

INNOVATIONS IN INTERNATIONAL PAYMENTS

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Abstract: *In this paper we analyze contemporary trends in international financial markets and the implementation of innovations in the system of international payments. The analysis is based on the consideration of the general character - the importance and role of international financial flows for the development of the world economy, and then gets concretized in the analysis of electronic payment systems in international finance. This paper entertains the application of the system of interbank communications that facilitate and expedite payments between banks in different countries (this is how - thanks to the implementation of automatic and electronic clearing houses in different countries - we facilitate the transfer of money between different countries). Further, this paper analyzes one of the most important achievements in international payments - the computer network SWIFT. Thanks to the World Society for interbank transactions via telecommunications SWIFT (Society for Worldwide International Financial Telecommunication), international payments are made quickly, easily, safely and at low cost. This paper attempts to analyze the number and structure of participants of the system and the number and volume of transactions carried out via SWIFT. When this electronic system for international financial transactions was established (1973) activities were conducted via fax in about 30 minutes. Today, through SWIFT, the inter-bank transactions in international payments are carried out in 20 seconds.*

Keywords: *international, payments, SWIFT*

1. INTRODUCTION

Application of computer and telecommunication networks and systems in payments between different national economies affects development of international payments, primarily the scope, pace and speed of performing international payments. Further, it provides a number of benefits and advantages for the companies-participants in international financial transactions, for national economies, for banks and financial institutions, as well

as for users and providers of banking services. Application of information technology in international payments has enabled the development of the international payment system and a whole series of innovations in international banking. Thanks to the SWIFT computer network, it takes only seconds to transfer money from account to account from one end of the world to the other part of the globe.

2. INTERNATIONAL ELECTRONIC PAYMENT SYSTEMS

„International accounting of currency and securities transactions is becoming more dynamic. In order to successfully perform extensive international foreign exchange transactions and other international financial transactions, various electronic payment systems have been developed. Foreign payments in modern conditions are impossible without electronic payment systems. The area of interbank payments is dominated by SWIFT, which was founded in 1973 in Brussels. SWIFT is owned by its members, i.e. by the consortium consisting of more than 2,200 banks.

Foreign payments include:

Electronic payment systems for wholesale payments, and

Electronic payment systems for retail payments.

Automation of transactions in retail banking has long been delayed because of the low value of the average transaction. Earlier, the prices of necessary equipment and infrastructure for payment systems in retail were high and the cost of processing a transaction was greater than the value of the transaction itself. Today, thanks to the use of public computer networks (primarily the Internet) and the development and application of methods of cryptography, banking transactions may be performed electronically at affordable cost per transaction. Reduction of costs of computer data processing, development of digital wireless communication and standardization – all these are reduced due to the reduction in prices of computer and communication equipment, which decreases the cost per transaction in retail banking. In modern conditions through SWIFT we also carry out foreign currency transactions.” [1]

International payment system has been developed within the framework of the system of electronic payments between countries of the European Union, as well as other organized regional financial systems, but this paper puts emphasis on SWIFT because the number of participants in international payments using the benefits of this innovative technology is the largest by far.

3. SWIFT

Application of new modern technologies in banking and payments proved to be most effective in international payments which are - thanks to the use of SWIFT computer network - performed quickly, easily, safely and at low cost.

SWIFT is an international electronic system for financial transactions.

World Society for interbank transactions via telecommunications SWIFT (*Society for Worldwide International Financial Telecommunication*) was founded in 1973 (in Belgium). When this company was founded, the affairs were conducted via fax. At that time SWIFT guaranteed that the transaction would be completed in 30 minutes.

„Today, through SWIFT, the inter-bank transactions in international payments are performed in 20 seconds. Via this network the number of transactions has been rapidly increasing. At the time when the organization was founded there were 239 banks from the 15 most developed countries, which have come together with the common goal of creating a global network for data processing and a unified language of international financial operations.” [1]

We present herewith several examples that show just how rapidly this system has been developing. In 1974, there were 503 members from 17 countries; in 1975 and 1976 there were 515 members from 17 countries, although in those years there was not a single message. In 1977 the prince of Belgium released the first message and from then on SWIFT officially begins to operate. In that year alone the 518 banks from 22 countries exchanged 3,400,000 messages, and in 1978 some 586 banks from 25 countries exchanged 21,600,000 messages.

„Within the framework of SWIFT tags are used in accordance with international standards, therefore the labels of certain currencies are standardized. Such a system could not function without standardization. In the early stages the SWIFT format was used, and they later moved to format the posts as per EDIFACT standards (one of the three international standards in banking).

SWIFT network was improved and perfected in the nineties, and is now known as SWIFT II. In March 2004 some 7,600 banks and other financial institutions from 200 countries operated via SWIFT. In 2003 more than half a billion transactions were carried out, while the average daily turnover amounted to over 200 billion dollars. In 2007, 8,332 active users from 208 countries performed nearly 3.501 billion transactions; in 2008, 8,468 users from 208 countries performed 1,257,110,454 transactions.

Today SWIFT connects over 9,000 financial institutions in more than 200 countries worldwide and annually performs more than 3 billion transactions (messages) or about 15 million daily messages with a total value of over \$ 10 billion. The architecture of SWIFT Network is based on a certain number of operational (commutation) centers, each of which is associated with a regional concentrate.

