



Microsoft Software-plus-Services and Windows Azure™ ISV Solution Success Story



Total Computer Group Uses Windows Azure Platform to Lower Law Enforcement Costs and Accelerate Growth Opportunities

Overview

ISV Solution Provider: Total Computer Group

Software-plus-Services Platform of

Choice: Microsoft Corporation

Case Study Highlights

- Total Computer helps law enforcement agencies maximize taxpayer dollars with a cloud-based version of Total Enforcement powered by Windows Azure
- Total Computer Group migrates their solution onto the Windows Azure platform in only three weeks
- The new Software-plus-Services offering for Total Enforcement removes growth barriers and opens new market segments
- Microsoft products and technologies provide a strong foundation and are a core component for Total Computer Group's continued success

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~ Al Perez, Chief Software Architect, Total Computer Group

Police, Detective, and Public Safety work generates massive amounts of paperwork, data, files, and communications on a daily basis. Routine law enforcement activities such as issuing a ticket, filing a theft report, or investigating an accident scene set off a chain of processes and procedures that typically require manual data input, case files and reports created, photos taken, and many other labor intensive activities. At the same time, calls for immediate law enforcement assistance via 911 require very tight information sharing between Central Dispatch and Police units in the field. Arming police officers with accurate and relevant information while heading into dangerous situations is an absolutely critical requirement as lives can be at stake.

A highly functioning law enforcement entity requires powerful technology solutions. Technology can save law enforcement organizations enormous amounts of time,

money, and resources. Technology can also improve the effectiveness of investigations, response times, community outreach, and communications.

In 2004, the Total Computer Group set out to improve the way law enforcement works by building the most comprehensive and innovative law enforcement solution in the market.

Total Enforcement: The Most Comprehensive and Innovative Law Enforcement Solution Available

Only a team with a background in law enforcement could build a system as comprehensive and powerful as Total Computer Group's flagship offering, Total Enforcement. Al Perez, Total Computer's Chief Software Architect, used to be a police officer himself, and notes *"there is a stark lack of efficiency and best practices in how*





law enforcement generally operates. Total Enforcement is the most efficient and feature-rich application of its kind for this industry. The mobile functionality is unlike anything today, and the street is where police work usually happens.”

Total Enforcement is a state-of-the-art solution unprecedented in the industry, offering the most complete functionality available in a single solution. Total Enforcement works to connect law enforcement officers, at the station or in the field, with real time access to critical information, from diverse sources, using any device, to crime solving data from any public source.

Total Enforcement consists of over twenty modules offering specific functionality in the areas of Computer Aided Dispatch, Records Management, Events, Alarms, Case Management, Arrests, Warrants, Accidents, and Citations. Total Enforcement provides law enforcement entities with a number of compelling benefits, including:

- **Increased Officer and Public Safety:** The safety of officers and citizens is paramount and is virtually unquantifiable. Total Enforcement enables officers to access real time information, sometimes in dangerous field situations, that can mean life and death for the officers or for citizens caught in the middle of an incident.
- **Increases Productivity:** Total Enforcement’s records management modules enables officers to collect data, create citations and other documents, and obtain approvals quickly. When officers enter data while they are in the field, that data is immediately available to everyone else. This is especially important when participating in Fusion Centers or other collaborative arrangements with other jurisdictions.

- **Reduces Data Entry:** One-to-many data entry ensures that information entered in one module is accessed in other modules so that the same information does not have to be added repeatedly, saving time and ensuring consistency.
- **Eliminates Errors:** Because the system validates all data, the agency’s files are more complete and correct
- **Provides Enhanced Crime and Statistical Analysis Reporting:** Total Enforcement’s report module enables officers to create reports with just a few keystrokes. Officers can print, export, and save those reports.

The compelling value proposition and return on investment of Total Enforcement has made the solution a fast-seller among law enforcement agencies of any size. Customers rave about the solution and enjoy immediate benefits upon implementing Total Enforcement.

