379 Thornall Street
Edison, New Jersey 08837

January 07, 2022

Bid Clerk
West Virginia Department of Administration, Purchasing Division
2019 Washington Street E
Charleston, WV 25305
Re: CRFI 0511-BMS00000001- REQUEST FOR INFORMATION-MEDICAID ENTERPRISE SYSTEM (MES)

Tata Consultancy Services (TCS) is pleased to present our response to the State of West Virginia's Bureau for Medical Services' Request for Information (RFI) regarding our view on Medicaid Enterprise Systems and our input for the State's plan to develop a roadmap for a modular MES procurement strategy.

TCS is a leading global provider of Information Technology and services. Our expertise and integrated method for delivering Public Sector programs demonstrates how we assist our government clients in achieving innovative, industry-best, and efficient solutions for their key initiatives, services and support.

TCS has been working with government and commercial customers for over 50 years and our proven processes, tools, and services methodologies can readily deliver value to the State of West Virginia. As a leading provider of government transformation solutions, TCS Public Services utilizes our experience, solutions, and partnerships to provide modern technology solutions that help government transform and operate more effectively and efficiently. Our modernization platforms, solutions and Agile approach addresses the fundamental issues facing agency programs today: increased volumes, new program deployment, compliance, and the need for improved service in conjunction with a consumer-grade experience.

As a top global partner for many of the world's largest Healthcare Organizations and as a leader in Life Sciences, systems modernization, development, implementation and integration services, TCS is highly qualified to respond to the State's request. Our past experience, tailored consulting approach and intellectual capital all allow us to drive innovation in solutions and services delivery, consulting and platform implementations. Through continuous innovation, TCS leverages our Government 4.0 digital framework and enterprise agile delivery method to focus upon improving State outcomes, efficiencies, and improved citizen interaction experience.

TCS is excited about this project and working with BMS and we are ready to answer any questions you may have about our response. We look forward to the opportunity to further discuss our capabilities with you at your convenience. If you have any questions or require clarification of any points in our response, please contact Roger Doermann whose information is listed below. He will be the contact person for the RFI.

Name of Contact for RFP: Roger Doermann
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Tata Consultancy Services Limited

TATA CONSULTANCY SERVICES

Building on belief

TATA Consultancy Services Response: State of West Virginia Bureau for Medical Services Request for Information Medicaid Enterprise System (MES)

CFRI 0511-BMS0000001

Issued Date- November 17, 2021
Submission Date- January 07, 2022
Attn: Department of Administration; Purchasing Division
2019 Washington Street East
Charleston, WV 25305
Attn: Crystal Hustead

Submitted by:
Tata Consultancy Services
379 Thornall Street
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Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130	State of West Virginia Centralized Request for Information Info Technology	

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BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code: VS0000038127

Vendor Name : Tata Consultancy Services

Address :

Street : 379 Thornall Street

City : Edison

State : New Jersey **Country : US** **Zip : 08837**

Principal Contact : Roger Doermann

Vendor Contact Phone: (703) 431-1300 **Extension:**

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Vendor

Signature Ashok Nandakumar, Business Unit Head-US Public Services FEIN# 98-0429806 DATE: 15 Dec 2021

All offers subject to all terms and conditions contained in this solicitation

Date Printed: Nov 17, 2021 Page: 1 FORM ID: WV-PRC-CRFI-002 2020/05

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Abbreviations

BPO	Business Process Outsourcing
BYOD	Bring Your Own Device
CMA	Cloud Applications, Microservices and API Services
COTS	Commercial off the Shelf
EAI	Enterprise Application Initiative
EDI	Enterprise Data Integration
EDW	Enterprise Data Warehouse
ETL	Extract – Transfer-Load
EVV	Electronic Visit Verification
FMAP	Federal Medical Assistance Percentage
iBPM	Intelligent Business Process Management
ICC	Integration Competency Center
JAD	Joint Application Development
MDM	Master Data Management
ML	Machine Learning
MMIS	Medicaid Management Information System
NLP	Natural Language Processing
PBM	Pharmacy Benefits Management
RPA	Robotic Process Automation
SI	Systems Integrator

SOA	Service-oriented Architecture
TCS	Tata Consultancy Services
TIME	TCS Integration Methodology for Enterprises

EXECUTIVE OVERVIEW AND COMPANY BACKGROUND

Tata Consultancy Services, Ltd. (TCS) sincerely thanks the West Virginia Bureau for Medical Services (BMS) for the opportunity to respond to your Request for Information (RFI) regarding modernization strategy and planning for the State's envisioned Medicaid Enterprise System (MES). We understand BMS's key drivers are focused upon an MES model and Medicaid Information Technology Architecture (MITA) that is aligned with the Centers for Medicare & Medicaid Services (CMS) guidelines and leverages modularity, continuous improvement, and reuse with an emphasis on your targeted outcomes. These outcomes include improved operational efficiencies, interoperability, reduced costs, and promotion of an enterprise MES environment that provides enabling technologies and processes to deliver flexibility, adaptability and enhanced member and provider data management to better support BMS's program administration and healthcare management decision-making.

TCS is highly qualified and deeply experienced in supporting the business needs, technology domains and services of government. We possess both the technology and consulting skills to assist the State with your MES vision to deliver successful results targeted to your desired outcomes. We understand that the improvements gained under your anticipated MES will have a direct impact on not only BMS, but on other State agencies' business requirements, processes, organization, healthcare providers and ultimately, the citizens of West Virginia. TCS's domain knowledge and business experience, along with our defined project methodologies can all be brought to bear for the State of West Virginia.

In working with TCS, you will also have access not only to our expertise in legacy modernization and transformation services but also to our extensive consulting and services domain competencies, Research and Development organization and the breadth and depth of the world's premier IT services company.

As a leading provider of government transformation solutions, TCS's Public Services team utilizes our experience, solutions, and partnerships to provide modern technology solutions which we believe are well-aligned with West Virginia's RFI intent and objectives. Our modernization platforms, solutions and Agile approaches address fundamental issues facing Health and Human Services agency programs today, including increased volumes, new program deployment, compliance, and the need for increased self-service and consumer-grade interactions between citizens and the government. Through continuous innovation, TCS leverages our Government 4.0 digital framework to include machine-driven process automation, cognitive/artificial intelligence, cloud interoperability and enterprise Agile deployment, all focused upon improving outcomes, efficiency, and the citizen interaction experience.

The mission of the TCS Government Public Services team is to build long-term, sustainable business relationships with our state and local government clients. Our three core principles include **Delivery Certainty, Innovation through Government 4.0, and Business with Purpose**.

- **Delivery Certainty** means that our customers can rely on TCS to deliver on our commitments with quality and integrity. We pride ourselves on creating value-based partnerships that deliver predictable outcomes, with a focus on the government's success and the needs of its constituents.

- **Innovation through Government 4.0** refers to our continued commitment to improve the way government business gets done by leveraging our investments in technology, intellectual capital, and digital assets. TCS is investing in practical innovation that will drive improved citizen experiences and create transformation that includes process and technology optimization for improved budgetary efficacy. Where possible, we employ technology automation techniques like robotic process automation and artificial intelligence solutions to reduce redundancy and increase the effectiveness of human intervention on value-added processes and decisions. Government 4.0 is our Public Services adoption of TCS Business 4.0.

- **Business with Purpose** is our constant drive to contribute to the communities we serve. With focus on education, healthcare, and the environment, TCS contributes 50% of our annual profits to charitable causes, with the goal

of creating highly sustainable operating and living environments. This philosophy enriches our communities by creating new opportunities and attracting the very best businesses, jobs, and employees.

In 2020, TCS was recognized as the "Most Valued" Global IT and Business Process Services Company in the world, being consistently acknowledged for our reputation in service and dependability. TCS offers a consulting-led, cognitive powered, integrated portfolio of business, technology and engineering services and solutions. This is delivered through our unique location independent Agile delivery model, which is distinguished as the benchmark of excellence in software development. The following is a broad categorization of services offered by TCS:

- Consulting and Services Integration: Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), modernization and transformation services. Enterprise Agility strategic consulting is key to assisting clients with new operating models and paradigms.
- Digital Transformation Services: Internet of things (IoT) and Engineering Services, Cyber Security, and Cloud Infrastructure across all major geographies..
- Cognitive Business Operations: Machine First Delivery Model MFDM™ resonates with customers to transform their core with Agile teams, to implement intelligent automation operations on the Cloud.

Government Focus TCS understands the multi-dimensional challenges governments face and has partnered with multiple states and local governments for the benefit of citizen engagement and improving agency stakeholder programs. Our information technology solutions assist states in achieving business outcomes to improve citizens quality of life through smart and effective governance. TCS's Public Sector team provides transformational intelligent and automated solutions for governments and engages to help enterprises align services with changing needs.

TCS blends our management expertise and domain knowledge with IT competence, a unique ability to tailor solutions best suited to the needs of our Government partners. Solutions range from policy and planning to enablement through people, processes, and technology at operational levels. Our experience with government ranges from perspective and roadmap planning to restructuring and institutional strengthening to development of information systems and technology planning to application development and implementation and operational support and managed services.

In summary, we believe that the information we are providing to the State will prove useful to you in your MES planning and evaluation. Our broad base of capabilities, experience and partnerships with leading industry software and technology providers allows us to meet the State's need for providing a "an enterprise view that supports enabling technologies that align with Medicaid business processes and technologies" for a best-fit blend of products and services to meet your State-specific needs. TCS's extensive experience in commercial healthcare, our professional services and consulting approach and our commitment to delivering to the State's desired outcomes fully support your desire to help define, transform and modernize West Virginia's Medicaid program.

TCS has rapidly grown to be the #1 Most Valued Transformational Services Company in the world by providing superior service and support to our customers with a deliberate focus on our clients' success and applying our three core principles: Certainty, Innovation, and Purpose. Together, these principles represent TCS's commitment to your success, with a focus on bringing innovative, forward-thinking, and proven solutions that provide BMS the committed partnership you need and deserve in perpetually serving constituents of the Great State of West Virginia. ***Our goal is simply to be "the most trusted provider" in your portfolio.***

SECTION 4: RFI BACKGROUND AND PURPOSE

4.1: Background

To meet the State's future needs and CMS guidance for modularity, the State intends to procure modular, business-focused solutions that can be configured to meet the State's changing business needs and service offerings. Additional information about CMS guidance on modularity can be found in State Medicaid Director letter SMD #16-010 at https://www.medicaid.gov/federal-policy-guidance/downloads/smd16010.pdf. The shift to modular systems will lead to performance and efficiency gains, freeing up State resources to better focus on the needs of our members and providers. Through the implementation of a modernized MES, the CMS requirements of interoperability and integration with other state Medicaid programs will be defined and met.

BMS is seeking respondents who can provide input on best practices and solutions to meet the State's strategic direction now and into the future. The State is highly interested in solutions that promote reuse and interoperability of system components and those that favor configuration management over hard programming.

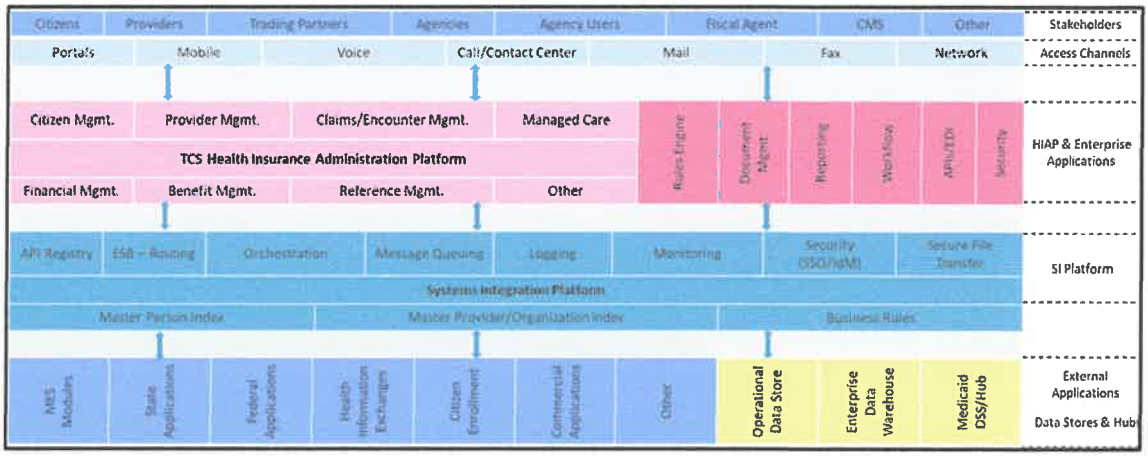
To best understand the MES market, technology trends, and available options, BMS has prepared this RFI to collect future market research regarding modular MES. Responses to this RFI will provide important input for the State's MES strategic plan and, if applicable, help inform potential RFPs/Requests for Quotations (RFQs). The purpose of this RFI will be to investigate technical solutions that can serve as modules within the modernized MES and the best plan to coordinate those implementations.

4.2 Questions

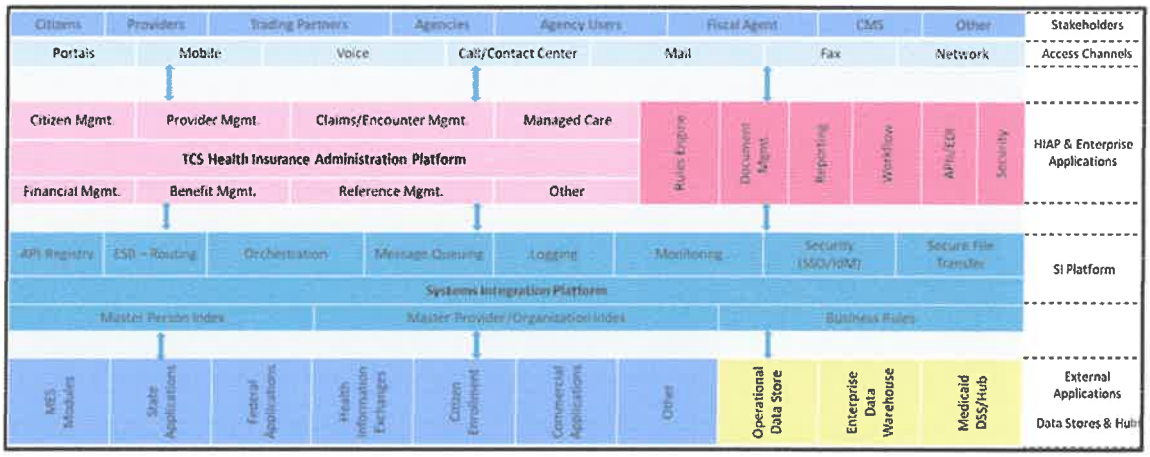
4.2.1	**Please describe any elements BMS should consider incorporating into its vision, planning, and implementation for a modernized, modular MES.** TCS recognizes that most Medicaid agencies have long-standing relationships with their vendors of the current MMIS systems and services. Through typically monolithic technologies, these vendors, working to minimize the impact of dismantling non-modular legacy systems, have little incentive to support the agencies' transformation to MES modular architectures. This can be one of the most significant risks to modular modernization, as much of the knowledge of an MMIS' architecture, code base, and data structure resides with the legacy vendor. CMS in its directive for MES modularity intentionally built-in ambiguity in how each state can and should architect their systems and associated modernization strategy. In recent years, states have refined their modularity impetus to one that is not a wholesale replacement but to one of selective enhancement, modernization, or replacement. Given these multiple risks, challenges and ambiguity to modularity, in the following responses, TCS offers numerous unique and innovative recommendations that we hope BMS will consider incorporating into its vision, planning, and implementation for a modernized, modular MES. TCS welcomes the opportunity to strategize, consult and support BMS' MES modernization and modularization journey. We hope that in our responses, you discover interesting and somewhat "non-traditional" approaches to your planning and ultimately final road map.

4.2.2	**In the projects you have been on, what was the optimal configuration of MES modules specific to functionality, integration of other solutions, and management of data?** TCS finds the optimal configuration of MES modules best alignment is to the core process areas. As an example, the traditional Medicaid Management Information System (MMIS) has multiple subsystems with a high-level of data interdependence. Benefits management, member data, financial management, claims/encounter management and managed care management are heavily dependent on the access to and real-time exchange of data between the subsystems. West Virginia is in an unusual MES modernization scenario given that the state hosts USVI's MMIS. The MMIS is currently provided by the same vendor so the modernization of the BMS MES will presumably be coordinated. If this hosting of the USVI systems is to continue, for modernization, TCS would highly recommend considering and perhaps requiring the ability for a single solution to be architected for a multi-tenant configuration. Multi-tenancy should result in reduced costs for implementation and for operations. The processes associated with provider enrollment, management, screening, and credentialing presents a logical separation from the core MMIS functions and depending on the state, may be off loaded to the managed care organizations. TCS has observed numerous SMA's including provider management/enrollment in their modularity strategy in order to update/replace legacy solutions and to re-introduce the processes into direct Medicaid operations and oversight that was previously outsourced to the MCOs. Pharmacy Benefits Management (PBM) systems and services are well served by organizations that have established a strong pharmacological competency. While a PBM can be considered a claims processing platform, the ancillary services typically justify the separation of the module from the core administration system. Case management (LTSS/waiver/HCBS), grievances and appeals, investigative case management and others are best served by modular offerings. We highly recommend implementing an Intelligent Business Process Management (iBPM) and case management platform. Also commonly referred to as low code/no code, these platforms afford rapid configuration, commonly provide "accelerators" for quick deployment, and incorporate advance technologies including Robotic Process Automation (RPA) and native integration of Internet of Things (IoT) technology that enable and enhance citizen engagement, improve outcomes, and reduce costs of operation. Independent of business process modules, the Systems Integration platform is critical to interoperability as business process modules are unbundled from the traditional MMIS. A well architected SI platform promotes interoperability, reusability, and shared information throughout the enterprise as well as across organizational boundaries. Please review section 4.2.14 for additional insights into the system integrator platform technologies, services and role in the modular MES.

