

AI BASED DISCOURS FOR BANKING INDUSTRY

ABSTRACT:

Today traditional banking services, based on lending and deposit- taking operations, are only part of banking activities. Due to the emergence of a knowledge- based economy and society as information and communication technology advanced, banking services have undergone profound changes during the past decades. In order to improve the quality of customer service delivery and reduce transaction cost, banks have invested to a great extent in ICT and have adopted ICT networks for delivering a wide range of banking products and services. Banks all over the world have embraced innovative banking technologies and e- banking services in recent years. In this context, the paper aims to provide an overview of the electronic banking service highlighting various aspects of e-banking. Although e-banking offers many advantages both to corporate and individual clients, electronic banking is not without certain challenges and issues in terms of security and interest of customers.

KEY WORDS:

banking sector, e-banking, online banking, mobile banking, PC banking, issues in e-banking.

JEL CLASSIFICATIONS: G21.

INTRODUCTION:

The banking industry is being reshaped by globalization, competition and innovation and customer needs. Due to the emergence of a knowledge-based economy and society as information and communication technology (ICT) advanced, banking services have undergone profound changes during the last period.

According to Wisdom (2012) ICT, the most important factor in the future development of banking, enables banks to create sophisticated products, to have better market infrastructure and to reach geographically distant and diversified markets. Furthermore, consumers' banking needs and demands have changed significantly over

the past three decade. They require today more personalised banking products and services and they expect to access such services at any time and any place. In addition, customers are looking for simplicity in their day-to-day banking and those who trust their bank are more willing to consolidate their banking needs with a single financial services provider.

In recent years the very nature of banking is changing. What used to happen only in branches can now happen anywhere in the world at any time and through any delivery channel a customer might choose (ATMs, telephones, personal computers). Thus, traditional banking network consisting of physical branch infrastructure is more and more threatened by information technologies represented by automated forms of interaction with the client (ATMs, call centres, online banking, mobile banking) that involve relatively lower costs and allow customers to choose from alternate delivery channels (Darlington, 1999).

Therefore, the introduction of new technologies have led to significant changes in bank strategies and branch banking started to lose ground to virtual banking as the use of remote banking services increased. Globalization, competition, changing social trends and especially ICT advancements have caused intense restructuring of the banking industry (Loonam & O'Loughlin, 2008). Initially, information infrastructure was regarded by developed banks over the world as a mere possibility of creating new electronic distribution channels for existing products. For this reason, remote banking services have been called *electronic* or *e-banking services* (Nedelescu & Stănescu, 2012).



Source: PWC, *Reinventing Banking Branch Network*, December, 2012

Figure 1. Channel strategy

In time, the increase of investments in technology was followed by banking products innovation, a driving force of efficiency boost. Banks and information technology manufacturers have begun to stimulate each other more and more in the development and profit creation. The increasing range and complexity of electronic banking services has led to the expansion of customers while satisfying more sophisticated needs and ensuring customer loyalty imposed a continuous demand for new technologies (Drigă, 2012)

AI-BANKING - CONCEPTUAL FRAMEWORK

Remote banking, considered representative for the new economy, consists of electronic transactions between customers and their bank. Electronic banking, more commonly known as e-banking, is the newest delivery channel for banking services. The term had been defined in many ways by researchers mainly because electronic banking refers to several types of services through which customers can request information and execute transactions via telephone, digital television, computer or mobile phone.

Daniel (1999) defines electronic banking as the distribution of information and services by banks to customers via different delivery platforms that can be used with a personal computer or other intelligent devices. According to Allen (2001), e-banking refers to the supply of information or services by a bank to its customers, via a computer or television. Keivani et al. (2012) describes electronic banking as “an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution”. Most specialists agree that e-banking ensures 24-hour-a-day, 7-day-a-week accessibility through a type of advanced information system.

A common definition for electronic banking comes from the Basel Committee on Banking Supervision: “*e-banking includes the provision of retail and small value banking products and services through electronic channels as well as large value electronic payments and other wholesale banking services delivered electronically*” (BCBS, 1998).

E-banking, a term used for new age banking system, represents an automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. It is a service that provides customers the opportunity to gain access to their accounts, execute transactions, and obtain information on financial products and services through a public or private network, including the Internet. There are several terms used in the literature all referring to one form or another of electronic banking: personal computer (PC) banking, internet banking, virtual banking, online banking, web banking, home banking, phone banking, remote electronic banking, mobile banking etc., but they are often used interchangeably.

