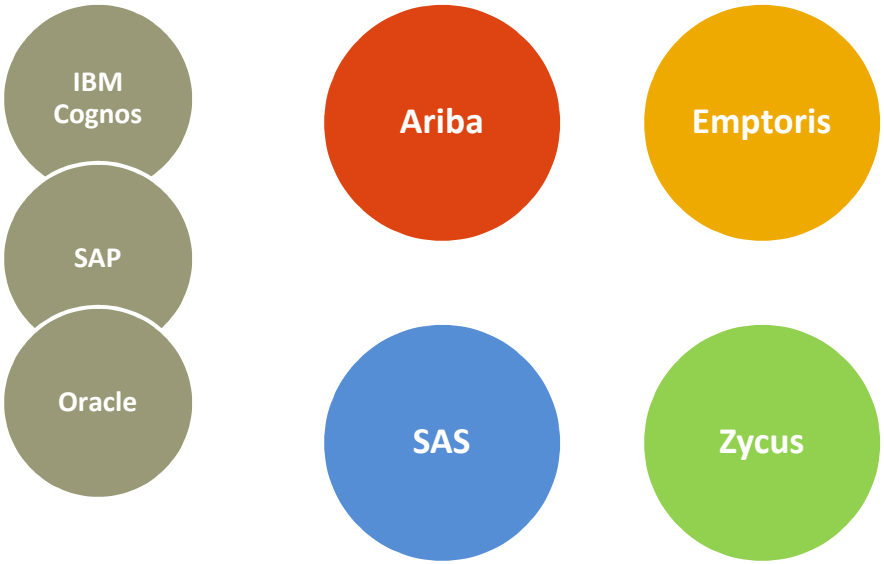
Market Analysis – Vendor Selection For Analysis

Four vendors were included in the market analysis based on: 1. Providing Spend Reporting specific solutions per State requirements and 2. Allowing the State to utilize its existing investment in the SAS reporting solution currently in place for procurement data.

Not Included



Key Points

- Spend reporting specific vendors Ariba, Zycus and Emptoris were included as part of the market analysis.
- SAS was also included in the market analysis because it is the current reporting solution for procurement data.
- The vendors included in the market analysis were given a questionnaire to gather additional information about their solutions.
- The four vendors provided 90 minute demonstrations on February 4, 2011 to Accenture and State resources.
- Cognos and SAP were not included in the market analysis because they provide a general business intelligence reporting platform and not a spend reporting specific tool and are not used for procurement reporting in the State today.

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Market Analysis – Vendor Highlights

Ariba

Company: Provider of "Best in Breed" procurement software. Solutions include enterprise behind the firewall installed software as well as Software as a Service.
Functions: Buying, Invoicing, Contracts, Supplier Management, Sourcing, Spend Analysis, Travel & Expense, Data Enrichment
Highlights: Ariba Spend Analysis has tight integration with Ariba Buyer, drag and drop user interface, and advanced Excel export features.

Zycus

Company: Provider of "Best in Breed" upstream procurement software primarily in a Software as a Service delivery model.
Functions: Spend Analysis, Strategic Sourcing, Contract Management, Data Enrichment
Highlights : Simple and intuitive interface for procurement professionals. Advanced spend reporting features including Opportunity Identification which allows users to flag report findings for further action.

SAS

Company: Key provider of business intelligence and analytical reporting software. Provides some spend specific reporting functionality.
Functions: Business Intelligence Reporting and Analytics, Data Enrichment
Highlights : Advanced dashboard template capabilities and deep reporting functionality.

Emptoris

Company: Provider of "Best in Breed" electronic sourcing and spend reporting. Also a leader in contract management.
Functions: Sourcing, Contracts, Supplier Management, Spend Analysis, Data Enrichment
Highlights : Advanced spend reporting functionality and data enrichment.

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Market Analysis - High-Level Requirements

High Level Requirements were gathered from review sessions during the Current State Assessment and from leading practices in industry. Vendors were sent questionnaires that were reflective of the requirements and were invited to provide solution demonstrations. The questionnaire responses and vendor demonstrations were used to further refine market analysis on spend reporting solutions.

