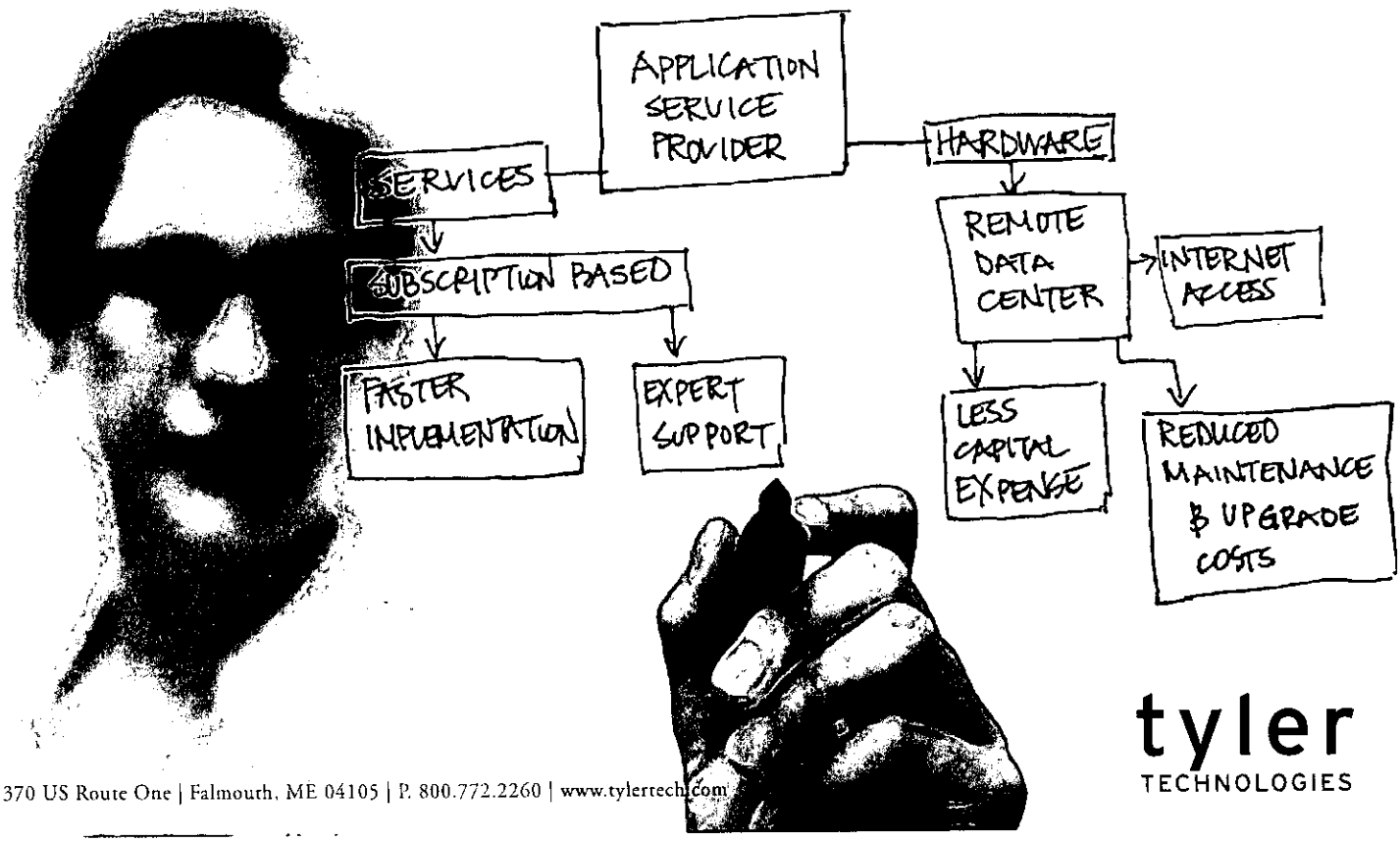
An Introduction to Tyler's Application Service Provider and the MUNIS Software Solution

Overview of ASP

Application Service Provider, or *ASP*, is not a new concept. In short, an ASP solution allows organizations to utilize software that is hosted and administered by a third party at a remote data center—typically over an Internet connection—on a subscription rather than a license basis. This connection is used to transmit data between the client workstation and the application or database servers. According to Gartner, a leading IT research firm, the annual cost to own and manage software applications can be up to four time the cost of the initial purchase. ASP providers offer varying degrees of services, including application and database administration, all server hardware and operating systems, and integration support. Hardware and technical expertise provided by an ASP is spread over multiple clients, and often provides a higher level of quality that can be cost-justified by any one client.

Sometimes referred to as *Software-as-a-Service* (SaaS), this purely Web-based subscription service model is unique and powerful in it's ability to meet a variety of end-user needs. For instance, clients using the SaaS service experience benefits such as shortened implementation periods, and cost savings from off-site IT services. In fact, the overall lowered cost of ownership sets the ASP, or SaaS, solution widely apart from traditional client-managed operations. The typical organization's cost-of-business overhead to run, maintain, and upgrade its own software and hardware is eliminated—thus enabling the organization to meet their application needs with minimal associated operating and capital expenditures. The result: each ASP client enjoys all the service and functional benefits of a self-administered organization, due to the large investment made by the ASP—but at a fraction of the cost.



