



Understanding the ATM Business

Aimee Leeper, Marketing Manager – Triton Systems and ATMGurus

Nearly every adult (with the exception of a few Senators) has used an ATM, probably without much thought about who owns and operates it. Many ATMs belong to Financial Institutions “FI’s” (Banks, Credit Unions, etc.), and these FI’s typically offer the ATM as a convenience for their customer base and even for non-customers. This provides after-hours access to a host of transactions such as cash withdrawals, deposits, and transfers. This is a service that consumers expect, and one that FI’s are compelled to provide to a discerning customer base. In addition to the traditional FI, there are other ATMs, not typically found on bank property. These are the ones you see in airports and hotels, at convenience stores, in shopping malls, etc. Some of these may be placed by a bank for the convenience of their customers, but many are placed by independent businesses that operate ATMs for profit, much in the same way vending companies place soda machines in similar locations.

These two different types of ATM installations can be categorized as ‘on premise’ and ‘off premise’, or as FI branded and independent. On premise ATMs are typically more advanced, multi-function machines that complement an actual bank branch’s capabilities and thus are more expensive hardware purchase. Many FI’s see these machines as an extension of their branch offerings since they provide multiple types of transactions. Off premise machines are designed to typically be deployed by financial institutions and also ISOs (or Independent Sales Organizations) in areas that are limited by space. With a smaller footprint and limited functionality, these units are a cost-effective solution to larger, full-function devices. Although lower in cost, there are a number of innovative technologies present in these “off-premise” units. Advances in security, communications and transaction offerings have helped to make the “white label” or “independent” ATM a common site virtually everywhere we go. Convenience stores, sporting venues, the workplace – ATMs are part of the fabric of our lives.

Using an ATM, customers can access their bank accounts in order to make cash withdrawals (or credit card cash advances) and check their account balances, or even in some cases to purchase other services such as gift cards or cell phone prepaid credit. If the currency being withdrawn from the ATM is different from that which the bank account is denominated in (e.g. withdrawing Japanese Yen from a bank account containing US Dollars), the money will be converted at a wholesale exchange rate. Thus, ATMs often provide the best possible exchange rate for foreign travelers and are heavily used for this purpose.

Everyone can agree that paying fees is something we’d all like to avoid. Folks who tend to plan ahead either withdraw enough cash from their bank during regular business hours, or use the free of charge ATM that their bank offers. Everyone can probably also agree that they are happy to pay a fee for access to cash when advance planning isn’t possible. Imagine traveling by car and breaking down in a remote area. The only mechanic available doesn’t take plastic, and you didn’t bring your checkbook on this trip. Paying a couple of bucks at a nearby ATM to get the cash necessary to get you rolling again is a bargain. Independent ATM operators are the ones who make such conveniences possible for consumers. See Figure 1, a breakdown of ATMIA (Automatic Teller Machine Industry Association) memberships in the U.S., for the make-up of the range of business related to this industry.

Figure
1

Region: ATMIA United States						
Financial Institutions	51	Network Processors	37	Cash Management	30	
ISO	191	Service Provider	84	Security	14	
Manufacturers	72	Maintenance	6	Other	41	
Refurbishment	6	Software Provision	26	Card Issuer	6	
Leasing	0	Consultant	10	Media	4	
					Total	578

As consumers, each of us makes decisions every day regarding convenience. Do I drive my car to work, take mass transit, or a cab? The convenience of a cab, for example, provides an individual with point-to-point personalized service. When we select a taxi as a form of travel, we expect to pay a premium for this, since we are weighing the value of convenience and personalized service over the cost / time of mass transit or walking. Take this a step further, think of the value of a convenience store. How many of you have walked into a convenience store to purchase a pack of gum or a soda? When you make a decision like that, you are taking convenience over cost. A soda at the grocery store or discount store can be purchased for a fraction the cost of one that is sold at a convenience store. Why? You are thirsty NOW. Here is a handy market nearby, well-stocked with a variety of beverages – typically cold, and... Convenient! Consumers make decisions like this when accessing cash as well. Convenience comes at a price, whether for travel, goods or even cash.