	Effective and efficient data management, data ingestion, data conversion to an operational data store (ODS) and Enterprise Data Warehouse are critical. TCS provides insights as requested by this RFI to recommendations and competencies for BMS consideration.
4.2.3	**Describe Medicaid Enterprise solutions your organization provides or is developing that BMS should consider during its roadmap planning. BMS is interested in learning about the following:** 1. **The Medicaid Enterprise business processes or discrete functionalities targeted by the Medicaid Enterprise solution.** 2. **How the Medicaid Enterprise solution is packaged (i.e., commercial-off-the shelf (COTS) or proprietary; modular or tightly integrated; cloud or local).** 3. **How the Medicaid Enterprise solution is priced (please include methodology only, e.g., Per Member per Month, fixed price per year, data usage—please do not provide actual purchase prices).** 4. **In how many states is your Medicaid Enterprise solution currently deployed, or expected to be deployed, and how long has it been in use.** 5. **Configurations and customizations typically requested to adapt the product for use in a State Medicaid Program.** 6. **Technical architecture and processing capacity/scalability.** 7. **User-facing and self-service capabilities.** 8. **Interface support, flexibility, and extensibility to other stakeholders and State agencies.** The TCS Health Insurance Administration Platform delivers on the need to leverage digital technologies, process automation, Artificial Intelligence (AI), advanced analytics and much more to provide a rich user experience and progressively align to evolving needs by offering contextual solutions at the right time and right place. Added to this, agencies are faced with the challenge of responding rapidly and efficiently to regulatory changes and developing innovative services to meet the needs of the neediest citizens of West Virginia, while also maintaining and enhancing the desired quality and outcomes. Unique to other MES vendors, TCS owns the platform and associated intellectual property, so the platform is not hampered by third-party ownership and restricted architectural challenges. Like other MES vendor offerings, the TCS Health Insurance Administration Platform was originally designed and implemented to meet the demands of the commercial payer. Now offered as a COTS (cloud or premise) SaaS offering, our solution is powered by APIs delivered on the cloud and is a complete solution suite, supporting a range of business processes including citizen engagement and management, benefits definition, plan and network management, policy administration, claims/encounter management, claims/encounter adjudication, financial accounting and third-party liability, among others. The solution's easy-to-use, web-based interface supports multiple languages as required. Through its parameter-driven, component-based architecture, the solution allows flexible configuration and customization to meet specific process needs. Recognized and ranked consistently as a leader and market star performer by industry experts worldwide, the solution has been installed in some of the leading commercial payers. The solution offers various flavors of Health and Personal Accident Insurance (Individual and Group Health and

	Personal Accident, Voluntary Benefits, etc.), with enterprise and consumer apps made available through the cloud and on premise, helping organizations become more agile and intelligent. The TCS Health Insurance Administration Platform's strong digital core ensures enhanced business and technical agility and efficiency by providing analytical insights for intelligent decision-making, alongside the amalgamation of IoT and AI within business processes. It is an integrated solution comprised of innovative and adaptive digital apps and a high performing processing engine supporting a suite of a wide range of products and services covering product configuration, service provider management, new business and policy servicing, pre-authorization and claims management with built-in configurable workflow.  *Figure 1: TCS Enterprise Health Administration Platform Architecture* In addition to the TCS Health Insurance Administration Platform, we also provide Systems Integration platforms and services, robust data and analytics solutions through our Connected Intelligence Platform, Electronic Data Interchange systems and services, Case and Business Process low code/no code platforms and services and an extensive suite of competencies and capabilities for systems modernization and transformation. Throughout this RFI, we share how many of these capabilities could be leveraged by BMS for your Medicaid Enterprise.
4.2.4	**What do you see as the benefits and risks of including business process outsourcing (BPO) services together with technical services?** Regarding the benefits and risks of including BPO services together with technical services, the simple answer is it depends. Some vendors are more aligned to providing BPO services and just happen to provide technology services in support of legacy systems or third-party white labeled applications, which subsequently they have little control over from a technological innovations' perspective. Unfortunately, Medicaid agencies have not derived technology innovations afforded the commercial sector due to these legacy systems vendors and corresponding lack of technological control of their platforms.

	There was a time, system operation and usability were considered a significant barrier to third-party BPO services. It was perceived the system vendor was the best choice due to relative complexity and a lengthy learning curve of legacy mainframe systems. In today's environment, systems usability can be rapidly understood and used efficiently. The choice of one or multiple vendors should be left to the most qualified vendors and while that vendor may be the same as the technology vendor, we recommend considering the separation of the contracting of the BPO services and the technical services.
4.2.5	**Describe your experience, if any, with CMS Outcomes-Based Certification or Streamlined Modular Certification.** In recognition that CMS has begun to transition its systems certification process to one that evaluates how well Medicaid information technology systems support desired business outcomes, there are potentially two approaches, depending on the timeframe for the commencement of certification processes and the CMS roll-out of its streamlined, outcomes-based approach or OBC. As quoted from the CMS Bulletin dated October 24, 2019, and the Subject: Outcomes-based Certification for Electronic Visit Verification (EVV) Systems, CMS defines outcomes through collaboration with states to define target outcomes, evaluation criteria, and Key Performance Indicators (KPIs). Outcomes-based certification is being designed to: • Improve CMS' and states' ability to monitor and measure the business outcomes of investments in technology, • Provide data to support CMS funding decisions (for FFP and for Federal Medical Assistance Percentage [FMAP] and, • Reduce burden on states and CMS during certification. Either approach will be used based on BMSs direction and with the defined CMS Certification Check lists whether technology focused, or outcomes based (CMS is apparently transitioning the naming convention from Outcomes Based to Streamlined Certification for evolving to streamlined outcome-based certification standards. As the department is probably aware, the certification lifecycle is composed of the following four phases: • Initiation and Planning • Requirements, Design, and Development • Integration, Test, and Implementation • Operations and Maintenance

	Personal Accident, Voluntary Benefits, etc.), with enterprise and consumer apps made available through the cloud and on premise, helping organizations become more agile and intelligent. The TCS Health Insurance Administration Platform's strong digital core ensures enhanced business and technical agility and efficiency by providing analytical insights for intelligent decision-making, alongside the amalgamation of IoT and AI within business processes. It is an integrated solution comprised of innovative and adaptive digital apps and a high performing processing engine supporting a suite of a wide range of products and services covering product configuration, service provider management, new business and policy servicing, pre-authorization and claims management with built-in configurable workflow.  *Figure 1: TCS Enterprise Health Administration Platform Architecture* In addition to the TCS Health Insurance Administration Platform, we also provide Systems Integration platforms and services, robust data and analytics solutions through our Connected Intelligence Platform, Electronic Data Interchange systems and services, Case and Business Process low code/no code platforms and services and an extensive suite of competencies and capabilities for systems modernization and transformation. Throughout this RFI, we share how many of these capabilities could be leveraged by BMS for your Medicaid Enterprise.
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	Referencing the CMS Certification Process as posted here (https://www.medicaid.gov/medicaid/data-systems/medicaid-enterprise-certification-toolkit/index.html), TCS, recommends modeling the certification approach to align to the CMS certification processes and departments direction.

4.2.6	**What approaches to supporting consistency in business process functions and data architecture across multiple systems and vendors have you encountered?** TCS has diverse and extensive experience supporting consistency in business process functions and data architecture across multiple systems and vendors. From this experience, we have formulated approaches to attain interoperability maturity from data level synchronization to business process integration and optimization. TCS extensive experience and lessons learned has resulted in a proven methodology we have coined as T.I.M.E. (TCS Integration Methodology for Enterprises). TIME provides an end-to-end process framework for the implementation of integration services. TCS first began practicing our Integration Methodology in 2002 and it has evolved since then by our vast experience in integration implementation of legacy and modern modular systems. It is a comprehensive methodology covering all integration phases and variations of integration projects. TIME is designed to address critical issues, mitigate if not de-risk the project and is a proven and successful methodology to an Enterprise Application Integration (EAI) initiative. TCS' recommended approach for enterprise integration covers three important dimensions: • Solution Framework – provides a comprehensive framework for defining and implementing technical solution architecture for enterprise integration covering various solution aspects, technologies, architectural components, and patterns required in an enterprise integration solution landscape. • Execution Framework – provides various modules for executing phases of an end-to-end integration program including envisioning, implementation, sustenance, and optimization, covering activities ranging from needs assessment, architecture strategy or blue-print and roadmap definition to solution design, development, testing, support, monitoring, and optimization. • Governance Framework – consists of a detailed model and framework for defining, setting up and implementing a comprehensive governance mechanism to optimally drive enterprise integration programs based on well-defined policies and principles. This helps ensure proper alignment and collaboration across various organizational groups and/or stakeholders. Each of these frameworks is supported by a comprehensive set of artifacts including various templates, checklists, questionnaires, standards, guidelines, and best practices. TIME is a process-driven approach to execute our Integration program that: • Ensures Business Focus – Maximizes business benefits and ROI by virtue of the integration solution.

- Leverage's skills, experience and learning from our past enterprise Integration engagements and our dedicated Enterprise Integration Practice Group and Competency Centers to ensure guaranteed and accelerated integration-based results.
- Conforms to best practices and recommendations provided by integration analysts, experts, and solution vendors.
- Establishes technology and process maturity in integration solution development and deployment.
- Ensures participation and commitment from different stakeholders.
- Ensures consistency and scalability of our integration solution for enterprise-wide deployment.
- Serves the purpose of both strategic (long-term) and tactical (short-term) goals of the Integration initiative.

TIME is driven by a detailed project plan which guides the implementation of your Integration Project. The plan comprises a set of phases, activities, and corresponding relationships among activities needed to carry out the Integration Project, however, it does not give the requisite duration and details of resources (except roles) as that depends on the engagement. Activities in the plan may have an associated artifact which helps the executor in carrying out the activity.

TIME brings with it a vast array of readily available assets and templates. The artifacts are grouped as follows:

- Questionnaires
- Guidelines
- Templates
- Samples
- Checklists
- Tools and
- Miscellaneous

Managing a successful Enterprise Integration Program requires a high-level of involvement with multiple stakeholders including the agency, trading partners and vendor partners. It too requires enablement and effective utilization of technology and process competency, and the establishment of necessary processes, policies, measures, and controls. Effective execution of the framework processes enables a smooth execution based on a well-defined strategy, work break down structure and roadmap. Equally as important is an awareness, alignment, acceptance, and collaboration among various agency stakeholders.

TCS' governance model and framework for enterprise integration is based on setting up an enterprise level Integration Competency Center (ICC) to encompass various aspects of governance including Data Governance, Systems Architecture & Technology Governance and Program Governance for integration.

	Data and Architecture governance includes defining, maintaining, and ensuring compliance to integrating an architecture blueprint, architecture or technology roadmap, architectural principles and technical standards, assessing and recommending various technology options, conducting design reviews, maintaining architecture and technology assets and liaising with development, operations, and support teams for technical guidance. ICC governance covers the following aspects: • Establishing an organizational mechanism to provide strategic direction and leadership to the integration program • Demand and resource planning • Delivery management • Stakeholder management and liaising • Risk management and escalations • Organizational change management • Asset management • Performance or value management • Communication and training The ICC function extends and complements an overall enterprise architecture function, that may already be established in an enterprise, to focus on integration-specific aspects.
4.2.7	**Please provide your recommended strategy for ongoing compliance with the CMS Interoperability and Patient Access final rule (CMS-9115-F). The rule can be found at the following location: https://www.cms.gov/files/document/cms-9115-f.pdf.** At the heart of CMS Interoperability and Patient Access initiative is quality data. In multiple sections of this RFI. TCS discusses our recommendations and approaches to ingesting, managing, standardizing, and sharing quality data not only across the MES but the HHS enterprise. The adoption of the FHIR standard driven by the CMS Interoperability and Patient Access final rule is accelerating the adoption across the healthcare continuum of systems and data. To comply with the CMS directive, Medicaid Agencies should: • Implement FHIR® enabled solutions across business areas • Achieve and modernize use cases across business areas member engagement, provider engagement and enterprise that aligns to FHIR standards • Implement technology and data enablers necessary for better FHIR adoption As an HL7 Gold member, TCS contributes to the evolving standards and is early in the adoption cycle.

	TCS funds a business accelerator program called COIN™. TCS COIN™ brings together a network of experts from the start-up, research, academics, and corporate worlds to work on collaborative innovations for TCS' Fortune 1,000 customers. Link - https://tcscubo.com/cubo/partners/tcs-coin-business-accelerator The COIN network provides start-ups direct access to TCS' marquee accounts through its sales, marketing, and client teams, along with introductions to affiliated investors such as venture capitalists, angel investors, and corporate venture capital. Each year, several start-ups are channeled through the TCS COIN™ pipeline after rigorous business and technology due diligence. One such partner is 1Up Health, a leading provider of FHIR interoperability systems and solutions. Link https://tcscubo.com/cubo/partners/1uphealth. If BMS has not begun its adoption of technologies to support CMS Interoperability and Patient Access, we recommend contacting 1Up for assistance in your implementation. There is an excellent white paper published by the CAQH (Council for Affordable Quality Healthcare) that dives into CAQH interoperability standards. TCS recommends reading the document and can be found here - https://www.caqh.org/sites/default/files/core/The-Connectivity-Conundrum.pdf?token=f8yPDMy8
4.2.8	**Provide your strategy for compliance with the Health Insurance Portability and Accountability Act (HIPAA) and Federal Risk and Authorization Management Program (FedRAMP) Requirements.** Information about HIPAA compliance can be found at the following location: https://www.hhs.gov/hipaa/for-professionals/privacy/index.html. Information about FedRAMP can be found on www.fedramp.gov. Alignment to HIPAA privacy and security policies and mandates plus compliance to FedRAMP (NIST 800-53-4) requirements is complex and requires more than just technology to meet and exceed the need to protect BMS systems and data. With growing digitalization, and state departments embracing new cloud technologies while dealing with 'the new normal' work culture of bring your own device (BYOD) and remote working, the risk of sophisticated cyberattacks is on the rise. Organizations are spending millions to protect their applications and IT assets from malicious attacks. It now becomes imperative for organizations to have clarity on their security strategy and prioritize safeguarding their critical assets from unforeseen risks. TCS recommends assessment frameworks and aligned services that provide a complete package to address several business challenges regarding security: • Vulnerability management services – Includes automated scanning, remediation tracking and, actionable reporting for management of digital assets

- Application security assessment services – Covers automated tool-based scanning, manual checks, and triaging of vulnerabilities identified in applications with alignment to industry benchmarks
- DevSecOps services – Shift-left of security processes in application development to identify vulnerabilities earlier in the lifecycle and ensuring maximum risk reduction with minimal effort
- Security consulting services – Performs dipstick assessments for maturity baseline of organizations according to industry standards

Engaging with a set of services as described should result in:

- Self-heal controls with a strategic scanning regime
- Purpose-driven remediation program
- Single pane of glass view and executive dashboards for 100% visibility and control
- 30% effort reduction using playbooks and automation with security reporting automation tool
- Risk-based prioritization (pinpoint exploitable vulnerabilities on critical assets)
- 35% increase in productivity with automated vulnerability remediation platform

TCS has extensive experience in all major cloud, hybrid cloud and premise-based deployments and will guide and direct the required services accordingly.

TCS would recommend and assist in implementing the following measures to ensure this:

- Each service shall be performed, and each deliverable produced only at those locations and sites specified in the Statement of Work and related Transition Services Plan.
- TCS would recommend a convergent security model to ensure the following: Protection to information assets against unauthorized access by deploying adequate security controls covering logical and physical security at office and DC.

Logical Security
Periodic Review should be conducted to ensure that:

- Authorized approvers are reviewed and validated at least quarterly. Resulting changes, including removals and modifications, are made upon completion of the review.
- User access is reviewed and validated at least quarterly. Resulting changes to access, including removals and modifications, are made upon completion of the review.
- A valid user ID and password is entered before access is granted. Passwords are masked upon entry. Stored passwords are encrypted.
- Access request submission or approved equivalent that is submitted before user access rights and entitlements are established or modified.

- Employee termination report is reviewed at least weekly and user access is revoked as required.
- Password control functionality is enabled and that provides for strong passwords (refer to ISO 19777).
- Security administrator access is reviewed and validated at least quarterly. Resulting changes to access, including removals and modifications, are made upon completion of the review.
- A valid user ID and password is entered before access is granted. Passwords are masked upon entry. Stored passwords are encrypted.

Office Physical Security

- Periodic review of the monitoring of access controls to facilities (example, a magnetic key card system) should be done.
- Periodic review of the monitoring for access to restricted areas should be done.
- Periodic review of the timeliness of key card access removal for terminated employees should be done.

Data Center Physical Security (if applicable)

- Periodic review of monthly security tests of door status equipment for verification that alarm stimulus is received by the central monitoring station should be done.
- Periodic review of monthly review of responses by security personnel to determine that action is taken based on the documented procedures should be done.
- Periodic review for security personnel response to alarm events based on documented procedures should be done.

West Virginia will be the beneficiary of TCS' comprehensive alignment to the NIST 800-53-4 and FedRAMP standardized security requirements for the authorization and ongoing cybersecurity of cloud services.

We offer the following graphic to illustrate the TCS Cyber Security depth and breadth that will be executed for our SI Platform and associated Architecture consulting.

