



U.S. Department of Education
Grant Performance Report (ED 524B)
Executive Summary

OMB No. 1890 - 0004
Expiration: 10-31-2007

PR/Award #: R372A090008

Significant progress continues to be made on project tasks by the Wisconsin LDS grant team, established in 2009 to address needs associated with SLDS grant efforts. The team has collaborated with stakeholders to accomplish major gains on LDS-related initiatives while moving forward with completing Wisconsin's proposed outcomes. To date, all seven outcomes have been started, and thirty-five out of thirty-nine subtasks are operational or in progress.

This year the team was able to build upon the progress made in prior years around the understanding of, expectations around, and conversations about data. Communication efforts geared toward project transparency and stakeholder feedback enabled Wisconsin to make considerable progress in identifying goals related to data warehouse and reporting efforts; defining and communicating these efforts for both internal and external stakeholders; in building momentum and support around education data, data warehousing, and using data as a pathway to success. Our team has expanded to include partners from varying internal content areas, the postsecondary and early childhood communities, and Wisconsin's regional Cooperative Educational Service Agencies (CESAs) to complete tasks and achieve project outcomes. Over the past year this successful engagement of both internal and external stakeholders effectively drove this project's success.

Initial conversations around "What does P20 mean for Wisconsin?" were focused on technical issues, and thus addressed as a silo. However, over the last three years DPI has come to understand that the answer to this question cannot and should not be developed overnight. In fact, effectively addressing this question requires an integration of ideas supported by working with our postsecondary partners. Throughout this project Wisconsin has successfully incorporated postsecondary enrollment data into the data warehouse, providing a foundation toward advancing Wisconsin's P20 vision.

Wisconsin also completed the collection of granular student level course data by launching the first statewide individual student-level Coursework Completion System. This student-level collection is integrated with the existing Individual Student Enrollment System (ISES) and provides a link between a teacher, a specific course section, and a student. This project's success is due to the coordination of activities around communicating the project's status and work with districts along every step of the way. Reports created from course data will contribute to a better understanding of the course-taking patterns, programs, and performance trends that enable students to graduate from high school ready for further education and the workforce.

In addition to collaborating across teams and various work groups, DPI is working to expand the tools and services we provide to our main customers – Wisconsin's districts, schools, and educators. The tools previously developed, implemented, and maintained provide specific, customized solutions for our school district customers as well as DPI users. The ability to turn data into information quickly and easily has become increasingly important to guide decisions at all levels of education and is a top priority for DPI. Just last year DPI purchased a Business

Intelligence Solution which will heighten data usage by enabling access to a comprehensive set of dashboards based on data in the data warehouse. DPI's Data & Reporting dashboard (WISEdash) is a component of the Wisconsin Information System for Education (WISE). The goal of WISEdash is to increase access to education data by providing dashboards and reports on a variety of topics that draw from our LDS data warehouse. These reports and dashboards will help build a better understanding of education performance and outcomes for Wisconsin students to enable informed decision making – ensuring that every child graduates from high school prepared for both college and career pathways.

In partnership with a diverse group of external stakeholders (CESAs, Wisconsin Association of School Boards, Wisconsin Association of School District Administrators, Association of Wisconsin School Administrators, and educators) our team is rolling out professional development trainings and materials to build WISEdash user capacity. With our partners we are developing push-button guides to educate users on the basic use and navigation of the dashboards. We will also provide basic instruction on how to use the dashboard data through the creation of user-targeted guided analyses. Our goal in helping users access and understand their data is to create a supported culture of data-driven decision-making.

Like the projects before it (P20, MDAT, SDPR, SAFE, etc.), the amount of energy, teamwork, and dedication across DPI to implement WISEdash has been and will continue to be the reason why Wisconsin continues to make progress on projects that will positively impact education in Wisconsin.

Wisconsin has made significant progress this year in advancing or completing outcomes set out in our grant plan while working to provide value to our districts, schools, and educators. In addition to meeting the goals and priorities of our LDS grant, all of these initiatives will move Wisconsin toward meeting State Fiscal Stabilization Fund requirements for a Statewide Longitudinal Data System as defined by the America COMPETES Act. Furthermore, the work accomplished through this grant continues to support DPI's Every Child a Graduate initiative - ensuring that Wisconsin students benefit from both college and career preparation, learning the skills and knowledge necessary to be contributing members of our communities.

