

October 2015

| Year | Up to 1799 |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 th Century | In Venice bills of exchange were developed as a legal device to allow international trade without the need to carry gold |
| 14 th Century | First known reference to bills of exchange in English law as a means to carry funds abroad |
| 17 th Century | Bills of exchange were being used for domestic as well as international payments. One of the earliest handwritten cheques known still to be in existence was drawn on Messrs Morris and Clayton, scriveners and bankers based in the City of London, and dated 16 February 1659. It was for £400 (about £43,000 today) made payable to a Mr Delboe and signed by Nicholas Vanacker. |
| 1694 | At the very first meeting of the Court of the Bank of England on 27 June 1694, it was been allowed customers to draw notes on the Bank up to the extent of their deposits. |
| 1727 | The Royal Bank of Scotland invented the overdraft, one of the most important banking innovations. The bank allowed William Hog, a merchant, to take £1,000 - the equivalent of £63,664 today - more out of his account than he had in it. |
| 1717 | The Bank of England pioneered the use of printed forms, the first of which were produced in 1717 at Grocers' Hall, London. The printed slips had scrollwork at the left-hand edge which could be cut through, leaving part on the cheque and part on the counterfoil – the real "check" – which is how the cheque got its name. |
| 1770 | Daily cheque clearing started. Clerks from each bank met at the Five Bells tavern in Lombard Street to exchange their cheques |
| 1782 | Tax imposed on all cheques made out to order – with some exceptions e.g. The Navy and the Army, and cheques made out to bearer |

| Year | 1800 to 1900 |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1871 | Western Union introduce money transfer Western Union introduce money transfer Western Union introduce money transfer Still Money Relation Bergen Could CARD Output Nyther Form & Education Bergen Image: Still Money Relation Bergen Image: Still Money Relation Bergen Image: Still Money Image: Still Money |
| 1880 | <image/> <image/> <text><text><text><text><text><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text></text></text> |
| 1887 | In his utopian novel "Looking Backward", Edward Bellamy described the concept of using a card for purchases. Bellany used the term "credit card" 11 times in this novel although this referred to a card for spending a citizen's dividend rather than borrowing |
| 1890s | Western Union provided services to Europe, North Africa, North and South America and Asia |

| Year | 1900 to 1949 |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1914 | The US Western Union provided metal cards nicknamed "metal money" giving free deferred payment privileges Credit Card 151 Na, M. S. Murchberg |
| 1920 | Australia of the information of a characterization of the information of the info |
| 1928 | AKRON CHARGAPLATE STORES WERLING PLATE STORES We Stopping - Lie Your Charge-Plates trademarked by the Farrington Manufacturing Company were made of sheet metal. These were embossed with the customer's city state and shall be returned upon the request of any one of the above members. PLEASE STRING PLATE INF F. N. BELLINGER ASS-CRESTHOOD AVE AKRON OLIO B |

1946 In Spain, remittances resulting from funds returned to their home country by migrants amounted to the 21% of all of its current account income

1946



Charge-It, the first bank card, was introduced by the Brooklyn banker Mr John Biggins. When a customer used it for a purchase, the bill was forwarded to Biggins' bank. The bank reimbursed the merchant and obtained payment from the customer. Purchases could only be made locally, and Charg-It cardholders had to have an account at Biggins' bank.

| Year | The 1950s |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1950 | Frank McNamara founded Diners Club, which was the first company to offer a payment card that could be used in 27 restaurants in New York |
| 1951 | Donald McCullough (after a trip to the US) launched Finders Services; the first UK charge card |
| 1951 | When customers of New York's Franklin National Bank submitted an application for a loan they were screened for credit. Approved customers were given a card they could use to make retail purchases. |
| 1958 | American Express introduced a paper charge card |
| 1958 | All WARKED BOARDAR Store Arrow State Store Arrow Store Store Arrow State Store Arrow State Store Arrow State Store Arrow State Store Arrow Store Store Arrow |
| 1959 | American Express cards switched to a plastic version |

| Year | The 1960s |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1962 | Diners Club becomes the first major charge card company in Britain following the merger of Finders Services and Credit Card facilities. |
| 1963 | American Express is launched in the UK with an annual fee of £3 12s (£49 in 2005) and a required income of £2,000 (£27,250 in 2005). The card is usable in 3,000 UK outlets and 83,000 overseas outlets. The only Bank of England constraint is a £75 limit on a single item for overseas transactions |
| 1966 | Barclays introduced the first UK credit card |
| 1967 | BARCLAYS BARCLAYS BARK BARCLAYS BARK ENFIELD TOWN BRANCH IN EARCHINE WAS INSTALLED HERE ON 27 JUNE 1967 INTER WORLD'S FIRST INFERT ON THE WORLD'S FIRST WAS INSTALLED HERE ON 27 JUNE 1967 INFERT ON INFERT ON INFORMULATION |
| 1969 | UK domestic cheque guarantee scheme is established. |

