

Texas Department of Information Resources (DIR): Web Development Services

Contract Number: DIR-SDD-1444



Web Development and Management Services

- Website Design/Development
- Website Hosting
- Domain Name System (DNS) Management
- Email Hosting
- Web Content Management
- Future Customization
- Maintenance, Training, Support
- Data Conversion and Cleansing Services

Service Descriptions

Website Design/Development

Website Design and Development is a MAT core-competency. Our staff of development personnel is versed in a variety of languages including .NET, Java, and Flash. Over the course of several contracts and training sessions, we have refined and streamlined our design and development process. This process includes many components of Agile methodology, which stresses constant collaboration with the customer and test-driven development to produce a quality website or application that meets customer needs. MAT will design and develop customer websites based on the Scrum project management approach. This approach includes the use of a product backlog and iteration backlogs to represent features, the use of iterations to produce the software, and regular communication with the customer to ensure the project is meeting the actual business needs.

PRODUCT BACKLOG

A product backlog is a list of features, functionality, and system behaviors the customer expects to be developed into the web application. A customer representative, called the 'product owner', will be responsible for listing the required features into the product backlog. The features in this list may be very high-level, with the intent of further discussion and breakdown, or may be as low-level and detailed as the product owner needs. MAT expects the product backlog to fluctuate on a regular basis, as the needs of the system are further discovered, developed, and demonstrated to the customer.

ITERATION BACKLOGS

In order to produce software from the features held in the product backlog, the product owner will work with the Team MAT development team to determine what can be completed within the next iteration. The development team is responsible for determining whether or not a feature can be completed within an iteration. If the development team does not believe the feature can be completed in the iteration, the product owner and development team will discuss the feature further and possibly break it down into smaller units of work that can be completed in the iteration. The features that have been agreed upon by the product owner and

development team make up the iteration backlog. In order to prevent down-time for the development team, it is common practice to over-estimate the capacity of the team for a single iteration. This provides a small buffer of additional work in case they complete a significant amount of work more quickly than expected. Any work that is not completed during an iteration should be put back into the product backlog and re-prioritized into the correct iteration backlog.

The product owner is expected to have an estimate of which features will be in the next iteration backlog, before the current iteration is complete. This will facilitate the development team's continual focus on the development of the system. The product owner may create iteration backlogs as far ahead of time as needed, and may change the features of an iteration backlog up to the point that an iteration is started with the specific backlog. The format of the feature and functionality descriptions will be determined via collaboration of the product owner and development team.

ITERATIONS

The purpose of the iteration is to provide a dedicated time period in which the development team can work on the features of the current iteration backlog. The development team is expected to produce software that can be demonstrated at the end of the iteration, based on the features agreed upon for the iteration backlog.

During the iteration, it is expected that the iteration backlog will not be modified by the product owner. In the majority of cases, only the development team should be allowed to modify the current iteration backlog – typically due to unforeseen issues. However, this should not happen frequently, and when it does, the product owner will be notified as soon as possible.

The product owner does have the option of abnormally terminating the iteration in order to reprioritize and create a new iteration backlog to work from. In such cases, the development team will likely need to back code out of the system in order to not leave unfinished work and potential defects in the system.

In order to provide an environment in which the product owner has ample opportunity to change the direction and focus of the system, including the option to change existing features and functionality, the iterations should be kept to a relatively short period of time. It is common for iterations to be set at two weeks for the outset of a project. During the life of a project, the length of iterations may evolve based on the development team and product owner's comfort level and needs. It is not recommended that iterations be stretched for more than one month, or be compressed to less than one week, though. The iteration length should not be changed frequently, as each change will cause the estimates of development capacity to be less accurate while the development team adjusts to the new iteration length.

END OF ITERATION DEMONSTRATIONS AND ITERATION PLANNING

At the end of each iteration the development team is responsible for delivering a demonstration of the software that has been developed up to that point. Additionally, the customer may request a working copy of the software at the end of any successful iteration.

Once the demonstration and/or delivery of an iteration has occurred, the next iteration should be planned based on the expected iteration backlog.

AUTOMATED SYSTEM TESTING

In order to provide a continuously functional system, MAT will provide a validation specialist as part of the development team who is responsible for writing and maintaining a suite of automated test scripts using a tool such as the HP Mercury test suite, Watir/Watin, Selenium, or other such automated test system. The validation specialist will work directly with the development team and product owner to define and execute tests on a regular basis.

Additionally, the development staff will be responsible for writing automated unit tests to cover the code that is produced for the system. These unit tests will be maintained throughout the life of the web application and will be run on a regular basis to ensure proper function of existing system code.

The automated test suite will cover ninety to one hundred percent of the functional application, as needed. Any deviation below ninety percent will either be corrected in a reasonable period and/or discussed with the product owner to ensure the system continues functioning at an optimal level.