Confirmation Designation	Definition
✓	The solution meets the requirements with out of the box functionality and configuration
✗	The system does not currently meet the requirement

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Market Analysis - Functional Requirements

Req #	Requirement	Ariba	Emptoris	SAS	Zycus
	General:				
1	All system functions should be easily accessible via standard web-browsers through the internet or organization's intranet	✓	✓	✓	✓
2	Reports can be exported to Excel as well as other formats	✓	✓	✓	✓
3	Reports can be distributed via electronic distribution methods (e.g. on-demand, emails, schedule)	✓	✗	✓	✓
	Dashboard Functionality:				
4	System can be configured with standard dashboard templates to show "at a glance" information to users.	✓	✓	✓	✓
5	System Administrators can create, update and managed dashboard templates in an online administration tool	✓	✓	✓	✓
6	System has the capability to push different templates to different user groups	✓	✓	✓	✓
7	User can modify their dashboards with reports, graphs, and charts	✓	✓	✓	✓

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Market Analysis - Functional Requirements

Req #	Requirement	Ariba	Emptoris	SAS	Zycus
	Standard Reports:				
8	Standard spend reports are provided with the solution (e.g. Commodity Analysis, Opportunity Analysis, Organization Analysis, Spend Overviews, Supplier Analysis, Contract Compliance)	✓	✓	✓	✓
9	Users have the ability to save modified versions of standard reports	✓	✓	✓	✓
10	The system provides standard reports for spend by commodity	✓	✓	✓	✓
11	The system provides standard reports for spend by supplier	✓	✓	✓	✓
12	The system provides standard reports for spend by company/entity	✓	✓	✓	✓
13	The system provides standard reports for spend by contract	✓	✓	✓	✓
14	The system provides standard reports for spend by part number.	✓	✓	✓	✓
	Custom Reports:				
15	Users can create custom reports	✓	✓	✓	✓
16	Users have the ability to save custom reports	✓	✓	✓	✓
17	User can share custom reports with other users	✓	✓	✓	✓
18	User can highlight information in the data with an "Alert" or "Opportunity"	✓	✗	✓	✓

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Market Analysis - Functional Requirements

Req #	Requirement	Ariba	Emptoris	SAS	Zycus
	Reporting Capabilities:				
19	Solution facilitates Pivot Table report capabilities. (Swapping rows and columns during report viewing)	✓	✓	✓	✓
20	Solution allows report users to drill up and down through hierarchies (e.g. Commodity Codes, Time dimensions, Vendor hierarchies)	✓	✓	✓	✓
22	System uses rollup totals as users drill through the hierarchies	✓	✓	✓	✓
23	System allows user to slice through the reporting cubes to drill down through the data to get to a specific view	✓	✓	✓	✓
24	Solution provides support for compound reporting across spend data objects	✓	✓	✓	✓
25	Users can modify their reports real-time (e.g. adding fields, applying filters, etc.)	✓	✓	✓	✓
	System Configuration and Enhancements:				
26	System provides configuration and/or enhancement capabilities to add new objects for reporting (e.g. Contracts, PCards)	✓	✓	✓	✓
27	System provides capability to configuration and/or add custom dimensions specific to organization (such as vendor HUB attributes, custom category taxonomy, agency, community college, etc.)	✓	✓	✓	✓
28	System provides capability to configuration and/or add custom reporting fields to existing spend reporting objects	✓	✓	✓	✓

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Market Analysis - Functional Requirements

Req #	Requirement	Ariba	Emptoris	SAS	Zycus
	Data Load				
29	System provides direct transaction extracts for Ariba Buyer applications (versions 8.2 and 9r1) out of the box	✓	✗	✗	✗
30	System can load data from a flat file structure (e.g. CSV format)	✓	✓	✓	✓
31	System can load data from an external database	✓	✓	✓	✓
32	The system can properly handle changes to existing loaded data (e.g. Change Orders)	✓	✓	✓	✓
33	System provides transformation capabilities at load (e.g. concatenate strings, translate source values to reporting values using look up tables)	✓	✓	✓	✓
34	System supports incremental loading of data on a weekly, monthly or quarterly basis	✓	✓	✓	✓
	System Administration				
35	Access to data can be restricted to a user's agency/entity or other user attributes	✓	✓	✓	✓
36	Administrators can monitor data load status online	✓	✓	✓	✓
37	Administrators can view the data content of the reporting objects (tables, fields, dimensions, etc.)	✓	✓	✓	✓

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Market Analysis – Spend Reporting Considerations

In addition to the High-Level Requirements, the market analysis highlighted key considerations for spend reporting solutions.

Spend Reporting Specific Providers	General Business Intelligence Solutions

• Spend reporting specific solution providers focus only on delivering systems that meet procurement reporting needs:
  • Focus on reporting data sets (e.g. invoices, orders, contracts) with necessary elements for effective spend reporting.
  • Pre-packaged spend reports designed for procurement professionals are included.
	• General business intelligence reporting solutions can provide enterprise data warehouse capabilities across business functions (e.g. finance, procurement, etc.).
	• These solutions focus on advanced reporting and analytic capabilities.