6

Source: Polymath Consulting 2015

| Year | 1970 - 1975 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Early 1970s | First prepaid products appeared for use by students for transit and on campus |
| 1970 | Dr. Kunitaka Arimura of Japan filed the first and only patent on the smart card concept |
| 1971 | Stamp duty on cheques abolished on 1 st February 1971 just before currency decimalisation. |
| 1972 | NatWest, Midland, Lloyds & RBS join together to issue the Access credit card under the Joint Credit Card Company (JCCC). |
| 1972 | Lloyds Bank 'Cashpoint' is the first on-line verified ATM using plastic cards with a magnetic bid |
| 1974 | Consumer Credit Act (Section 75) provides protection to consumers buying goods costing between £30 and £10,000 (£100 and £30,000 in 2005) on their credit card: if the product turns out to be sub-standard, or fails to be delivered, the cardholder can claim compensation from the card-issuing bank. The Act (Section 84) also limits customer liability to no more than £50 if cards are stolen, and used by someone else. |
| 1974 | Roland Moreno of France filed the original patent for the IC card, later dubbed the "smart card" |

| Year | 1975 - 1980 | |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1977 | 1977 Company Barclaycard is born | |
| 1977 | Consumer Credit Act comes into force on July 1st 1977 Under Section 75 of the Consumer Credit Act, the credit of contract or misrepresentation by the company. The Seattle National Deal | |
| 1978 | Bank RESOURCES \$30,000,000 DEPARTMENTS Savings True Book Credit | and |
| 1979 | Visa improved upon the traditional manual imprint machines the first credit card machine with the introduction of the "swiper structure of the structure | ber", |
| | 8 | |

| Year | 1980 - 1985 |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1980s | The UK moves to 'duality', i.e. banks begin to issue both Visa and Access cards. Subsequently, the Access consortium begins to break-up, and disappears as a brand as MasterCard gains recognition in the UK. This move brings world-wide acceptance to UK-issued cards. |
| Early-Mid 1980s | Early/mid 80s saw the introduction of electronic point of sale terminals. |
| 1983 | MasterCard were the first to introduce a laser hologram to their cards to combat counterfeiting |
| 1984 | Most Visa cards around the world feature a dove hologram, designed by Kurt Roald originally for Visa Travellers cheques |
| 1984 | The smart card reached a milestone when the French Postal and Telecommunications services (PTT) successfully tested ATM bank cards with chips. Within two years, the use of smart cards proliferated throughout the world. |
| 1984 | First debit cards under a nationwide system were more generally issued initially by Landmark using ATMs for access |
| 1984 | First online shop made by Mrs Jane Snowball when she used a television and a controller to purchase groceries |

| Year | 1985 - 1990 |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1985/86 | LINK cash machine network established (33 members including Abbey National, Nationwide, Co-Operative Bank, Girobank etc), essentially enabled by the 1986 Building Societies Act. |
| 1986 | Matrix cash machine network established (A&L, Anglia, Bradford & Bingley, Bristol & West, Leeds, National & Provincial, Woolwich etc) |
| 1987 | DELTA Barclays bank becomes the first to issue a debit card in the UK – the Visa Delta Card under the Connect brand in June |
| 1987 | Four bank cash machine network established (Barclays, Lloyds, RBS, BoS) |
| 1988 | Switch debit card launched by Midland, NatWest and RBS with the first Switch transaction occurring in October 1988. |
| 1988 | Visa test the world's first multi-function chip card, the SuperSmart card, in Japan. |
| 1989 | £100 and £250 UK cheque guarantee limits introduced. |
| 1989 | MINT cash machine network established (Midland, NatWest, TSB, Clydesdale, Northern Bank) |
| 1989 | LINK and Matrix cash machine networks merge |
| Late 1980s | First prepaid phone cards appeared |

| Year | 1990 - 1995 |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1990 | France introduces chip and PIN based upon France-only B0' standard. (for French domestic use only) |
| 1990 | Cashback emerges as a means of acquiring cash (7m transactions in 1990). |
| 1990 | Mondex invented by National Westminster |
| 1992 | MONDEX UCCURONIC CASH CONTROL CASH MasterCard launch the Maestro brand for its international debit card. MasterCard launch the Maestro brand for its international debit card. MasterCard launch the Maestro brand for its international MasterCard launch the Maestro brand |
| 1993 | A J BELL Mondex launched Mondex launched |
| 1993 | Dr. David Chaum, the head of cryptography in CWI, the Dutch national research center, developed a software solution – eCash technology for working with digital cash. ECash became the ground of DigiCash, the first world's electronic payment system |
| Mid 1990s | First closed-loop prepaid gift cards appeared |
| 1994 | Europay, MasterCard, and Visa (EMV) published joint specifications for global microchip-based bank cards (smart cards). |
| 1994 | The first online purchase was carried out in the United States. The same year the first domestic chip card of "Golden Crown" system appeared in Russia |
| 1995 | UK debit card volumes exceed credit card volumes for the first time. |
| 1995 | Over 3 million digital mobile phone subscribers worldwide begin initiating and billing calls with smart cards. |

