



SIGMA Overview

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► What is SIGMA?

What is SIGMA?

Statewide Integrated Governmental Management Applications

SIGMA is the backbone of state government operations supporting the delivery of state government services.

Project SIGMA was a business process transformation project that implemented new software as the State of Michigan's Enterprise Resource Planning (ERP) solution.

SIGMA integrates previously disparate State systems and provides end-to-end support for budget, accounting, procurement, employee timekeeping, employee expense, and labor distribution functions.

It replaced over 60 systems in state government operations, including 24-year old enterprise systems like MAIN and DCDS and numerous agency specific systems.

It replaced the State's Buy4Michigan eProcurement system providing integrated procure-to-pay functionality.

In addition to addressing the functions described above, SIGMA includes over 350 enterprise reports, the State's Comprehensive Annual Financial Report, the State's Transparency and Accountability Portal, and includes robust ad hoc reporting capabilities.

What New Functionality did SIGMA Deliver?

In addition to the enterprise-wide systems replaced by SIGMA, SIGMA delivers new functions at an enterprise level in an integrated and standardized manner. These include:

- Extensive **cost accounting and cost allocation** functions to address project and grant accounting needs, increase automation of complex accounting functions, and enable improved transparency. These functions are configured to address over 10,000 individual projects and grants statewide.
- **Grant lifecycle management**, which includes integration with federal grant opportunity information, enabling the State to pursue grant opportunities in an automated manner. It also enables online State grant offerings allowing local units of government and service agencies to pursue opportunities to collaborate with the State in an efficient manner.
- **Asset and inventory management** functions that are integrated with procurement, cost accounting, and financial reporting.
- **Performance budgeting** replaced spreadsheet-based processes streamlining the budget development process. In addition to direct use by the State, State of Michigan Colleges and Universities use SIGMA Budget directly to submit capital outlay requests.

What are the Benefits of SIGMA?

By standardizing processes, data, and systems, we ensured the state will be able to seamlessly adapt to a changing environment while reducing long-term costs.

- ▶ By reengineering processes to meet the solution's best practices we have certainty regarding the long-term stability of the system and the associated costs.
- ▶ Standardization of the data improves the ability for the State to be responsive to an ever-changing environment.
- ▶ Streamlined business processes that work similarly across departments enable improved data consistency and reporting internally and improved access to information for businesses interacting with the State (the State's vendor community), economic developers, and constituents.

The operational efficiencies produced by SIGMA will enable an increased focus on mission critical business and program functions of the departments – providing improved services to the citizens of our State. These efficiencies include:

- ▶ Less manual, paper-intensive tasks
- ▶ Elimination of redundant data entry and less reconciliation needs across systems
- ▶ Greatly improved reporting and data analysis capabilities
- ▶ Simple and automated tracking and approvals

What are the Benefits of SIGMA (cont.)?

Collaboration across federal, state, and local units of government is improved through integrated, online functions such as FHWA integration and grant lifecycle management.

Local units of government can leverage SIGMA to support select functions surrounding procurement and they can also leverage the same software and collaborate with the State on standardized solutions, like one county and one city in Michigan are already doing.

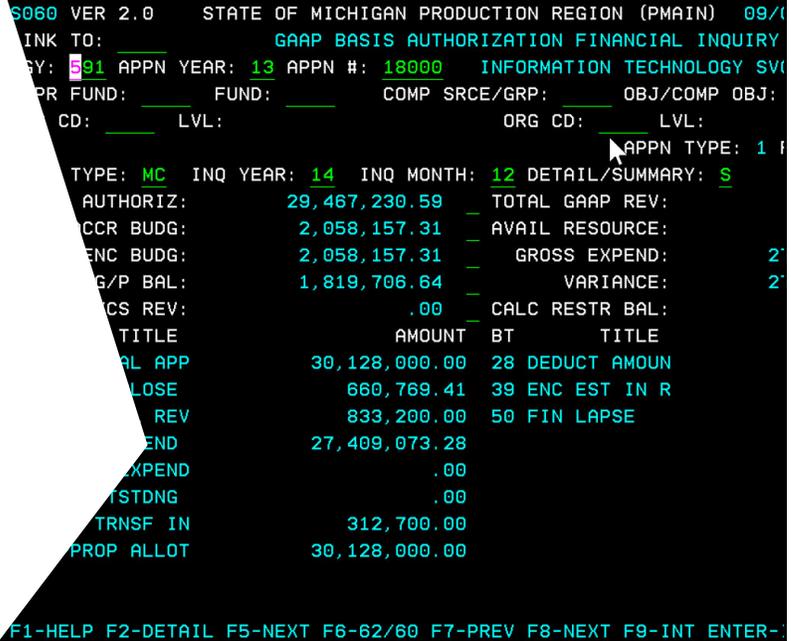
Antiquated legacy systems were replaced with new, supported technology that will continue to evolve and be updated as business needs and technology capabilities evolve.