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TECHNOLOGIES

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CLIENT CENTERED

Tyler's MUNIS ASP offering is unlike any of the previous scenarios. It's a full-service ASP, meaning we host, administer, and support all MUNIS applications. True to our full-service commitment, Tyler doesn't rely on sub-contractors; we have invested over $1M in our Data Center and have staffed it with experienced personnel dedicated solely to ASP operations and the MUNIS solution.

The MUNIS ASP Data Center is a client-centric service, currently hosting multiple clients on various release versions. Each client's MUNIS database is unique, meaning they are not tied to any other ASP client. As a result, Tyler's MUNIS ASP Data Center currently is host to thousands of individual users.

DATA CENTER EQUIPMENT

The MUNIS ASP Data Center is operated under a *continuous improvement* model whereby the hardware, software, and technical infrastructure are constantly being reviewed and optimized for performance and stability. New client acquisition, utilization, and advancements in technology all influence changes in the Data Center configuration, which is currently equipped with the following:

Server: IBM P550

Storage Sub System: IBM SHARK—Enterprise Storage Server

Tape: Digital Linear Tape Library
Magstar Tape Subsystem

UPS: Liebert Nfinity

Diesel Generator: Caterpillar Olympian

Bandwidth: Multiple Ts lines from multiple ISPs

Routers: Cisco 7200

Firewall: Nokia hardware using CheckPoint OS

VPN: Nokia CryptoCluster and Nortel Contivity

OPERATIONAL TASKS

Tyler's MUNIS ASP Operations team is dedicated solely to our ASP and MUNIS Online services. The team performs a number of ongoing proactive steps to ensure best performance and stability—many of which are unique to our configuration, and highly technical. The Operations team also performs routine maintenance and administration to the system. The tasks include, but are not limited to:

- Adding and changing user IDs
- Adding and changing printers
- Backing up and restoring data
- Migrating data to test environment
- Updating operating system, database, and application software
- Configuring and maintaining integration to third-party products
- Monitoring Internet and VPN traffic
- ASP operations client support
- Operating system and database performance tuning

DATA SECURITY

Within the MUNIS Data Center, Tyler utilizes some of the highest security measures available. All data traffic runs through a Virtual Private Network (VPN) tunnel between the MUNIS Data Center and each of our clients' networks. Two VPN devices manage this VPN tunnel. Our engineers install one at each client location, while the other is in place at the MUNIS Data Center. All traffic between the two devices is encrypted using 3DES cryptographic standards—the same level of data encryption used by banks and credit card processing companies. The Nokia VPN incorporates a built-in Certification Authority (CA), which allows compliance with IETF standards for the safe creation and distribution of security policy to other gateways and remote clients.

Tyler's Responses to Typical ASP Questions

Q. How does your data center utilize multiple ISPs to prevent telecommunications outages in the event your primary ISP goes down?

A. *Tyler's MUNIS Data Center not only utilizes multiple ISPs, but also has its bandwidth drawn from different hub locations. Multiple ISPs and multiple hub sources mitigate the risk of a MUNIS Data Center Internet outage.*

Q. What security measures do you have in place?

A. *The MUNIS ASP Data Center is equipped with battery back-ups in the event of a power loss. During a sustained outage a diesel generator dedicated solely to the ASP Data Center will supply power. Additionally, Tyler stores all back-up tapes at an off-site fireproof storage facility, and Tyler's MUNIS Data Center is always locked, requiring key card access only by authorized personnel.*

Q. Do you rely on any sub-contractors or third parties to administer the ASP application and database servers?

A. *No, Tyler recognizes the importance and value of having experienced staff support and administer the MUNIS Data Center environment.*

Q. Does your company own and have complete control of the data center that hosts the ASP servers?

A. *Yes, Tyler does not rely on hosting companies or other third parties to provide the MUNIS Data Center. Tyler has invested over $1M in its MUNIS Data Center and has a capacity model in place with planned expansion as required.*

Q. Redundancy and fault tolerance are important to us. Please list all single points of failure that remain in your ASP solution. Include all hardware, network, and Internet components.

A. *Tyler's MUNIS Data Center has eliminated virtually every single point of failure detected. Redundant systems include: ISPs, DASD, processor, power supply, electrical power, staff, and facilities.*

Q. Does Tyler provide a Service Level Agreement (SLA)?

A. *Yes, Tyler provides a comprehensive SLA that includes operational performance and technical support response times.*

Current ASP Clients

Tyler historically has added approximately ten new clients each year to the MUNIS ASP Data Center. Our current clients number in excess of eighty, and range in size from just a few to well over 1,000 users. Current ASP clients include: City of Richmond City of Richmond, CA • Town of Greenwich, CT • Village of Schaumburg, IL • Louisianna Department of Education • York, ME Water District • Fort Worth ISD, TX • and Beaufort County, NC