| Year | 1996 - 2000 | |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1996 | Visa Electron launched | Symmitank I Midt Norge |
| 1996 | Over 1.5 mi Marta Olyr | Ilion VISACash stored value cards were issued at the price of the store of the stor |
| 1997 | UK chip trials in Northampto 535 terminals installed in 46 | n and Dunfermline ran between October 1997, with over 117,000 cards issued, 3 outlets, and 14 ATMs. |
| 1997 | Concession of the second secon | Solo debit card scheme launched by the Switch card scheme |
| 1997 | | First internet banking service introduces by Nationwide Building Society |
| 1997 | | en Coca Cola introduced two vending machines in Finland ake a mobile purchase via a text message |
| 1998 | UK Debit card transactions f | irst outnumbered the use of cheques |
| 1998 | | first sale of digital content as a download to mobile phones was made possible when the first nloadable commercial ringtones were released by the Finnish wireless operator Radiolinja. |
| 1998 | | Pal began as a mobile payment company with wireless transactions on Palm Pilots, but soon ched focus to online payments when it found a strong customer base on eBay. |
| 1999 | | Internet card issuers (eg, Egg, Smile, Marbles) join the market place. |
| 1999 | | Philippines launched the first commercial mobile payments systems on the platforms provided he country's two large mobile operators: Globe and Smart. |

| Year | 2000 - 2005 |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2000 | The association of the 12 largest manufacturers of smart cards, special software and credit associations announced about the creation of the first universal electronic wallet |
| 2001 | Debit card expenditure exceeds credit card expenditure for the first time. |
| 2001 | More than half of UK spending is on plastic |
| 2002 | Chip and PIN cards announced in the UK |
| 2003 | In 2003, Chip and Pin trials were held in Northampton. The new payment method allowed transactions to become a great deal more secure, without compromising on the speed with which customers could make a payment. |
| 2003 | Chip-and-pin cards began to be issued throughout the UK. These debit and credit cards contained a microchip which was used to store data on the card. It was hoped the system would reduce card fraud because the embedded chip stores information more securely than the old magnetic strips on cards. Customers enter a four-digit Pin in to a keypad to authorise any payment rather than write their signature on a receipt. |
| 2004 | Card expenditure exceeds cash for the first time |
| 2005 | First ever general purpose prepaid card in the UK issued by APS |

| Year | 2006 - 2010 |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2006 | MasterCard Worldwide became a publicly traded company |
| 2007 | First contactless payment takes place |
| 2007 | A mobile phone with built-in contactless payment card technology (and Oyster card functionality for travel) piloted in London |
| 2007 | Western Union announced partnership with GSMA to develop mobile money transfer |
| 2007 | Kenya's largest mobile carrier Safaricom, owned by Vodafone, formalized a process which allowed Kenya's rural migrants to send their earnings from Nairobi to back home in the countryside. M-Pesa service in Kenya allowed people to send and receive cash through mobile phones, thus replacing banks in ordinary people's lives. |
| 2008 | Faster Payments Service introduced for online, phone and standing orders |
| 2009 | Bitcoin version 0.1 is released and the first transaction takes place |
| 2010 | India and China between them account for around a quarter of world-wide remittances receiving some US\$106 billion |

| Year | 2011 and beyond |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2011 | Starbucks started to accept mobile payments as an opportunity to reach those who don't always carry cash. In 2011 they went nationwide with their acceptation of mobile payments |
| 2012 | Contactless payments introduced on London buses. |
| 2012 | Mobile payments usage hits US\$163.1 billion |
| 2012 | Contactless payment limit in UK increased to £20 |
| 2012 | Visa pushed the London Olympics as the coming of age of contactless payments. Visa postulate that the London 2012 Olympic and Paralympic Games offered a unique opportunity to demonstrate the value and potential of contactless payments to our partners and members from around the world |
| 2013 | Total plastic card spending amounted to £532 billion from 10.9 billion transactions |
| 2013 | Alipay.com Alipay (from alibaba.com, the Chinese e-commerce company) had a payment turnover of US\$150 billion on its mobile payment solution dwarfing PayPal'sUS\$27 billion |
| 2014 | In April the total number of card payments amounted to 977 million totalling £46.7 billion |
| 2014 | Apple Pay launched in the US (and in the UK in 2014) |
| 2015 | Contactless payment limit in UK raised to £30 |
| 2020 | The number of debit card payments is expected to reach 12.5 billion |
| 2022 | The combined total of payments in the UK is expected to almost double from 9.9 billion in 2012 to 17.3 billion |



David Parker <u>davidparker@polymathconsulting.com</u> 07712 079 307

www.polymathconsulting.com