



# The dawn of DIGITAL BANKING

For many, the cash dispenser was the first tangible sign of digital change in retail banking. Nearly 50 years later, BERNARDO BÁTIZ-LAZO asks what its invention can teach us about financial innovation today.

**T**he deployment of the first cash machines, in Britain and Sweden in 1967, was a pivotal moment for modern self-service technology and its omnichannel aspirations. But uncertainty surrounds the identity of the originator of this technology.

A quick internet search is likely to credit one of four figures: Luther Simjian, James Goodfellow, Don Wetzel or John Shepherd-Barron.

#### WHO INVENTED THE ATM?

Simjian's association with cash dispensers stems from his ownership of more than 200 patents related to the applications of photography to different uses and devices. One of these was an early automated lobby machine, the Bankmatic, which accepted cheques, bills and coins and issued a photograph as a receipt. These patents and the only deployment of this machine date to events between 1959 and 1961. While an unfortunate typographical error wrongly recorded 1939 as the date of this invention, Simjian's ingenuity did have an impact; his invention was quoted as "prior art device" throughout the patent records of cash machines and later on, of automated teller machines (ATM).

Meanwhile Goodfellow owes his fame to his role as engineer in the team that devised the Chubb cash machine and claims ownership of the personal identification number (PIN) system. Yet, like Simjian, his contribution had little impact beyond references in the patent record. As IBM's

own PIN solution and machine became popular, the Chubb machine failed to develop widespread acceptance. Banks deployed the IBM machines throughout the 1970s and early 1980s, while other market leaders such as NCR and Diebold built upon its cash dispenser system.

Thirdly, Donal Wetzel designed the Docuteller machine (1968) that entered service at Chemical Bank in New York City (1969) and was patented (1973). Wetzel developed his machine after visiting Europe and seeing several similar devices in operation. It is thus hard to defend Wetzel's idea as a novelty. But to his credit, his drawings marked the first time that a full-bodied cash machine was portrayed within the patent record.

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Then we have Shepherd-Barron's story, which asserts that Barclays rushed to sign him after he got his inspiration while taking a bath one Saturday. This is the most fragile version of events as there is very little evidence to support his claims (other than this story being perpetrated verbatim throughout the Internet and the press since the late 1990s).

One lonely inventor in a garage (or a bath) does not appropriately describe the process of technological change in retail banking, however. Based on 10 years of research into the history of the ATM, I would instead propose that bankers have played a very active role in financial innovation – a role that is typically ignored by common wisdom, beliefs and misconceptions conveyed via the Internet.

#### AN EVOLVING PROCESS

Regardless of whether it is a cash machine or an ATM, we are talking about an industry-specific, complex technology that took between 10 to 20 years after its introduction in 1967 to become mainstream. This period from inception to relative stability involved the ongoing development and introduction of new applications and solutions. For instance, early devices already required advanced engineering to ensure that their electronics could withstand changing weather conditions and that the correct number of wafer-thin banknotes were delivered to the account-holder. Today we continue to improve ATM design and access by adding cash recycling, accepting coins, video conferencing and biometrics.

In 1967, two British devices (Barclays Bank De La Rue and Westminster Bank-Chubb) and one Swedish (Swedish savings Banks-Asea Metior) were put to work within weeks of each other. The deployment of a fourth device (from Speytec, Midland Bank and Burroughs) was delayed until 1969 as a result of a combination of security concerns, production capacity and having missed the opportunity to present it as a novelty.

In each case, it was bankers' concerns with rising labour costs that drove the search for a solution. Moreover, bankers (certainly British clearing banks) continued to discuss developments while engineers were largely unaware of competing machines. All this took place at a time when self-service devices such as candy dispensers and tokens in petrol stations were booming. Finding a similar solution for retail banking was not much different – and engineers in my own fieldwork said as much.

#### OPEN SECRET

More to the point, the invention was no secret, at least in Britain, as has been made evident by a series of articles in the press. As early as October 1965 – almost two years before the deployment at Barclay's Enfield branch – both *The Times* (9 October) and the *Financial Times* (11 October) broke the news that banks were in the process of developing "automatic machines [that will be] giving cash at any time". Both news items promised that the machines would be ready in 18 months' time in Britain. Neither of them mentioned developments in Sweden. Only the *Financial Times* followed up the story

of the machines "developed for installation in the walls of banks" by describing and specifically naming De La Rue in March 1967 and, more importantly, by showing a picture of the Chubb fascia side-by-side with that of the De La Rue in May of 1967.

In other words, the general public had seen the cash machine at least a month before the 27 June 1967 launch of the De La Rue in Barclays's Enfield branch. This was due not only to reports in the broadsheets but also to the distribution of brochures and verbal information at the branches. Retail banking customers had to be taught how to operate the new devices, and had to apply in advance for either activation vouchers or plastic punched cards.

#### A COORDINATED EFFORT

Documented evidence renders little credibility to the view that the invention of the cash machine resulted from the ingenuity of a single man working secretly in his garage. Surviving evidence instead suggests a coordinated effort from within the industry to create both the concept and develop the device that set the parameters of today's ATMs.

Cash machines originated as an 'inside out' development by incumbents as opposed to an 'outside in' effort by an engineer working at a new or potential entrant. Moreover, the cash machine and its evolution into the ATM results from efforts by a network of actors comprised mainly by generations of bankers, engineers and the customers that used them.

The ATM has a special place in history because its deployment and success formed the basis for the 'pipelines' and 'rails' that have enabled customers to bank through other channels. The fact that it is poised to be at the centre of self-service branches and is pivotal to the implementation of omnichannel approaches shows that it is just as pervasive – and important – in banking innovation today. 

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