From 1990 onwards, banks from Serbia and from the former Yugoslavia also perform business through the SWIFT network. In 2003 the situation was as follows: through SWIFT operated some 57 financial organizations from Serbia and Montenegro, another 36 from Bosnia and Herzegovina, 49 financial organizations from Croatian, 24 from Slovenia and 19 from Macedonia.[2]

The SWIFT Network is established in the form of a non-profit private joint stock company. Security and reliability of the system is provided through a universal method for the identification of financial institutions – the so-called Bank Identifier Code - BIC, which represents a unique set of addresses of all financial institutions. The address of any financial institution is made up of 8 basic character and three additional characters.

In addition to the universal method for the identification of financial institutions, SWIFT organization has produced a unified language and procedure for sending messages of different types.” [1]

All types of messages are classified into nine categories: Remittances and checks; Transfers of financial institutions; Foreign exchange markets, money markets and derivatives; Billing and cash collection; Securities market; Precious metals and investment groups; Documentary letters of credit and guarantees; Traveler’s checks and cash management and user status. There is yet another category called Nth category, which is a group of common messages.

SWIFT enables electronic data exchange and communication between banks completely eliminating paper documents and at the same time guarantees the integrity and prompt delivery of messages.

SWIFT members include banks of all types, stock exchanges, brokers and dealers, clearing institutions, investment funds, etc.

For financial institutions using SWIFT services allows for quick, safe and prompt (spot, immediate) transmission of messages, control of transactions, reduction of operating costs, automation of business and more efficient management of banking risks.

4. SYSTEMS OF INTERBANK COMMUNICATION

„Banks exchange data on realized payments. Further, banks communicate through clearing houses. Initially, the motif for development of clearing center was to reduce the number of checks. Together with the development of financial services, new technical developments and globalization, clearing centers have undertaken a new role in financial operations (switching centers).

In developed market economies, there are different models of the system of payment transactions. Models of the payment system for large value transactions vary according to: the choice of the system operator: (a central bank or a private organization which acts as the clearing institution) and the selection of the type of calculation (gross and net settlement).

Clearing houses are institutions that guarantee that buyers shall have the delivery of assets, and that sellers shall be paid. In order for financial transactions in payment systems with clearing institutions to be implemented, it is essential that participants conclude specific agreements with the clearing institution.” [1]

The function of clearing institutions are the following: maintenance of accounts of all participants, settlement of accounts, collection and maintenance of initial deposits at the level which is necessary for the smooth conduct of financial transactions, preparation of reports for all participants, etc.

Clearing institutions may be owned and controlled by the Central Bank, or under the control of commercial banks, or the combined model. They can receive only instructions on paper, or just automated electronic instructions, or they can be organized to receive both paper and electronic instructions. Clearing institutions can serve the whole country, or are organized on a regional basis within the country.

ACH-Automated Clearing House

ECH - Electronic Clearing House

Direct communication through SWITCH center

Automated clearing houses are among the first forms of computerization between banks. They came around in the sixties in the United States, England and Japan, and were based on the off-line systems. Such systems have enabled faster and more efficient transfer compared to paper transfer, irrespective of a high share of manual work. The system of automated clearing houses was first implemented in 1974 in the United States. This original system of automated clearing houses used magnetic tapes and disks, which were physically, by hand, distributed to depository institutions. Starting from 1994 both files with payment instructions and output files must be sent by electronic means (at the request of the FED).

Electronic clearing houses today carry our large financial transactions. The most well-known and largest clearing systems are: CHIPS (Clearing House Interbank Payment System) and CHAPS (Clearing house automated payment systems).

In Serbia, both networks of the electronic payment system (private network of the National Bank of Serbia and SWIFT) use SWIFT message formats. All participants use the private NBS network. By using RTGS (real-time calculation on a gross basis) all the orders for payment can be executed, provided that the payment orders for more than 250,000 dinars („large payments”) must be executed. Clearing payments („small payments” – orders up to 250,000 dinars) are executed in the process of net settlement in three clearing cycles every working day (at 11:00, 13:30 and 16:15 hours). NBS has, starting from January 2005, offered participants a new service - the execution of „small clearing payments” in the RTGS system, at the tariff for clearing payments. This allowed the liquid banks to pay through the RTGS system at a lower rate, without waiting for the clearing cycle. Foreign payments in Serbia and the other former Yugoslav republics are carried out with the use of SWIFT. Members of the Beokliring are: banks, custody banks, duly authorized banks, stock brokers, NBS, RS, stock market, companies for fund management, foreign deposit and clearing organizations.

Technical systems of electronic payments in retail (EFT / POS) systems and self-service counters (ATM) are connected through switching centers. Banks too are interconnected via switching centers.

5. CONCLUSION

The functioning of the current international payments and the modern economy and economic activity is unthinkable without the use of modern computer technology in the field of international payment systems. Thanks to modern computer and telecommunications networks, today payments between organizations or individuals from different countries and different continents are carried out during the same day and even in a period of time measured in minutes or seconds from one account to another or using certain electronic transfer system. Interbank communications systems make it possible to facilitate and speed up payments between banks. This paper provides a brief overview of how different countries use different models of the system of payment transactions (automated clearing houses and electronic). One of the most important achievements in the application of new technologies for payments is the computer network SWIFT. Thanks to the World Society for interbank transactions via telecommunications SWIFT (*Society for Worldwide International Financial Telecommunication*) international payments are made quickly, easily, safely and at low cost. SWIFT is an international electronic system for financial transactions. When it was founded (1973) activities were conducted via fax in about 30 minutes. Today, the inter-bank transactions in international payments through SWIFT are performed within 20 seconds.

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