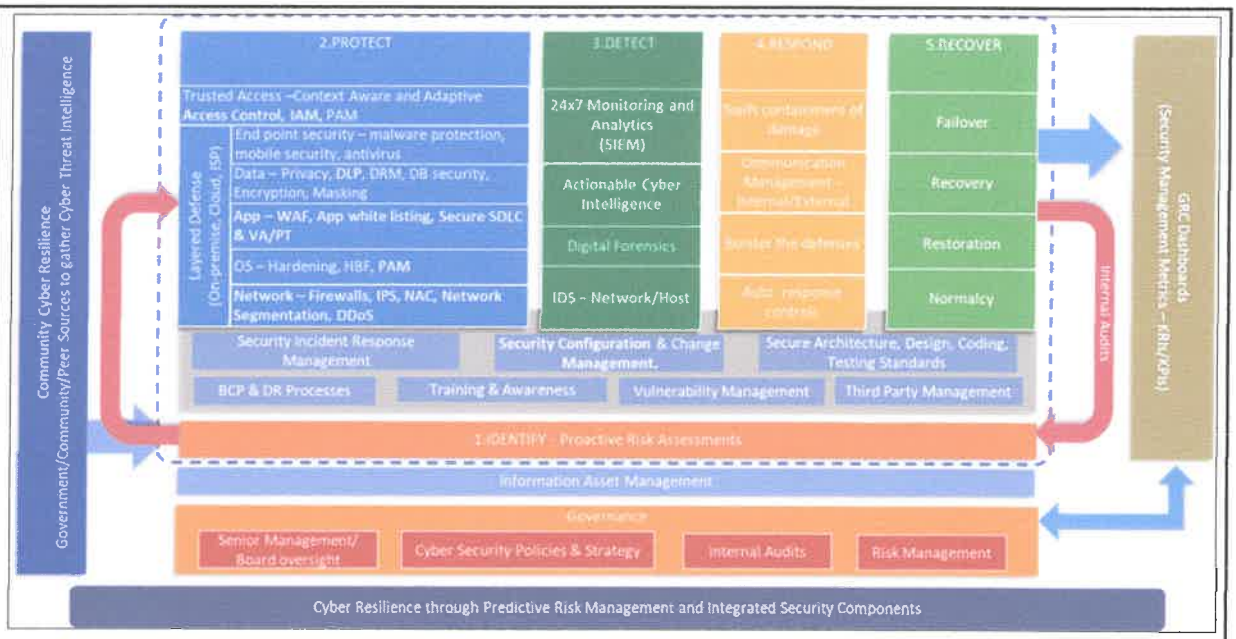

Figure 2: TCS Cyber Security Methods

Some of the more commonly instituted data services and solutions to conform to data privacy policies are as follows:

- Data Classification: Allows data controllers to classify and document the personal and sensitive data that are required for the use case or project development, but the identification of the personal and sensitive data is the responsibility of the data controller. This helps to provide a common visibility to the users to understand the personal and sensitive data that are used in specific use cases or for development, the purpose of collecting the data and document the necessary encryption or masking to be applied on the data.
- Process Classification: Documents the processes in various data and analytic processing scenarios developed as part of the use case or project. This helps to provide common visibility to users of the platform in understanding which data and analytic processing scenarios leverages personal or sensitive data and the purpose of processing.
- Encryption of Data: The solution provides the capability where the encryption of the data can be done either at the complete database level or at an identified attribute level of the entities. The encryption at rest at the database level is done using the keys which would be provisioned for the source data and systems. For the attribute level encryption, if required for certain information, it can be enabled based on the identification of such attributes.
- Consent Handling: Processes and policies to which the data controller has aligned and supported necessary consent and DOES NOT share any individual data without proper consent.
- Right of Access: Systems access configurability to define user rights to store and retrieve data.
- Right of Rectification: The data controller will define the necessary procedures and appropriate measures to ensure that inaccurate or incomplete personal data of data subjects are either erased

	or rectified in the system of records and will provide accurate data for data processing based on the business or regulatory needs. • Right to Erasure – Policies for controlling the logic/permissions required to manage data deletion based on the business or regulatory needs. • Right of Data Portability – Processes and policies that define the necessary security measures and enterprise procedures to transfer data from one controller to another. • Audit Trails and Logging: Effective implementation of logging and audit trail functionality for capturing and logging data processing jobs covering: (i) Who accessed, (ii) Process name that accessed the data and (iii) when the data was accessed. • User Role Management – Access management and configuration of user and roles for defining the access levels of the platform features and the data access. This helps the data controller to configure appropriate data access and output for different user roles in the organizations.
4.2.9	**Provide your strategy for assisting states in achieving compliance with CMS, and federal rules, regulations, and guidance related to modularity, leverage, reuse, and outcomes achievement.** It perhaps goes without saying that each Medicaid agency needs to identify the type of modules (and module vendors) that they have the bandwidth to manage in addition to the logical grouping of business functions. While a common assumption is that modules are SaaS solutions procured from vendor partners, in fact the discrete functions needed to manage the Medicaid benefit can take multiple forms, including: • Existing functions that must be integrated, as is, at the data layer. • Existing functions that need to be refactored before integration. • New functions that will be built by a vendor partner from scratch; and • Vendor COTS products that will be integrated to the MES. CMS' Modularity "standard" simply states the following: • Use a modular, flexible approach to systems development • Use of open interfaces & exposed APIs • Separation of business rules from core programming • Rules should be both human and machine readable • Commitment to formal system development methodology • Open, reusable architecture in order that states can more easily change and maintain systems CMS in its directive for MES modularity intentionally built-in ambiguity in how each state can and should architect their systems and associated modernization strategy. In recent years, states have

	refined their modularity impetus to one that is not a wholesale replacement but to one of selective enhancement, modernization, or replacement. The standards and conditions for Medicaid information technology (IT) require that states use a modular approach to systems development. In the final rule 80 FR 75817, CMS has defined an MMIS module as "a group of MMIS business processes that can be implemented through a collection of IT functionality." The Medicaid Enterprise Certification Life Cycle (MECL) supports modular development. In TCS' experience, the following tenets help define the modularity journey: **Complete Modular Ecosystem** - The modules do not directly align in a simplified string of functions. Rather, the modules contain a web of data and business function relationships. **Different States define similar functional modules is different ways** – State programs and policies evolved independently and there is rarely a common definition of any module. Required functionality extends beyond configuration capabilities in COTS/SaaS modules. **Inherent Dependency** – most modules have inherent business dependencies including data and business processes/functions **Modularity is complex** – States have not fully embraced modular requirements and due to arduous procurement mandates, new vendors can seldom compete against veteran system providers TCS looks forward to assisting states in achieving compliance with CMS, and federal rules, regulations, and guidance related to modularity, leverage, reuse, and outcomes achievement Whether BMS selects TCS as a modular vendor, a strategic partner or combination thereof, we can provide, amongst others, Technology Leadership, Consulting, Medicaid Focused Services and Digital Reimagination. We have shared many of these capabilities and competencies throughout our responses to this RFI and we look forward to assisting BMS in its modularity journey.
4.2.10	**What approaches do you suggest for Disaster Recovery processes in a modular MES that accounts for integration and communication across multiple partners?** Specific to Disaster Recovery, any implemented module must have proven and effective data and system backup and recovery competencies. When it comes to DR planning, a one-size-fits-all approach does not always work. However, any organization can leverage the benefit of geographic diversity offered by the cloud providers (for example, AWS and Microsoft Azure offers cross-region disaster recovery). For effective DR planning, it is important to identify critical IT systems and associated steps to restart, reconfigure, and recover systems and networks in the DR setup. The DR plan should be based on risk and business impact analysis, which helps determine where to focus resources as per the required recovery time objective (RTO) and recovery point objective (RPO) metrics. The agency will need to determine what systems are "mission critical" and which can be restored in a period other than "near real-time" switch over. Typically, the MES does not required a "hot stand-by"

	environment and with cloud-based solutions, extended delays in systems recovery have transitioned from days to hours. For BMS review, we suggest a quick read of the following TCS blog on disaster recovery on the cloud: https://www.tcs.com/blogs/disaster-recovery-on-cloud In addition to Disaster Recovery, TCS strongly recommends a rigorous and well documented Business Continuity Plans (BCP) for all modules, systems, and Data Centers. As part of the BC plan, TCS recommends that necessary systems maintenance and operations workforce be SBWS™ (Secure Borderless Work Space) enabled in order that they would be able to work from any location. In case of any disaster impacting business continuity, TCS would recommend aligning to the following guidelines for BMS and your contractor/vendor resources: • Whenever processes or services require it, make sure that each resource has a counterpart and ensure that the onsite associate can work. • In case there is no onsite and the associate cannot work due to other impediments, then as a Business contingency plan, TCS recommends additional alternate sites and resources depending on the critical aspect of the systems supported. TCS will make plan recommendations based on close collaboration with BMS. For every engagement TCS creates a BCP plan, which is agreed with customer to ensure that services are not disrupted in case of any unforeseen events. TCS leverages its different delivery centers to ensure service continuity for any geography specific outages (including Onsite and offshore locations when applicable). For every support area, a BCP Call tree is created where primary and secondary owners are identified, typically in different geographies, that can take over from the impacted location.
4.2.11	**What organizational change and communications management processes have you seen employed for a modernized, multi-vendor MES implementation? How would you help support the evolution of the Medicaid Enterprise as a whole?** Many of the Medicaid Enterprises are multi-vendor in nature. In few exceptions, a state (West Virginia and Virgin Islands) may be hosting and operating the MES for another state or the state is providing the systems managed services and/or administering as the fiscal agent. Medicaid agencies frequently have a variety of systems and vendors for core MMIS (claims, financials, benefits management, managed care, member management, core reporting) and for long-term support services, pharmacy benefit management, provider enrollment and management, member enrollment, TPL, UM/PA and so on. Organizational change, while challenging, is fundamental to successfully implementing and adopting a modern and modular MES. Effective workflow solutions can assist in minimizing potential communication challenges. Worthy of consideration is a unified (Omni channel) citizen and provider-facing communication platform. Digitizing processes (driven by RPA –, implementation of Smart

Bots/digital assistants and AI) help reduce current inefficiencies and facilitate a modern multi-vendor MES.

A modular implementation with numerous vendors provides unique challenges to the State. TCS recommends that the Systems Integrator also be the "OCM" integrator. It should co-ordinate all communications, change management programs, and diverse training activities provided by all the modular vendors. If modular vendors stage individual training sessions for their discrete functionality, State Medicaid staff and other stakeholders (e.g., providers), may easily become overwhelmed. The SI can and should establish, schedule, and operate a co-ordinate OCM and training program.

TCS has a highly structured approach to OCM, broken into several steps:

1. Stakeholder Inventory

   The Stakeholder identifies the number of agencies and organizations who need to participate in the overall program, what information is required from them, and what functions they must perform. It also must identify the number of systems affected and the number of individuals/FTEs within the participating stakeholders who will be engaged in the overall program.

2. Stakeholder Discovery & Readiness

   Conduct sessions with BMS and all stakeholders to catalogue what data is required from each stakeholder, how that data is collected, on what cadence, with what systems (and using which vendors, when relevant), the critical resources in that stakeholder agency/department/county responsible for which activities, with what skill sets.

   The TCS team will also note under what constraints each stakeholder operates (e.g., resources, funding, systems, technology, skills, and other vendor dependencies).

3. Stakeholder Engagement/Identification of Change Champions ("Champions")

   Identifying "champions" from each stakeholder is a key element in engaging all the stakeholder agencies and organizations. The Champions will play a significant role throughout the project. Working with BMS, TCS will nominate a list of "Change Champions' from the Stakeholder Community. BMS must determine the criteria for selection. Given the large number of stakeholders, BMS will need to assist in determining how and who to engage.

4. Strategy Development: Champion "Visioning"

   Together with BMS team members, TCS will hold visioning sessions with the selected Champions presenting them key questions for the development of the overall strategy: What are the responsibilities of the stakeholders and how will they achieve those goals and what sort of activity/support/functions do they need a central organization to perform to assist them?
   Stakeholders will help BMS develop the "Case for Change" for the overall program and will identify key concerns among the stakeholder community. Engaging stakeholders early in the process helps develop the commitment to change and support for the overall program.

5. Strategy Development: Future-State "White-Boarding" with Champions

Once TCS collects and catalogues all of these inputs, it will facilitate a "white-boarding" session with key stakeholders and led by BMS executives to determine:

a. What the future-state organization needs to perform
b. How it should be organized
c. What systems/technology should it employ
d. How it should be staffed.

The Champions might consider whether the future organization focuses on data collection, data management, and data analysis (an "Office of Data Management" for the program), which feeds into policy discussions made by established players. Alternatively, it might decide Data Collection & Analysis and Policy Formulation should be housed in a single organization. There are a variety of models that can be considered.

Business Impact Management

TCS' Business Impact management is a critical component in the formulation of a successful organizational change management strategy and program. Once the functions and the new program are defined along with the requirements such as data from the stakeholders, TCS will analyze the impact of these changes against the following criteria:

Business Function
What function does each of the stakeholders perform that impacts the inputs (data etc.) and the outcomes for BMS (provision of benefits, care provision, policy analysis, policy formulation).

Business Process
Will the demands of the program require changes in how stakeholders perform their functions (e.g. – the cadence of when data is reported, the format of the data, nomenclature and definitions of data, privacy protections)? Are those processes driven by business practice or by regulatory requirement? Which can or cannot be adjusted to accommodate the new program?

Roles and Responsibilities
Who among stakeholder staff (or vendors to stakeholders) perform certain functions, and will they be required to perform additional tasks?

System Changes
What are the systems currently used by stakeholders and will they be able to perform the functions needed for the program? What new processes may be required across stakeholders to support potential impacts from interoperability changes?

Training
With such a broad and diverse group of stakeholders, a structured and highly supportive ("high touch") training program will be critical. As would be expected, training will vary significantly based on the stakeholders but ultimately, they need to attain a uniform level of competency in the common tools and systems and processes.

4.2.12	**How does a multi-vendor environment change how you manage your own Design, Development, and Implementation (DDI) work? How should dependencies be identified, negotiated, and implemented in a multi-vendor environment?** TCS has extensive experience working with multiple vendors and subcontractors on large government and commercial customer projects throughout the United States and across the globe. TCS understands a government's responsibility to deliver an outstanding citizen experience and quality programs and services, while eliminating disparities of care. Further, TCS has proven experience in successfully creating, testing, deploying and maintaining complex enterprise-wide systems that integrate with other systems and sub systems to deliver high-quality user experiences. For example, in designing and developing a state's Unemployment Insurance (UI) solution), TCS created an n-Tier architecture deployed both on premises, and in a cloud. The n-tier architecture had a plethora of software products that needed to be integrated to deliver the final solution, while also communicating with other complex systems such as federal and state agencies, including but not limited to, the Social Security Administration (SSA), the Internal Revenue Service (IRS), and State Tax and Revenue systems. Business functionalities in the solution interact with external interfaces and state and federal agencies, to complete business requirements. Integration and data transfer are achieved through web services or flat files and can be bi-directional. Additionally, TCS has experience integrating workflow, document management, reporting solutions, and Business Rules software products, among a multitude of other third party and state-owned systems. After application(s) are fully deployed into production and in a steady state, TCS engaged with vendors in post implementation phases of these programs and worked closely with them on ticket/problems and incident management using the best of the breed service management tools. TCS is typically responsible for the scope of the overall engagement with specific tasks for roles performed by subcontractors and third-party vendors in addition to TCS staff. TCS extensive experience and lessons learned in a multi-vendor environment has resulted in a proven methodology we have coined as TIME (TCS Integration Methodology for Enterprises). TIME provides an end-to-end process framework for the implementation of integration services. Please see our response to requirement 4.2.6 for additional insight to our TIME and ICC processes and methodologies for a multi-vendor environment.

4.2.13	**Describe your experience, if any, with collaboration tool(s) such as or equal to Jira®, Confluence, and IBM® Rational Team Concert (RTC) or other tools to track items, which include, but are not limited to, project milestones, deliverables, and/or implementation testing. Do you recommend any specific approaches or tool(s) for collaboration in a multi-vendor environment? Does your company prefer using its own collaboration tool(s) to support an implementation, or do you prefer using collaboration tool(s) provided by a state and/or a systems integrator (SI)?** Organizations are looking to leverage Agile methodologies and DevOps practices for their enterprise to catch up with the pace of digital transformations and to fully realize the benefits of the Agile transformations of the agencies distributed ecosystem. • Fundamentally, DevOps tools should enable enterprises to become Agile by filling in the gaps in the processes. • Such tools should easily integrate with existing software stack. New investments and migrations Can be must kept to a minimum. **Choosing the Right Collaboration Tools** IBM, Atlassian (JIRA and Confluent), CA, Compuware and Micro Focus are some of the key vendors that provide DevOps tools for the software development life cycle (SDLC) and application lifecycle management (ALM) of mainframe portfolios. The choice of the DevOps tools depends on the application technology and the software stack used for configuration management in particular and other peripheral software such as file management, debugging, test automation and monitoring. TCS' extensive global experience across industries has resulted in our shared experience in the use of many if not all of the current market solutions. Given TCS' vast experience, we have developed and leverage our MasterCraft™ DevPlus™, which is an integrated, Continuous Delivery Lifecycle Management platform to plan, execute, automate, and govern the demand to deploy processes encapsulating Agile Practices in Portfolio, Development and Delivery Processes. It also supports traditional practices to bring Bi-modal IT, which is the practice of managing two separate but coherent styles of work: one focused on predictability; the other on exploration. Bi-model IT combines a more predictable evolution of products and technologies (Mode 1) with the new and innovative (Mode 2), which is the essence of an enterprise bi-modal capability. TCS would implement and utilize our MasterCraft DevPlus for the Testing Services and outcomes-based contracting including tracking and compliance to SLAs, KPIs, and performance measures). DevPlus provides end-to-end testing and defect Management capabilities which include Test Design, Traceability, Test Execution, Defect Management, Metrics and reporting. The product caters to all Test management, reporting, user management/access, usability & performance, audit and compliance requirements. TCS MasterCraft DevPlus can integrate with Automation Testing tools in Functional, Performance and Security testing area. These include Selenium, UFT, JMeter and others. This enables end-to-end test value chain automation. TCS' MasterCraft DevPlus will act as one single platform to manage all defects/ test cases/test scripts. This platform integrates with popular open source and third-party automation tools to bring speed and quality to the entire CI-CD (continuous integration/continuous delivery/deployment) pipeline.

To illustrate the extensive KPI management of MasterCraft DevPlus, the following is a dashboard of KPIs as tracked and managed by DevPlus.