As a means of automated regression testing, the developer's unit tests and the validation specialist's automated test scripts will be executed regularly. This is done to ensure that existing functionality has not been broken. If existing functionality has been broken, it will be immediately addressed by the development team and corrected.

The execution results of the test engineer's automated scripts will be provided at the end of each iteration, for review. The execution results of the developer's unit tests can be provided at the end of each iteration, upon request. Additionally, a request for either execution results may be made at any time during an iteration, and the results will be delivered within a reasonable time period.

CUSTOMER ACCEPTANCE TESTING

It is reasonable to expect that not all functionality can be tested through an automation script. Non-functional points, such as usability and user experience, still require human interaction testing. For such testing, the test engineer will work directly with the product owner to determine what is not capable of being automated, and may provide written test scripts that can be followed, as needed.

Additionally, it is expected that the product owner will provide a reasonable level of acceptance testing, including human interaction testing, prior to the system or an iterations modifications

to the system are put into production. The customer reserves the right to forego any / all customer acceptance testing, and will assume all responsibility for making this decision, including any potential issues that arise as a result.

Website Hosting

MAT's web hosting solution features a dedicated server session, leveraging VMware ESX on HP physical host hardware and configured for maximum security and efficiency. Though each web host can be custom configured for the Agency's unique requirements, standard configuration includes: Microsoft Windows Server 2003 S Operating System, single processor, 1 GB RAM, 32 GB Disc Storage. Standard 110v / 20 amp and redundant power and cooling also included.

MAT's web hosting primary data center is a Tier 4, SAS 70 Type II facility with the highest levels of security, redundancy and reliability supported by our highly skilled on-site technical staff to provide an effective solution for hosting applications and include:

- Military-grade security with 24 x 7 x 365 guards, Biometric & Card Key security for access control and Video Surveillance and Recording;
- Reinforced structure including concrete bollards, steel lined walls, bulletproof glass, and barbedwire fencing on the perimeter of the property;
- Fully redundant power including multiple municipal feeds, three diesel powered generators and redundant UPS;
- Redundant switching and router configuration within each component;
- Multiple providers of metropolitan area networks (MANs) and Internet access;
- 100% availability guarantee and bandwidth on demand from 1 Mbps to 1 Gbps;
- Intrusion Detection Systems to detect / prevent unauthorized electronic access;
- Data storage and back-up solutions;
- Trained, certified staff to provide custom applications development, network/desktop support, onsite or remote monitoring and management of critical applications; and
- Experienced Professional Services staff to assist with security, business continuity, disaster recovery, regulatory requirements and control objectives.

Additionally, each server session includes a single Network Interface Card (NIC) residing on the internal LAN segment with up to 8 forward-facing public IP addresses. This service provides a firewall with state-full packet inspection (including SSL packets) and port redirection, basic security rules settings, VPN access, basic IDS features, HTTP caching, and usage reporting.

Web hosting package pricing includes Microsoft Windows Server 2003 SP Operating System, single processor, 1 GB RAM, 32 GB Disc Storage. Standard 110v / 20 amp and redundant power and cooling also included. 1 MB of bandwidth is included, however, bandwidth can be purchased on a per Mb basis burstable to 100 Mb. Includes eight (8) IP addresses, six (6) of

which are usable addresses. Monitoring and management of bandwidth via the Customer Web Portal ensures correct “sizing” of Customer bandwidth requirements and rapid scalability should you require higher throughput. Redundancy can be configured in multiple strategies including clustering a second server session, or replication to our offsite disaster recovery data center facility. Our proposed solution includes monitoring and management from our Network Operations Command Center (NOCC) with certified Level II and Level III technicians who monitor device (server, firewall, router, switch) health, operating systems and provide application level support, via agents installed on the device. Service Level Agreements (SLA’s) ensure continuous operation of key information assets. We will provide ongoing management of the routine tasks required to maintain operational status of servers routers and firewalls. We will troubleshoot, load service packs and apply patches as required. Using management agents and/or SPI’s (Smart Plug Ins), abnormality alerts detect and notify the NOCC where upon our technicians will open a service request ticket and notify the customer (as appropriate) of the incident based on established escalation procedures.

Domain Name System (DNS) Management

DNS Management and associated service requirements; domain registration, registry changes, renewals, transfers and web-related service requirements will be provided by our expert Level II/III staff in the NOCC and provided on a Time & Materials service request as required.

Email Hosting

MAT will provide E-Mail hosting for Microsoft Exchange using the dedicated server session similarly described for website hosting. Standard email server configuration includes: Microsoft Windows Server 2003 SP Operating System, single processor, 1 GB RAM, 32 GB Disc Storage. Standard 110v / 20 amp and redundant power and cooling also included. Exchange licensing is provided from our capability to sell Exchange Client Access License (CAL) leveraging our Service Provider License Agreement (SPLA) pricing option. Exchange clustering for redundancy and/or load balancing can be configured per each organizations unique requirements for an additional cost.