Electronic banking services have been around for quite some time in the form of automatic teller machines and telephone transactions. In more recent years, modern e-banking services such as internet and mobile banking has revolutionized banking services. The evolution of the e-banking industry can be traced to the early 1970s when banks began to look at these types of services as an alternative to some of their traditional bank functions. First, such a choice was considered appropriate since it ensures reduced costs as branches were very expensive to set up and maintain. Second, e-banking products and services like ATMs and electronic fund transfer were an important qualitative element of differentiation for banks that used them (Mobarek, 2007). Given that banks operate in a fiercely competitive industry, their ability to differentiate themselves on the basis of price is limited. Thus, in order to remain on the market it is imperative for banks to adjust their strategies in response to changing customers’ needs and developments in technology.

The term e-banking became popular in the early 1980’s referring to using a computer to access banking service via a phone line. E-banking first appeared in New York in 1981, where it was offered by major banks in that city, such as Citibank, Chase Manhattan, Chemical and Manufactured Hanover. Banks from the United Kingdom started to adopt the concept in 1983 where the Bank of Scotland was the first to introduce it. The early electronic banking services were basic, covering services like viewing bank statements and paying bills online without being a full transaction banking service (Shannak, 2013).

Electronic banking services have actually started to develop only since 1995, when the Maryland Presidential Bank, an American bank, allowed bank accounts to be opened online. In mid-2004, over 17% of Americans were already using electronic banking services.

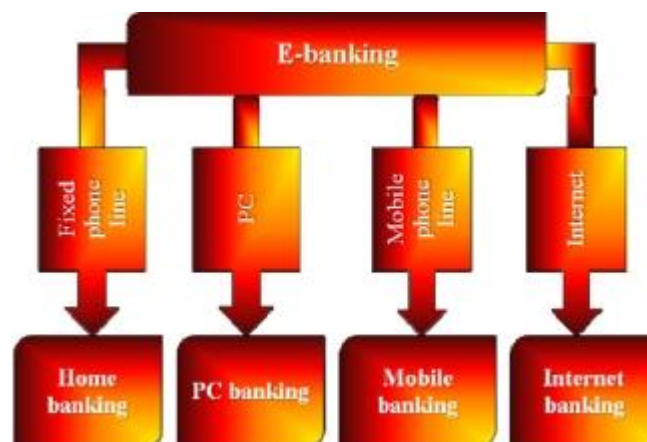


Figure 2. Types of electronic banking services

Home banking - generally refers to the practice of conducting banking transactions from home rather than at branch locations that allows customers to obtain information about personal accounts via a phone call; it is based on the existence of a telephone line, a customer passwords and personal code that provide access to data; clients are able to consult account balances, transfer money within their accounts and conduct routine transactions;

PC banking - a form of banking that enables customers to perform bank transactions from a the by PC providing a proprietary financial software program that perform financial transactions From his/her home computervia a modem;

Internet banking – also referred as online banking, web banking or virtual banking, an outgrowth of PC banking, is a more developed service, a system that enables bank customers to access accounts and general information on bank products and services or perform account transactions directly with the bank through a personal computer using the internet as the delivery channel; customers are able to access all of their accounts through the website of the bank and are allowed to conduct banking activities such as transferring funds, paying bills, viewing account balances, paying mortgages or purchasing financial instruments and certificates of deposits;

Mobile banking - is a system that allows bank customers to conduct different financial transactions through a mobile device, being the newest service in electronic banking; mobile banking relies on WAP (Wireless Application Protocol) technologies since a mobile device requires a WAP browser installed in order to allow access to information.

E-banking may allow banks to offer new products and services, to expand their markets for traditional activities and to consolidate their competitive position in offering available payment services, while ensuring operating costs cut for banks (BCBS, 1998).

