The business success of your ATM network depends on your communications linking - a common knowledge gap for ATM deployers. Have you noticed how high your communications rental and management costs are? What about the opportunity costs of poor service?

Choosing the Best Communication Technology for Your ATM Network

A practical guide to finding the most cost-effective communication technology to link your ATM terminals back to your bank host, to ensure the profitability of your ATM network

Smart Choice of Communication Technology can be Crucial for the Business Performance of Your ATM Network

Many ATM Deployers Have a Knowledge Gap on ATM-to-Bank Linking and its Impact on Business Performance

Fi-Tech has worked with many ATM deployers who often see the communication links between ATMs and bank transaction processors as a real mystery and can have little idea on how to implement and manage them well.

Unlike bank-branch ATMs that have access to existing Local Area Networks (LANs), off-premise ATMs require dedicated communication links at a significant cost. There is an ever-expanding range of options available and the deployer's choice can significantly impact business success.

The unaware ATM deployer can incur management headaches and unnecessary damage to their business from over-priced connections, long service outages and poor customer service, to name a few issues.

Business Success Depends on Seven Key Performance Factors

The profitability of an ATM network depends largely on brand reputation, customer loyalty, and cost-effective management, which are subject to seven key factors:

1. Service Reliability
2. Data Security
3. Fault Restoration
4. Transaction speed
5. Swiftness of deployment
6. Value-added applications
7. Costs

These factors are largely determined by the choice of communications technologies available to deployers. Next, we look at the nine options available for communications linking…

Communications Technologies Available to You

Traditional Dial-Up and Leased Line linking are being complemented or superseded by a whole range of new options to choose from. Selection of communications technology is often complicated by technical variations and subtleties but we have simplified these issues in this guide to give broad-brush advice.

Circuit-Switched versus Always-on Technologies

With “circuit-switched” technologies, communication links must be switched-on or called-up prior to every transaction, whereas “always-on” links are ready for transactions anytime. The big advantage of always-on technology, apart from faster transactions, is that it allows for real-time performance monitoring from both the core and edge of the network, enabling pro-active fault identification and restoration. Dial-Up and Cellular Voice are circuit-switched, whereas the other technologies are always-on. The technologies available to you are listed below…

Dial-Up

This is traditionally the most common and simplest technology for linking off-premise ATMs to a host bank. Dial-up technology uses a traditional telephone company (telco) circuit-switched telephone network, sometimes called the Public Switched Telephone Network (PSTN) which was designed for telephone service (known as Plain Old Telephone Service or POTS). ATMs typically have a built-in dial-up modem that uses the V.22 protocol for transactions and switches to V.90 for connecting to ATM management systems.

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How the Technology Options Impact the Seven Key Performance Factors

Now we look at how the nine communications technologies rate when it comes to the seven ATM network performance factors listed earlier…

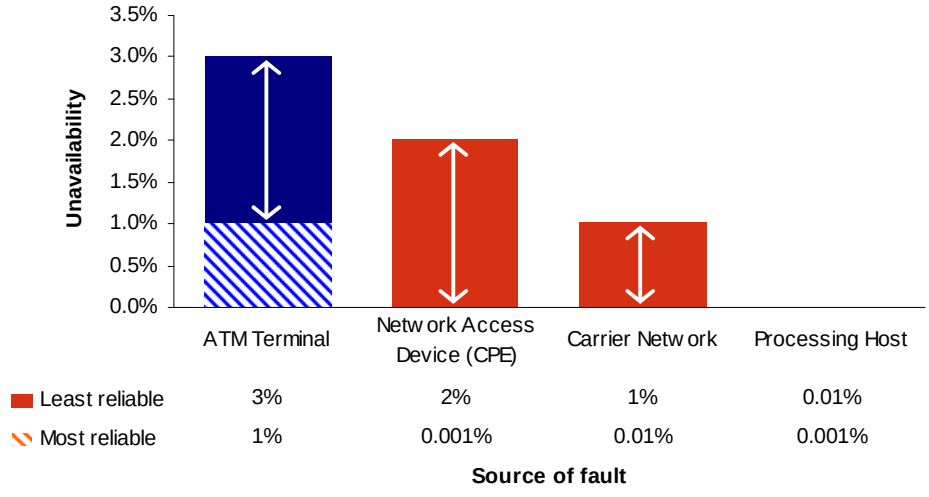
Service Reliability

Business Performance at Stake

Poor reliability drives up help desk and servicing costs and revenue is lost while the ATM is out-of-service…damaging brand reputation and customer loyalty. Transaction errors can incur reconciliation costs to balance the difference between cash dispensed and the deduction from customer accounts. Communication link problems can be responsible for 40% of the out-of-service time. The consequent support costs and lost revenue can amount to an equivalent of 20 transactions or more for an ATM per month.