Because SIGMA is standardized to the vendor-supported software and the vendor is continuously updating the software as technology evolves, **SIGMA will never have to be replaced.**

Legacy System: MAIN

Accounting and Financial Management
 SIGMA replaced the Michigan Administrative Information Network (MAIN), which was comprised of four distinct enterprise components: R*STARS, AdPICS, RMDS, and MIDB. MAIN was implemented in 1994 for all State of Michigan accounting, financial management, and financial reporting functions.

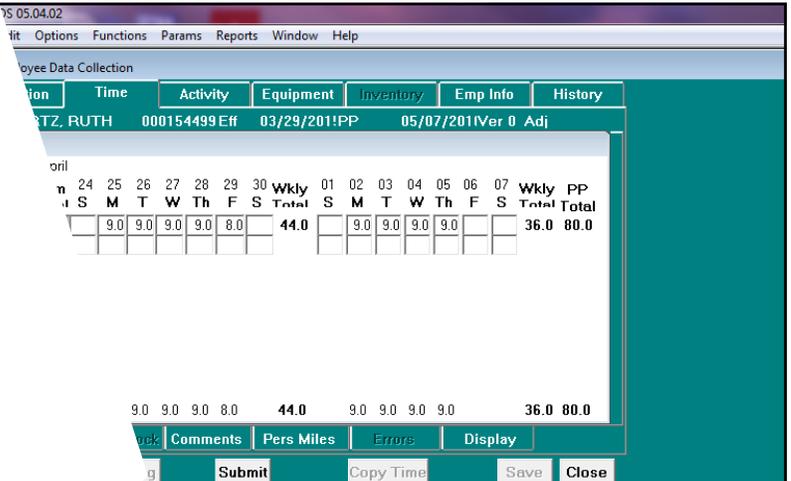
- MAIN was a mainframe COBOL system considered outdated technology by the time it went live.
- It was heavily customized and was not vendor-supported software.
- Updates and changes were extremely costly and time-consuming.
- Limited resources are available (and dwindling) to support the MAIN technology.