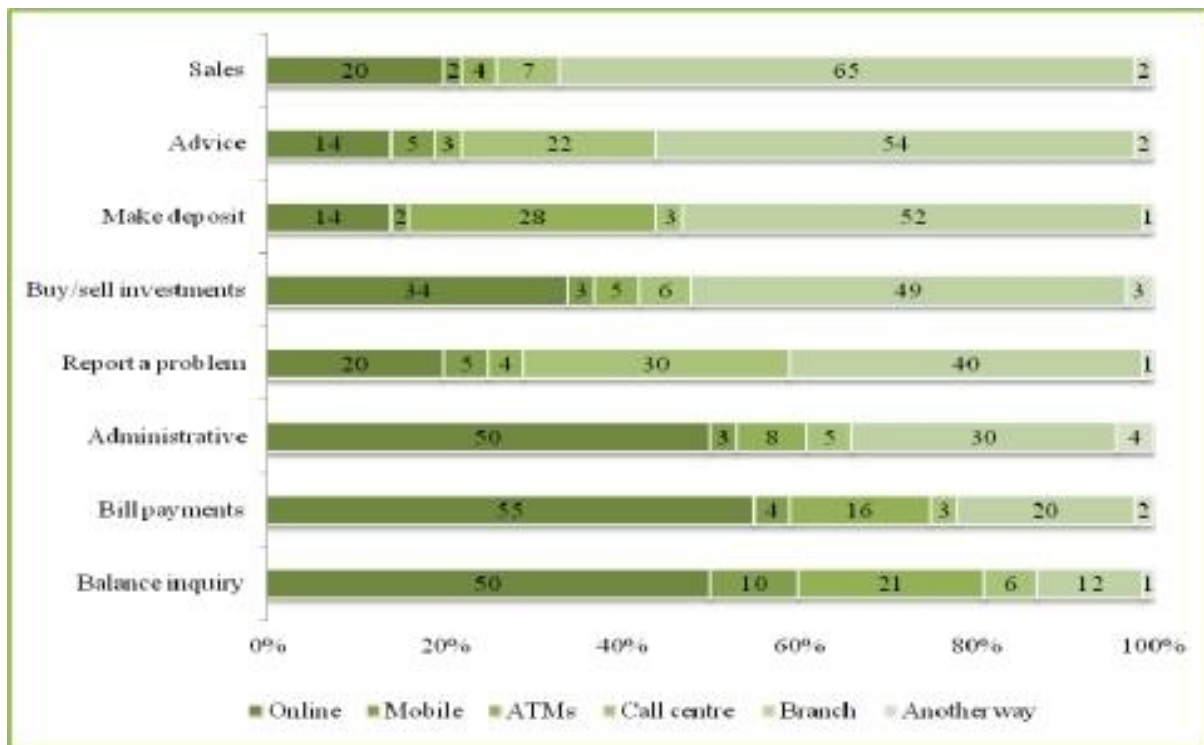
The improvement of online

banking and its increased use by consumers worldwide has made this service a privileged target for cyber criminals although banks have set up security systems to ensure that transactions conducted online are protected from internet security threats. In fact, electronic banking involves several particular operational risks: one mainly related to the security of systems and transactions, including data confidentiality and authentication of the parties involved, and another concerning the continuous availability of the Internet for financial transactions leading to significant hazards, such as hackers and computer viruses (Sokolov, 2007). Cyber crime, also known as computer crime or electronic crime, is an economic crime committed using computers and the internet. Typical examples of cybercrime are distributing viruses, illegally downloading files, phishing and pharming and stealing personal information such as bank account details (PCW, 2014a). Phishing and pharming are **modern online banking cyber crimes**, two of The most organized crimes of the 21st century, representing different ways hackers attempt to manipulate users via the Internet. Phishing is an electronic fraud technique used for financial gain that involves tricking a user into giving confidential personal information, such as passwords, social security numbers, credit card numbers and other personal information. The number of phishing attacks against banking systems is constantly growing and the methods are constantly evolving. In Japan, for example, phishing scams have targeted bank customers' personal computers via virus, using fake pop-up windows or e-mails masquerading as legitimate internet banking interfaces to trick customers into inputting their personal information (PCW, 2014a).

Pharming is similar to phishing but more sophisticated. It is an electron fraud technique that allows automatically re-directing a user to a malicious site by modifying DNS entries, which causes users to be directed to a fake version of the web site, identical to the legitimate one, when they try to access their bank's website. In this way, the pharmer is able to capture the personal financial information that the consumer enters into the false web site and the consumer's account is compromised. What makes pharming dangerous is that the attack is unrecognizable to even an alert user. In fact, pharming forces viruses, worms, Trojans and spyware to carry out sophisticated attacks such as hosts file modification, DNS cache poisoning etc. (Srivastava & Purcell, 2007).

