

The Future of ATMs

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Under the Spotlight

On 19 Mar 2013, photos showing long queues in front of the Automated Teller Machines (ATM) in Cyprus were splashed across print media and online publications. The frantic scenes were repeated at most parts in Cyprus after its government announced a hugely controversial 5.8-billion-euro grab on savings that stung even the smallest of account holders in exchange for a 10-billion-euro sovereign bailout deal. Also in Europe, the Italian banking group UniCredit announced in the middle of March that it has developed a commercial biometric payment system based on Fujitsu PalmSecure palm vein reader technology. Just a year ago, Japan's Ogaki Kyoritsu Bank offered its customers the option of using ATM services using the same type of palm-scanning biometric technology from Fujitsu.

Since its popularity from the late 1970s, the ATM has seen its fair share of limelight from its humble origin as a single function cash dispenser to a sophisticated vending machine that dispenses discount coupons, postage stamps, concert tickets and even gold bars (ATM installed in Abu Dhabi's Emirates Palace Hotel¹ in May 2010). Besides the wide array and sometimes weird medium that the ATM dispenses, the machine has over the years got a lot of bad press as a result of ATM card skimming cases, fake ATMs, mugging and robbery in front of the ATM and even the most bizarre ways of dismantling/dislodging the ATM from its secured position.

But the most critical spotlight on the ATM is its fate considering that mobile banking and electronic payment and transfers have taken off in big ways across various parts of the globe. So, what does the future holds for the ATM?

Controversial Beginning

Before we take a peek into the future, who actually invented the ATM that is used by millions around the world?

According to Inventors.About.Com²; Luther George Simjian patented an earlier prototype of an ATM in 1939 (some 20 patents) and installed the machine in New York City by the City Bank of New York but the machine was removed after six months due to the lack of customer acceptance. According to the website, some experts are of the opinion that James Goodfellow of Scotland holds the earliest patent date of 1966 for a modern ATM while John D White in the US is also often credited with inventing the first free-standing ATM design. In 1967, John Shepherd-Barron invented and installed an ATM in a Barclays Bank in London. A year later, Don Wetzel invented an American made ATM.

However, things are more complicated. ATMmachine.com³ wrote that while the Queen of England said that the inventor is John Shepherd-Barron, John D While has contacted ATMmachine.com and furnished them with copies of patents. Likewise, James Goodfellow of Scotland had also contacted ATMmachine.com and gave his version of the story and copies of patents.

In Jan 2005, the Guardian published an article "Pins and Needles" only to print a correction a few days later to clarify its position on who is the inventor of the ATM. The interested reader can follow the link⁴ under "References" at the end of this article.

As is often the case with inventions, many inventors contributes to the history of an invention and the ATM we use till this day is of no exception.

Bridging the Gap

In the 1970s and 1980s, US and European banks reeling in from high energy prices and high inflation were forced to cut back on their branch network expansion programmes especially in high-street areas where rentals were sky rocketing. During that period, many banks began to promote their phone banking services as an alternative banking channels but as cash was the primary mode of payment during those years; ATMs began to feature strongly in retail banking strategy in most banks.

According to the paper⁵; "It's not just the ATMs: Technology, Firm Strategies, Jobs, and Earnings in Retail Banking" by various authors from the Wharton Financial Institutions Centre; the de-regulations of the US banking industry in the US led to three major developments:

- As a result of de-regulations, banks were allowed to operate beyond state boundaries. This has led to consolidation of the banking industry resulting in 4,000 banks being consolidated from 1987 to 1995.
- Secondly, de-regulation heightened price competition among banks. Coupled with the emergence of new technologies, competition intensified and basic financial services began to resemble commodity products.
- Third, as deregulation broke down barriers between banks and other financial services providers, banks began to offer investment products through their branch networks, often in partnership with mutual fund companies.

With these as backdrops, the ATM evolved quickly as bankers demanded that the machines supported by new technologies offer more than cash dispensing, balance enquiries and payment transfers. With high cost of staff and shareholders' pressure to improve productivity and efficiencies of banks, ATMs were soon rolled out to offer 24X7 services beyond just after-banking hours access to cash. More innovative banks offered simple insurance and personal loans on the ATMs. Yet others offer cheque deposit and ticket dispensing service at their ATMs.

When PC banking (using dial-up modem) became more popular in the early 1990s, some banks worked with ATM vendors to develop touch-screen Self-Service Banking (SSB) terminal as part of their ATM network strategy. SSB lobbies soon became common features either as stand-alone units or located besides branches offering after-hour access to a range of self-service banking options in addition to cash withdrawals.