SecureMail Anti-SPAM provides real-time protection from the latest email threats through the use of cutting edge filtering technology and 24/7/365 monitoring. With antivirus included, SecureMail Email Filtering Service guarantees 99.99% availability, has the lowest false positive rating in the industry and is trusted by thousands of businesses worldwide. This service also provides mail queuing for fourteen business days in the event of an Exchange mail disruption.

Web Content Management (WCM)

Once the website is delivered, MAT understands offers various methods of maintaining site content. Each method differs in amount of customer involvement, time, and cost. Often, MAT will include Web Content Management in a maintenance agreement, which guarantees a

certain number of dedicated development hours. When a customer chooses this option, MAT will define the content that can be modified under the contract. Then a customer simply contacts MAT with the change request and it is implemented. Though this option does not require significant development work, MAT recommends the customer include a custom Content Management System in their website; this option is discussed below.

MAT recommends a customer includes a custom-built Content Management System in their website. A custom built Content Management System gives the Customer the freedom to update website content from their location. The system is developed with role-based permissions, so content is only modified by the appropriate personnel. Though this option requires an up-front development effort, it is usually the most best long-term financial option. If the customer decides to include a Content Management System in their site, MAT's Business Analysts will determine which content the customer needs to modify regularly. This may include items such as new web pages, automatic emails, media, web page text, or language selection. MAT will develop the Content Management System in parallel with the website development.

MAT uses the same approach when either modifying an existing website or converting to a new website. We set up a test or development environment that mirrors the production environment. All existing databases, automatic scripting processes and user interfaces are shadowed in the development environment. Any modifications to the existing database or user interface are then completed in this development environment. We then import and reformat, if needed, any existing data that will be used in the new website or new module.

Once the new development or modifications are completed, we have a functioning development website that is loaded with production data. This new website then becomes a testing environment used for user acceptance. We typically define a testing or pilot group that will be given access to the new functionality for testing and user feedback. Any additional changes that come out of the user acceptance testing are then completed, re-tested, and given the final approval. At this point, the testing environment can also be used as a training region if the target users require detailed training on the new functionality. We have found that this works very well, giving the users a testing website and total freedom to test out all the new functionality before using it in a production environment.

Once we have received final sign-off of the new website or modifications, we determine the optimal time to bring down the system and promote the new functionality to the production environment. This usually takes place over a weekend or at night depending on the customer's preference and when their business experiences the most down time. The system downtime is usually not longer than 1 hour in our previous experiences.

Website Training, Maintenance and Support

WEBSITE USER TRAINING

MAT's pool of instructors, technical writers, and engineers have the experience and knowledge to produce a comprehensive and state-of-the-art training package that will surpass your customers' needs. MAT's instructors have years of experience offering world-wide training in a variety of disciplines. We offer training in a variety of mediums so customers have the flexibility to choose the most effective method for their staff.

TRAINING LOCATIONS

Our instructors will be centrally located in Temple, Texas and will travel wherever necessary for training at the requesting Customer's site. During a course, trainers will offer both classroom and over-the-shoulder assistance to ensure users are comfortable operating in their new environment. These trainers can also assist with data conversion if required.

TRAIN-THE-TRAINER

MAT will develop and conduct training sessions at our headquarters in Temple, Texas. We have extensive experience with conducting train-the-trainer courses and can provide references if requested. Our team will train and certify instructors and provide training material and lesson plans upon successful completion of the course.

COMPUTER-BASED TRAINING

MAT will develop and provide custom computer-based training for the developed web applications. This training may be combined with other options for a more comprehensive learning solution or may be implemented as the sole learning solution.

MAINTENANCE

Team MAT offers maintenance services on all of our solutions. Typically, a maintenance agreement provides support, bug fixes, customizations, and product enhancements. A maintenance agreement will be tailored to each customer's needs and specifications.

SUPPORT

Every Trouble Ticket submitted to the MAT Help Desk will be evaluated and organized by severity level. All Trouble Tickets will begin in Tier One, which evaluates the Trouble Ticket and performs basic corrective functions. The issue will be escalated based on time spent correcting the issue, and issue's severity level. An issue resulting in total system failure will be immediately escalated. Response times will be determined in the Service Level Agreement established at the beginning of this service.

MAT's Help Desk has the capability to provide on-site support to any county requiring these services. On-site support response time will be dictated in the Service Level Agreement. The response time will depend on severity of the issue and the county's location.