Section B: Narrative Documents

1. PROJECT NARRATIVE

Outcome 1.0: Recruit and Hire Project Team

a. Outcome Summary: While this outcome was reported as operational in 2010 because the core project team was in place, we continue to see project team membership changes. Specifically, the Education Consultant hired as a member of the project team was promoted within DPI. We have since hired a new consultant who started on the team in January of 2012. Other team members have rolled off the project as well. In addition, we have also added team members to help us complete tasks related to the many projects we have been working on throughout the last year. Based on the number of projects we want to complete related to our SLDS data warehouse, we feel that additional team members will be added in the near future.

Outcome 2.0: Define and Develop Wisconsin's P20 System

b. Outcome Summary: Initially Wisconsin's goal of Defining and Developing Wisconsin's P20 system was very simple. We hoped to answer the question "What does P20 mean for Wisconsin?" Throughout the last three years we have begun to understand that the answer to the question was not something that could be developed overnight but is instead a combination of ideas supported by collaboratively working with our postsecondary partners to achieve a common goal.

This year Wisconsin has completed the first project to incorporate postsecondary enrollment data into our data warehouse. This project is the first project we have completed within the scope of the P20 initiative. In addition to meeting the goals and priorities of our LDS grant, these initiatives will move Wisconsin towards meeting State Fiscal Stabilization Fund requirements for a Statewide Longitudinal Data System as defined by the America COMPETES Act and will align with the agencies Every Child a Graduate effort to ensure our students benefit from both college and career preparation, learning the skills and knowledge necessary to be contributing members of our communities.

While we feel that this is a significant accomplishment, we are very excited to start using the data for decision-making. To begin the next phase of P20 NSC, we recently brought a team together comprised of individuals from the Data Warehouse & Reporting Team and the Office of Educational Accountability, the business owners of graduation and postsecondary data here at DPI. This group will be responsible for learning to use the data for analysis, helping others use the data for analysis, and eventually analyzing the data for the department. We also plan to create dashboards and reports within outcome 4.0 to help others use the data for analysis and decision-making.

While most of our P20 work has since moved to be within the scope of our 2009 ARRA grant, we feel that the work completed within this grant provided the foundation we needed to successfully advance our vision of what P20 means for Wisconsin.

c. Major Accomplishments: As of September 2011 postsecondary enrollment data from the National Student Clearinghouse (NSC) is available in our LDS ODS data warehouse. DPI has submitted records to the NSC for graduates from the classes of 2006 through 2010. Matched data—including, but not limited to, enrollment start and end dates, indicators of full- and part-time status, school name and state, school type (private/public), school level (two- or four-year), and completion status—have been incorporated into the data warehouse.

The data is now available to business analysts at DPI with a legitimate education need to use the data for postsecondary enrollment querying and analysis. A number of business rules were put in place to accommodate our known business requirements, including those related to our interpretation of how to report postsecondary enrollment for the c(11) SFSF indicator. Documentation explaining the business rules and data was created and made available to users.

In addition to individual high schools and/or districts continuing to utilize DPI's statewide contract with the NSC to submit their own students for local analysis, the data warehouse team at DPI is working with other teams, such as the Career and Technical Education team, to submit groups of students to the NSC for postsecondary enrollment tracking. Since some teams do not have data integrated into the data warehouse yet to obtain data through the LDS ODS, this method provides them with another way to get this data to analyze their program.

d. Plans for Tasks Still to be Accomplished: To keep the data up-to-date the team will continue to submit follow-up submissions for the classes of 2006 through 2010. In addition, each year we will submit our new class of completers as well. We plan to submit the Class of 2011 to the NSC by March 15th of this year.

The data warehouse team is currently working on the final touches to our SFSF (c)(11) report which will contain postsecondary enrollment information for the 2009-10 cohort who have enrolled in postsecondary within 16 months of graduation. We expect to be able meet the reporting requirement early this year.

While we have made great strides by adding postsecondary data into our data warehouse, this task is cannot be checked off just yet. The next step for DPI will be to use the data for analysis and data informed decision-making. In future phases of the project we plan to integrate the data into the Edvantage data model and will create dashboards and reports for users, including district and school users, to access through WISEdash.

e. Difficulties Faced and Lessons Learned: The team continues to experience challenges related to incorporating the data from the National Student Clearinghouse into the data warehouse.