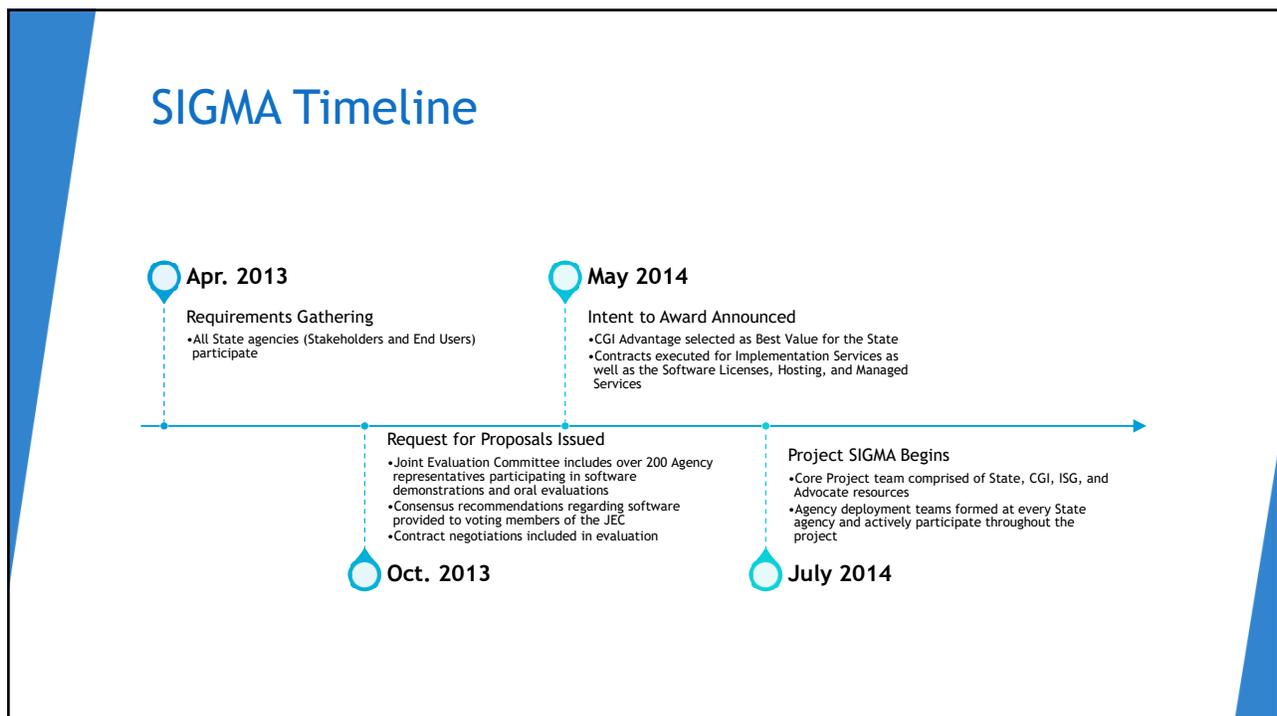
Legacy System: DCDS

Employee Timekeeping, Expense Reporting and Labor Distribution
 SIGMA replaced DCDS for employee time and attendance, leave and overtime requests, labor distribution, and employee expense reimbursement functions.

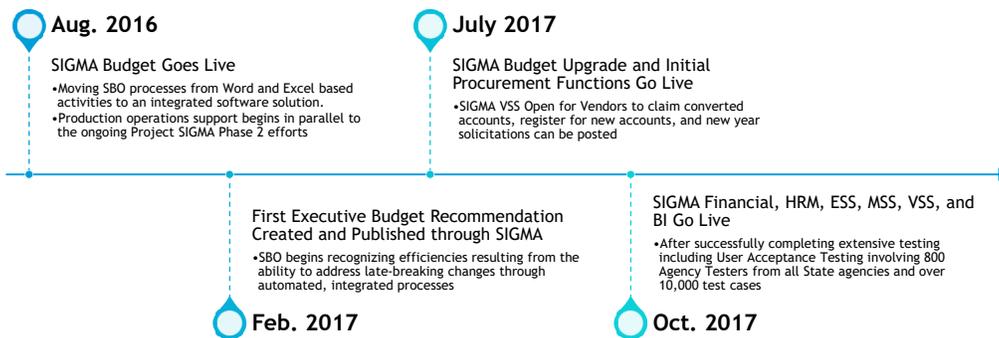
- DCDS was a custom-developed, Power Builder application built in 1994 along with MAIN.
- The DCDS framework was client-server, requiring updates on every State employee PC or Laptop when changes were made.
- Power Builder is considered an antiquated technology. Limited resources are available (and dwindling) to support the DCDS technology.
- Changes and updates were time-consuming and costly.



▶ SIGMA Timeline



SIGMA Timeline (continued)



SIGMA Timeline (continued)



▸ Project SIGMA

Project SIGMA, a History- Making Success



SIGMA went live, statewide, with all functionality on time, under budget, and without customization to the core software.



SIGMA accomplished all project objectives including standardization of processes and data statewide.



Relative to other, comparable statewide ERP implementations, Project SIGMA was lower cost, more comprehensive, and faster.

Project SIGMA vs. Other State ERP Implementations

- Analysis was done of comparable other state ERP project durations and implementation services costs. They range from 30 to 75 months in length. The analysis further emphasized the aggressive nature of Project SIGMA's original 27-month schedule for Phase 2 of the project.
- In addition, Project SIGMA's implementation strategy called for enhancements to be incorporated in a new release prior to implementation (a mid-project upgrade). This strategy suggests a longer design/development timeline than one in which site-specific enhancements would be made. Despite that, the State in partnership with CGI maintained and achieved an extremely aggressive timeline.
- A project extension was vetted with stakeholders, the Governing Board, the Project Executive Sponsor, and the Governor in the fall of 2015. The extension resulted in change from 27 months to 39 months for Phase 2 and from \$40.7 to \$46.5 million for CGI's implementation services. These costs remain on the very low end for ERP projects of comparable scope and size in other states.
- The total Project SIGMA budget (primarily funded through the IT Investment Fund) was \$178.8 million, as follows (in millions):
 - CGI Implementation Services: \$46.5
 - State Team (including retirement and fringes): \$41.7
 - Environments and Software: \$33.8 ⁽¹⁾
 - Agency Contingency Funding: \$30.1
 - Quality Assurance, Project Management, and Third-Party Support: \$21.9
 - Facilities, Supplies, Computers: \$3.8
 - Pre-implementation planning and support: \$1

⁽¹⁾ This includes the original Software purchase as well as 4 years of maintenance and related technical environments.