How does one operate an ATM for profit? There are many things to consider when answering this question. Costs vary by the type of ATM and by the location. Machines vary widely in price, ranging from \$1500-\$15,000, depending on functionality. Then, there are on-going maintenance fees to keep the unit operational, like ensuring receipt paper supply remains constant and other repairs and maintenance much like a car might have. The communications line, whether cable, phone, or wireless must be paid for monthly. Depending on the location, operators may compensate the store owner for “rental” of the space the unit occupies. Some operators hire armored cars for cash replenishment. Then, there are ever-changing security mandates that compel operators to comply with or be fined. Finally a processing bank must be paid to complete the transaction.

Return on investment in an ATM depends on the usage and traffic. Keep in mind that an ATM located in a nightclub, amusement park, or casino will typically have high transaction counts because customers frequently run out of cash and do not want to leave the premises to find an ATM. An ATM located in the lobby of large apartment or commercial building with lots of tenants or employees typically does well because of convenience. People are creatures of habit and like to combine “trips”. ATMs in convenience stores and fast food restaurants do well because they are destination establishments. People go there for something anyway and the ATM saves them a trip to the bank.

What is the process for completing a transaction? Most ATMs are connected to interbank networks, enabling people to withdraw and deposit money from machines not belonging to the bank where they have their account

or in the country where their accounts are held (enabling cash withdrawals in local currency). Some examples of interbank networks include PULSE, PLUS, Cirrus, Interac, Interswitch, STAR, and LINK.

ATMs rely on authorization of a financial transaction by the card issuer or other authorizing institution via the communications network. This is often performed through an ISO 8583 messaging system.

ATMs typically connect directly to their host or ATM Controller via either ADSL or dial-up modem over a telephone line or directly via a leased line. Leased lines are preferable to POTS lines because they require less time to establish a connection. Leased lines may be comparatively expensive to operate versus a POTS line, meaning less-trafficked machines will usually rely on a dial-up modem. That dilemma may be solved as high-speed Internet VPN connections become more ubiquitous. Common lower-level layer communication protocols used by ATMs to communicate back to the bank include SNA over SDLC, TC500 over Async, X.25, and TCP/IP over Ethernet.

In addition to methods employed for transaction security and secrecy, all communications traffic between the ATM and the Transaction Processor may also be encrypted via methods such as SSL.

How are surcharges determined? The average ATM transaction is \$60. A banking rule states that a cardholder must be able to withdraw a maximum of \$200 when paying a surcharge. The operator may set a limit on how much can be taken out, but it needs to be at least \$200.

The average surcharge is typically set between \$1.75 - \$2.50. The ATM sets the price at what the market will bear. However, some states have specific maximums.

All of the money taken out of an ATM is usually directly deposited back into a checking account each business day from previous day's usage. All funds go through the Federal Reserve ACH (automated clearing house). Funds from surcharge income are direct deposited into the checking account also. It's just like having credit card charges direct deposited into a checking account.

The average ATM in a retail environment (not a bank) does about 6 – 10 transactions per day. Keep in mind that there are ATM owners only doing two or three transactions a day on an ATM, but there are also ATM owners that have ATM machines that complete 30 - 40 transactions per day. Some FAR exceed this in certain circumstances – imagine the action ATMs get at Churchill Downs on Derby Day.

In a scenario with a \$2.00 surcharge, an ATM processing 10 transactions per day would earn at least \$560 per month. At 25 transactions per day it would earn \$1400 per month.

How does the processing work? When an ATM transaction is processed the machine makes contact to begin the authorization process. The ATM machine has a TID (terminal ID number). This is the number that identifies it uniquely within the processing system. This is how the networks allow the transaction to be completed. This TID along with other identifying information lets the cardholder's bank know that the transaction is taking place on that particular ATM.

Now the ATM can connect to the networks through our processing center and then to the cardholder's bank. If there are sufficient funds in the ATM cardholders account for the withdrawal request, the transaction will be completed.

Once transactions are approved the ATM receives the authorization and dispenses the cash requested. The ATM can also be used if someone just wants to check their account balance or transfer funds before or after

withdrawing cash. There is typically no surcharge placed on non-cash withdrawal transactions.

What is an ATM network? If you take your ATM card out of your wallet now, you will see network logos (also known as bugs) on the back:



Notice that the Cirrus bug looks similar to the Master Card logo. That's because it's the ATM processing network of Master Card. The Plus network is the ATM side of Visa. Plus and Cirrus are the National ATM networks. All other logos and bugs are regional networks.