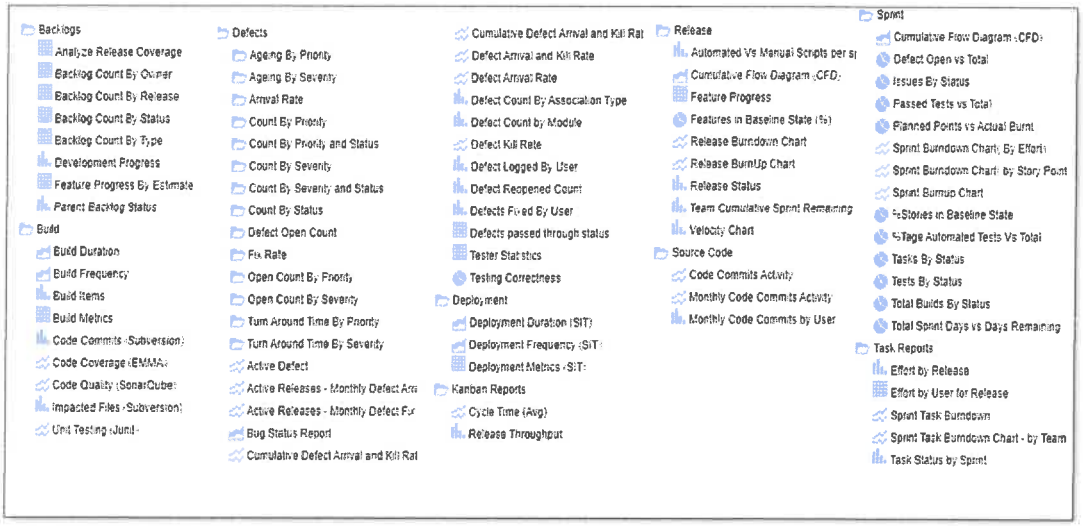

Figure 3: TCS KPI Dashboard

4.2.14 **What roles and responsibilities have you seen for a system integrator (SI) in a modular systems environment? Was this role fulfilled by a separate vendor, incorporated with other services, or performed by the state Medicaid agency itself? What are the key success factors and risks to success related to using a SI?**

TCS has extensive experience working with vendors and subcontractors on large government and commercial customer projects not only across the United States but all over the globe.

For MES Modular initiatives, typically, the SI is a separate vendor from the PMO, IV&V and MMIS centric modules. The SI may be engaged for data migration, Enterprise Data Integration (EDI) and data warehouse offerings (EDW, Decision support systems, operational data stores, data hubs, lakes) in addition to the core SI platform and services. The role of the primary vendor provides Integration Services and if not performed by a separate and second vendor, will also provide for and implement/support the Integration Platform.

Roles and responsibilities for the Integration Services vendor include but are not limited to the following:

Coordinate and oversee across all modules and enterprise programs:

- Architecture planning
- Interoperability
- Testing
- OCM and training

	In general, the SI provides service interoperability coordination and enforces standards of end-to-end business processes, and collaborates with the agency, external entities, and vendors to establish aid and support interfaces and connectivity to the integration platform and BMS' MMIS. The integration technology stacks used most commonly for systems integration today serve to help de-risk the integration platform. Proven Hybrid Integration Platforms (HIP) from companies including RedHat (IBM) and Mulesoft (SalesForce.com) leverage and repackage widely used opensource and industry standard technologies that can be supported by one vendor or multiple system integrators. Selecting a technology SI that has a proven reputation and partnership with multiple technology offerings helps de-risk implementation and ongoing operations of technology required for a successful systems integration outcome. Of benefit to the agency is TCS' partnerships with top-tier companies such as RedHat, IBM and Mulesoft. TCS welcomes the opportunity to explore the benefits of HIP and TCS's partnership collaborations and successes.
4.2.15	**Describe your depth, breadth, and frequency recommendations for performing periodic vulnerability scans of production and development environments?** TCS recommends both vulnerability and penetration testing. With growing digitalization and state departments embracing new cloud technologies while dealing with 'the new normal' work culture of bring your own device (BYOD) and remote working, the risk of sophisticated cyberattacks is on the rise. Organizations are spending millions to protect their applications and IT assets from malicious attacks. It now becomes imperative for organizations to have clarity on their security strategy and prioritize safeguarding their critical assets from unforeseen risks. TCS recommends assessment frameworks and aligned services that provide a complete package to address several business challenges regarding security: • Vulnerability management services – Includes automated scanning, remediation tracking and, actionable reporting for management of digital assets • Application security assessment services – Covers automated tool-based scanning, manual checks, and triaging of vulnerabilities identified in applications with alignment to industry benchmarks • DevSecOps services – Shift-left of security processes in application development to identify vulnerabilities earlier in the lifecycle and ensuring maximum risk reduction with minimal effort • Security consulting services – Performs dipstick assessments for maturity baseline of organizations according to industry standards Engaging with a set of services as described should result in: • Self-heal controls with a strategic scanning regime • Purpose-driven remediation program • Single pane of glass view and executive dashboards for 100% visibility and control • 30% effort reduction using playbooks and automation with security reporting automation tool

	• Risk-based prioritization (pinpoint exploitable vulnerabilities on critical assets) • 35% increase in productivity with automated vulnerability remediation platform
4.2.16	**What processes, techniques, and solutions does your organization consider critical for delivering optimal data sharing throughout the MES?** Medicaid enterprises have an abundance of data and they are often not able to fully utilize it. They are inundated with numerous sources and formats of data – structured data sets in the form of master data, operational data and transactional data, and the potential for unstructured and semi-structured data in the form of documents, PDFs, excel sheets, images, transcripts, and so on. In addition to the above 'traditional' data sets, there are newer types and sources of data, such as data from internet of things (IoT) sensors or streaming or crawled web data from internal as well as external sources. Data-driven enterprises possess infrastructure and mechanisms such as Extract-Transform-Load (ETL) tools, enterprise data warehouses (EDWs), and data lakes, which help them harness and harvest the data available to them. However, despite these resources, they often fail to leverage the data at their disposal completely or efficiently. There are various levels of maturity of data initiatives in organizations and the challenges of data harnessing vary across these scenarios: 1. Companies with the least maturity of data-focused initiatives are either still struggling with operational issues or owned by respective business divisions or departments. This eliminates the free flow of data and information and at best, these organizations have ad hoc ways of sharing data across divisions, and much of the data stays hidden or otherwise inaccessible. This leads to inefficiencies and lack of visibility on important parameters, which subsequently means that inadequate data is available for department leaders and operational decision-makers to analyze and draw actionable insights from. 2. At the next level of maturity are companies that may have an EDW or a data lake initiative, but lack enterprise policies, standards, and (automated) processes (or a combination of these) to input the data into the warehouses or data lakes. The result is missing or inconsistent data in the warehouse, which is not enough to derive real value from. This type of data is also referred to as noisy or dirty data, which requires a lot of effort to clean and make ready-to-use by department leaders and operational decision-makers 3. While a lot of large organizations have overcome the previous two scenarios, they are challenged by the continuously changing environment with new sources of data being discovered and existing sources throwing up new data types and formats. The time they take to adapt with a change in their data management infrastructure is not adequate to protect the business from the impact of inefficient data usage. This typically happens because the data warehouse or data lake was structured and designed with a static view of data based in the past and catering to the present changes in data sources or formats needs significant effort. 4. A few Medicaid enterprises have been able to upgrade their data warehouses or analytics infrastructures to cater to newer sources and types of data. However, even there, the effort is largely driven by the IT department, which brings in some obvious lags and inefficiencies due to the lack of a complete understanding of the business users' needs.

Given these challenges, Medicaid Enterprises have started data virtualization initiatives to address the ever-changing landscape of data sources and formats. These initiatives, however, will fail to address the challenge around IT dependence, as discussed in the fourth scenario. The need is to develop self-service capabilities, which the business users and decision-makers can then search, discover, and use (analyze/visualize) data by themselves to draw insights. The data provisioned by such a solution would typically constitute all data sets available in the enterprise across internal and external data sources. Further, the curating, cataloging and classification of data from available enterprise data sets would enable the vision of a self-service-driven and easy-to-use system that streamlines data/information flow across the enterprise.

The following enterprise data marketplace architecture depicts a framework that ensures seamless ingestion, curation, classification, cataloging, and distribution of data. It enables self-help mechanisms for business users to search and discover data, perform analytics, and visualize it in insightful ways.

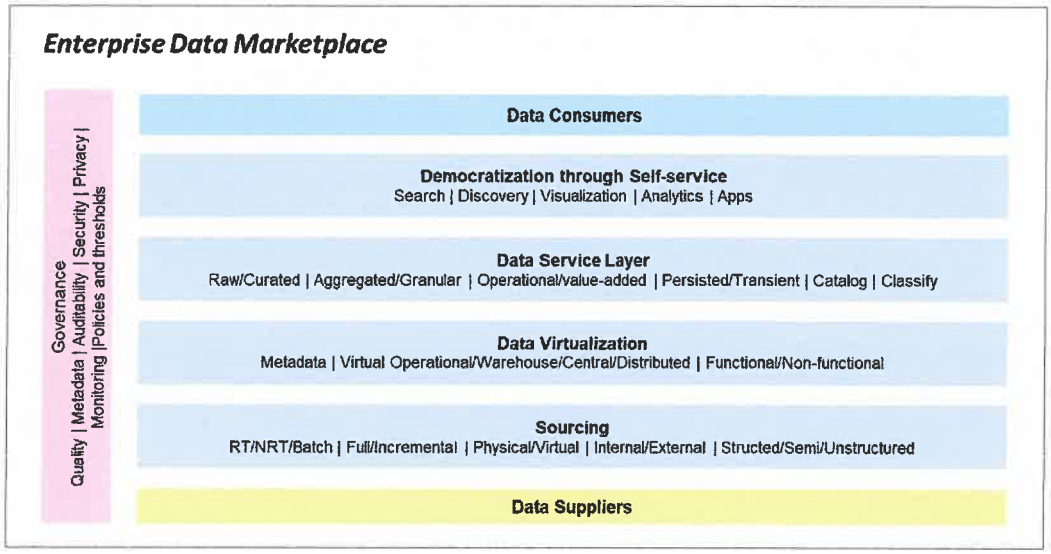

Figure 4: TCS' Enterprise Data Marketplace

To leverage the digital wave of MES and non-Medicaid data, it is important that enterprises prepare a roadmap that helps democratize data across organizations and agencies and empowers them to participate in larger data ecosystems.

4.2.17	**What standards and practices would you recommend with regards to key data governance, master data management, data stewardship, and data-sharing concerns? What approaches do you recommend for engaging business data owners separately from technical data system managers?**

Core to the MES Enterprise transformation will be reliable, trustworthy data. This is no easy task for public sector health and human services agencies. Looking across all industries that TCS services, health data is more complex, more nuanced, and more fraught with risk than other industries.

Critical to the success and improving outcomes for the citizens of West Virginia is effective and efficient master data management (MDM) to provide the solid foundation necessary for intelligent data-driven decisions. By relating information about people and organizations from multiple sources

and systems, a properly implemented MDM system creates a trusted and reliable ongoing record about your citizens, providers, trading partners and other data sources and reveals otherwise hidden connections between them.

However, it is critical that the master data records can correctly match and merge identifying information. This process, known as entity resolution, ensures that MDM is successful in creating a trusted view of master data. An MDM strategy cannot succeed without it.

Identity resolution helps to search and analyze disparate data sets and databases to find a match and resolve identities. The two problems that interfere with the quality of identity data are errors and variations.

Errors can creep into identity data at any point, from the time it is captured to the time it is integrated with data from other systems. These errors can include spelling, typing, and phonetic errors within a word or entire missing, extra, or transposed words. When they are not caught and corrected, they can cause poor customer experience, delays in service, or misdirected and lost deliveries, which could result in churn.

The errors that are not caught and corrected turn into potential waste and risk. Like marketing budgets wasted on poorly targeted campaigns. Overlooked revenue-generating opportunities that just slip by, or the catastrophic risk of what might be missed when records are screened inaccurately against fraud and sanctions lists.

Variations in data affect the ability to search and match even high-quality data. To give a basic example, someone who has been recorded in one database as Mary Elizabeth Green-Smith might appear in other databases as Mary Elizabeth Smith, Mary Beth Green-Smith, Mary Beth Smith, Marybeth Smith, Marybeth Green Smith, and M. G. Smith, and alphabetized under either G or S.

People change their names. People go by nicknames, professional names, aliases, and initials. Companies have registered names, trade names, division names, and doing business as (DBA) names. People and organizations can have multiple street addresses, multiple locations, separate billing addresses, post office boxes, old addresses, and more. People, organizations, and locations may use more than one language or more than one alphabet.

A large database with identity data from multiple languages, countries, and cultures will further complicate identity matching by containing data in non-Roman alphabets, data that has been Anglicized from non-Roman alphabets, and transliteration of name variants in different languages. It's also likely to have different structures, follow different parsing rules, and have an even wider range of variation characteristics.

An important step to ensure identity matching delivers correct results is to focus on standardization and quality of the key data elements such as address, phone, and email address used in matching. Also, an ability to enrich customer profiles from external sources that help improve the accuracy of matching and, hence, reduce the manual reviews.

To make identity data relevant and actionable, BMS will need a single, trusted, authoritative record for each entity. This requires intelligent data matching that prepares identity data for use by pulling it from multiple systems, compensating for the many formats that data might be in, and considering errors and variations in that data.

There are many challenges to identity resolution. Each approach has advantages and disadvantages. The capabilities of Informatica's intelligent search/match engine reduce the cost of creating and maintaining quality information through proactive data management. These capabilities enable compliance with a complete, consistent view of the data and its lineage.

TCS recommends a scalable, configuration-based approach to identity resolution. It should intelligently combine different identity resolution methods based on the quality and type of data in the MES Enterprise. And it must provide enhanced citizen engagements and outcomes by delivering relevant, actionable master data relationship insights.

To support accelerated development of analytic use cases on an ongoing basis, organizations need a methodology that standardizes best practices into its key steps. TCS has documented a repeatable 10-step Value Factory Model that practitioners can follow. This model is intentionally generalized in that it is applicable regardless of the user's choice of individual tools. The TCS CIP is explicitly designed as an integrated solution to leverage this model for the delivery of analytic use cases by providing all the components necessary to move from ideation to production.

The TCS Value Factory Model approach (illustrated in the below graphic) with end-to-end data management and analytic features and functionality is designed to accelerate business value realization from big data. Enterprises that practice the Value Factory Model approach with a supporting architecture and ready-on-day-one capabilities like those available in the TCS CIP, will more quickly start empowering business stakeholders and front-line systems with real-time analytic insights.

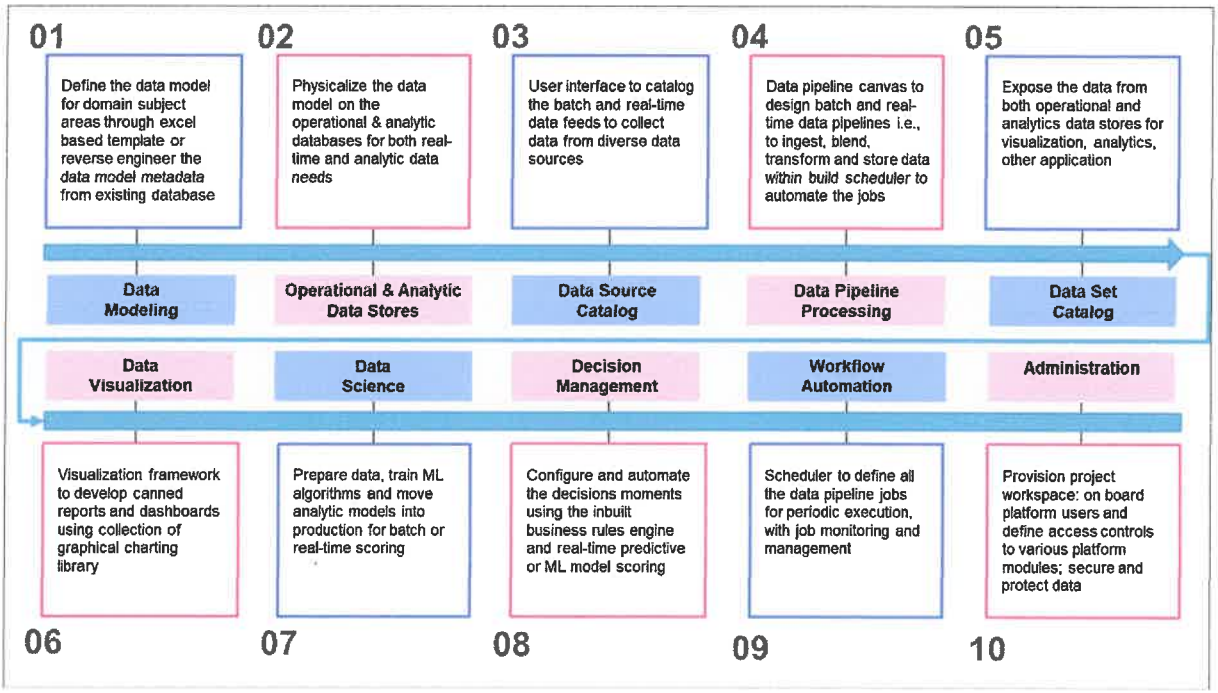

Figure 5: TCS' Value Factory Model

The Value Factory Model will simplify and accelerate the implementation of analytic use cases. It provides an effective, flexible, and TCO-efficient way to accelerate the development and deployment of IoT, big data and analytics initiatives with out-of-the- box, pre-integrated, low-code, end-to-end capabilities. The TCS CIP can help bypass the typical 12–24-month development cycles with a future-proof approach and platform which supports the continued development of new use cases.

