

Selected aspects of online p2p lending

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Abstract

Importance of process management in the current period is significantly increasing. One of the main reasons is increasing complexity of system of management in organizations, constant pressure to reduce costs and as well as to optimize production and management processes. In this paper, we focus on online p2p lending system and within that, on the process of the transfer of money, which we analyze precisely through a process map. The conclusion of the paper is about proposing next steps which would eliminate the risks arising in the process of transfer of money within the system of online p2p loans namely the application and effective using of digital signatures.

Key words: digital signature, p2p lending, processes, process management, transfer of money

Introduction

During the last decade of 20th century, there was general opinion, that old way of organizational management is insufficient in new conditions. Organizations cannot be managed on the principle of strictly defined administrative structure, in which each employer has defined position, responsibility and based on that, pertained rights. Company based on this parameters was inflexible, absented variation of techniques and methods in management. Last but not least, it did not motivate employers on any hierarchical level to have creative approach as there was inefficient motivational system. Strictly set hierarchical structure, defining remits and responsibilities, communication procedures, rewarding system, as well as system of promotions was common in the past. But today it is indispensable to substitute old organizational hierarchies by new hierarchies with focus on processes, while there is natural need to make a detailed map of processes with more inputs and outputs creating the value for customer. It is necessary to understand processes intentionally, what means, that we devote them in order that inputs would be transform into outputs, not just because there were performed "some"

activities. Processes must be understood in relation to each customer (as through them is creating customer value). We are getting to the essence of the processes and their hierarchy - the main, the key chains of processes are those activities, within which are creating customer values, while the function of other processes is supporting the main process. It can be stated that the processes and their relationships form the basis of an organization, everything else has the nature of infrastructure and is only derived from the main structure of processes: communication and organizational structure, information system and other potential technologies. (Řepa, 2006) If processes should have sufficient flexibility to reflect the changing nature of customer needs and circumstances of the market environment, they must have sufficient flexibility and derived infrastructure. In terms of organization, this means to leave strictly defined structure of superiority and subordination, as these relations must always be assigned according to the purpose within that process. That requires the delegation of decision-making power according to the need of process. In the field of supporting technologies, adaptation to the process changes means mainly finding attributes of process, organization and communication, which are generally valid and which are at least related to the need of change. There is also needed to separate them from those which are more specific. On the one hand, that brings the need to standardize the corporate system, on the other hand, it brings a strong need to pay adequate attention to the non-standardized processes, as they require, from the qualitative point of view, completely different support (must be specifically supported).

1. System – components - modelling

The principle of modelling is one of the basic principles within the method of conceptual design of the system. Methodology and characteristics of tools and techniques are based on the premise that the analyzed system is a model of the real system (real world), the information in the system is not created, but it is only mediated by the system, because the system provides information about its environment, so about the real world, not about itself. The structure and content of the individual components of the system are set by the structure and content of the individual components of reality. The task of the system is, according to the information what is happening in reality, provide the same information in the relationship between the various components of reality. Inputs into the system represent information about what is happening in reality, as well as outcomes, but in different - demanded structure. Information is not changing, but its value during processing in the system increases, as we are putting them into the mutual relations on the basis of knowledge about the structure of reality.

Hierarchical abstraction in modelling

Hierarchical abstraction represents a tool of decomposition of components in the developing system into more detailed level of view. The higher level is a conceptually superior to a lower level. At each level are described components and the relationships between them. Řepa (2006) defines two basic types of hierarchical abstraction:

1. Abstraction "part - complex" (collectivization, aggregation) - this abstraction has its typical use in a functional model, where the system is divided into subsystems, parts of subsystems and other parts. For aggregation is typical of fundamental unlimitedness of division. Higher complex is defined as the sum of its parts.
2. Abstraction "specific approach - a general type" (generalization). This abstraction is typically used in data model where it is possible to think about individual specific variants of superior conception (entities, object). Unlike aggregation, the superior complex is not defined as the sum of subordinate components, but as a carrier of their common characteristics (attributes).

In general, we can apply object and process view to the real world. While object view emphasizes the essence (structure) of reality, process view is focused on the behaviour of reality. Also the object model describes the behaviour and we can describe it by the form of "life cycles of objects". Mainly the

behaviour of individual objects is visible, but the behaviour itself does not clarify the reasons leading to the activity. In the process view, there is necessary to find a superior reason for this behaviour, which is independent on the general rules of life of individual objects. This means that for each process has to exist a reason supported by a purpose, goal or also external impulse. Professional literature presents several methodologies used for modelling business processes (Řepa, 2006; 2007). In general, we can decomposed the analysis of processes into three basic phases that form a coherent complex.