INTERNATIONAL TRENDS IN AI-BANKING

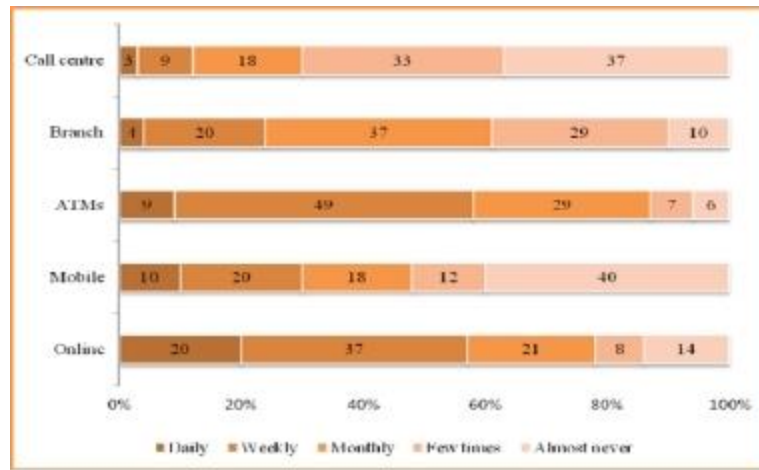
There are a number of studies that identify consumer preferences when it comes to using different delivery channels when interacting with their banks. According to a 2014 EY Global Consumer Banking Survey, the Internet is the preferred banking method for 55% of respondents globally for paying bills or making transfer and for 50% for balance inquiry, while branch banking is favoured for deposits, advice and sales (see figure 3)



Source: EY (2014) Global Consumer Banking Survey

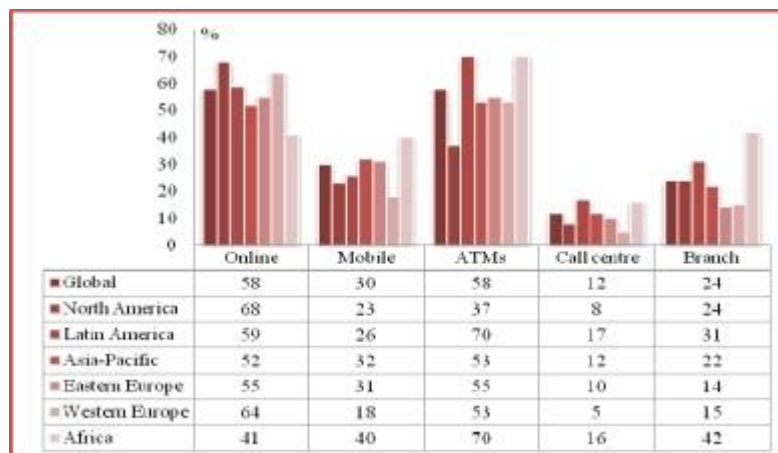
Figure 3. Percentage of channel preference by task

For everyday banking, customers have several alternative channels to choose from depending on their needs and experience. While on a daily basis they prefer the internet, mobile and ATMs, for weekly usage customers pick ATM and online channels far more frequently than any others (see figure 4 and 5), but for monthly usage branch banking is the most common option (EY, 2014).



Source: EY (2014) Global Consumer Banking Survey

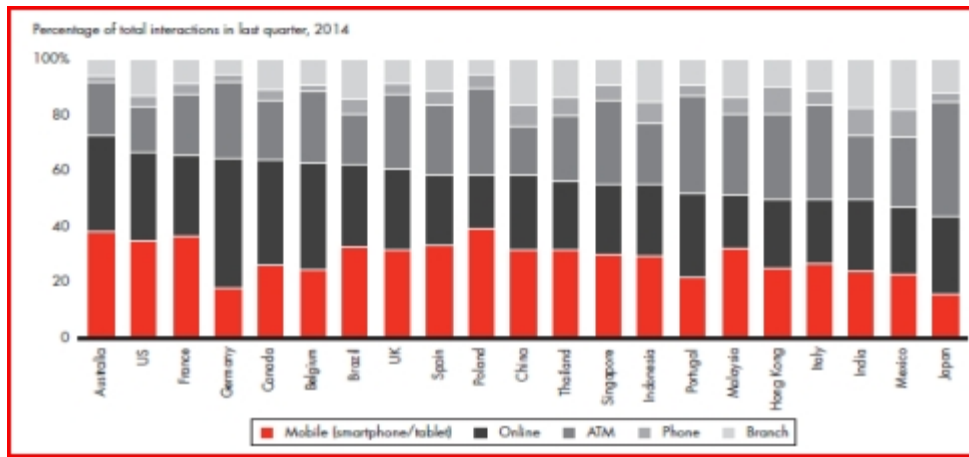
Fig 4. Channel use (% who use channel at special frequency)