Software as a Service Delivery Model	**Behind the Firewall Delivery Model**

• Software as a Service generally has a lower up front investment cost and has the potential to reduce the total cost of ownership
  • There is no hardware to buy or maintain
  • State resources are not required to support the technical aspects of the vendor system. The State would have to support extract of the data from the source systems
  • Performance scalability and tuning are the responsibility of the solution vendor who maintain significant infrastructure resources to support scalability needs across clients .
  • Vendors are responsible for meeting solution and data load performance based on contracted service level agreements.
  • Upgrades are delivered automatically by the provider.
	• This solution can be configured or customized more easily to meet specific State needs.
	• The State has full control over the data loaded in the solution.
	• Hosting in a State Data center with existing infrastructure and security standards eliminates the need to validate and audit 3rd party hosting providers

Potential use of Data Enrichment Services:

- All of the vendors surveyed as part of the market analysis provide data enrichment software and services. This functionality focuses on resolving classification issues on data coming from disparate data sources.
  - Vendor enrichment takes the vendor names and attempts to normalize them across the different data sets. (e.g. IBM, I.B.M., IBM North Carolina)
  - Taxonomy classification can look at spend data that is not classified (e.g. NIGP, UNSPSC, etc.) and attempt to set a classification based on the available information

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Market Analysis – Spend Reporting Cost Considerations

The market analysis provided insight into the cost component of spend reporting solutions

- Base solution cost considerations:
  - Developing data extracts from multiple State source systems in a common format
  - Implementation project management costs
  - Implementation testing and training costs
- Software as a Service considerations
  - Number of source systems from which data is being pulled
  - Frequency of data refreshes (e.g. weekly, monthly, etc.)
  - Amount of annual spend data loaded
  - Some vendors may have additional costs if there is a higher than average user base
  - There may additional costs if the State requires any enhancements to spend reporting objects (e.g. adding new fields)
- State Hosted - Behind the firewall considerations:
  - License fees typically based on a per user basis
  - Ongoing maintenance fees and management of solution
  - Purchasing hardware and software to run the solution
  - Hiring or training resources to support and maintain the application
- Data Enrichment Services:
  - Cost may be included in licensing fees or may be separate depending on the amount of enrichment services needed

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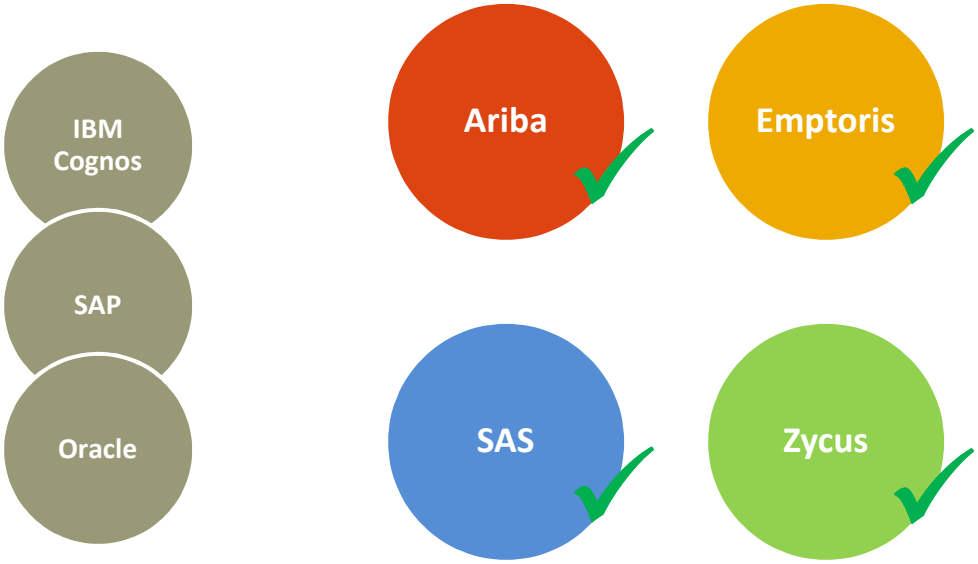
Market Analysis - Results

The four vendors were reviewed against the high level requirements based on their questionnaire responses and demonstrations.

Not Included



Key Points

- All four vendors have the core capabilities the State would need.
- Key differentiators that the State should consider in formally evaluating these solutions include:
  - Total Cost of Ownership
  - Data Enrichment solution
  - Ease of Use
  - Reference clients
  - Service level agreements
  - Training commitments