- analysis of elementary processes ,
- specification of the key processes,
- specification of supportive processes .

The result of the analysis of elementary processes are mapped elementary processes in terms of their structure, relations between them, and all of that according to the analysis of events and reactions, as well as relations between them. Similarly, in the analysis of key process we are focusing on mapping the structure and the relations between them and the important components of key processes. The analysis is based on object analysis of products or services and it represents the next step after the first phase - analysis of elementary processes. Next step should be specification of supportive processes, which is aimed at the analysis of supportive processes, structure, their essential attributes, as well as their reciprocal relations. (Réveszová – Pařová, 2009; Řepa, 2007)

Our ambition was to focus on a specific type of processes within online p2p lending system, which is currently highly topical, what is caused also by the recent economic crisis, which contribute to development of alternative forms of financing.

2. P2P lending system

Development of online p2p lending system, called also as online community loans, in recent years was based mainly on development - increase in the use of new information and communication technologies that enable communication between users from different places. New technologies have so enabled creating markets composed of borrowers (people with temporary lack of funds) and investors (people with surplus funds seeking profitable form of investment). As the attractiveness of the market has raised, many new companies started to operate also like p2p lending mediators focused on profit or more on social character. To early adoption by inhabitants of several countries contribute also many advantages of p2p lending in comparison with loans from classic financial institutions – banks and non-financial subjects. Just to mention a few - low operating costs, no difficult administration or feeling that you are helping a concrete person with your investment. So the trend of raising the communities was set and it enables better reallocation of sources not only within one country.

If a person has more finance than he actually, they are usually thinking what to do with them. Over the years, there has developed a whole range of investment opportunities, but the basic criteria for comparison are still two main - the rate of return and the level of risk. Naturally when someone postpones current consumption he should obtain a reward what brings them the possibility of increased consumption in the future and that is represented by appreciation of the investment. In case, an individual does not have enough financial resources to cover their needs, they usually seek for opportunities to borrow from other economic entities for a certain period of time. In the past, borrowers asked mainly family members or friends as the creditors. Later appeared other subjects - banks and other financial and non-financial institutions enabling transfer of funds from lenders to borrowers.

Bank can be characterized as a financial mediator, which main activity is enabling the transfer of funds between economic entities , and such activity is based on its rights as a bank, to take deposits and provide loans. (Revenda a kol. 1996) As a bank provides clients - creditors much lower interest rates in comparison with other clients - debtors, this difference becomes income of the bank. (Kumar 2007)

Some authors, e.g. Hulme and Wright, say that traditional banks are dependent on customers who are unable to pay their debts, and the main part of banks' income is made by additional fees, fines from just this type of customer. Besides banks, there are a few types of financial and non-financial institutions providing different forms of loans, mostly short-term loans or leasing-products allowing the purchase of goods without immediate payment of the full sum.

Specific form of a loan provided from people to people - via p2p lending systems. In the past, this type of loans was provided usually by family members or friends. With development of new technologies, people started to use internet also for communication related to loans and also as virtual place for meeting and pairing demand and supply of investors and debtors.

2.1. Classification of online p2p lending systems

Today, we distinguish 3 main types of online p2p lending models:

P2P lending focused on social character

First impulse to their creation was aim of help, support of poor countries, especially in Africa and Asia. Thanks to that there is able to reallocate resources in more efficient way, via transferring money from developed to developing countries. There are a few concrete forms of loans but usually their characteristics are like small amount of money, very often for purpose of starting a business. Interest rates in this case are also very low. Known companies in this sector are e.g. Kiva or Zidisha. In the past, this type of lending was provided also by some classic banks (e.g. Grameen Bank - the first banks which introduced the concept of p2p lending in Bangladesh). (Collier, Hampshire 2010)

Model „person - person“ focused on profit

Today the most popular model of online p2p lending, which is based on lending from one physical person to another with main purpose of profit. The social aspect is still there, but motivation of lenders is strongly influenced by potential reward as well as one of a provider of services. So the loan has usually higher interest rate than one in model focused on social character. Loans are also little higher and all subjects included are usually residents of one country. In case of international cooperation, there would be needed more sophisticated solution when talking about the legislative issues as well as the aspects of risk management. (Ashta, Assadi 2009) Anyway there is one example from Estonia – Isepankur – which was founded with the purpose of building connection for clients of eastern Europe.

Model „company – person“

This, the least popular model, allows companies to raise capital from individuals. These are mainly start-ups on the market who are seeking for capital. It is a form similar to investing in the stock market of emerging companies, as repayment of the loan depends on the fact whether the debtors products or services will be successful or not. As a result, the form of investment identified as highly risky. Some companies, despite being several years on the market use also this form of financing as an good alternative to conventional loan.