State	Software	Integrator	Scope	Not Included	Duration	Implementation Services Cost	Mid Project Upgrade
Michigan	CGI Advantage	CGI	<ul style="list-style-type: none"> Financial Budget Procurement HR - Select Functions Labor Distribution FHWA Billing Grants/Cost Allocation Data Warehouse 		39 Months	\$46.5 million	Yes
Comparably Sized State Projects							
Ohio	Peoplesoft	Accenture	<ul style="list-style-type: none"> Financial Procurement Upgrade of HR/Payroll Data Warehouse 	<u>Not Included</u> <ul style="list-style-type: none"> No Grants/Cost Allocation No FHWA Billing No Budget Prep 	42 Months	\$97 million	No
Pennsylvania	SAP	Bearing Point (later acquired by Deloitte)	<ul style="list-style-type: none"> Financial Procurement HR/Payroll FHWA Billing Grants/Cost Allocation Data Warehouse 	<u>Not Included</u> <ul style="list-style-type: none"> No Budget Prep 	42 Months (not including DOT) 75 months including DOT	\$126 million	No
Connecticut	Peoplesoft	Accenture	<ul style="list-style-type: none"> Financial Procurement HR/Payroll FHWA Billing 	<u>Not Included</u> <ul style="list-style-type: none"> No Grants 	48 months	\$130 million	No

State	Software	Integrator	Scope	Duration	Implementation Services Cost	Mid Project Upgrade
Michigan	CGI Advantage	CGI	<ul style="list-style-type: none"> Financial Budget Procurement HR - Select Functions Labor Distribution FHWA Billing Grants/Cost Allocation Data Warehouse 	39 Months	\$46.5 million	Yes
Other Recent CGI State Projects						
Arizona	CGI Advantage	CGI	<ul style="list-style-type: none"> Financial Grants/Cost Allocation Data Warehouse <p>Not Included</p> <ul style="list-style-type: none"> Procurement HR/Payroll Budget Prep 	30 months	\$36.6 million	No
West Virginia	CGI Advantage	CGI	<ul style="list-style-type: none"> Financial Grants/Cost Allocation Procurement HR/Payroll Third Party Time/Leave Data Warehouse Budget Prep 	48 months	\$45.9 million	No

What Made Project SIGMA Successful?

- ▶ Detailed objectives, scope, and requirements kept at the forefront throughout
- ▶ Strong Executive Sponsorship
- ▶ Governing Board representing all State agencies
- ▶ Core, collaborative, co-located project team comprised of State, CGI, ISG (Quality Assurance), and Advocate (Project Management) resources
- ▶ Stakeholders and Agency Deployment Teams involved from start to finish
 - Agencies involved in design, configurations, testing, and training
- ▶ Strong, effective project management discipline
 - Proactive, accurate, and transparent risk and issue management throughout
- ▶ Extensive testing through Unit, System, End-to-End, and User Acceptance
 - User Acceptance test included over 800 agency testers and over 10,000 test cases
- ▶ Emphasis on change management and communications throughout
- ▶ **An incredibly dedicated, enthusiastic, and hard-working State project team!**

Jr#Dlyh#Issues and Resolution

Issue – SIGMA Employee Self-Service

- Significant technical and software issues with employee travel and expense functionality occurred in production in October/November 2017
- SIGMA Employee Self Service and Manager Self Service functions (SIGMA ESS and SIGMA MSS) replaced a custom developed legacy system (DCDS) and has a significantly different user interface. This combined with the technical issues noted above resulted in major organizational change management challenges.
- Some functions in SIGMA ESS and MSS are not as intuitive as preferred to support such a large and diverse user base (all state employees).

Resolution

- ✓ Technical issues were fully resolved by December 2017
- ✓ SIGMA Operations and Support continues to conduct outreach and solicit feedback regarding usability improvements, training needs, and other means of assisting the diverse end user community.
- ✓ Some usability improvements have been delivered by the software vendor and were moved to production in June 2019. Significant usability improvements are included in the Advantage 4 release of the software. The State's commitment to using the software without customization positions us to move to that version of the software.

Issue – Batch Cycle

- Problems with the batch cycle timing have occurred and initially impacted system availability on a frequent basis.

Resolution

- ✓ All batch issues were resolved without impact to payees.
- ✓ None resulted in costs to the State.
- ✓ Tuning efforts were undertaken and addressed significant issues that occurred early on.
- ✓ Occasional delays still occur when unanticipated volumes of transactions occur.
- ✓ SIGMA Operations and Support monitors the cycle throughout the night and takes action to mitigate delays.