Since the logic used by the NSC to match K12 students to the postsecondary data is proprietary and a degree of confidence is not returned, the match rate and reasons for non-matches are difficult to define and comprehend. In addition, DPI has identified many cautions of which users need to be mindful when reporting off of this dataset and will be providing support documentation to accompany reports that are produced off of this dataset to help explain the limitations of the data.

Another challenge we will face soon is the expiration of our first contract with the NSC to obtain postsecondary data on Wisconsin high school completers. The first contract was obtained, after 6 months of negotiations and approvals, in 2010 for a one year term with the option to extend the same contract for a second year. Our second year will be up April 30, 2012. The Department hopes to continue working with the National Student Clearinghouse to obtain this data, but services and pricing have changed dramatically since we began our relationship with them. We plan to start discussions soon to hopefully work out the details before the contract end of life.

Outcome 3.0: Develop student-level data collection including course completion and teacher/student connection

a. **Outcome Summary:** Wisconsin launched the first statewide individual student level Coursework Completion System data collection in March of 2011. This collection captured the data necessary to satisfy the requirements of the American Recovery and Reinvestment Act (ARRA) and by reference the America Competes Act. This student-level collection is integrated with the existing Individual Student Enrollment System (ISES) already in place and provides a link between a teacher, a specific course section, and a student. Grades earned were captured for high school students. Standard NCES course codes were also used. The collection takes place in two phases each year— one phase begins after the 1st half of the school year and a 2nd at the end of the school year.

The Applications Development team led the implementation effort for building the course collection system. The LDS Team will be responsible for managing and completing the effort to move the data to the LDS data warehouse. (6.4)

b. **Major Accomplishments:** Project conceptualization (3.1) is complete and the project charter was published in November 2009. Project analysis (3.2) is complete and the tollgate review (3.3) was conducted in April 2010 to confirm the scope and objective of this first collection. Application design (3.4) was completed in Fall of 2010. Development (3.5) was completed in February 2011, followed by a two week long pilot in which a select group of school districts were invited to participate in final testing. No significant issues were uncovered during this pilot and the collection was opened to all school districts in Wisconsin on March 14, 2011. (3.5) The first collection phase ran from March 14, 2011 - May 23, 2011. The second collection phase was open from June 13, 2011 - September 30, 2011.

Training for the school districts started the week of March 7th. Training included face-to-face presentations across the state as well as a collection of video modules that can be accessed at any time from the project website (<http://dpi.wi.gov/lbstat/cwcsapp.html>).

The collection was actively monitored by a subset of the IT development team and issues were addressed as they arose (3.6). We had participation from all school districts in the state, although not all districts were able to send a complete dataset.

The project business analyst met individually with program areas to create detailed submission guidelines for a wide variety of topics. Data analysis has helped inform data quality issues which are being addressed in the ongoing training throughout the collection.

The 2011-2012 school year collection was opened to school districts on February 1, 2012 and is scheduled to close May 2, 2012. The second collection period is scheduled for May 16, 2012 - August 15, 2012 for the remaining data.

c. Plans for Tasks Still to be Accomplished: The work necessary to move this new data set to the data warehouse and turn it into “information” has not yet begun (6.4). Analysis of this effort is planned for this year.

d. Lessons Learned: Although we have a long way to go to improve the quality of data collected, Wisconsin made progress with “ownership” of this new collection. The Content and Learning Team has stepped up and provided necessary leadership and ownership for this new collection. Communications to the school districts improved considerably once a C&L program area person was hired and assigned to this team. Critical communication became both more frequent and more appropriate as non-technical team members assumed the responsibility for this activity. It is not clear to this Agency however how to fund a long-term commitment for these resources or the technical team.

Analysis of the data collected in the 2010-2011 school year collection has been used to identify data quality issues in order to better target technical assistance to school districts.