4.2.18	**Describe your company's current roles and responsibilities as a fiscal agent, if applicable, in a modular systems environment. Describe how you coordinate with other vendors to incorporate their services in a modular systems environment. What are the key success factors and risks for separating Fiscal Intermediary functions from technical functions?** TCS' perspective on the roles and responsibilities of a Fiscal Agent in a modular system is that the FA performs primarily the administrative and business process operational program functions including processing claims/encounters, fiscal activities and citizen engagement. We recognize that many Medicaid agencies include system technical roles and responsibilities with the same FA contractor and/or state designated organization. As state's replace core legacy MMIS subsystems with disparate vendor modules, providing the technical support specific to the new module can become more complex. Additionally, there may be a separation between the modules technical function support and the infrastructure/hosting managed services, depending on the licensing models offered (Hosted, Premise data center-based, Cloud, Software as a Service, etc.). These trends in systems architecture and deployment models builds the case for the separation of technical and FA vendors. Historically, Medicaid agencies have rarely benefitted from technology innovations. At the root of this lack of innovation is the legacy solution vendors. Rarely does a vendor, that is primarily focused on the solution/application, bring technology innovation. Technologies ranging from open-source analytics and integration to process automation including AI (artificial intelligence), Smart BOTS, Robotic Process Automation (RPA) and Business Process Management (BPM) are seldom readily implemented. Goals of enhancing citizen engagement, reducing healthcare disparities, and improving outcomes are at risk when technologies used to support and deliver services remain heavily dependent on legacy communication channels. This results from the lack of process automation, proactive citizen engagement technologies (Omnichannel CRM for example) and other innovations. TCS strongly recommends the inclusion of technology innovations as core deliverables to the new MES modules. Agencies who rely on vendors that are primarily delivering fiscal agent services and/or technologies which are dependent on vendor development versus primarily low code/no code architectures, will continue to propagate platforms and technologies which do not deliver desired outcomes to the citizens of West Virginia.
4.2.19	**Describe the division of responsibilities on successful projects, in relation to a multivendor environment, between vendor and subcontractor Project or Portfolio Management Offices (PMO), and an Enterprise PMO provided by either BMS or a separate vendor?** While the scope of engagement and the resulting responsibilities of various public and private organizations will vary based on project scope and services, TCS offers the following list of typical project groups/organizations and their respective high-level roles and responsibilities. **State Agency** – Responsible for the administration of programs including contract management and the oversight of all selected vendors. **Consulting Advisory Group** – Provides strategic, technical, and program consulting and services and can also facilitate the overall program.

	Independent Verification & Validation – Provides independent processes to evaluate compliance to the requirements and the quality of solutions and services. IV&V serves to verify alignment to, and engineering of the systems as specified by the state. **Project Management Office** – Represented (staffed) by multiple groups and vendors. Responsible for alignment to deliverables and associated tasks for successful implementation and operation of required systems. **Systems Integrator Vendor** – SI will provide service interoperability coordination, consult on API development, and enforce standards of end-to-end data exchanges. The SI collaborates with the agency, external entities, and module vendors to establish and support interfaces and connectivity to the integration platform. **Systems Platform Vendor** – May be same vendor as SI – Architects, provides, and supports technical platform used to integrate various systems and external data sources. For this type of modernization and business transformation, other vendors may include middleware/software providers for enterprise service BUS, API management, configuration management, rules engine, master data management, MPI/MOI (expert and organization index), data warehouse, cloud computing and so on. Vendors' responsibilities specific to their offerings will depend on the prime vendor(s) and how the latter subcontracts these capabilities and competencies to third parties.
4.2.20	**Describe your recommended approach to addressing the complex relationships between a variety of vendors working on separate parts (or modules) of the overall Medicaid Enterprise System. To what degree do you recommend BMS require these approaches in any RFP(s) it issues?** TCS has extensive experience working with vendors and subcontractors on large government and commercial customers throughout the United States and additionally across the globe. TCS understands a government's responsibility to deliver an outstanding citizen experience and quality programs and services, while eliminating disparities of care. Further, TCS has proven experience in successfully creating, testing, deploying and maintaining complex enterprise-wide systems that integrate with other systems and sub systems to deliver high-quality user experiences. Managing a successful Enterprise Integration Program requires a high level of involvement with multiple stakeholders including the agency, trading partners and vendor partners. It too requires enablement and effective utilization of technology and process competency, and the establishment of necessary processes, policies, measures, and controls. Effective execution of the framework processes enables a smooth execution based on a well-defined strategy, work break down structure and roadmap. Equally as important is an awareness, alignment, acceptance, and collaboration among various agency stakeholders. TCS' governance model and framework for enterprise integration is based on setting up an enterprise level Integration Competency Center (ICC) to encompass various aspects of governance including Data Governance, Systems Architecture & Technology Governance and Program Governance for integration.

	Data and Architecture governance includes defining, maintaining, and ensuring compliance to integrating an architecture blueprint, architecture or technology roadmap, architectural principles, and technical standards, assessing and recommending various technology options, conducting design reviews, maintaining architecture and technology assets and liaising with development, operations, and support teams for technical guidance. ICC governance covers the following aspects: • Establishing an organizational mechanism to provide strategic direction and leadership to the integration program • Demand and resource planning • Delivery management • Stakeholder management and liaising • Risk management and escalations • Organizational change management • Asset management • Performance or value management • Communication and training The ICC function extends and complements an overall enterprise architecture function, that may already be established in an enterprise, to focus on integration-specific aspects.
4.2.21	**What factors (technologies, development methodologies, frameworks, etc.) would you recommend BMS require in an RFP in order to accelerate the DDI of MES modules?** There is an old adage commonly used with Medicaid system vendors. If you have implemented a Medicaid Management Information System, then you have experience implementing ONE MMIS. Simply stated, due to the differences in how Medicaid agencies operate and the perception that the systems must be customized to accommodate the state Medicaid agency's varying processes, Medicaid systems require an excessive amount of time and resources to design, develop and implement as compared to Business Process Management platforms and COTS solutions that can be implemented through primarily a configuration model. Vendors with multiple implementations may have access to domain knowledgeable staff but are primarily already deployed to other state implementations or operations and do not typically bring technology innovations to their legacy platforms. Vendors make more revenue when they can add more billable resources to the projects versus the license models from cloud-based COTS like offerings. Contrary to CMS expectations, modularity has not been proven to reduce costs or the time to implement. Unfortunately, quite the opposite. BMS has a functioning MES and although the costs to operate and manage the systems are most likely much higher than the commercial equivalents, options

	for a whole replacement should be considered. Modernization, transformation, cloud migration and process automation are all within the realm of approaches to the legacy systems. TCS complements BMS for accepting responses from vendors with innovative non-Medicaid centric solutions that meet or could be modified to meet a specific function or functions within the Medicaid Enterprise. TCS would welcome the opportunity to perform in-depth assessments of the department's legacy platforms and provide recommendations that may be contrary to the more traditional systems replacement approach. If the TCS recommendation results in a system replacement or platform, TCS would strongly recommend Business Process Management platforms (includes Enterprise Case management and No Code/Low Code platforms). Now labeled as Intelligent BPM suites (iBPMS), the latest offerings can easily support complex work styles, automate operational processes and associated rules while also allowing users to use their skills, manage complex events, and provide advanced analytics to assist with intelligently facilitating business processes. iBPMS deliver to the digital architecture of today's systems with advanced capabilities including Artificial Intelligence, integration of Internet of Things (IoT) technology, advanced analytics, and Robotic Process Automation (RPA).
4.2.22	**Describe ways you feel BMS should structure an RFP to encourage competition and innovation from Medicaid Enterprise solution bidders.** TCS understands and recognizes the costs and effort state agencies put forward to develop requests for proposals. Literally millions are spent on state resource time and external consulting firms, all with the best intentions to produce a solicitation that will result in quality solutions with the highest value to deliver services and improve outcomes for the most underprivileged citizens of West Virginia. There are many reasons impacting a vendor's reason to respond to a state issued RFP. TCS shares the following as examples that may assist in crafting the desired vendor participation goals. **Issuance of multiple RFPs with no awards** – responding to RFPs, particularly complex ones, consume significant resource time and associated costs. When an agency has issued similar RFPs over a period of time, and without resulting awards, this will influence the respondent's confidence that a similar cycle will not be repeated. There is no easy answer to this challenge other than sharing a definitive model that helps to assure that the awards will be made in the timeframe as described. **Incumbents** – by default, incumbents have distinct advantages in re-competing, which typically include existing staff, a detailed understanding of the agency's processes and data, integration, architecture etc. That distinct incumbent knowledge affords a significant advantage that many vendors will choose not to compete against. "Breaking apart" the MMIS into distinct modular solutions with separate procurements helps to reduce the traditional incumbent advantages yet introduces additional risk. TCS would recommend a detailed assessment of the legacy systems and technology infrastructure to ascertain if there is a legacy system modernization and transformation path that could be pursued versus a disruptive whole system replacement.

	SLAs and liabilities – when states, for example, mandate unlimited liability, many otherwise qualified vendors will choose not to risk the future of the company on this clause. Also, service level performance expectations and associated penalties, while recommended, will all too often become excessive and while vendors may understand that some may be negotiable, it does impact a broader participation due to the potential excessive risks to the vendor. **Minority business set asides** – TCS has observed that state's required percentages of minority business set asides have not adjusted to the technologies that are driving modularity and reduced systems operational costs. For example, when a solution is provided as a SaaS COTS (software as a service commercial of the shelf) solution, the technical and operational staff required to implement and configure the solution are significantly less than the legacy model for Medicaid of a design, develop and implement (DDI) approach. When states require a minority and veteran set aside that is a percentage of the total value of the contract, the staff that would have been afforded to the set aside percentage is no longer viable given the reduced technical staff requirements for COTS and SaaS offerings. TCS would recommend adjusting the percentages to align to the vendor's staffing model rather than the overall deal revenue size. **Qualifications** - One other challenge that would serve to encourage competition among non-incumbent and innovative Medicaid Data Enterprise solution bidders is to alter the installed base qualification mandates to one that is more inclusive of non-government experience. The Healthcare industry often embraces innovative technologies and approaches long before government agencies. TCS consider this dynamic to be healthy. Government programs cannot afford to accept the risk untested systems. However, for Health & Human Services agencies and Medicaid programs to benefit from the intense innovation of the private sector, it should allow vendors to provide – as acceptable references – programs from commercial Healthcare clients (e.g., payers). States inadvertently create a "closed environment" by requiring references *only* from other Medicaid programs (for example). Opening this aperture allows new entrants to offer newer solutions that have been proven in the commercial sector.
4.2.23	**What recommendations do you have for establishing procurement and implementation timelines that help deliver value sooner, reduce risk, maximize Federal Financial Participation (FFP), and achieve Outcomes-Based Certification or Streamlined Modular Certification?** In this RFI, TCS has identified numerous opportunities to deliver value to the disadvantaged citizens of West Virginia while reducing risks in timelines and cost overruns, break downs in services and systems and enhancing interoperability and data integrity. TCS welcomes the opportunity to further engage in these discussions. While maximizing FFP is critical, TCS also recommends an analysis of transformation and modernization options that can help reduce operations and management costs of current systems and services while reducing risks and accelerating the quality of services. TCS teams with industry leading experts that will provide consulting and direct certification support to assist the state and BMS in maximize Federal Financial Participation (FFP) and achieve Outcomes-Based Certification (Streamlined Modular Certification). We team in order to support our state Medicaid agencies with the highest level of desired support when TCS does not necessarily have the level of expertise that our clients may need.

	Regarding Outcomes-Based Certification or Streamlined Modular Certification, we refer you to our responses to section 4.2.5. Procurement timelines should be aligned to the complexity of the modules and desired vendor participation community. And ultimately aligned to the overall BMS MES strategy road map as it is finalized and published. BMS resources allocation to support module procurement and implementation is critical. Other state agencies have released multiple module procurements that result in significant strain on department staff. Poorly written procurements will result in excessive questions and the lengthy time for the required answers. Some states require that vendors sign non-disclosure agreements and limit access to information while others hold monthly procurement meetings, conduct detailed scope exercises, and establish libraries of information frequently necessary for vendors to establish meaningful and specific responses. If BMS opts for a "transfer and modify" approach, fewer vendors will be able to respond and the length of the responses and time to respond will be much longer than COTS and SaaS applications architected to be configured versus designed, developed (coded) and implemented. Subsequently, transfer and modify solutions typically require much longer implementation times lines. Fortunately, the days of three year plus implementations are mostly eliminated for MES modules. Unless BMS opts to procure a one for one MMIS replacement in a single procurement, implementations will range from approximately eight months to eighteen months, again very dependent on the modules and levels of complexity.
4.2.24	**Describe the major trends in your Medicaid Enterprise solution category that you believe BMS should be aware of, including any product or approach changes that you believe will come to market within the next 12 – 24 months. How do your Medicaid Enterprise solution roadmaps stay current with such trends? If possible, please be specific regarding how these trends affect Medicaid, WVCHIP, or healthcare IT in West Virginia.** While not all inclusive of TCS major trend views and solution roadmaps, the following are significant issues and challenges that BMS has the opportunity to evaluate, introduce and incorporate into your Medicaid Enterprise solution and overall MES strategy. We welcome the opportunity of engaging with BMS on of these trends, technologies and services and/or other as provided by this RFI, **Procurement Models** At the recent Medicaid Enterprise Systems Conference (MESC), there was a clear initiative expressed by many Agencies to change the traditional RFP based procurement model to one that invites innovation and process improvements through an ITN (invitation to negotiate) or other models. It is recognized that frequently, any changes to standard state procurement methods may require legislative (law) changes so changes may take a while. TCS recently had the opportunity to submit a response to an ITN for Medicaid Systems Integration. The agency requested proposals that addressed processes, architectures, platforms, and outcomes rather than the hundreds of requirements on how they think it should be delivered. It also allowed the use of commercial entities as references with the idea that state agencies are slow to adopt technological innovations. Had the agency required multiple Medicaid references, we may not have been able to submit our innovative solutions and services due to non-compliance to a client reference mandate that could only be met by a few. **Value Based Care and the Longitudinal Citizen Record**

Data is the core foundation that will allow continuous ongoing measurement of populations, cohorts, measures, utilization of services, variances, evidence-based practices, outcomes, and health statuses as we shift from a provider focused, episode-based care delivery system to a longitudinal person-centric, preventative, innovative, costs and quality outcomes-based care delivery system.

Furthermore, innovation in value-based care will develop new approaches to ease the burdens placed on providers, reduce inefficiencies in record keeping, enhance analytics, provide real time reporting of insights, and evaluate disparate payment models and programs, to ensure the delivery of health care services at a cost and quality that holds value.

So, what does a value-based patient-provider-payer relationship look like? The truth is, it can take on many forms, depending on the level of integration and shared risk between stakeholders. On the lower end of the spectrum, there is the patient-centered medical home, pay for performance, and episode of care payment models. With increasing accountability, there will be a subsequent rise in models that incorporate shared savings, shared risk (i.e., Accountable Care Organizations – ACOs), and full risk capitation. A final potential implementation of value-based care goes as far as provider sponsored health plans, though this is often cited as impractical and is usually used as a theoretical example.

However, regardless of what value-based model is implemented, the need for real time longitudinal health record information across the care delivery team, to include administrative claims, electronic and digital health, biometrics, genomics, and other data sources will be critical in addressing important behavioral and lifestyle drivers of value. These, in turn, will highlight opportunities for improvement in Medicaid and CHIP cost, quality and outcomes

Social Determinants of Health

A recent paper published by the National Alliance to Impact the Social Determinants of Health stated that:

Social determinants of health (SDOH) have a significant impact on health outcomes for all people, with a disproportionate impact on vulnerable populations. Understanding and addressing SDOH downstream and upstream can improve the health of both individuals and communities. Sustained success will require a multidisciplinary, strategic approach that leverages policy, programs, and partnerships between the public and private sectors. These efforts must be built in partnership with communities through their meaningful engagement and involvement.

One important challenge to meaningfully address SDOH is the fragmented communication and coordination between the public and private sectors providing clinical, social, and human services, and with the individuals and communities served. This fragmentation has many unfavorable consequences, including limiting the effectiveness of resource availability and allocation, negatively impacting the quality of care, and damaging health outcomes. It can also be a source of frustration and confusion for individuals needing services and supports to address the impact of SDOH.
https://www.nasdoh.org/wp-content/uploads/2020/08/NASDOH-Data-Interoperability_FINAL.pdf

TCS is committed to building the data models and interoperability that will capture and incorporate SDOH to help BMS including the WVCHIP programs deliver better programs and benefits and support the initiatives to address health care and social program inequalities.

Enterprise case and process management platform – low code/no code

One common answer to the challenge of legacy modernization is traditional custom software development. While a custom solution provides an agency the flexibility to create a system unique to its organization, it requires large capital expenditures and can take years to complete. Another answer is commercial off-the-shelf (COTS) solutions. While this approach may cost less than customized systems, it does not allow users to alter or build upon the code, thereby preventing organizations from revising the solution to fit their specific requirements.

Neither of these two options fits governments' need for fast, flexible modernization at an affordable price. Some government agencies are turning to an alternative solution: low-code/no-code application development platforms.

Low-code platforms offer a unique solution to the challenge of legacy modernization: They provide the flexibility of custom systems without the high cost of custom coding. System integrators and the agency users can create application software through graphical user interfaces and configuration instead of relying completely on traditional custom computer programming.

TCS can provide multiple low code/no code platform options and the services to design, develop and configure the solutions to help BMS deploy a longitudinal citizen record using flexible case and business process management solutions using low-code/no-code platforms.

Case and business process management workflow solutions including Integrated Eligibility and Enrollment, member management, provider management, long term support services, HCBS, PASRR, Investigative case management, grievances and appeals and numerous others can be deployed in a greatly reduced time and cost for both implementation and ongoing operations with a much more flexible and reduced time and cost architecture to support ongoing regulatory and process enhancements.

Digitization, Artificial Intelligence and Robotic Process Automation

Technologies ranging from open-source analytics and integration to process automation including AI (artificial intelligence), Smart BOTS, Robotic Process Automation (RPA) and Business Process Management (BPM) can help enhance current and future BMS MES solutions. Goals of enhancing citizen engagement, reducing healthcare disparities, and improving outcomes are at risk when technologies used to support and deliver services remain heavily dependent on legacy communication channels.