“The officers love the idea of being able to enter case reports while on the road and have remarked how they find no difference in speed when comparing the mobile case entry with stationhouse desktop case entry. As an administrator, I am thrilled to see police officers remaining on their beats as opposed to sitting at a desk and typing on a computer. Information is instantly available, in real time, from anywhere the system runs. Especially mobile computers” -**Lt. Eric Johansen, City of Peekskill PD**

Although the value of Total Enforcement is recognized by many law enforcement agencies, many more are simply unable to take advantage of the solution due to tight budgets, outdated existing technology, and lack of resources within the agency. As a result, Total Computer Group was missing out on sales opportunities for reasons beyond their immediate control.

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~ Al Perez, Chief Software Architect, Total Computer Group

Outdated Law Enforcement IT Infrastructure Limits Explosive Growth Potential of Total Enforcement

The Total Computer Group found that the single biggest obstacle to driving new sales of Total Enforcement is the current technology capabilities of law enforcement organizations. “Technology infrastructure is a huge issue at many law enforcement agencies,” commented Al Perez. “That, coupled with the IT knowledge and capabilities of the organization can sometime make for a difficult barrier to overcome.” Several factors contribute to the technology issues facing law enforcement organizations:

- **Outdated IT Infrastructure** - older servers and software and a lack of processes for disaster recovery, storage and back-up, security, and ongoing updates makes for a challenging environment to add mission-critical solutions.
- **Lack of IT Resources and Knowledge**- the number of staff devoted to IT is minimal, with many entities simply assigning a part time person to the task. This, coupled with the difficulties in staying current on technology is a major contributing factor to outdated infrastructure.
- **Scarcity of Capital Budgets for IT Projects**- Law enforcement agencies are faced with many capital projects for new equipment and resources to enhance the effectiveness of their department. The simple reality is the reason IT spending ends up as a lower priority due to the scarcity of resources.

While sales of Total Enforcement have been steadily rising, these IT issues have put a limit on the rate of growth for Total Computer. Many sales opportunities take longer to close or must be delayed until law enforcement entities can upgrade their systems. Total Computer wanted to help

solve this issue, and the innovative organization found an answer to this challenge with the new Microsoft Windows Azure Platform.

The Microsoft Windows Azure Platform Powers Total Enforcement’s Software-plus-Services Approach in the Cloud

Total Computer knew that in order to overcome the IT infrastructure and scarcity of IT capital budget issues facing the industry, they would need to offer their customers an alternative method of implementing the Total Enforcement solution. Current implementations are “on-premise” at the law enforcement organization’s facilities and must utilize existing IT infrastructure.

The Total Computer team analyzed several approaches for using the Internet as an alternative software delivery method to the traditional client/server software delivery approach. In terms of the application itself, Total Computer evaluated two basic approaches:

- **Software-as-a-Service (SaaS) Approach** - software is accessed over the Internet and is utilized within a browser environment. The software application resides remotely on servers. This approach requires constant internet access and is typically used in situations that do not require mobility on the part of the user.
- **Software-plus-Services (S+S) Approach** - this is a hybrid approach where a “smart client” application is initially downloaded via the Internet and runs locally on the user’s computer. The application provides a rich interface and functionality and can still be used even without Internet access. When Internet access is available, the application can upload and download data as required. This approach is ideal when

user mobility is required and/or when more robust features and functionality are needed.

Total Computer chooses the Software-plus-Services approach based on several factors:

- **Mobility Needs** - Total Enforcement is used by police officers in their squad cars all day long. Internet access is not always available but the application must be available at all times. The smart client approach was the best possible solution to handle the intermittent online and offline realities of police work. Even without Internet access the data needed for the job is still available wherever necessary.
- **Rich Functionality and User Experience Requirements** - With this approach, Total Computer was able to deliver a robust application that could take full advantage of the capabilities of a PC, while still reaping the benefits of Internet-delivered software.
- **Most Compelling Value for Customers** - The functional requirements, robust user experience, and “best of both worlds” that the software-plus-services approach provides made it the best approach for Total Computer.