Sources of ATM Network Outages and Their Impact on Service Availability

ATM service availability depends on: the ATM terminal itself, the host processor, communications linking, and network access device (modem) reliability. An ATM terminal can commonly be out-of-service for up to one day each month (97% availability). The graph below shows comparative availability for the elements of an ATM network:



The arrows show the difference between the least and most reliable cases. Note that the most reliable cases for network access device and communications link are too small to be visible on the graph, and the host unavailability is insignificant alongside unavailability of the other elements.

Network access equipment can be prone to lock-ups potentially taking your ATM offline as often as once a month. For example generic low-cost wireless and TCP/IP modems have been notorious for poor communications error tolerance. Without some form of control these devices can frequently require a manual reset making them unsuitable for off-premise ATMs. It is best to buy network access equipment designed specifically for ATM use from a reliable vendor, proven by reliable operation in the field. If the equipment hasn't been proven in the field, insist on a trial as you won't want to spend time or money remedying unreliable equipment.

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Technology Comparison Summary

One size fits all? Obviously not, as we have seen many performance variables above plus variation between ATM markets, telco infrastructures, and vendor products prevent there being any silver-bullet solution. Below is a simplified rating of communications technology options in relation to the seven key performance factors above. This will help you narrow-down the options for your ATM network:

		Dial	Leased Line	Cellular Voice	TCP/IP	Managed TCP/IP	Cellular	Cellular	Satellite	Carrier WIFI	Dual Networks
1.	**Reliability**	✘	✓	✓ 🧍	✘	✓	-	✓ 🧍	✓	✘	✓
2.	**Deployment**	✘	✘	✓	✘	✘	✓	✓	-	✓	
3.	**Speed**	✘	✓	-	✓	✓	✓	✓	✓	✓	
4.	**Value added applications**	-	✓	-	✓	✓	-	-	✓	✓	
5.	**Maintenance**	✘	✓	✘	✘	✓	✘	✓ 🧍	✓ 🧍	✓ 🧍	
6.	**Security**	✘	✘ 🧍	✘ 🧍	✘	✓ 🧍	✘	✓ 🧍	✘ 🧍	✘ 🧍	
7.	**Monthly Cost**	✓	-	✘	✓	-	✓	✓	✘	✓	

KEY:

✓	Good
-	Moderate
✘	Poor
🧍	Vendor Dependent

Common ATM Scenarios and Suitable Communications Technologies

There are a wide range of possible ATM applications but we have chosen three common examples in the table below to illustrate selection of communications technology:

ATM Application	Important Performance Factors	Best Communications Technologies
Low cost cash dispenser	• Cost • Reliability	• Dial-Up • Cellular (GPRS)
Midrange convenience ATMs	• Cost • Swift deployment • Fault restoration	• Managed Cellular (GPRS) • DSL (TCP/IP)
High volume bank grade ATMs	• Reliability • Value added applications (high bandwidth)	• Managed DSL/Cable (TCP/IP) • Emerging managed 3G solutions

Making the Choice - Getting it Right

This paper has given simplified guidelines for choosing the best communications technologies for ATM networks, however in reality the issues can be more complex. ATM deployers may well need assistance to implement and manage the communications linking for their ATM network. Lack of technology expertise or shortage of time may necessitate outside expertise or consultancy.

Recommendations in this guide are given objectively as Fi-Tech is 'neutral' with no alliance to any communications providers (telcos).

Fi-Tech offers ATM deployers:

-Individual components to build their own network

-Consultancy to enable them to find optimum solutions for themselves

-Complete operational service

Fi-Tech is a leader in design and management of financial transaction networks, reliably linking any brand of ATMs to bank hosts. Our customers include banks, telcos, ATM network service providers, systems integrators, equipment re-sellers, and OEMs.
Find out more at www.Fi-tech.com