



## Software Development

CTIS offers our clients proficient, high-quality software development services. It offers 'end-to-end' services to develop applications and architecture for the enterprise. Our experts combine decades of experience to provide application development, business and data architecture, technical architecture, architecture integration and governance, regulatory compliance, and reporting services that cater to the unique needs of our clients.

### VALUE PROPOSITION

Our software development methodology will better facilitate collaboration among institute participants, particularly doctors and patients. This will ensure the quality of information, improve professional productivity, process streamlining, and organization effectiveness. This, in turn, will improve evidence based research, provide better outcomes and allow endpoints to be reached faster.

Our systems are built on an environment that facilitates information exchange and sharing driven by informatics solutions. With the proper use of infrastructure, architecture and engines that deliver the needed open source and interoperability requirements, these solutions cover regulatory compliance, best practices, and privacy protection. This results in overall capacity building, process control, stakeholder collaboration, and empowerment of the individual. With this said, the product delivered will be improved patient safety and drug efficacy, an increased return on investment and value, and better patient care.

### PROCESS APPROACH

CTIS' process approach consists of adopting incremental and iterative software and systems development processes that were created and institutionalized based on industry best practices from the CMMI and RUP frameworks.

- **Enterprise Architecture:** The Enterprise Architecture tool is one designed to give strategic direction, business and IT alignment, and cost management. It includes an assessment of the existing architecture program while also identifying the areas of improvement.
- **Enterprise Application Development & Integration:** Using the best practices framework such as RUP and CMMI, CTIS provides its project staff with tools, templates, standard operating procedures, guidelines, and clearly-defined processes. Our solutions facilitate a standard and efficient method of delivering IT services and products to clients.
- **Quality Assurance & Testing:** Software testing begins with understanding the importance of the application and the needs of stakeholders. A thorough analysis of the production environment and functional and non-functional requirements is performed with an emphasis on system availability, performance, safety issues, and regulatory compliance.

**Systems & Process Reengineering:** As a CMMI Level 3 organization, CTIS utilizes the industry standard RUP and tools to deliver business and systems analysis support and consulting services that are tailored to our clients' needs. We deliver cost-effective solutions without compromising quality service. CTIS proficiency expands to address various areas,

including as-is analysis, needs assessment, solution proposals, prototype solutions, transition and implementation and continuous process improvement.

**BUSINESS AGILITY THROUGH SERVICE-ORIENTED ARCHITECTURE**

CTIS's solutions are based on a Service-Oriented Architecture (SOA). SOA allows us to provide methods for systems development and integration where systems group functionality around business processes and packaged as interoperable services. CTIS promotes the adoption of an iterative and risk-based approach for SOA. In doing so, organizations can more quickly realize software benefits upon initial integration.

**ABOUT CTIS, INC.**

CTIS has over 20 years of proven history in providing total informatics solutions to the health sector. CTIS provides innovative, appropriate, timely, and quality information technology solutions to health systems, health professionals, research organizations, and payors to support their goals in serving patients. To address this need, CTIS' informatics solutions converge health sciences, information technology, process reengineering, total quality management, and organizational effectiveness in order to optimize the capture, storage, and use of information in health and biomedical sciences.

**Key benefits to SOA:**

- More flexible and responsive IT infrastructure platform
- Faster adaptation to changing processes and needs
- Reduction of IT and maintenance costs

CTIS is also building needed personal information solutions that serve patient directly in dealing with their healthcare providers. CTIS' leadership is at the forefront of national discussions that are defining the next generation of biomedical, clinical research, translational research, personalized medicine, comparative effectiveness research, performance driven healthcare, health disparities, elder care, and chronic disease management programs that will not only provide better patient care, but also meet the cost management goals of the health industry.

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INTEGRATION	BUSINESS PROCESS REENGINEERING	ENTERPRISE ARCHITECTURE
<ul style="list-style-type: none"> <li>• Systems Integration                             <ul style="list-style-type: none"> <li>ESB Implementation</li> <li>B2B Implementation</li> </ul> </li> <li>• Application Integration                             <ul style="list-style-type: none"> <li>Web Services</li> <li>Workflow Integration</li> </ul> </li> <li>• Data Integration                             <ul style="list-style-type: none"> <li>Business Intelligence</li> <li>Data Modeling</li> <li>Ontology Mapping</li> <li>Federated Data Access Services</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Clinical Trials Business Process Reengineering</li> <li>• Clinical Trials Management Support</li> <li>• Clinical Trials Data Management and Data Security</li> <li>• Electronic Data Support</li> </ul>	<ul style="list-style-type: none"> <li>• SOA Services</li> <li>• Solution Architecture</li> <li>• Best Practices</li> <li>• Digital Signature</li> <li>• Business Agility</li> <li>• Integration and Interoperability</li> <li>• Enterprise Security</li> </ul>