In 2011, UK customers transacted nearly 2.9 billion times, taking out £191 billion according to the UK Payment Council. The latest available statistics from the Payment Council⁶ showed that ATM transactions grew almost 2% for the first 9 months in 2012 over the same period in 2011. In 2010, the US National ATM Council reported that there were some 425,000 ATMs in the country in 2009. The US Census Bureau⁷ statistics in 2012 showed that there were 5 billion transactions with value totalling US\$0.6 trillion or an average of US\$108 per ATM cash withdrawal in 2009.

Indeed, over a span of nearly 50 years, the ATM has grown to become ever-present in our daily lives.

Future Trends

The ATM Future Trends report⁸ released in early 2012 predicted that with a branch decline of 2.5% per year between 2010 and 2013, ATM usage is projected to increase. The survey report suggested that ATM installation would grow 6% between 2009 and 2015 with cash withdrawal increasing 8% per year through to 2016.

However, other industry observers are projecting the demise of the ATM with the advent of mobile banking and e-payment. Brett King, author of the latest book⁹; "*Bank 3.0: Why banking is no longer somewhere you go, but something you do*"; wrote that "... with somewhere around 4.5 billion people owning a mobile phone; there's a very strong case for pushing financial inclusion through the mobile phone and mobile payments, especially in developing economies where mobile penetration is 5-10 times the penetration of the basic bank account...". The author believes that by 2020, what we consider a bank account will most likely be defined by the mobile phone.

Unlike in the past where rental for ATM space is relatively low at about SGD 1,000 (~USD 800) per month per site in the 1990s (Singapore), this has risen to over SGD 5,000 per month to even SGD 10,000 for sites with high pedestrian traffic. With more off-premise ATMs installed and coupled with high staff cost, many banks have outsourced the field servicing and cash replenishment functions to 3rd party vendors that are supposed to provide lower servicing costs due to economy of scales, efficiencies and specialisation.

In addition, the vulnerability of the ATM magnetic stripe to card cloning/skimming has led authorities around the world to impose more regulations to protect the consumers¹⁰. The installation of anti-skimming devices, surveillance cameras, new card activation procedures, default deactivation of overseas transaction, provision of customer option for withdrawal limit setting, replacement of magnetic-stripe cards with smart-chips, notification by sms/email, etc have all added up to the total cost of providing ATM services to banks' customers.

However, it is not all gloom for the consumers and ATM vendors as some banks are still expanding their ATM network as part of their overall retail banking strategies with consumers as their key focus. Many banks are now offering a range of ATM in their banking premises from the single-purpose cash dispenser (for faster turn-around) to full-service ATM terminals that offer personalised services based on customers' past transaction patterns and data analytics. Yet others are experimenting with cardless cash withdrawals using the customers' mobile phones with Near Field Communication (NFC) technology. Banks with net deposit positions are introducing cash recycling ATMs that accept deposits and withdrawals so as to reduce cash management and servicing costs.

Only earlier this year, Chase and PNC¹¹ in the United States have both been launching ATMs that churn out exact change to the dollar, allowing customers to withdraw denominations as low as USD \$1 and \$5.

Although the ATM could have reached its pinnacle, they are not expected to disappear completely anytime soon as many individuals, households and small businesses still choose to live on cash even in developed countries like Japan. Yes, society will continue to evolve with the emergence of newer technologies but the end of the ATM is still many years down the road. A recent survey of over 2,300 adults by ATM Marketplace¹² seems to confirm this view.

References:

¹ <http://www.telegraph.co.uk/news/worldnews/middleeast/7720491/The-ATM-that-dispenses-gold-bars.html>

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⁵ *The Wharton Financial Institutions Centre*: <http://fic.wharton.upenn.edu/fic/papers/00/0031.pdf>

⁶ *The UK Payment Council*: http://www.paymentscouncil.org.uk/files/payments_council/statistical_publications/statistical_release_non_uk_cards_q3_2012.pdf

⁷ US Census Bureau: http://www.census.gov/compendia/statab/cats/banking_finance_insurance.html

⁸ ATM Future Trends Report: <http://www.atmmarketplace.com>

⁹ Bank 3.0: Why banking is no longer somewhere you go, but something you do":
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¹⁰ ATM Skimming: Bank Body reassures customers of security:
<http://www.stasiareport.com/premium/money/story/bank-body-reassures-customers-security-20130325>

¹¹ Money CNN: <http://money.cnn.com/2013/01/17/pf/atm-bills/index.html>

¹² Harris Poll: <http://www.atmmarketplace.com/article/205615/Will-m-payments-replace-cash-Harris-poll-gives-mixed-answer>

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