What do ATMs offer besides convenient access to cash? Mike Lee, CEO of ATMIA, is an expert on the socio-economic benefits that ATMs provide to society. Figure 2 on the next page shows an excerpt from his white paper on the subject.

Figure 2

<p style="text-align: center;">Benefits of ATMs to Banks</p> <ul style="list-style-type: none">▪ ATMs reduce queues in banking halls▪ ATMs save banks costs of hiring tellers by automating many “teller” transactions▪ ATMs have become the customer's most popular and most used interaction with the bank and an important Customer Relations Management (CRM) and marketing tool▪ ATMs enable banks to re-design branches into more sophisticated customer services and sales outlets▪ ATMs reject unfit banknotes, helping maintain banknote standards <p style="text-align: center;">Benefits of ATMs to Cardholders</p> <ul style="list-style-type: none">▪ ATMs allow citizens to draw cash outside of banking hours, enabling retail cash purchases around the clock▪ ATMs save cardholders transport costs and time by bringing self-service banking into convenient, non-branch locations nearer to where they live, work and shop▪ ATMs allow for easy payment of utility bills and other functions like topping up air-time on cell/mobile phones▪ ATMs can help cardholders monitor their bank accounts outside of bank hours through balance enquiries▪ ATM debit cards use debit rather than credit teaching financial self-discipline as opposed to credit card payments which can get citizens into debt <p style="text-align: center;">Benefits of ATMs to the Economy</p> <ul style="list-style-type: none">▪ ATMs distribute and recycle the bulk of banknotes in modern economies▪ ATMs are a critical channel in the whole cash and spending cycle underpinning the consumer economy▪ The ATM industry is a huge global market worth about \$15 billion, providing business and jobs worldwide for manufacturers, deployers, cash-in-transit operators and suppliers▪ ATMs are linked in an international system of interlocking networks which make it possible for tourists and other overseas travellers to conveniently and safely draw foreign currency using their domestic bank card▪ ATMs make cross-border remittances possible for millions of the world's migrant workers <p style="text-align: center;">Benefits of ATMs to Retailers</p> <ul style="list-style-type: none">▪ ATMs increase annual sales of retailers situated in proximity to them by up to 25% through a phenomenon known as “impulse buying”▪ ATMs have helped extend shopping hours beyond 9-5 limits <p style="text-align: center;">Benefits of ATMs to Governments</p> <ul style="list-style-type: none">▪ ATMs assist with electronic payroll in both the private and public sectors by supplying employees with a means to draw cash from their salaries deposited directly into their bank accounts▪ ATMs provide a convenient outlet for public benefit and welfare payments <p style="text-align: center;">Benefits of ATMs to Society</p> <ul style="list-style-type: none">▪ Public announcements are increasingly being used at ATMs, for example, police in the UK have used ATMs to advertise their “don't drink and drive” campaigns▪ ATMs have proved a form of free technology training for the public to become more technologically literate in the field of financial self-service - the simplicity of ATM transactions, proven by its worldwide popularity, gives citizens confidence and experience in using important modern self-service technology▪ ATMs can be used to reach the unbanked and underbanked through basic bank accounts for low income groups linked to an ATM card – an important step towards greater financial literacy for the poor▪ Electronic funds transfers may be used for payments to charities to transfer financial aid across borders, money which can then be accessed using payment cards in the recipient's country

What we must understand about this business, just like any other, is that consumers have choices. ATM operators, just like in any other business, will charge for their services based upon a number of factors. Convenience, location, competition: all of these determine the fees ATM operators charge. If a fee is set too high on a machine, transaction volume goes down, and the operator makes an adjustment to get that machine operating profitably. In a free society, the market sets the price for goods and services. Consumers ask for demand-oriented and cost-effective solutions: i.e. more applications, bandwidth, graphics, intelligence, flexibility, and reliability. All of this costs money, and consumers don't expect it to be free.

ATM users spend much of the cash they withdraw right at the establishment where the transaction takes place. This drives the economy. Who doesn't support that?

Sources:

ATMDepot.com - <http://www.atmdepot.com/resources/how-atm-machines-work/>

Wikipedia

ATMMarketplace

ATMIA – Mike Lee - [The Many Socio-Economic Benefits of ATMs](#)

Note also that in conjunction with Tremont Capital, ATMIA has also published a new paper analyzing the business model of the off-branch ATM. For details on how to purchase, visit <http://www.atmia.com/unitedstates/>



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