Picture 1 Three main types of p2p lending systems

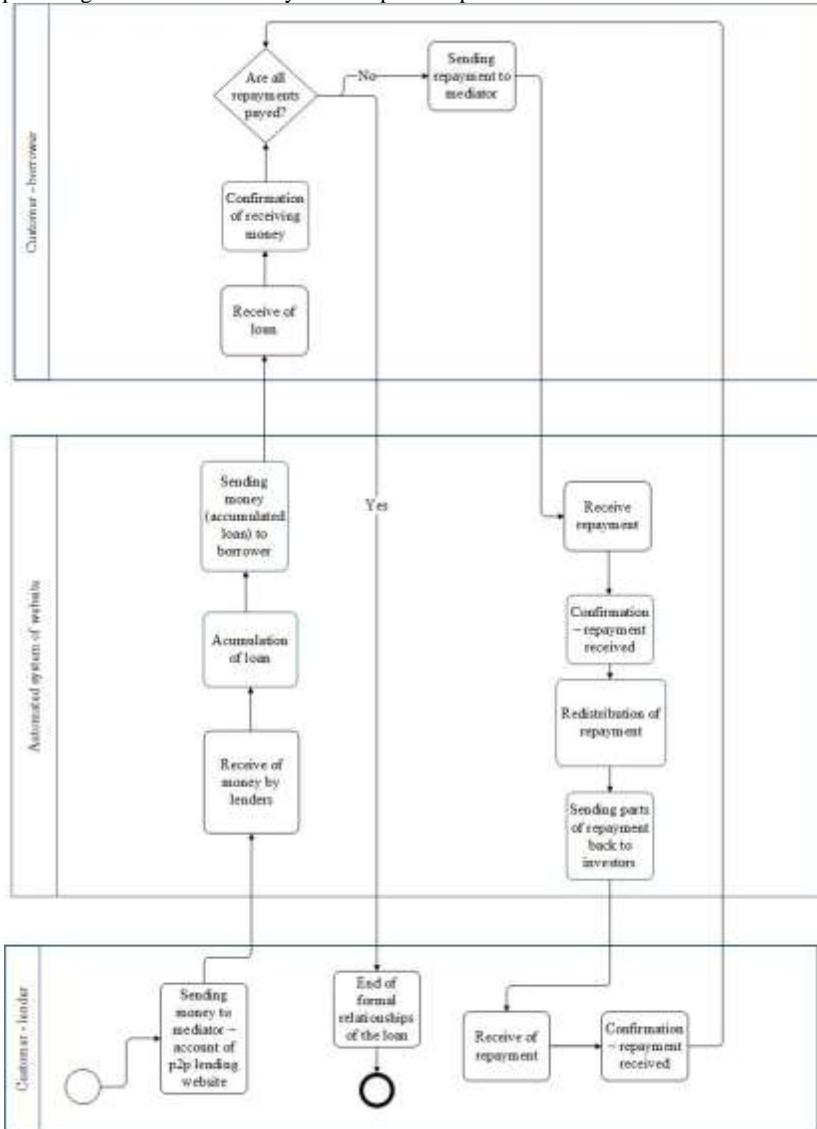
Source: Own proceeding

A brief description of online p2p lending system clarified basic aspect of the system and pointed out that during recent years, a few alternatives and aim groups of customer has been developed. There are some differences when comparing them, but they have also some typical attributes which we can see

in each case like e.g. auction mechanism, which enable pairing of demand and supply and more effective allocation of sources – gained thanks to competitiveness on the market.

2.2. Specification of selected process within system of p2p lending

According to the aim of the paper we focused on selected type of processes within system of online p2p lending – transfers of money. The map of the processes is in the Picture 2.



Picture 2 Process map of transferring money

Source : Own proceeding

As it is obvious from Picture 2, at the beginning of the process, investor sends money to the mediator's account, who then adds them to sources of other investors, creating the accumulated amount of the loan, which is in the next step sent to the debtor. This subject - borrower later, based on time defined in agreement, is sending back regular payments. These payments are then reallocated to investors. The cycle is repeated while all repayments are paid. The final activity is ending of relations based on a specific loan agreement.

Thanks to composition of the process map, we can see the current setting of the system, which is today very common for many p2p lending websites. As we can see there are needed many transfer of financial sources within actors - lenders, borrowers and websites. This solution is needed especially because of security – when money is transferred via mediator, they are sure, if the client really has sent it or not. But the price for this certainty is relatively high, since it is necessary to pay a fee for each transfer of money and so profitability and also attractiveness, from the clients' point of view, is decreasing.