Outcome 4.0: Build Next Generation Analysis and Reporting Tools

a. Outcome Summary: DPI continues to maintain currently available reporting tools by updating the SDPR-School District Performance Report (4.1) and MDAT (4.8/4.13) with updated data from the data warehouse. DPI also continues to use SAFE-Secure Access File Exchange (4.16) as a confidential way to distribute static reports and files online to districts and schools. In addition to maintaining the customized solutions already available to our school district customers and DPI users, DPI purchased a Business Intelligence Solution which will heighten data usage by enabling access to a comprehensive set of data in the data warehouse. DPI's Data & Reporting dashboard ([WISEdash](#)) is a component of the Wisconsin Information System for

Education (WISE). The goal of WISEdash is to increase access to education data by providing dashboards and reports on a variety of topics that draw from our LDS. These reports and dashboards will help build a better understanding of education performance and outcomes for Wisconsin students to enable informed decision making – ensuring that every child graduates from high school prepared for both college and career pathways. The team continues to work under an ambitious implementation plan to make WISEdash available to users as soon as possible.

b. Major Accomplishments:

Build Student Growth Percentile Reports (4.4) DPI continues to move forward with utilizing the Student Growth Percentiles (SGP) statistical method of calculating growth data to inform district decisions. SGP are calculated in R and integrated into the data warehouse for reporting and analysis. In July 2010 the Office of Educational Accountability (OEA) began piloting static, SGP reports to districts through SAFE (4.16 the Secure Access File Exchange). As of May 2011 the 2011 reports were distributed in PDF format to ALL districts using the same technology. Presentations were given to groups throughout the state and a training packet was created and made available to CESA's to use when working with their districts. Final reports were uploaded in June 2011 and are used today for analysis.

ASM-Application Security Manager (4.15) The goal of building and implementing ASM was to consolidate delegated security applications across the enterprise into one standard security solution. District staff had previously used one tool to manage user access to data collection applications, and another tool, the LDSAM application, to manage user access to data reporting applications. As of May 17, 2011 all secure LDS applications (Secure Home, Data Dictionary, MDAT, MDAT Training, and SAFE) had been migrated to use the new security method and ASM (4.4 Security Enhancements). This change also required the applications to be migrated from Oracle to Websphere to align all DPI reporting applications technology. In addition, ASM was rolled out to users to replace LDSAM (4.9/4/14 LDSAM replaced by ASM) as the tool the district security administrator uses to manage access to secure LDS applications in their district/school. Documentation was updated and communicated to districts/schools.

Business Intelligence Reporting Tool (4.5) *Purchase a tool and Deploy Supporting Architecture*
In February 2011 DPI made the decision to utilize the VersiFit Edvantage education data model and dashboard solution in tandem with the Microsoft BI Reporting solution. The official contract with VersiFit was signed on 2/16/2011. Once the architecture specifications were completed and the hard ware purchased, IT staff began setting up all pieces of the development environment including the database server, the application server, security, network/connection, and access. Desktop tools including a direct query tool, SSRS, and Team Foundation Server were also installed on project team workstations. In May the software installation and configuration, deployment of the VersiFit data model and dashboard content, and security was completed for the development environment. During this time period the team was also trained on various aspects of the new tools and overall solution. The production environment set up is currently in progress.

Business Intelligence Reporting Tool (4.6) Implement BI Reporting Tool Data Warehouse Solution

In the past year the team has made tremendous progress on this project. Data Analysis and Design was completed in July. This included all data mapping sessions to decide the business rules to load data from our data sources to the Edvantage data model. Prototypes were also created to help the team finalize the business rules. ETL development using SQL Server Integration Services (SSIS) was completed between June and August. Data testing was completed in November 2011. Standards and guidelines for dashboard development were developed by the Data Analysis Workgroup and dashboard design and development was completed in February 2012. The security architecture for the project was defined and implemented in development as were the security roles for content level security and data security. This month the team loaded data successfully into the production database and scheduled nightly builds and backups. The team is currently working through access and security to the production application server and moving developed content from the development dashboard environment to the production dashboard environment to prepare for final QA and production verification.

c. Plans for Tasks Still to be Accomplished:

Build Student Growth Percentile Reports (4.4) Before WISEdash, DPI had planned to create a new reporting application (GOALS) to visualize Student Growth Percentiles (SGP). Instead of creating a new tool the team will build SGP dashboards and reports within WISEdash available at initial implementation.

ASM-Application Security Manager (4.15) While the team has completed the initial step to roll LDSAM into the new security solution/ASM progress needs to be made with rolling in other delegated security applications, such as WAMS DA, into ASM as well. Conversations continue around this topic within the scope of each application.