Next, Total Computer evaluated the hosted infrastructure options needed to deliver their software-plus-services application. Providing a hosted infrastructure would eliminate the issue of a law enforcement organization’s lack of a robust IT infrastructure and budget. The company looked at three possible scenarios for hosting their solution:

1. **Self-hosted**- Total Computer would build and manage their own hosted infrastructure environment. This approach would provide the company with the greatest control, but would require a significant amount of resources (staff, data center space, budget) to build and maintain the environment.

2. **Outsource Hosting to a Hosting Partner-**

With this option, a hosting partner sets up and manages the infrastructure environment, and provides ongoing services as needed. The obvious benefits are the lack of resources required since everything is outsourced. The downside of this approach can be costs and continued responsibility for updating the security and ongoing updates of the hosting environment.

3. **Hosted via a Cloud Environment-** Hosting via the cloud involves provisioning the servers, database, and bandwidth resources needed through a cloud computing provider. This approach allows for a pay-as-you-go model and can instantly scale up or down as needed.

Total Computer chose to implement their solution via the Cloud, and more specifically through the Windows Azure Platform. “For us, the cloud approach offers superior benefits for our solution. We can immediately scale up the infrastructure and the cost structure through Azure is the best value available”, noted Al Perez.

For Independent Software Vendors like Total Computer, creating a Software-plus-Services version of their traditional client/server solution is no small task in terms of time, knowledge, and resources. Taking advantage of the feature-rich capabilities of an S+S offering usually requires a developer to build their solution from the ground up. Fortunately, at the same time Total Computer was in the early stages of their planning, Microsoft was announcing the launch of the Windows Azure platform.

The challenging situation facing Total Computer turned out to be tailor made for utilizing the Windows Azure platform. Windows Azure™ is a cloud services operating system that serves as the **development, service hosting and service management environment** for the Windows

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Azure platform. Windows Azure provides developers with on-demand compute and storage to host, scale, and manage web applications on the internet through Microsoft datacenters. Windows Azure consists of a hosted operating system, a hosted database through Microsoft SQL Azure, the AppFabric (see below), and tools for migrating and integrating the application - all at extremely competitive pricing. The Windows Azure platform AppFabric provides secure connectivity as a service to help developers bridge cloud, on-premises, and hosted deployments. You can use AppFabric Service Bus and AppFabric Access Control to build distributed and federated applications as well as services that work across network and organizational boundaries.

Standardization on the Latest Microsoft Technology Makes Migration to Windows Azure a Snap

In 2009, The Total Computer team began planning for the migration to the Azure platform. One of the hallmarks of the Total Enforcement solution is that it is standardized on Microsoft technology. “For us, being standardized on Microsoft technologies provides the most productive and efficient development and deployment platform available”, commented Al Perez. The Total Computer team is committed to remaining current on the latest versions of Microsoft products and uses the most modern development techniques and architectural framework possible. Within the last year, the Total Enforcement solution was refreshed for Windows Server 2008, SQL Server 2008, and .Net Framework 3.51SP1, and the client portion of the application became Windows 7 logo certified. As a result, migration to the Azure platform could not have been easier. “Migration to the Azure platform was seamless. We were able to get Total Enforcement into a complete SaaS offering within three weeks,” indicated Al Perez.