Issue – Cash Reconciliation

- Cash Reconciliation processes within Treasury had to be reengineered around SIGMA processes and SIGMA data volumes. In addition, data and reporting issues early on caused delays in the reconciliations during the first fiscal year of operations.

Resolution

- ✓ Treasury, SIGMA, OFM, and others worked through refinements to reports and understanding of data to improve the processing time on cash reconciliations.

SIGMA in
▶ Production

SIGMA contains extensive configurations, processes, and technical components that require ongoing support, testing, and management.

These include:

- Over 5,000 requirements
- Over 500 configuration tables
- Over 56,000 configured Chart of Account elements
- Over 300 interfaces
- More than 350 enterprise reports
- Approximately 50 Training courses including classroom (instructor-led), computer-based training, and self-study components
- Over 10,000 test cases
- Approximately 200 Document Codes
- Over 200 security roles and over 300 workflow approval paths expanding, with department configurations, to approximately 20,000 configurations

SIGMA By the Numbers

SIGMA End Users are a Diverse Group

- Approximately 15,000 core application users using SIGMA Financial, SIGMA HRM, SIGMA Procurement, SIGMA Budget, and SIGMA BI
- More than 45,000 employee self-service users, approximately 8,000 of whom also use manager self-service
- Over 150,000 Vendors and Payees
- Colleges and Universities (Capital Outlay Budget Requests)
- Local Units of Government (Procurement functions)

SIGMA By the Numbers— Cont'd

Who is SIGMA Operations and Support?

- **End User Support** provides help desk support and training for core users, state employees, vendors, customers, and occasional users of the system. End user support also provides oversight and support of security and workflow.
- **Centers of Excellence** provide system assurance, ensure standardization is retained, test and implement increased and new functionality as available, maintain central/core configurations, and provide an escalation path for complex help desk calls.
- **Business Operations and New Development** provides oversight of hosting and managed services delivery by the contractor, ensuring DTMB-IT technical standards are maintained and providing quality and project management oversight of all new business development initiatives. Business Operations and New Development also includes a Business Intelligence section providing ongoing support for reporting needs.

Who is SIGMA Operations and Support? (cont.)

SIGMA Operations and Support resides in the State Budget Office. This enables:

- Direct support to the primary business owners and stakeholders of the system: SBO-Budget, SBO-Office of Financial Management, Civil Service Commission, Treasury, and DTMB-Procurement.
- Direct support to the additional major integration partners: MDHHS (cost allocation) and MDOT (federal highway billing).
- A strong understanding and working relationship with the end users of the system regarding application needs for configurations, automation, and future enhancements.

SIGMA operations and Support chairs a Steering Committee comprised of business leaders of all state agencies and responsible for helping to set priorities for future SIGMA initiatives

SIGMA Operations and Support participates in or co-chairs various operational groups including but not limited to: Chief Finance Officers, Chief Accountants, Procurement Leadership Team, and Human Resources Directors

SIGMA is a hosted/managed solution providing fixed price certainty, technical expertise in the product, and updates on an ongoing basis.

- **Hosting:** the technical infrastructure (hardware, software, and technical security) is the responsibility of CGI.
- **Managed:** the technical operations and maintenance (batch cycles, patching, operating system updates, and other technical functions) are the responsibility of CGI.
- DTMB IT does not have a direct role in running or managing SIGMA; their role is to provide support, IT policy oversight, and advisory services to SIGMA Operations and support.

Time, Expense, Leave, and Labor (TELL)

- Approximately 50,000 timesheets successfully processed each bi-weekly payroll cycle; over 85% initiated and processed through employee and manager self-service
- 6,000 to 10,000 employee travel expense reports successfully processed and reimbursed through SIGMA each bi-weekly payroll cycle; over 98% initiated and processed through employee and manager self service.
- Integration with HRMN results in processing an average of 655,000 HRM documents addressing employee changes each month

Financial

- Over 600,000 payments totaling over \$5.2 billion issued through SIGMA each month
- Over 1 million SIGMA Financial and Procurement documents recorded each month
- Over 99% success rate for interfaced documents
- DHHS Cost Allocation processed quarterly in SIGMA in a fully integrated manner

Budget

- Fiscal Year 2018, 2019, and 2020 Budget Books developed through SIGMA Business Intelligence
- On average, 3,350 reports run by end users every weekday