Additional Services

DATA CONVERSION

A crucial component of a web application is the data that drives it. Team MAT has extensive experience in converting customer's existing data to new and enhanced applications. To accomplish this, Team MAT will develop and implement conversion scripts, which map where the old data will populate the new database. Once the data is converted, Team MAT will test the system to ensure full functionality.

DATA CLEANSING

In order to conduct data conversion, MAT assumes the data is 'clean,' meaning it is in a normalized form. MAT offers data cleansing services to assist customers with preparing for a conversion. During data cleansing, Database Administrators analyze and map legacy data to the new database. They manually correct any obvious deficiencies. Then they run re-conversion scripts, which will store deficient and redundant data in an error log. MAT will work with the customer to analyze and remediate any data in the error log. This includes duplicate records and permutations of free text fields.

Pricing

Service	Customer Price
1. Website Design/Development	
SCRUM Master (Hourly rate)	\$68.36 - \$111.35
Database Architect (Hourly rate)	\$49.81 - \$64.50
Senior Web Architect (Hourly rate)	\$65.51 - \$93.77
Junior Web Programmer (Hourly rate)	\$73.40
User Experience Designer (Hourly rate)	\$46.88 - \$68.64
Validation Specialist (Hourly rate)	\$53.16 - \$73.25
Tech Writer (Hourly rate)	\$54.57
Business Analyst (Hourly rate)	\$46.88 - \$71.19
Configuration Management Technician (Hourly rate)	\$31.14 - \$54.10
2. Website Hosting	
Virtual Server Hosting w/Operating System	\$ 296.54
Security Server Basic (Firewall)	\$ 296.54
Internet Bandwidth (Price per MB)	\$ 177.92
Daily Back up Services (Price per 50GB)	\$ 296.54

3. Domain Name System (DNS) Management	
DNS Management; domain registry, transfers, renewals and web accessibility: Services performed on a Time & Materials basis as required.	N/A
4. Email Hosting	
Virtual Server Hosting w/Operating System	\$ 296.54
Security Server Basic (Firewall)	\$ 296.54
Internet Bandwidth (Price per MB)	\$ 176.48
Daily Back up Services (Price per 50GB)	\$ 296.54
Hosted Exchange Enterprise Single Access License (per user)	N/C
Anti-SPAM Email filtering (per user)	N/C
<i>(Software products may be included in this category only)</i>	
7. Web Content Management	
Project Management (Hourly rate)	\$103.53 - 145.41
Application Development (Hourly rate)	\$70.96 - \$118.66
Systems Analyst (Hourly rate)	\$75.61 - \$123.31
Business Analyst (Hourly rate)	\$75.61 - 120.98
8. Future Customization	
SCRUM Master (Hourly rate)	\$68.36 - \$111.35
Database Architect (Hourly rate)	\$49.81 - \$64.50
Senior Web Architect (Hourly rate)	\$65.51 - \$93.77
Junior Web Programmer (Hourly rate)	\$73.40
User Experience Designer (Hourly rate)	\$46.88 - \$68.64
Validation Specialist (Hourly rate)	\$53.16 - \$73.25
Tech Writer (Hourly rate)	\$54.57
Business Analyst (Hourly rate)	\$46.88 - \$71.19
Configuration Management Technician (Hourly rate)	\$31.14 - \$54.10
9. Maintenance, Training, Support	
Tier 1 Maintenance (hourly rate)	\$ 84.30
Tier 2 Maintenance (hourly rate)	\$ 105.38

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Computer-Based Training and Training Material Development Rates:		
Senior Web Architect (Hourly rate)	\$65.51 - \$93.77	
Tech Writer (Hourly rate)	\$ 54.57	*
Business Analyst (Hourly rate)	\$46.88 - \$71.19	*
Training Material Printing Costs (per 25 pages)	\$ 13.00	
Training Instructor - customer or MAT site (hourly rate)	\$65.51 - \$93.77	
Training hardware (per computer per week)	\$ 90.50	
MAT Facility Usage Fee for on-site training (per 40 hour week)	\$ 905.00	
11. Data Conversion and Cleansing Services		
Database Architect (Hourly rate)	\$49.81 - \$94.44	
Senior Web Architect (Hourly rate)	\$68.36 - \$93.76	
Junior Web Programmer (Hourly rate)	\$ 73.40	*

***Denotes a Federal labor rate, not allowed to discount.*

Quotes and Purchase Orders

In order to obtain quotes and purchase orders, please contact MAT through the website, www.mclaneat.com, by submitting the "Contact Us" form.

Warranty and Return Policies

Warranties and return policies will be in accordance with Appendix A and as outlined in each individual contract.

Contact McLane Advanced Technologies

To find out more information, or to order please contact McLane Advanced Technologies:

Lanette Vela, Contracts Manager
254.771.6447
matcontracts@mclaneat.com

You can also visit the State of Texas DIR website to order and learn more.