To assist BMS in adopting these advanced technologies, we have introduced a framework we call the Machine First Delivery Model (MFDM™).

The foundation of the MFDM framework is closely aligned with the industry accepted **"hyper-automation"** concept that facilitates end to end transformation adoption in a structured way. The key tenets of the MFDM framework are as follows:

A. **Sense** – This stage ingests data (structured, semi-structured, unstructured) across multiple channels in a seamless manner while ensuring a frictionless transition across various interaction modes, thus rendering a "Omni-channel" experience for the customer. This stage leverages emerging technology stacks such as **Intelligent Character Recognition** (ICR) and **Chatbot** capability.

B. **Understand** – The purpose of this stage is to decipher the relevant information from the ingested data to ensure that focus is laid on actual pain points / improvement opportunities – TCS has been pioneering the use of **Process Mining** and other **AI** (as deemed fit based on the specific use case at hand) solutions at this stage.

C. **Decide** – Once the information has been analyzed, the resulting decision needs to be rendered and this is typically achieved either using **AI** (e.g., machine learning driven predictive analytics) again or **Robotic Automation** in situations where the logic can be codified in definitive terms.

D. **Respond** – The final "action" component is usually performed by leveraging **Robotic Automation** yet again – this can happen either in isolation (e.g., **Unattended automation**) or by keeping the human-in-the-loop (e.g., **Attended automation**) as necessitated by the specific use case.

Below is a summary of the MFDM™ tenets:

Key MFDM™ Tenets	**Input**	**Outcome**	**Technology sta**
Sense	Data (structured, semi-structured, unstructured)	Meaningful insights / Relevant Information	**Intelligent Cha Recognition** (IC solutions
Understand	Meaningful insights / Relevant Information	Business Pain points / improvement opportunities	**Process Mining** solutions
Decide	Business Pain points / improvement opportunities	Automation Eligibility and Priority of Execution	**AI** (machine lea predictive analy
Respond	Automation Eligibility and Priority of Execution	Build, test and deploy attended / unattended Bots	**RPA**

TCS' Global Head for Healthcare recently published a Point of View titled "**Opportunity for a Digital Generation Leap**" *Technology is set to drive better healthcare using a low-touch ecosystem replacing the existing models.* Although the PoV is focused on the acute and ambulatory healthcare systems, the conclusion as follows rings true for BMS and other WV HHS state agencies.

...healthcare enterprises are also evolving their operating models to become resilient, adapt to the evolving needs of the world at large, as well as prepare to play a key role in the emerging purpose-centric ecosystems over the long term. Healthcare agencies (and HHS agencies) will need to eliminate the existing barriers to create fertile grounds for global and local collaboration. They will also need to adapt to more resilient and efficient digital models and transform operations to expand quality and reach of care. Additionally, these transformations will have to be accelerated to not only effectively

	deal with the current crisis but also prepare for the changed healthcare, social, and business environment, going forward. The industry will need to take advantage of the new ways of working, high degree of collaboration, interoperability, and patient centricity for better health outcomes to drive the change. The transformation of the healthcare industry will be important to future proof not just the sector but the world at large. *We invite BMS to review the Point of view located here -* *https://www.tcs.com/content/dam/tcs/pdf/Industries/life-sciences-and-healthcare/insights/healthcare-opportunity-for-a-digital-generation-leap.pdf*
4.2.25	**Identify any innovations in your Medicaid Enterprise solution for addressing Medicaid Business Priorities (cost savings, performance efficiencies, improved care outcomes, etc.).** Digitization is a key trend in all industries and is particularly prevalent for the future of MES. Adoption of digital technologies such as cloud, mobile, IoT, analytics, machine learning, Artificial Intelligence and robotic process automation has reached an inflection point and is triggering large re-architecture programs. The convergence and robust application of these new technologies is a testament to the definitive presence of digital technologies. Digital is now the default stack for all new investments today and is helping states reimagine the way they support their citizens. Transforming to a MES Administration Platform will create a strong digital core to bring in a true and end-to-end transformation, right from the trading partner channels and to the core processing engine. The strong digital core can expand the art of the possible by making business transactions and services highly secure and easy to integrate with, alongside functionally granular APIs available in the larger ecosystem that the MES is operating in. The well architected MES Administration Platform is built on a modern and open architecture, embracing best-in-class principles, giving the solution a future proof edge. A multi (N-Tiered) cloud-friendly architecture adopts best practices such as: • Elastic scalability enabled by container-based deployment and a microservices-oriented product development. • A strong and complete integration framework that include adaptors for interoperability with evolving industry solutions, including those that are based on Blockchain. • A co-existence capability, which aids in migrating from a traditional MMIS to a modern open MES. An integrated analytics engine would give BMS deep insights from varied sets of data across multiple channels, customer behavior and needs, and enterprise performance. Putting Artificial Intelligence (AI) to work by enhancing the efficiency of the operations is now an integral part of our offering. Embedding AI techniques like Natural Language Processing (NLP) and Machine Learning (ML) into the digital core, TCS brings innovative solutions such as a Conversational User Interface to augment citizen servicing capabilities. ML techniques make it possible to enhance operational efficiencies with better exception management in manual effort intensive processes such as reconciliations, compliance and others.

4.2.26	**Identify any innovations in your Medicaid Enterprise solution for addressing technical risk management.** TCS offers multiple innovations in our offerings and services. Specific to risk management and mitigation, TCS has provides insight into the technology offerings and competencies that TCS can bring to the department. Today, the unmet need of enterprises is an agile, resilient, and efficient enterprise IT to meet the customers' expectation of a great digital experience. In reality, the IT teams face numerous challenges like understanding the infrastructure complexities, long delays in isolating and resolving IT faults and inconsistent and variable quality of operations. Due to lack of end-to-end visibility of the IT landscape and persistent reliance on legacy tools for IT functions, the operations teams mostly respond reactively and are unable to predict and prevent IT problems. There is also a heavy reliance on people and tacit knowledge thereby increasing the operational risk of human error. An MES Administration Platform can create a strong digital core to bring in a true and end-to-end transformation right from trading partner channels and to the core processing engine. A strong digital core can expand the art of the possible by making business transactions and services highly secure and easy to integrate with, alongside functionally granular APIs available in the larger ecosystem that the MES is operating in. The platform should be architected to operate in containers which delivers on the ease of portability and robust business continuity as two primary technology advantages. To help reduce and mitigate risks, TCS' Cloud Applications, Microservices and API Services (CMA) Services can provide consulting, migration, implementation, and managed services that help design, execute, and sustain an organizations ecosystem balanced on cloud-led business strategy. TCS services cover: • Integration and API services: Aiding enterprises excel in a highly competitive digital economy with ecosystem intermediation, asset allocations, and interoperability of data using APIs through multi-cloud connectivity across applications • Application development services: Defining the optimal solutions environment with cloud-native applications that are independently deployable, lightweight, and agile using microservices, serverless and containerization. • Cloud migration services: Enabling organizations' cloud journey orchestrated through decision services, cloud migration factory and cloud managed services, and ensuring a transformation continuum. **TCS ignio™ AI-driven software for Autonomous IT Operations** A typical Medicaid enterprise hosts critical application and mission critical process transactions. It churns and stores tons of confidential data, while maintaining various technology stacks such as Operating System, Databases, Middleware, and many more where risk management plays a very crucial role. Before deploying any application, organizations often fail to notice improperly configured IT assets, underestimating their compliance and security risks. Major reasons for such breaches are is configurations of assets such as using default profile/passwords, incorrect access control settings, weak encryption, and so on.

To overcome these security vulnerabilities, a solution is needed that makes enterprise assets more secure and robust while provisioning, and periodically audits them based on industry standard recommended guidelines. Having IT asset management protocols in place which monitors data and performs real-time fixes to mitigate risks and data security breaches is an absolute necessity today.

TCS offers ignio AIOps, an AI-driven software for Autonomous IT Operations. By combining Enterprise IT context, analytics, and intelligent automation, ignio provides a closed-loop solution for your growing IT compliance requirements. As an example, an organization that needs to perform a security assessment of the IT assets and centrally track the compliance status is no simple initiative. If the enterprise were to use YCS ignio, it would facilitate the security leads ability for compliance of their IT estate in-line with the internal guidelines as well as external industry regulations.

ignio automates the labor-intensive process of checking settings on each machine in your network. It can work unobtrusively in the largest of inventories that may contain thousands of assets. With over 5500+ security checks covering standard security guidelines accepted across the industries and geographies, ignio plays a crucial role in identifying and reducing security risks.

To support the dynamic and ever-evolving IT landscape with the need of new emerging technologies, changing requirements and additional security checks, ignio has an advanced feature called Control Management, wherein new technologies and controls can be easily on-boarded as a part of the module to cater to the Enterprise's custom compliance needs.

ignio™ AIOps is an AI driven software that judiciously combines Enterprise IT context, insights, and automated actions to deliver resilient, agile and autonomous IT operations across hybrid environments, while eliminating repetitive manual processes and contentious war rooms.

It detects and assesses the deviation in system behavior, triages and resolves the incidents, predicts the future state and prescribes actions proactively to prevent any disruptions of datacenter operations.

To effectively address Technical Risk management, TCS highly recommends a solution suite like the TCS ignio offering that can facilitate the following:

- Creates a comprehensive graph model of IT, connecting applications to platforms to infrastructure
- Identifies changes, trends, patterns, and outliers
- Detects anomalies based on normal behavior profiles
- Predicts alerts based on observed trends and prioritizes them based on business impact
- Suppresses redundant or false alerts intelligently
- Aggregates correlated alerts using industry- leading rule, case and model-based reasoning patterns
- AI-based automated root cause analysis and self-heal of incidents
- Best in class, model-driven adaptive automation; pre-built, ready-to-use end-to-end automation for over 40 technologies
- Predicts problems and eliminates them proactively

	• Automated patch management and prediction of issues due to patches • Updated health check dashboard indicating change in configuration parameters • Proactive compliance controls for on-premise and cloud environments with over 5500 OOB compliance controls supporting industry benchmarks • Automated remediation support of compliance failures with over 1000 pre-built fixes • Mobile app support for notification and remediation of issues • Omni channel experience for Collaboration room • Proactive problem identification and performance and capacity optimization for infrastructure, services, and cloud • Cloud Cost Management and Optimization • Cloud Governance and Visibility • Service availability and incident management
4.2.27	**Describe 1 to 3 use cases where innovations in your Medicaid Enterprise solution would apply and the value your Medicaid Enterprise solution would add when applied to them.** TCS's Public Services Unit has been servicing government organizations globally for over two decades implementing numerous solutions, including labor and workforce, education, social services, social security, and citizen-centric solutions. Our experience includes working across multi-technology platforms and implementing solutions with varied complexities for different engagements. TCS's approach, which blends execution expertise and domain knowledge with technology competence, enables us to provide tailored solutions that are best suited to meet the needs of the public sector. TCS's Public Sector Industry Solution Unit has a strong presence in the US, catering to IT service needs of federal, state, cities, and counties. TCS has recently begun to focus our competencies on the US State Health & Human Services agencies and related systems and services. The following are outcomes that have been achieved through one of TCS' Department of Labor solutions for Unemployment Insurance. During the COVID-19 pandemic and associated unemployment benefit surge, TCS solutions were able to handle the extremely high volumes of up to 4,000 % without faltering and without degradation of services. These TCS solution capabilities have made the TCS UI Transfer solution one of the most reliable and functionally mature solutions in the industry. The outcomes of TCS Innovative Solutions demonstrates the UI program performance improvements resulting from the implementation of our innovations as follows: • 65% reduction in time for processing payments • 29% increase in customer service representative's productivity to handle calls • 41% reduction in call wait times for claimants

	• 15% reduction in temporary staff due to system efficiencies • No impact on performance during pandemic despite 4000% increase in load • 72% decrease in deflected (unanswered) questions • Enhanced claimants and employer's experience While these outcomes are not specific to a Medicaid system, there are strong correlations to the citizen experience and the focus TCS brings to all our systems and services.
4.2.28	**In the states where you have implemented, what have been some of the higher value outcomes? What performance metrics were you able to provide to substantiate this success?** For a mid-west state, TCS transformed their legacy Unemployment Insurance System as follows: TCS helped the State to resolve the business and technical challenges that surfaced on the project. The TCS team consulted with the agency to help them understand an enhanced solution/approach to their business problems. TCS' data migration experts worked closely with the State team to address all challenges and successfully converted data from what was the oldest UI system in the U.S. TCS also shared lessons learned and best practices along with key documentation and templates from multiple transformation projects that further assisted in the successful execution of the UI program. For a western state, TCS evaluated cloud-based providers and proposed Azure's cutting-edge technology stack to build an IaaS solution due to the huge demand fluctuations in the targeted domain. The TCS team performed a detailed analysis of the dedicated data center-based UI Benefits, Appeals and Tax System. The study helped in understanding the complexity of the system and in re-engineering the architecture that is compatible with cloud infrastructure. The solution was deployed, transformed and migrated to the Microsoft Azure Government site. The TCS client became the first state in the United States to host both its Benefits and Tax System on a public cloud. The new benefits system enabled claimants to file Unemployment Insurance's new and weekly claims online, protest and file appeals online, receive electronic correspondence, perform online eligibility reviews and make online payments against overpayments. The tax system provides employers the ability to file reports, authorize payments, file appeals, and make account changes online. For a county in SC, TCS provided a large infrastructure transformation to a public cloud, implemented and centralized their document repository, implemented a robust cyber security environment and augmented/created a disaster recover solution. They also implemented an e-Filing case management system and a system for online court case searching. Some of the results included: • Higher Service Availability: 99% service availability consistently for the entire project period • Customer satisfaction index up to 98% • Minimum impact on users during technology upgrade • Cost Reduction - More than a 50% cost reduction by process improvements • Reduction in carbon footprint– virtualized 95% servers

	• Enhanced business continuity • Standardization - tools and software standardization • Enhanced Security – Implementation of a vulnerability management system, SIEM, application firewalls, IPS, Geo protection and hard disk encryption.
4.2.29	**Discuss any experiences you have had integrating your Medicaid Enterprise solution with legacy system management and lessons you have learned for implementing new Medicaid Enterprise solutions. Do you recommend any specific approach for modifying, interfacing with, and managing the legacy system while implementing a new Medicaid Enterprise solution?** States are evaluating boosting their digital maturity to deliver a superior citizen experience, transform business models, and accelerate outcomes while reducing costs. Most agencies face a multitude of challenges when considering transformation and modernization strategies, considering outdated integration stacks, complex multi-data center and cloud environments, and a lack of enterprise-wide standardization. Similarly, the transition to a systems integration platform and modularity strategy face roadblocks, including the lack of in-house knowledge, long cycle times and hyper customization. A key point in this RFI is attempting to gather insight on is integrating cloud and web-based services with legacy systems. TCS' Enterprise Integration Services can help state agencies identify the use cases for enterprise integration based on the transformation initiatives, understand required key capabilities in order to support these initiatives, and define reference/solution architecture for modernizing the middleware portfolio. Our experience has resulted in recommending and delivering services including roadmap definition, cloud and API integration, product evaluation and migration, application development and support, portfolio set up, ESB/B2B implementation, microservices deployment, and open-source adoption. Our team of seasoned middleware experts and cloud practitioners create business value for digital enterprises by boosting cloud ROI and providing a modernization roadmap for traditional integration portfolios resulting in options for BMS with its migration from the legacy Medicaid systems to the transformed and modernized MES.
4.2.31	**Describe the System Development Lifecycle (SDLC) approach that you use for implementing your Medicaid Enterprise solution. Can your SDLC approach be incorporated into an environment that uses a traditional "waterfall" SDLC approach? What about "agile" methodologies to support the implementation of your Medicaid Enterprise solution? If so, how can this be accomplished?** TCS has successfully established best-in-class processes and methodologies to achieve desired and required implementation outcomes. A systematic approach, in consultation with our clients, is followed with the identification of the system development life cycle (SDLC) aligned to the scope of work. In this context, TCS' approach mitigates project risk while focusing on strategic and tactical project objectives.

	Listed below are SDLC models TCS effectively facilitates and manages: a) Waterfall model: widely employed sequential development model. Is well-suited for clearly understood requirements. b) Agile Development model: Used when business requirements are evolutionary – typically based on how the application and business users react to a particular requirement / option. Appropriate for scopes of work where "failing fast" and "quick course correction" is necessary / possible. c) Modified Waterfall model (Sashimi model): Like Waterfall, but with a provision to overlap between phases. This model addresses weaknesses of Waterfall development, wherein, it can be made "incremental", and a previous project phase revisited, as needed, during development. d) Spiral model: Risk-driven software development process/model. Based on unique risk patterns of a given project (with typically large and complex system requirements). Spiral guides a project team to adopt elements of one or more process models, such as incremental/iterative, waterfall, or evolutionary prototyping. This helps to identify risks at initial stages of development and enables the development team to revisit previous phases and progress iteratively to completion. The development model adopted may vary depending on the scope of work. The above models include Joint Application Development (JAD) sessions/engagements. This collaborative approach to systems requirements analysis brings together the SI, legacy, module, and business teams and accelerates the analysis and systems design phases. Also, refined requirements derived from JAD sessions typically help to reduce rework from the perspective of business and technical requirements not being initially well defined and or properly identified.
4.2.32	**What is the typical duration of a project to implement your Medicaid Enterprise solution? How does this timeline break down across the planning and DDI phases?** As would be expected, the duration of a MES module DDI phase will vary significantly based on the process area being addressed (claims and financial versus provider management or TPL or PBM, for example). Given that modules are, by definition, typically a subsystem of what has traditionally been an MMIS, the duration of the DDI can be considerably less than what was experienced in the past with a large MMIS replacement (frequently over 3 years). Most modules can be implemented and operational within 15 months of project start and some can range from 6 to 12 months (systems integration platform for example). Variables that will impact the timelines will include but not limited to state/BMS stakeholder availability, legacy system and/or new dependent module vendor collaboration, data conversion (how many years, terabytes, quality of the data, etc.) and the support of the PMO, IV&V, SI vendors. The planning phases will also vary significantly, depending on the modules and associated complexity. For example, TCS recommends that the Systems Integrator implementation consist of multiple phases with the first phase would devise a strategy and implementation approach that aligns to your overall outcomes and objectives, identifying use cases for enterprise integration that will define the reference/solution architecture for modernizing the middleware portfolio. This strategy will also identify risk management and proactive change strategies to help minimize risk and maximize success. Many large technology efforts like this endeavor can fail without appropriate risk management and program governance.