Reaping the Benefits of a Cloud-based Software-plus-Services Solution with Windows Azure

For Total Computer, the value of the Azure platform cannot be overstated. It removes a huge barrier to sales growth by providing a ready-to-go solution for law enforcement customers lacking the IT infrastructure and resources needed for the traditional client/server offering. Azure has also expanded the market for the Total Enforcement solution as smaller law enforcement entities can now afford the solution due to the low upfront costs. In addition to the above, the Azure platform provides a number of compelling benefits for Total Computer and their customers:

- Shorter sales cycle with the S+S solution
- No upfront deployment costs and predictable monthly costs based on the number of users
- Instant provisioning as new customers can be instantly deployed the same day
- Azure infrastructure can instantly scale up to meet customer usage requirements
- Excellent failover and redundancy for 100% uptime of the application
- Highly secure infrastructure that meets the stringent needs of law enforcement
- Removes the need for IT support resources at law enforcement organizations
- The solution is an operating expense item instead of a capital expense

Al Perez sums up the value of the Azure platform for Total Computer: “Without Windows Azure, the time, learning curve, and expenses required to get Total Enforcement into an S+S offering would have greatly slowed our ability to bring the offering to market. Thanks to the Azure platform, we now have a very compelling cloud-based solution that the market is embracing. Without a doubt, we have a competitive advantage due to the Azure platform.”

About Total Computer Group

Our focus at Total is on our clients and their organizational needs. Clients count on Total for complete end-to-end solutions—implementing business-critical technology, watching over networks through managed services, providing expert technical support, outsourcing expert technical consultants, and procuring systems and peripherals through our multitude of strategic partnerships.

Total has been in operation for more than 20 years because we listen to our clients' needs and take steps to satisfy those needs. A prime example is our developing of Total Enforcement™, a Computer Aided Dispatch/Records Management System for law enforcement agencies. Our law enforcement clientele lacked a capable records management solution and turned to us for assistance. Today, Total Enforcement is recognized by Microsoft as one of the top .NET CAD/RMS solutions in the country.

Few companies can match Total Computer Group's combination of business and technological experience. Founded in 1988 as a computer services and maintenance firm, Total has grown to become one of the most respected information technology solution providers and application developers. *Built on integrity, innovation, and impassioned by service*, Total stands ready to meet 21st century challenges for your organization.

For more information, visit www.totalcomputer.com or www.totalenforcement.com.

About the Microsoft Windows Azure Platform

The [Windows Azure platform](#) offers a flexible, familiar environment for developers to create cloud applications and services. With Windows Azure, you can shorten your time to market and adapt as demand for your service grows. Windows Azure offers a platform that is easily implemented alongside your current environment.

- Windows Azure: operating system as an online service
- Microsoft SQL Azure: fully relational database in the cloud
- Windows Azure platform AppFabric: AppFabric Service Bus gives developers the flexibility to choose how their applications communicate, and to address the challenges presented by firewalls, NATs, dynamic IP, and disparate identity systems. AppFabric Access Control enables simple, secure authorization for RESTful web services that federate with a variety of identity providers.

For more information, visit www.microsoft.com/windowsazure

About Microsoft's Software-plus-Services Strategy

When you combine the ever-growing power of devices and the increasing ubiquity of the Web, you come up with a sum that is greater than its parts. Software-plus-Services is that greater sum. It all adds up to a commitment from Microsoft to deliver ever more compelling opportunities and solutions to consumer and business customers—and to our partners.

Microsoft has vibrant businesses on the desktop and in the enterprise, and is making sizable investments in online services and devices. As these four worlds converge, no technology vendor is better positioned to deliver on the vision of Software-plus-Services. Microsoft has multiple ways to monetize the results through the familiar model of software licensing, offering services by subscriptions, leveraging Microsoft's industry-leading advertising platform or the growing form of micro-payments known as Microsoft Points. And, Microsoft has the world's largest and most diverse partner ecosystem, which is committed to its role in our strategy.

For more information visit: <http://www.microsoft.com/softwareplusservices/>

Powering Software-plus-Services Solutions: Microsoft Products Used In This Solution

- Microsoft Windows Azure Platform
- Microsoft Windows Server 2008
- Microsoft SQL Server 2008
- Windows 7 Certified
- Microsoft .NET Framework 3.5
- Microsoft Visual Studio
- Windows Presentation Foundation
- Windows Communication Foundation