Source: EY (2014) Global Consumer Banking Survey

Fig . 5 Channel used weekly or more often

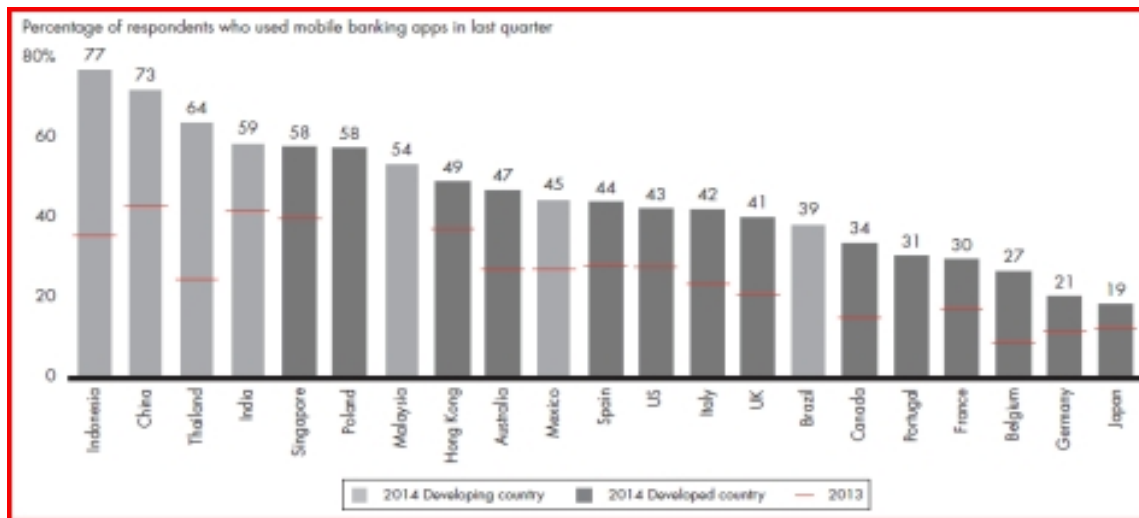
Although branch and the internet still remain the most important channels, the growing importance of the mobile channel is undeniable due to the rise of software solutions that allow users to embrace mobile banking. In most markets, digital channels were favoured in general for the majority of interactions, and mobile banking has overtaken online banking in many markets, according to a 2014 Bain & Company survey regarding customer loyalty in retail banking (see figure 6).



Source: Bain & Company (2014) *Customer Loyalty in Retail Banking, Global Edition*

Figure 6. Percentage of channel preference in different countries

Obviously, prior to mobile banking online banking had somewhat of an impact, but worldwide banking customers started to handle more of their banking interactions via smart phones than through other channels. While it is the newest channel for banks to reach their customers, mobile banking has evolved and expanded to an impressive degree during its short life. Mobile banking adoption among consumers is much faster than the adoption of internet banking as banks have educated their customers and have invested a great deal in mobile technology and security and smart phone apps development. In both developed and developing countries, the rapid take-up of mobile banking is evident (see figure 7).



Source: Bain & Company (2014) *Customer Loyalty in Retail Banking, Global Edition*

Figure 7. Mobile banking usage worldwide

It is obvious that mobile technology is revolutionizing the global banking and payment industry by offering new opportunities for banks to provide added facilities to their customers. Although mobile penetration is high in certain countries (such as the U.S., France, the U.K. or Germany), mobile banking is relatively new in many markets and its usage is still low in most countries over the world (Gupta, 2013).

CONCLUSIONS

Customer satisfaction and customer service delivery are key element for banks to ascertain customer acquisition, retention and increase bank profitability. New technologies enabled banks to serve and assist customers not only in branches, but anywhere in the world at any time and through any delivery channel a customer cares to select. With the convenience of digital channels, customers are visiting branches lessoften and they use online and mobile technology for their banking needs more often. Online and mobile banking are growing fast while branch importance decline rapidly. Nevertheless, branch banking is still preferred by customers when it comes to getting banking advice. Although the internet and mobile does not completely replace other channels, they have become lately the dominant means for consumers to interact with their banks. Thus, there is no doubt that in the near future electronic banking will undeniably overcome traditional banking.

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