Naturally the question comes up, what are the options to simplify the process and increase the efficiency and attractiveness for investors as well as for borrowers.

2.3. Digital signature and online p2p lending

One of the possibilities that could be applied to processes within system of online p2p lending is a digital signature. Digital signature and its use is in actual Slovak legislative described in the law number 215/2002. In this law is stated that digital signature is an information connected or logically linked with electronic document and it must be valid for it that:

- It is not possible to create the information without knowledge of private key,
- When knowing the information and public key pertained to private key used when creating the information, there is able to verify if electronic document to which the information is connected or linked with it, was or not changed after its creation.

Another type of description provide e.g. Bucko who described digital signature as own long and difficulty generated numbers, which are made by processor of computer or chip card. (Bálint, Bucko 2009)

Use of electronic signature is linked not only with the transfer of funds, but also with other processes within the system of online p2p lending as the digital signature is an alternative to traditional handwritten signature. The application of digital signature within the system of online p2p lending would allow mean a few new opportunities like e.g.:

- Faster and easier process of verification the identity of clients, which is usually made via post office services. It could be used in order to confirm identity of clients as well as for confirmation of fact that document was really released by particular subject and was not changed on the way to recipient. In comparison with classic handwritten signature, verification in the case of digital signature in controversial situations is not so difficult and expensive. In the case of handwritten signature only expert can make validation, as each signature is always unique, because it is not only the combination of characters created by mathematical processes like digital version. There is also the issue of probability of failure in case of signature made personally. On the other hand, verification of electronic signature is a process resulting says yes or no with 100% certainty. (Delina, Vajda 2008)

Of course represent additional time and financial costs for p2p lending company. Secure digital signature would mean additional costs also for clients. This could lead to lower attractiveness, but on the other hand there is very important to point out the fact, that also government administrative and generally all administrative activities are meant in the future to

be held via digital signature. So the tool of it can be used by clients also for other purposes in the future, and so for one expense, they can potentially use it for many times, many purposes.

- Speaking about the transfer of funds, there would be no need for accumulation and subsequent redistribution of payments flow from lenders to borrowers and vice versa, as transfers of money could be verified via electronic documents secured by digital signature.

What should be not forgotten, achieving the benefits of implementing the digital signature is able only when also banks, which are complementary subjects in online p2p lending (Rumiany 2007), start to use it. It is needed as only providing secured confirmation of money transfers by banks allow p2p loans mediator to enable direct transfer money from borrowers to lenders and vice versa. Without this tool, there could be a situation of two opposing statements about money transfers, when one side confirmed money was sent and another side of transaction, that money was not received. Such a situation can be solved very fast and simply via digital signature, as document signed with digital signature would guarantee that a client or other entity did not change the document and it has the form and content as it was given by a financial institution.

Conclusion

Based on theoretical and practical experience we have, we focused in this on the description of process management. In the first section - introduction, we highlighted its importance today, while the accent was mainly on the individual components of process management and correlation between them. In the analytical part, our attention was focused primarily on the selected type of financial process within online p2p lending system, whose importance in the current economic crisis continues to grow. It is related also to the increasing complexity of management of financial processes, as well as the emerging trends to financial innovation. Due to the content and extent limitation of the paper we focused on the process of transfer of money, which clearly describes the process map. Its importance results not only from better imagination, but also from the fact that it enables to understand the components of individual processes and the relations among them, to identify relatively weak components in the process and thus support efforts to eliminate them. In our case, we identified weaknesses in this type of process in the absence of an digital signature.

As we described, the application of electronic signature would allow considerably simplify the processes particularly in terms of institution – the company providing services in the system of online p2p lending. As it is obvious, the act of application would mean additional costs – investment. But from long-term point of view, we think it would be effective and it would lead to lower operational costs of company as there would be no need to many transfers of money via account of p2p lending mediator. On the other hand it is true, that using of digital signature need to be analysed from customers' point of view as it would mean additional costs for them, especially for borrowers who would be pushed to decompose the repayment and sent it to each lender separately. And here comes a question of attractiveness, as costs for them are becoming higher and so it leads to worse position in comparison with other lending products from financial and non-financial institutions. Secondly, equally important issue is the current legislative in a country. EU countries moving towards digitalization of all administrative issues and so there is prediction that digital signature, or other tool very similar to it, will be used in all countries of the Union during next years. Today, not all countries are on the high level of digitalization like e.g. Estonia. But according to many statements by institutions of the EU as well as national institutions, we believe, in the near future, development in the field of digital identity and security will speed up and new opportunities also in connection with online p2p lending will come up.

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