End User Support

- Same day call resolution approximately 90%, 1st call resolution 65%
- 61 classes offered last quarter – 345 students attended

Technical

- 5 environments: Production, Production QA, Test, Development, Training
- Production and Production QA databases are each approximately 33 terabytes
- FedRAMP cybersecurity standards required and met
- All infrastructure and technology stack components are supported and consistent with DTMB standards
- An average of 450 Operations request processed each month
- 8 to 9 batch cycles every day with over 500 unique batch jobs executed according to the business cycles

Operations Snapshot

Surgxfwtrq#issues and Resolution

Issue – Effective Use of SIGMA

- As agencies continue to learn how to effectively use the new system, occasional processing delays occur and/or data corrections are needed.

Resolution

- SIGMA Operations and Support has a fully staffed help desk, conducts a variety of stakeholder and user group meetings, and conducts outreach, working sessions, and labs to support continuous improvement and efficiency gains.

Issue – Employee Expense Reimbursements

- The technical issues previously mentioned are fully resolved but the entry of expense reimbursements can be complex and time-consuming.

Resolution

- Continue to work with agencies to streamline processes.
- Implemented enhancements in the current release of the software in June 2019.
- Ensure remaining 'pain points' are fully addressed with the upcoming upgrade.

Issue- Labor Distribution Reconciliation

- A fully integrated, end-to-end solution for labor distribution through cost-accounting and federal billing requires a different approach to reconciliations for federal audit purposes. Determining the appropriate reports and procedures presents complexities.

Resolution

- Refinements to reports and various labs, working sessions, outreach, and training efforts will continue to assist in addressing this.



Issue – Ad Hoc Report Reconciliation

- Although the ad hoc reporting capabilities of SIGMA represent a significant improvement over the legacy systems, their development requires reconciliation to the application prior to relying on them. This can be time-consuming and complex, initially.

Resolution

- SIGMA Operations and Support offers SIGMA Business Intelligence (BI) labs every month to assist users in developing and tuning ad hoc reports. Additional training classes were developed and are routinely offered.

Issue – SIGMA BI Performance

- Performance issues with SIGMA BI.

Resolution

- The related technical and business process issues are actively worked with prioritization around end user impacts. Analysis occurs throughout every day regarding system performance and specific report performance. Outreach is done as appropriate to improve poorly performing ad hoc reports.

Issue - Workarounds

- Supporting end users with software defects requiring temporary workarounds while patches are delivered, tested, and deployed to production.

Resolution

- Open defects and related workarounds are published with full transparency. Outreach and assistance is provided as necessary.

SIGMA In Production – Major Successes



Employee time and attendance processing stabilized within first 2 ½ months of operations



Operations predominately stabilized within first 9 months including: Batch Cycle, Issue Resolution, Testing Protocols, and Help Desk support



All major SIGMA “Firsts” successfully completed including: DHHS cost allocation, 1099’s, Budget Book developed and published through SIGMA, CAFR developed and published through SIGMA



Automated, integrated budget processing significantly reduces manual efforts and potential for error



Improved application security with increased, automated controls compared to the legacy systems

SIGMA In Production – Major Successes



Information for reporting needs is more readily available as a result of nightly updates to SIGMA BI and real-time operational universes



Ability to evaluate impact of pending documents improving management oversight and impact analysis capabilities



The ad hoc reporting capabilities of SIGMA represent a significant improvement over the legacy systems



Over 175 production work requests optimizing SIGMA for greater efficiencies completed during first 2 years of operations



Ability to address organizational changes and new reporting requirements without customizations, major efforts, or additional resource needs

► What's Next?

SIGMA Upgrade

- SIGMA is currently on the CGI Advantage 3.11 release of the software.
- Advantage 4 brings a simplified and intuitive user interface.
- Advantage 4 delivers a role-based paradigm allowing us to tailor the user experience for individual types of users **without customization**, fully addressing the remaining usability challenges for self-service users.
- Advantage 4 shifts from the software delivery model of costly, major upgrades every 3 to 5 years to a 'featureset' model.
 - New features and functions will be delivered on an 8-month cadence and will be included in our base managed services costs.
 - This eliminates major technical upgrades and related projects every 3 to 5 years.
 - This positions SIGMA Operations and Support to deliver continual updates and improvements in an agile manner.
- An upgrade approximately 3 years after implementation was always planned in order to meet the overarching objective of staying current with technology.
- The upgrade costs will be fully paid for with existing budget authorization.
- This will be the **first and last** major upgrade for SIGMA