	The duration of the SI planning phase would typically range from six to twelve months. Results would include additional planning for the systems implementation based on alignment to agreed upon strategies and architecture.
4.2.33	**What do you see as the key cost drivers for implementing your Medicaid Enterprise solution? What recommendations do you have for managing MES costs and demonstrating outcomes that mitigate any unnecessary costs of a Medicaid Enterprise solution?** Setting aside the challenges as identified in requirement 4.2.22 that typically drive costs in most state MES module procurements, TCS suggests the following as the primary cost driver: **Collaboration** – primarily, the time, availability and adequate participation from the various stakeholders in supporting the needed insights, integration, data transparency and support needed from the primary vendors to implement in the targeted timeframes. Well communicated and documented initial responsibilities and experienced PMO and IV&V vendors typically helps to moderate these typical time and related costs impacts. (Please see our PMO and IV&V and stakeholder comments in requirement 4.2.19.)
4.2.34	**Using your Medicaid Enterprise solution as an example, what guidelines do you recommend for "phasing in" your modules and/or services? How do these guidelines maximize efficiency and/or minimize risk? What constraints would they place on DDI partners and BMS?** Reflecting on the current enterprise, albeit complex, TCS highly recommends a phased in approach. This is because data required from current systems and not in the core MMIS architecture, must continue to be accessible and leveraged as required. It is for these and other reasons TCS recommends assessing the current architecture to determine what can perhaps be modernized and transformed, including migration to a cloud. There are relatively low cost and opensource technologies available that support the construction and service-oriented architecture (SOA) enablement of legacy and modern systems. The early introduction of an operational data store (ODS) that will facilitate the exchange of data between disparate systems and the BMS' EDW while offloading performance challenges created as outcome when different solutions are introduced into the enterprise, is also recommended. To achieve a holistic view of citizens, providers, and supporting organizations, master data management, including expert person and organizational indexing (MPI & MOI) systems, become critical to standardize data and perform data matching between disparate data sources. A phased-in approach and design is guided by principles to minimize constraints while enabling effective and efficient interoperability. Compliance with data standards should be mandatory to help minimize and reduce risks.
4.2.35	**What do you believe would be the optimum duration and the minimum duration for DDI of your Medicaid Enterprise solution?** As would be expected, the duration of a MES module DDI phase will vary significantly based on the

process area being addressed (claims and financial versus provider management or TPL or PBM, for example). Given that modules are, by definition, typically a subsystem of what has traditionally been an MMIS, the duration of the DDI can be considerably less than what was experienced in the past with a large MMIS replacement (frequently over 3 years). Most modules can be implemented and operational within 15 months of project start and some can range from 6 to 12 months (systems integration platform for example). Variables that will impact the timelines will include but not limited to state/BMS stakeholder availability, legacy system and/or new dependent module vendor collaboration, data conversion (how many years, terabytes, quality of the data, etc.) and the support of the PMO, IV&V, SI vendors.

4.2.36 **List and describe the documentation developed by your company and/or the state Medicaid agency that is essential to DDI and operations of your Medicaid Enterprise solution.**

While not necessarily all-inclusive, the below Deliverables table is well representative of what is expected and essential for DDI and operations of the MES.

Deliverable	Description
Project Management Plan	Includes a comprehensive and practical description of the contractors' plan for project management and control mechanisms, including staff organizational structure, progress reporting, major decision making, signoff procedures, and internal control procedures.
Project Schedule	Identifies person hours of effort and responsibilities for the deliverable and each work activity/task.
High-Level Technical Design (Includes Technical Integration Plan)	Includes design of framework which serves as a single point of reference for integration management of modules, systems, and data.
System Design Document (Includes Integration Architecture Specifications)	Includes detailed integration and technical explanation of all aspects of the Contract including detailed architectural diagrams, data flows, component specifications, COTS products, and hosting environment details.
System Security Plan (SSP)	This SSP is based upon CMS Acceptable Risk Safeguards (ARS) to assess CIA (Confidentiality, Integrity, Availability) and NIST Special Publication (SP) 800-53 Rev 4. The SSP is a living document which shall be updated no less than annually, and when new vulnerabilities are identified and mitigated, and when additional functionality, components or COTS products are implemented.
Bill of Materials	List and activities to acquire, install and initialize hardware (cloud) and software configuration
Requirements	Includes a Requirements Traceability Matrix (RTM) developed and used in the project team to validate the

		scope, requirements, and deliverables as originally specified when compared to the baseline.
	System Design Specification Document	Provides a written description of the solution including detailed information on function and architecture. Provides guidance to system developers. The deliverable should include software design, security design, and infrastructure design.
	Configuration Management and Release Management Plan	Details the tracking, planning, managing, scheduling, and controlling the implementation of the solution through different stages and environments.
	Contingency Plan (for Disaster Recovery and Business Continuity)	Document the approach to cover situations which could interrupt the ability of BMS to access and/or use the solution for business purposes.
	Interface Control Document (ICD)	The ICD describes the design, development, and maintenance of enterprise interfaces. Each Application Program Interface (API) and component which shall interface with the platform shall be documented using the ICD template.
	Test Plan	Describes how the contractor shall perform testing of the solution and detail the work products which shall be submitted to BMS as part of the testing phase
	Readiness Review (environment)	Includes Construction Completion Approval and Report which details the scope of work, planned tasks, and completed tasks as part of the configure/build process for the solution including implementation of detailed requirements, detailed design, configuration, development, unit testing, and documentation.
	Implementation Readiness Review	Includes System, Security, and Performance Test Completion and Report
	Training Plan	Details the approach to provide training to the stakeholder for the solution.
	Operations and Maintenance Manual	Details how the Contractor shall plan, operate, and maintain the solution in compliance with negotiated Performance Standards. The manual shall include the plan and details for Architecture/hosting operations, monitoring daily operations performance, performing routine maintenance, maintaining user and system documentation, approach to system changes, enhancements, data corrections and other new requirements, reporting status against relevant Performance Standards and schedule of major and minor releases.
	Production Readiness Review and Stage Gate Review	Includes a checklist which shall examine the actual solution characteristics and the procedures of the solution operation to verify all hardware, software, resources, procedures, and user documentation

	Post Implementation Report	Details planning and roadmaps for managing all System releases. This includes managing dependencies across releases along with handling technology stacks, databases, and infrastructure to match the roll out needs.
	Warranty Completion Report	Defines the approach to the warranty period, including entrance criteria, and warranty exit criteria shall be defined during the contract negotiations and covers the agreed upon requirements defined in the Contract
	MES Vendor Turnover Plan	A pre-defined period prior to the end of the contract (typically 6 months), the contractor will create and submit a MES turnover plan which would include, at a minimum: proposed approach to turnover of the Integration Platform and Services solution, tasks and subtasks for turnover, schedule for turnover, entrance and exit criteria, readiness walkthrough process, documentation update procedures during turnover, and description of Vendor coordination activities which shall occur during the Turnover Phase.

4.2.37 **Detail how your Medicaid Enterprise solution could support BMS in improving data analytics and reporting capabilities, data sharing initiatives, and overall confidence in health data.**

State data stores/warehouses have been scaling up their infrastructure by integrating advanced analytics and reporting tools with their data aggregation systems. Such advanced analytics and reporting tools not only focus on spotting inefficiencies or potential fraud, waste and abuse, but work on the foundation of quality measurement to enable patient health outcomes through identification of high-risk patient populations and utilization controls in place.

Please also refer to our response in 4.2.17 on data management and the TCS Value Factory Model.

Advanced technologies and processes are being used to create a data standardization framework to transform the data into, high-quality, accurate, transparent, and interoperable. This drives the success of Artificial Intelligence results and AI review tools and systems that are used to improve program integrity and efficiencies.

TCS has experience implementing AI solutions including for example, free-form text analytics, Multi-disciplinary Readmission prediction analytics, program integrity solutions, Clinical Guidance Exchanges integration with HIE, population health, quality measures and much more.

Many utilize TCS solutions for AI, ML (Machine Learning) and a variety of predictive models, and techniques including:

- N-Gram Techniques
- Maximum entropy
- Multi-modal fusion/matching strategy

- Ensemble techniques
- Random forecasts
- High dimensionality reduction,
- Vector machines
- Binning
- Custom normalization
- and custom similarity

The following graphic provides four case studies, the techniques utilized, and the challenges/benefits derived.

Case Study	Techniques Employed	Challenges / Benefits
LOINC Mapping	Text Analytics, N-Gram techniques, Maximum Entropy, Multi-Modal Fusion / matching strategy	• **Variability of Data** within Standard structures, Automation enabled by **Text Analytics and Fuzzy Algorithms** • Significantly **reduce the fatigue** (manual interventions) in the process • **Local provider codification schemes, unstructured and variable datasets**, Missing / Incorrect data
30-Day Readmission	Ensemble Techniques, Random Forests	• Wellness of Patient, Reducing cost of Care, **Reduce Preventable Readmissions** • Direct impact on Payer, Provider and Member • **20 Years of Data from Legacy Systems**, Discovering Waves of Data due to changes in Procedures • **End to End Engineered solution**
Early Detection of Adverse Events	High Dimensionality Reduction, Feature Selection, Support Vector Machines	• **Identification of right features** for prediction, A critical but a **rare class problem.**
Cohort / Similarity Measures	Binning, Custom Normalization, Dimensionality Reduction Techniques, Custom Similarity Measures	• **Context based reasoning** and applicability of underlying datasets, Complex inter-relationship of features • **Custom similarity measures**, Asynchronous Measurements, Missing and Abnormal Values

Figure 6: TCS Case Studies Summary

4.2.38 Describe or illustrate your data visualization capabilities.

Medicaid enterprises have an abundance of data which are often not able to be fully utilize it. They are inundated with numerous sources and formats of data – structured data sets in the form of master data, operational data and transactional data, and the potential for unstructured and semi-structured data in the form of documents, PDFs, excel sheets, images, transcripts, and so on.

In addition to the above 'traditional' data sets, there are newer types and sources of data, such as data from internet of things (IoT) sensors or streaming or crawled web data from internal as well as external sources. Data-driven enterprises possess infrastructure and mechanisms such as Extract-Transform-Load (ETL) tools, enterprise data warehouses (EDWs), and data lakes, which help them harness and

harvest the data available to them. However, despite these resources, they often fail to leverage the data at their disposal completely or efficiently.

There are various levels of maturity of data initiatives in organizations and the challenges of data harnessing vary across these scenarios:

1. Companies with the least maturity of data-focused initiatives are either still struggling with operational issues or owned by respective business divisions or departments. This eliminates the free flow of data and information and at best, these organizations have ad hoc ways of sharing data across divisions, and much of the data stays hidden or otherwise inaccessible. This leads to inefficiencies and lack of visibility on important parameters, which subsequently means that inadequate data is available for department leaders and operational decision-makers to analyze and draw actionable insights from.
2. At the next level of maturity are companies that may have an EDW or a data lake initiative, but lack enterprise policies, standards, and (automated) processes (or a combination of these) to input the data into the warehouses or data lakes. The result is missing or inconsistent data in the warehouse, which is not enough to derive real value from. This type of data is also referred to as noisy or dirty data, which requires a lot of effort to clean and make ready-to-use by department leaders and operational decision-makers
3. While many organizations have overcome the previous two scenarios, they are challenged by the continuously changing environment with new sources of data being discovered and existing sources throwing up new data types and formats. The time they take to adapt with a change in their data management infrastructure is not adequate to protect the business from the impact of inefficient data usage. This typically happens because the data warehouse or data lake was structured and designed with a static view of data based in the past and catering to the present changes in data sources or formats needs significant effort.
4. A few Medicaid enterprises have been able to upgrade their data warehouses or analytics infrastructures to cater to newer sources and types of data. However, even there, the effort is largely driven by the IT department, which brings in some obvious lags and inefficiencies due to the lack of a complete understanding of the business users' needs.

Given these challenges, Medicaid Enterprises have started data virtualization initiatives to address the ever-changing landscape of data sources and formats. These initiatives, however, will fail to address the challenge around IT dependence, as discussed in the fourth scenario. The need is to develop self-service capabilities, which the business users and decision-makers can then search, discover, and use (analyze/visualize) data by themselves to draw insights. The data provisioned by such a solution would typically constitute all data sets available in the enterprise across internal and external data sources. Further, the curating, cataloging and classification of data from available enterprise data sets would enable the vision of a self-service-driven and easy-to-use system that streamlines data/information flow across the enterprise.

The following enterprise data marketplace architecture depicts a framework that ensures seamless ingestion, curation, classification, cataloging, and distribution of data. It enables self-help mechanisms for business users to search and discover data, perform analytics, and visualize it in insightful ways.

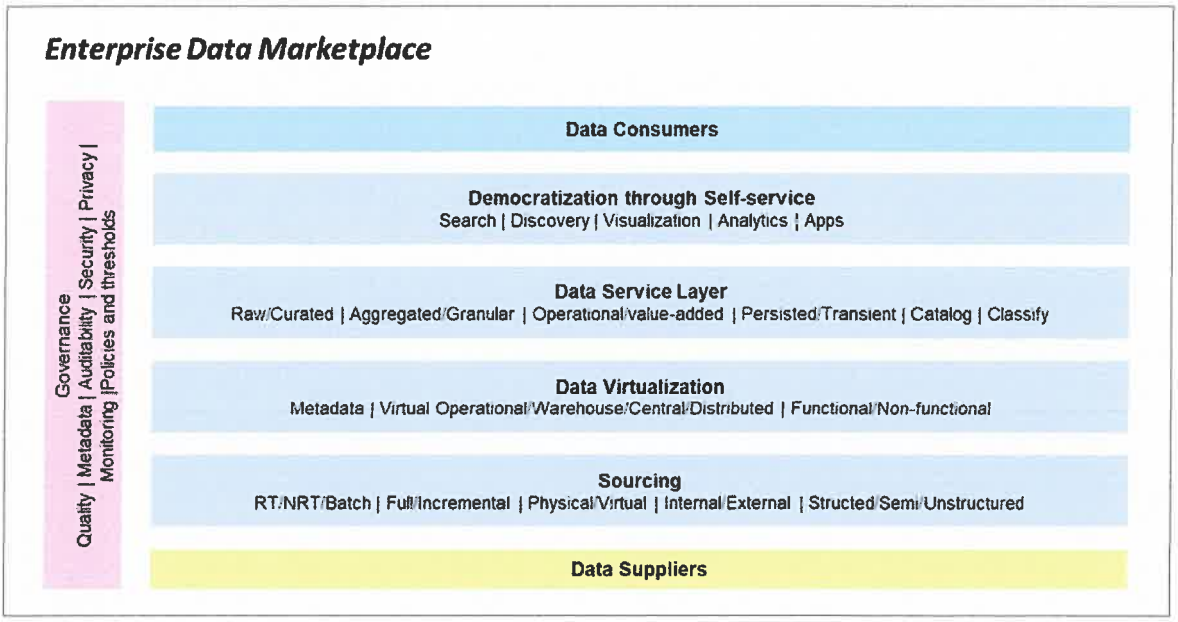

Figure 7: TCS Enterprise Data Marketplace Architecture Framework

To leverage the digital wave of MES and non-Medicaid data, it is important that enterprises prepare a roadmap that helps democratize data across organizations and agencies and empowers them to participate in larger data ecosystems.

4.2.39	**How does your Medicaid Enterprise solution improve the coordination of care, detect and prevent fraud, waste, and abuse to support Medicaid program integrity, and improve stakeholder access to state Medicaid Enterprise data?**

Data is the core foundation that will allow continuous ongoing measurement of populations, cohorts, measures, utilization of services, variances, evidence-based practices, outcomes and health statuses as we shift from a provider focused, episode-based care delivery system to a longitudinal person-centric, preventative, innovative, costs and quality outcomes-based care delivery system.

Furthermore, innovation in value-based care will develop new approaches to ease the burdens placed on providers, reduce inefficiencies in record keeping, enhance analytics, provide real time reporting of insights and evaluate disparate payment models and programs, to ensure the delivery of health care services at a cost and quality that holds value.

So, what does a value-based patient-provider-payer relationship look like? The truth is, it can actually take on many forms, depending on the level of integration and shared risk between stakeholders. On the lower end of the spectrum, there is the patient centered medical home, pay for performance, and episode of care payment models. With increasing accountability, there will be a subsequent rise in models that incorporate shared savings, shared risk (i.e., Accountable Care Organizations – ACOs), and full risk capitation. A final potential implementation of value-based care goes as far as provider sponsored health plans, though this is often cited as impractical and is usually used as a theoretical example.