Business Intelligence Reporting Tool (4.5, 4.6) Production reviews and quality assurance testing will be completed and production implementation scheduled. Final scope for production implementation was determined early in 2011. Intended users for the initial release include school and district staff interested in accessing a variety of dashboards and reports populated with their district/school data. The initial release will be a secure release only and will include the following data /dashboards: Enrollment & Attendance, Assessments (including WSAS, ACT and AP), Student Growth Percentiles, Student Profile (4.12) (only available with a specific security role), Student Search (only available with a specific security role) and SGP and WSAS Guided Analysis. All security work will be finalized, tested, and implemented in both development and production. To maximize performance before implementation the team will work on performance tuning as well as defining the final architecture components. A DBA was brought on board in January 2012 to analyze current performance, implement necessary architecture changes, implement partitioning and indexing, complete dashboard query tuning, and complete other tasks related to performance tuning and the SQL Server environment. In

addition, a new team member was brought on as a replacement in January 2012 to continue working on tasks and efforts around documentation, communication and training.

d. Difficulties Faced and Lessons Learned: In May 2011 VersiFit work on the project was halted while the team waited for approval of the sole source. Some progress was made by DPI resources on the various tasks in the following weeks but the team started to hit multiple roadblocks in the 3rd/4th week. As of June 1, 2011 the sole source was approved and the team was able to continue working with VersiFit on the project, however, momentum was lost during the downtime. It took a few weeks to get the project ramped up again. The project also continues to experience staffing issues due to high turnover and the length of time it took to hire the correct resources based on the needs of the project.

The team did a better job of involving stakeholders in projects this year. Districts were included in a review of ASM and changes were made to the application based on their feedback. In addition, the team created an External Advisory Group for WISEdash. At various times through the year questions were presented to the group for feedback to aide in design and development.

Outcome 5.0: Upgrade LDS Infrastructure

a. Outcome Summary: While this outcome was reported as operational in 2010, we continue to update and add to the infrastructure as the need arises. For example, the addition of new tools outlined in Outcome 4.0 required us to implement additional hardware to support statewide use of a dashboard and reporting tool.

Outcome 6.0: Build Detailed Student-Level Datasets

a. Outcome Summary: To fully recognize the potential of a student-level data warehouse, we need to maintain the current datasets while adding additional, useful data for analysis beyond what is required. Wisconsin has worked in the past few years to add required datasets, such as the 4-Year Adjusted Cohort Graduation Rate, and additional datasets, such as Student Growth Percentiles, to our ever expanding data warehouse. At the same time we have worked to streamline our data loads to ensure that all existing datasets are loaded as timely as possible. This year we have focused the majority of our efforts on mapping our existing data warehouse to the Edvantage data model (see outcome 4.0 for more information.)

b. Major Accomplishments: This year the team added one additional dataset, specifically postsecondary enrollment data from the National Student Clearinghouse (NSC), into the LDS ODS. Updates continue to be made to existing datasets to incorporate the new race/ethnicity codes.

Race/Ethnicity Updates (6.5)

New standards for classification of federal data on race and ethnicity were announced in 1997. DPI and local school districts were required to begin collecting and reporting student and staff data using these new standards by the fall of 2010 for the 2010-11 school year. As each data collection has been updated the corresponding data set in the data warehouse is updated as

well. In the last year updates have been made to the Year End and Discipline collections/datasets.

Adjusted Cohort and Graduation Rate (6.6)

Last year DPI implemented the 4-Year Adjusted Cohort Graduation Rate formula required for 2009-10 graduation rate reporting. As of March 8, 2011, the formulas to calculate the rates had been developed and the data implemented into the data warehouse for reporting and analysis. Reports created through our WINSS public reporting application were available May 4, 2011. A press release on May 5, 2011 announced the release of this report to the public. The availability of this dataset and the subsequent reports enabled us to meet reporting requirements for the State as well as SFSF requirements.

Student Growth Percentiles (6.9)

Last year DPI calculated individual student growth percentiles off of WSAS assessment data already existing in the data warehouse. The percentiles were then incorporated into the data warehouse and linked to the individual student. With this data, DPI was able to produce student-level student growth percentile reports in PDF format to be released directly to districts through a customized secure online site called SAFE, the secure access file exchange. These PDF reports were made available to districts in May 2011. Additional reports have been created (and drill down/through capacity enabled) within WISEdash and will be available in the initial release.

