

**LEVEL FOUR PERSPECTIVE**

# Towards intelligent monitoring at the ATM

By Martin Macmillan, Director, Level Four

With ATM migrations to Windows largely complete in western Europe, banks and processing institutions are turning their attention to the monitoring and control of ATM networks, one of their biggest challenges today.

Now that the technology platform underpinning most modern ATM networks has changed, deployers are starting to fundamentally rethink their monitoring strategies in order to keep availability and customer satisfaction high. A key driver is the increase in the number of software problems which are plaguing ATM networks, but the move to a multi-vendor hardware environment also brings new challenges.

Increasingly, banks are looking to deploy agent-based solutions, which can monitor ATM devices in greater detail thanks to the CEN/XFS standard. Agent-based solutions can also have a direct interface into the Windows operating system in order to exercise a greater degree of control over software faults.

## How the problem has changed

In a legacy environment based on OS/2 and a stable application that seldom changed, the approach of host-based monitoring was acceptable and worked well. Host message traffic was analysed in order to 'second guess' what was happening at the ATM, and this information was used to diagnose faults, monitor cash levels etc. Most deployers measured their ATM uptime as their host availability because it was taken as given that the ATM would be functioning unless there was a hardware fault.

Most modern ATM networks are now based on the Windows operating system running multi-vendor software, connected using TCP/IP. The overall complexity of the software stack has increased dramatically with additional applications running on the terminal, such as software distribution, firewall and anti-virus. Each of these applications has its own release/update cycle (not least the Windows operating system), which causes a high frequency of updates.

Deploying a monitoring strategy to reflect the migration to a Windows/multivendor environment is

essential. The opportunities presented by the advances in both hardware and software technology mean that it is possible to take a much more rigorous approach to the monitoring and control of ATMs, resulting in higher availability and reduced maintenance costs.

The industry is moving towards a consensus that the optimal monitoring and control approach requires an agent resident on the ATM, reporting to a central monitoring server. This is completely separate from the transaction processing environment. The sophistication of the agent depends on the package selected, but key factors to consider are:

1. Access to low-level device detail through the CEN/XFS interface. This enables fault data to be reported in a timely fashion, ensuring that the maintenance provider is armed with accurate information regarding the nature of the problem. Remote diagnosis information can be used to minimise the number of trips made to the ATM.
2. Access to the Windows Management Interface (WMI). ATM availability is increasingly being compromised by software rather than hardware issues, due to the complexity of its software stack. This manifests itself in a number of ways, whether through software quality issues, operating system glitches or interoperability of applications. The ability to monitor individual processes on the ATM and reset when necessary gives deployers the control they need to handle this increasingly complex software environment.

## Key pressures affecting ATM deployers

*Time to resolution:* While ideally any fault at an ATM terminal should be highlighted immediately, the reality is that there is often a significant time-lag between the fault occurring and the network operator becoming aware of it – in some cases, hours or even days.

The data currently used by deployers regarding the state of ATMs typically lack granularity, resulting in long delays due to problems routing information to the correct department. The usual response is that engineers are sent to out-of-service ATMs without

**Deployers are starting to fundamentally rethink their monitoring strategies in order to keep availability and customer satisfaction high**

**The industry is moving towards a consensus that the optimal monitoring and control approach requires an agent resident on the ATM**

knowing the nature of the problem, when often all that was required was a simple software restart.

*Customer satisfaction:* ATM downtime negatively impacts brand image, both with respect to individual customers and within the banking industry as a whole. As the main branch touch-point, customers expect 24/7 availability from the ATM and a high quality, stable service. In fact, widespread ATM downtime has warranted national newspaper coverage, causing damage to banks' reputations.

A survey conducted by ICM Research on behalf of Level Four in July 2007 indicated that 38% of UK cardholders would consider moving their main bank account if their bank's ATMs were constantly out of service or unable to dispense cash.

*Loss of interchange revenue:* Network downtime is the worst case scenario for deployers, especially for processors who manage multiple ATM networks; it is costly in terms of lost revenue as well as discouraging customer loyalty. Deployers with significant network downtime not only lose interchange fee revenues, but also face increased interchange charges themselves when existing customers seek alternative ATMs, most likely those of a competitor.

*Multi-vendor networks:* Due to consolidation within the banking industry and the proliferation of open standards brought on by the migration to Windows, ATM deployers face the challenge of capitalising on the potential of multi-vendor networks. Banks must carefully consider their choice of ATM and monitoring software, and third-party service provision. Banks must view each as a separate business case if they are to benefit from this opportunity and avoid the re-emergence of vendor lock-in strategies.

### **Towards intelligent ATM monitoring**

In order to benefit from the intelligence gathered by closer ATM monitoring, financial institutions must follow a few key steps. These can help leverage the investment in new hardware and software by improving efficiency of the network, ensuring high quality of service and driving revenue.

*Deploy a monitoring agent on the ATM:* An intelligent ATM monitoring solution has an agent on each terminal that sends and receives data in real-time to a central monitoring server, independent of the existing financial host. This approach ensures that faults within the ATM network are dealt with quickly and gives the banks a holistic view of the network with improved granularity. A sophisticated agent has

access to the (XFS) layer to query devices and the ability to access operating system data through the Windows Management Interface. An agent-based monitoring approach ensures that any problem at the ATM terminal is identified and dealt with immediately, resulting in lower ATM network downtime. It also means that central host systems can focus on their core functionality of transaction processing.

*Ensure neutral monitoring:* In the open standards world of multi-vendor ATM networks, financial institutions should ensure monitoring is independent of any ATM manufacturer. In order to achieve a true and accurate picture of how their ATM hardware, software and network are performing, banks should consider neutral, independent ATM monitoring. This opens up the possibility of benchmarking and comparing hardware performance (such as overall machine reliability or response times from different types of cash dispenser) in order to make better informed and cost-effective hardware choices for their network.

To reap the true benefits of a multi-vendor strategy, deployers should think about hardware, software and monitoring separately. Only then will deployers gain unbiased performance statistics across their network.

### **Business Intelligence (BI)**

Banks can use the data collected via intelligent monitoring to gain a competitive advantage by implementing best practice at an operational level and making more informed business decisions.

Improved business intelligence through advanced monitoring can be used throughout the bank's operations to:

- Increase overall network uptime
- Manage third party service relationships better
- Make informed purchasing decisions about ATM hardware and software
- Ensure transparency of reporting and strengthen business/IT relationships
- Improve change management processes by deeper knowledge of current systems, and ability to monitor the rollout process closely

In summary, there are strong benefits to be reaped from an intelligent monitoring approach in improved uptime and service quality, and through enhanced reporting. Deployers need to rethink strategies based on their current network infrastructure and needs, rather than rely on a legacy approach which no longer meets the requirements of a modern ATM network. ■

**The data currently used by deployers regarding the state of ATMs typically lack granularity, resulting in long delays**

**Banks can use the data collected via intelligent ATM monitoring to gain a competitive advantage by implementing best practice and making more informed business decisions**