However, regardless of what value-based model is implemented, the need for real time longitudinal health record information across the care delivery team, to include administrative claims, electronic and

	digital health, biometrics, genomics and other data sources will be critical in addressing important behavioral and lifestyle drivers of value. These, in turn, will highlight opportunities for improvement in cost, quality and outcomes. Most payer and government programs organizations are facing challenges in claims processing such as an increase in late payment interest due claims not paid correctly, unacceptable rework rates and high false positives using the existing prepay audit methodology. Most organizations have a reactive approach towards claims processing, which means action is taken after the damage has been done. TCS recommends the use of nationally accepted and valid protocols and methods for identifying and validating improper payments and an adherence to federal and state program rules, regulations, and laws. TCS offers a platform in combination that incorporates Artificial Intelligence (AI) that can result in significant improvements to the payment integrity and compliance and fraud and waste detection programs. Some of the benefits typically include improving medical coding, claims reviews, medical necessity reviews, compliance program oversight and reduced appeals. These tools can have the following additional benefits: • Assure pre-payment and claims quality control billing accuracy before checks are sent to the providers. • Deploy editing prior to pricing across multiple care settings. • Review claims pre-payment and post-payment with high complex intervention when necessary. • Cost containment and FWA prevention. Delivering advanced analytics should be provided by vendors able to illustrate competency. TCS recommends separating the technology platform procurements from the analytics providers. For TCS' response to improving stakeholder access to state Medicaid Enterprise data, please see our response to 4.2.37 and 4.2.38.
4.2.40	**Describe how your Medicaid Enterprise solution increases access and shared use of data with both the State and other vendors, improves healthcare quality management, and increases automation capabilities.** As agencies transition to a modular enterprise, critical to the success is a well-orchestrated enterprise architecture, data sharing and data management strategy and the right integration platform and vendor(s) to execute the interoperability of the modular MES. When Medicaid agencies have chosen to select a dedicated SI (systems integrator) based on a very complex "to-be" model to orchestrate and facilitate interoperability between legacy and future modules, the success and equally as important, the costs for technology and services, that largely sit idle, have often, resulted in failed services, additional burden on the module providers and escalating cost and resource projections for future connections. TCS highly recommends a phased-in approach. Reflecting on the current enterprise, albeit complex, the data required from systems not in the core MMIS architecture, is accessible and leveraged as required and in concert with the new modules as they are onboarded.

Assessing the current architecture and determining what can perhaps be modernized and transformed (including migrated to a cloud) would be TCS' recommendation. There are relatively low cost and open-source technologies available that support the construction and SOA (service-oriented architecture) enablement of legacy and modern systems.

The early introduction of an Operational Data Store (ODS) that will facilitate the exchange of data between disparate systems while offloading the performance challenges created when different solutions are introduced into the enterprise, would be a crucial component.

Master data management, including master person and organizational indexing (MPI & MOI) systems, become critical to standardize data and perform data matches between disparate data sources to achieve a holistic view of the citizens, providers and supporting organizations.

TCS will recommend the integration tools based on the identified BMS architecture and associated interoperability requirements analysis outcome and map the selected tool chain to the architecture. The integration strategy will provide:

- Key capabilities to meet the current and future needs of the MES
- Integration patterns and principles
- Define high-level reference target architecture

The BMS MES integration/API roadmap will be created to meet the continuous evolving digital requirements focusing on agility, Flexibility and enabling Digital integration platform.

The roadmap will take into consideration the following factors:

- Life cycle management of the integration/API products
- Application roadmap & strategy
- Cloud roadmap & strategy
- Operations support model
- Digital strategy, etc.

Experience is paramount when the very responsibility for the success of MES interoperability is dependent on the contractors' resources and architectural recommendation and the implemented platform. Creating and executing processes to ensure success is key to the successful execution on the MES modular roadmap.

TCS has created and executes against the following delivery process blueprint.

Graphic: TCS Integration Delivery Process Blueprint

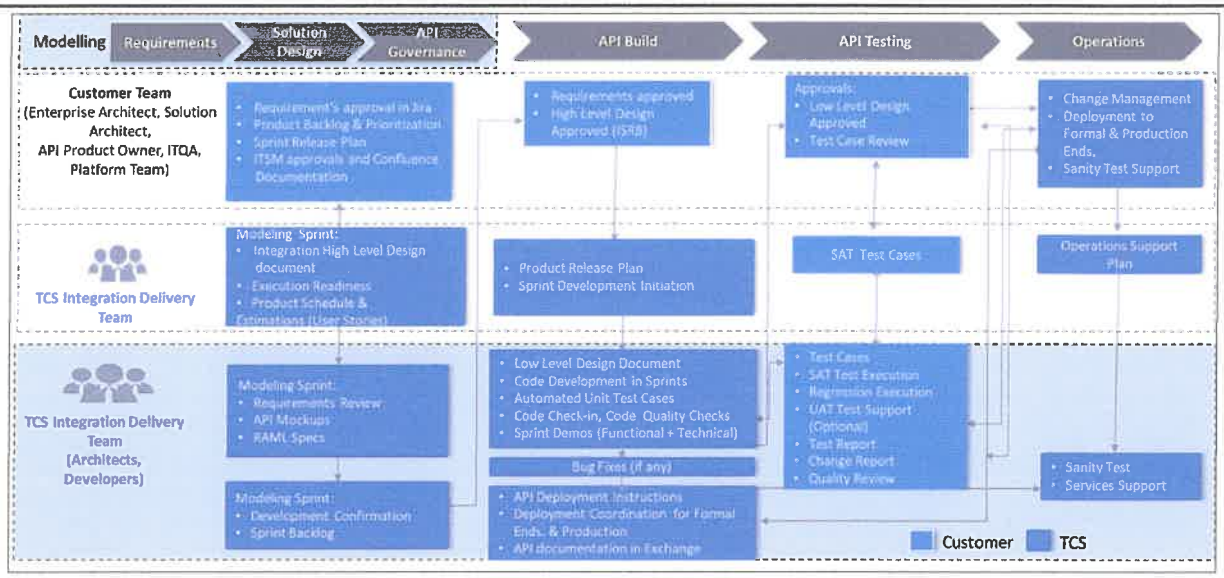

Figure 8:TCS Integration Delivery Process Blueprint

4.2.41	**If applicable, how does your Medicaid Enterprise solution improve access to end users, such as a user's data or access to additional services?** The adoption of the FHIR standard driven by the CMS Interoperability and Patient Access final rule is accelerating the adoption across the healthcare continuum of systems and data. As an HL7 Gold member, TCS contributes to the evolving standards and is early in the adoption cycle. Implementation and compliance with CMS Interoperability and Patient Access final rule is only as good as the data and its accessibility. In this RFI, TCS has recommended various approaches to data management, standardization, interoperability, and democratization of data. Should BMS choose to adopt TCS recommendations, the outcomes of a well architected MES will improve access to end users, such as a user's data or access to additional services. Also, TCS recommends reading a paper entitled, "The Connectivity Conundrum" as published by CAQH, that discusses the coexistence of integration standards and can be found here https://www.caqh.org/sites/default/files/core/The-Connectivity-Conundrum.pdf?token=f8yPDMy8
4.2.42	**How can your Medicaid Enterprise solution help address gaps in health outcomes? Please provide outcomes from other engagements, if applicable.** Data is the core foundation that will allow continuous ongoing measurement of populations, cohorts, measures, utilization of services, variances, evidence-based practices, outcomes and health statuses as we shift from a provider focused, episode-based care delivery system to a longitudinal person-centric, preventative, innovative, costs and quality outcomes-based care delivery system. Furthermore, innovation in value-based care will develop new approaches to ease the burdens placed on providers, reduce inefficiencies in record keeping, enhance analytics, provide real time reporting of

	insights and evaluate disparate payment models and programs, to ensure the delivery of health care services at a cost and quality that holds value. So, what does a value-based patient-provider-payer relationship look like? The truth is, it can actually take on many forms, depending on the level of integration and shared risk between stakeholders. On the lower end of the spectrum, there is the patient centered medical home, pay for performance, and episode of care payment models. With increasing accountability, there will be a subsequent rise in models that incorporate shared savings, shared risk (i.e. Accountable Care Organizations – ACOs), and full risk capitation. A final potential implementation of value-based care goes as far as provider sponsored health plans, though this is often cited as impractical and is usually used as a theoretical example. However, regardless of what value-based model is implemented, the need for real time longitudinal health record information across the care delivery team, to include administrative claims, electronic and digital health, biometrics, genomics and other data sources will be critical in addressing important behavioral and lifestyle drivers of value. These, in turn, will highlight opportunities for improvement in cost, quality and outcomes. For VBP, CMS offers a collection of programs that can be accessed here - https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs To assist in the strategy associated with identifying gaps in care and predicting outcomes, TCS highly recommends reviewing and adopting many of the recommendations as published by the Observational Health Data Sciences and Informatics organization (OHDSI.org). Free access to the Book of OHDSI can be obtained here - https://ohdsi.github.io/TheBookOfOhdsi/

4.2.43	**Describe your experience with payment milestones during the DDI of your Medicaid Enterprise solution. In other DDI projects, were payments tied to deliverables, acceptance criteria, and/or other DDI milestones?** Payment milestones are relatively common for larger multi-year implementation projects. Well-structured, payable milestones can serve the dual purpose of meeting cash flow needs of the performer and as a management tool to verify achievements on the critical path to project success. Failure to achieve milestone and/or technical goals typically force a management analysis and decision. For a Modular MES acquisition strategy, the various modules will have significantly different implementation phases. A TPL or PBM will typically be less than 12 months. A claims and finance system may take 18 months or longer. We respect the need to use payment milestones as help achieve project successes. We do recommend that BMS considers dependencies on external influences that a vendor may have little control. Collaboration from the legacy system vendor, availability, and access to required state stakeholders, access to data, conversion of legacy data and numerous other issues may negatively impact timelines. We have also experienced payment milestones that are staggered by several months rather than shorter time periods. Vendors due not have the ability to not pay the partners, employees, software suppliers, etc. so imposing significant delays in payments will cause financial burdens on your vendors that could negatively impact the overall project. We believe that payment milestones should be specific to the module and project so in many cases, you may end up with a combination of milestone criteria that would include deliverables, acceptance criteria and other milestones of varying significance.
4.2.44	**Do you have a short demonstration of your approach and/or Medicaid Enterprise solution that you would like to present to BMS? If so, please describe the method of presentation for the demonstration and suggestions for who should attend. If BMS wishes to take part in a demonstration, they will reach out to the Respondent for further information.** TCS would welcome the opportunity to present our Health Insurance Administration Platform and complementary digital innovation capabilities or any of the other systems and capabilities as we have identified in response to this RFI. TCS is flexible in the methods of presentation. If possible, an in-person demonstration is preferred. Recommended attendees would be subject to which solutions BMS desires to review and the scope of the demonstration.
4.2.45	**Is there additional information you would like to share with BMS related to the topics addressed in this RFI?** The reality is there have been relatively few Medicaid Enterprise migrations to reference in recent years. TCS' lessons learned and the articulation of critical success factors are derived from numerous implementations of our state Unemployment Insurance and various commercial organizations systems including case management and data warehouses. TCS is compassionate about meeting the needs of the states most underprivileged citizens and highly respect the privilege of assisting BMS in helping to close the disparity of healthcare services for the states most disadvantaged. One key to closing the disparities is improving and enhancing the citizen experience of engaging and acquiring the needed services and care.

	TCS has shared the value of digitizing the MES which includes automated processes, improving access to required information through automated agents, chat BOTS and mobile enablement, to name a few. States are beginning to evaluate and implement Unified Operation Centers leveraging what is referred to as an Omni Channel platform. While not all inclusive, many of these innovations are driven by various communication challenges including: • Limited Self Service options that result in increased calls and agent support demand. • Multiple "entry" points coupled with unique web portals resulting in confusion to stakeholders. • Potential for inaccurate information due to data access, quality and synchronization issues. • Communication from multiple entities which can cause confusion. • Reliance on manual contact tracking and emails for tracking communications. • Separate consumer care portals • Unable to reach support representatives, particularly during peak periods (enrollment, pandemics, natural disasters, etc.) Standardizing on communications and case management technology platforms, introducing knowledge bases so a broader spectrum of agency support personnel can be leveraged for various communications, and the introduction of automation tools including artificial intelligence can greatly enhance the citizen and provider experience supported by BMS. TCS would welcome the opportunity to assess the departments current digital and communications landscape and formulate recommendations that could drive communications efficiencies, reduce costs and improve the citizen and provider experience.

SECTION 5: VENDOR RESPONSE

5.1. Incurring Cost: Neither the State nor any of its employees or officers shall be held liable for any expenses incurred by any vendor responding to this RFI, including but not limited to preparation, delivery, samples, or travel.

5.2. Proposal Format: Vendors should provide responses in the format listed below:

5.2.1. **Title Page:** Indicate the RFI subject, number, Vendor's name, business address, telephone number, fax number, name of contact person, e-mail address, and Vendor signature and date.

5.2.2. **Table of Contents:** Clearly identify the material by section and page number.

5.2.3. **Response Format:** All responses should be limited to the information requested and be submitted in the same order in which it is presented in this RFI. Respondents may choose to respond to as many or as few questions as they wish. For each question, please repeat in bold font the question number and question you are responding to prior to providing your response.

5.2.4. **Response Contents:** In addition to the question responses, Respondents may supply a corporate overview of no more than two pages describing their organization's experience, staffing, ownership, and technical maturity. BMS discourages overly lengthy responses.
Therefore, marketing collateral, manuals, or other materials beyond that sufficient to present a complete and effective response are not desired. While additional data may be presented, material not relevant to this RFI will not be reviewed by BMS.

5.2.5. **Response Reference:** Vendor's response should clearly reference how the information supplied applies to the RFI request. For example, listing the RFI number as a header in the proposal would be considered a clear reference.

5.2.6. **Respondent Contact Information:** Respondents should designate a single point of contact within their response. The State may use this information to request additional information, provide additional RFI materials, and inform respondents of potential future solicitations.

5.2.7. **Response Submission:** All responses must be submitted to the Agency **prior** to the date and time stipulated in the RFI as the opening date. Responses should be submitted by email to crystal.g.hustead@wv.gov, with the subject line "MES Strategic Planning RFI". Submission of responses in a manner other than as described in these instructions will not be accepted.

Request for Information
CRFI BMS2200000001
Medicaid Enterprise System (MES)

SECTION 6: EVALUATION

All responses will be reviewed by BMS. All responses to the RFI and any correspondence relating thereto are public documents and may be shared with CMS, contractors working with BMS to develop its Medicaid Enterprise solution, or other states. It is anticipated that responses will be used to inform the State's strategic plan for its MES implementation.

By signing below, I certify that I have reviewed this Request for Information in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this response for review and consideration on behalf of my organization.

Tata Consultancy Services Limited
(Company)

Ashok Nandakumar , Business Unit Head – US Public Services
(Representative Name, Title)

248-219-0830
(Contact Phone/Fax Number)

15 Dec 2021
(Date)

ADDENDUM ACKNOWLEDGEMENT FORM

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Centralized Request for Information Info Technology

Proc Folder:	964162
Doc Description:	REQUEST FOR INFORMATION-MEDICAID ENTERPRISE SYSTEM (MES)
Proc Type:	Request for Information
Reason for Modification:	ADDENDUM 2 TO CORRECT METHODS OF RESPONDING AND EXTEND THE OPENING DATE

Date Issued	Solicitation Closes	Solicitation No	Version
2022-01-05	2022-01-11 13:30	CRFI 0511 BMS2200000001	3

BID RECEIVING LOCATION
ION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code: VS0000038127
Vendor Name : Tata Consultancy Services
Address :
Street: 379 Thornall Street
City : Edison
State : New Jersey Country :USA Zip: 08837
Principal Contact : Roger Doermann
Vendor Contact Phone: (703) 431-1300 Extension:

FOR INFORMATION CONTACT THE BUYER
Crystal G Hustead (304) 558-2402 crystal.g.hustead@wv.gov

Vendor

Signature X FEIN# 98-0429806 DATE: 1/5/22

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

REQUEST FOR INFORMATION:

THE WEST VIRGINIA PURCHASING DIVISION IS ISSUING THIS REQUEST FOR INFORMATION FOR THE AGENCY, WEST

VIRGINIA DEPARTMENT OF HEALTH AND HUMAN RESOURCES (DHHR), BUREAU FOR MEDICAL SERVICES (BMS), FOR

THE PURPOSE OF GATHERING INFORMATION TO DEVELOP SPECIFICATIONS FOR A MEDICAID ENTERPRISE SYSTEM (MES) MODERNIZATION. INFORMATION PROVIDED WILL ASSIST THE WEST VIRGINIA DEPARTMENT OF HEALTH AND HUMAN RESOURCES IN DEVELOPING SPECIFICATIONS AND WILL ASSIST IN THE PROCUREMENT PROCESS.

QUESTIONS REGARDING THE SOLICITATION MUST BE SUBMITTED IN WRITING TO CRYSTAL.G.HUSTEAD@WV.GOV PRIOR TO THE QUESTION PERIOD DEADLINE CONTAINED IN THE INSTRUCTIONS TO VENDORS SUBMITTINGBIDS

ONLINE RESPONSES FOR THIS SOLICITATION ARE PROHIBITED

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Medicaid Enterprise System (MES) Modular				

Comm Code	Manufacturer	Specification	Model #
93151507			

Extended Description:

Medicaid Enterprise System (MES) Modular

SCHEDULE OF EVENTS

Line	Event

SOLICITATION NUMBER: CRFI BMS2200000001
Addendum Number: 2

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[ ] Modify specifications of product or service being sought
[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet
Correction of error

Other

Description of Modification to Solicitation:

1. To correct section 5.2.7 Response Submission, emailed submission was included by mistake. Responses should be submitted by fax, mail, or drop off in person.

2. To extend the response date to January 1 1, 2022 at 1.•30 PM ET

No other changes

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgement, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

To modifiy section 5.2.7 Response Submission Methods for responding are as follows:

*Fax to 304-558-3970

*Mail or drop off in person to :

2019 Washing Street East

Charleston, WV 25305

Emailed responses are not acceptable

ADDENDUM ACKNOWLEDGEMENT FORM

SOLICITATION NO.: BMS2200000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

X Addendum No. I	Addendum No. 6
X Addendum No. 2	Addendum No. 7
Addendum No. 3	Addendum No. 8
Addendum No. 4	Addendum No. 9
Addendum No. 5	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

TATA CONSULTANCY SERVICES

Company

ASHOK NANDAKUMAR

Authorized Signature

Business Unit Head US Public Services

January 5, 2022

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing. Revised 6/8/2012