Postsecondary Enrollment (6.10)

As of September 2011 postsecondary enrollment data from the National Student Clearinghouse (NSC) is available in our LDS ODS data warehouse. DPI has submitted records to the NSC for graduates from the classes of 2006 through 2010. Matched data—including, but not limited to, enrollment start and end dates, indicators of full- and part-time status, school name and state, school type (private/public), school level (two- or four-year), and completion status—have been incorporated into the data warehouse.

The data is now available to business analysts at DPI with a legitimate education need to use the data for postsecondary enrollment querying and analysis. A number of business rules were put in place to accommodate our known business requirements, including those related to our interpretation of how to report postsecondary enrollment for the c(11) SFSF indicator.

Documentation explaining the business rules and data was created and made available to users.

c. Plans for Tasks Still to be Accomplished: With the development and implementation of WISEdash and the WISEdash data warehouse/data model, we have switched directions slightly regarding what data to load to the data warehouse and where it should be loaded. Ideally we want to load as much data as we can to the new WISEdash data warehouse, bypassing the LDS ODS. The team will continue to work toward adding additional useful datasets into the data warehouse for analysis and reporting, but instead of loading them to the LDS ODS we will load them into the WISEdash data warehouse.

Over the past few years we have compiled a list of student level data items to be added to the data warehouse. Discussions are taking place to prioritize the additional data sets which will then be completed after initial implementation. Integrating career and technical education (CTEERS 6.3) data and course completion data (Course Completion 6.4) into the data warehouse continues to be a top priority of the team and is included in the list for prioritization.

Race/Ethnicity updates (6.5) will continue for additional datasets through the next reporting period. We anticipate all planned updates to be completed by May 2012. Additional updates may be needed if reporting requirements change for the datasets not yet updated.

d. Difficulties Faced and Lessons Learned: One challenge we currently face is the number of staff resources and length of time it takes to complete our LDS ODS loads. While the team sees the benefit in adding additional data sets to the data warehouse, we also feel the constraint of an additional manual process to complete each year. Because of this, the data loads / ETL jobs for our new data warehouse will be completed in SSIS. This tool enables us to build jobs which are repeatable and automated greatly reducing the time needed to complete a task and the number of resourced needed to run updates. In addition, it addresses the data timeliness obstacle we reported last year. Because the process is automated we will be able to load the data more frequently. With the statewide student information system project in progress the actual data will be timelier as well.

Outcome 7.0: Build Comprehensive Educational Portal

a. Outcome Summary: While the ultimate goal of this outcome is to build (7.1) and implement (7.2) a one-stop-shop portal for LEAs, Educators, DPI and the Community to access data and information on Education in Wisconsin, we feel that we have made considerable progress towards our goal by taking steps to build a Comprehensive Education Portal within many of our other initiatives which are becoming more integrated as we proceed down the path of a common data vision within DPI for the State of Wisconsin.

b. Major Accomplishments: In 2009 the Wisconsin team rolled out a secure landing page called Secure Home to coincide with the rollout of MDAT, our first secure reporting tool end users could use to access data from Wisconsin's longitudinal data warehouse. This landing page enables users, with one login, to access the secure reporting tools they have been assigned access to by their district's LDS Security Administrator. WISEdash, DPI's Data and Reporting Dashboard tool (see outcome 4.5 and 4.6), will also be accessible through Secure Home. WISEdash will include dashboards and reports around various topics such as Enrollment, Attendance, and Achievement Tests. Other reporting tools not needing to be "secured" by Secure Home will be linked from within WISEdash or Secure Home to create a common access point for all tools.

c. Plans for Tasks Still to be Accomplished: After WISEdash is implemented statewide, tasks will then focus on integrating other applications into the Secure Home landing page to increase the number of applications and tools available to users in one location.

d. Difficulties Faced & Lessons Learned: Before WISEdash the security solution used by districts and schools to gain access to secure tools (ASM) and to access these tools in one location with one login (Secure Home) was tied specifically to applications built by internal developers and housed at DPI. With WISEdash we are housing the application at DPI but it was built by an outside vendor. With our long-term goals in mind, we decided to integrate our security solution within the WISEdash application. As we worked to implement the solution within WISEdash, we found that there were many pieces to consider due to the breadth and depth of a single sign on solution. As we start looking at integrating other applications into the ASM / Security solution that may or may not sit at DPI and / or may or may not be built internally, we will need to hold many detailed conversations to ensure we are addressing all security components for each application to ensure a successful implementation.