Abstract
Successful information management is big challenge for any organization. In this paper the emphasis is on information management in new product development in bank. Under strong pressure from competition and new technological changes, as well as the turbulent changes in the environment, financial institutions must continuously develop new products and services. In order to make the services more interesting to the users, it is necessary to collect data about the users, their wishes and preferences. The data should then be converted into useful information that will result with developing the right product or service that users will recognize as necessary. Products become personalized, user-friendly, and the emphasis is on the importance of long-term company relationships with customers. Only with well-organized information, managers can make the right business decisions and companies can react in time to market changes. When creating their strategy, successful companies analyze and identify elements that significantly contribute to creating a competitive advantage and ensuring long-term growth and development. The paper presents an empirical research of customer preferences which lead to new product development in bank.

THE IMPACT OF INFORMATION MANAGEMENT IN DEVELOPING NEW PRODUCTS IN BANK – AN EMPIRICAL ANALYSIS

UTJECAJ UPRAVLJANJA INFORMACIJAMA U RAZVOJU NOVIH BANKARSKIH PROIZVODA – EMPIRIJSKA ANALIZA

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Sažetak
Uspješno upravljanje informacijama predstavlja veliki izazov za svaku organizaciju, a u ovom radu naglasak je na upravljanju informacijama pri razvoju novog proizvoda banke. Pod snažnim pritiskom konkurencije i novih tehnoloških promjena te samih turbulentnih promjena u okruženju, financijske institucije moraju kontinuirano razvijati nove proizvode odnosno usluge. Kako bi usluge bile zanimljive korisnicima, potrebno je prikupiti podatke o korisnicima, njihovim željama i preferencijama. Podatke zatim treba pretvoriti u korisne informacije koje će rezultirati razvojem pravog proizvoda odnosno usluge koju će korisnici prepoznati kao potrebnu. Potreba za informacijama dolazi od potrebe izrade točne analize pojedinih tržišnih segmenata, promatranja ponašanja korisnika, odabira ključnih korisnika i postojeće konkurencije. Upravljanje informacijama pruža mogućnost sveobuhvatnog i učinkovitog korištenja informacija. Kontinuirano prikupljanje i upotreba informacija u cilju stvaranja novih proizvoda i usluga postiže se stvaranjem odgovarajućeg okruženja u kojem upotreba novih tehnologija znatno olakšava proces. Proizvodi postaju personalizirani, prilagođeni korisniku, a naglasak je na važnost dugoročnih odnosa poduzeća s korisnicima. Samo pomoću dobro organiziranih informacija menadžeri mogu donositi prave poslovne odluke, a poduzeća mogu pravovremeno reagirati na tržišne promjene. Uspješna poduzeća prilikom...
INTRODUCTION
The business environment today is characterized by extremely strong competition, rapid advances in technology and, consequently, a multitude of new products and services. For an organization to be competitive it is not enough to be average. It is necessary to know how to survive in such environment, or how to make the right business decisions. The business environment imposes the need for continuous inflow, processing and management of information in order to deliver new, sustainable and competitive value to the user. There is a need to use technologies that enable comprehensive, fast and efficient use of all available data and information, inside and outside the organization, important for the successful management of the organization. The need for information comes from the need to make an accurate analysis of individual market segments, observe user behavior, select key users and existing competition. Information management provides the possibility of comprehensive and efficient use of information. Continuous collection and use of information in order to create new products and services is achieved by creating an appropriate environment in which the use of new technologies greatly facilitates the process. In a situation where market supply significantly exceeds demand, in a dynamic and turbulent business environment and competition, there is a growing need for more efficient management and making the right decisions at the right time. To survive in this environment, it is not enough for companies to be average, they must strive for business excellence. It is necessary to know how to survive in such environment, how to prepare plans and make successful business decisions based on them. Financial institutions that want to continue to operate successfully in addition to so many competitors in the market must take important, not simple task, successful information management. In order for a financial institution to obtain important information about users, it is necessary to collect data, research the market, use and manage information and make the right decisions.

One of the biggest challenges in the field of strategic planning is the development of new products. Once when company carefully does the market segmentation, selects targeted consumers, identifies their needs, and defines a market positioning strategy, it is able to develop a new product that will be acceptable to the target market. Financial institutions should organize and plan market research and customer research activities, as the information obtained from such research is a base that should be organized and used as a basic driver of their competitive advantage. Timely organized information about market and competition, as well as customer information, their characteristics and behavior, necessary for the process of segmentation, selection of target markets and positioning, are hypothesis for making appropriate business decisions and profitable operations. The ability to continuously make new products and services for the market is a characteristic of successful organizations. For them, innovation is an essential part of business strategy.

INFORMATION MANAGEMENT IN BANKS
Digital age is changing the environment, enabling faster, higher quality and more efficient data processing and using them in everyday business. Revolution in the
The application of digital technologies in organizations is related to the Web /1/. With the development of technology, globalization and the availability of resources, the information that the organization possesses becomes a key source of competitive advantage of the company. Information management has become major part of every modern and successful company. Financial institutions, as large organizations in the market, collect and have lot of data from which they identify, extract and use the best or those needed to contribute to successful business. Special emphasis was placed on the specifics of these systems in financial services and their adaptation, which is necessary to ensure successful implementation. Financial institutions are often large organizations with a large number of branches and employees. In order to give the impression of professionalism and trust, it is very important to pay special attention to the processes in providing services. That is why each financial institution prescribes its own special list of rules that must be followed by all employees and service users. Monitoring and managing business processes within the financial institution require a high degree of standardization, but at the same time a personalized approach to each user. These two goals are often contradictory, so the role of information systems that help employees personalize communication while maintaining the standard quality of service delivery is extremely important.

The information system generates reliable information that managers use in making decisions when creating a strategy. Organizations are aware that monitoring market developments and new technological solutions directly affects the increase in their business performance. Initially, the application of information systems was focused on sales tracking. Over the years, information systems have evolved and serve management as a support in business decision making. Information systems have the ability to generate reports based on collected and processed data, which generally give a picture of individual segments over a period of time. These reports support management in making decisions. The basic function of the decision support system is to support strategic decision making /2/. The primary goal of the decision support system is to provide quality information to management to support decision-making, where the information is the result of processing real data at all levels of the organization in each interested organizational unit. Information systems are oriented towards the collection, processing and sharing of collected data. Data is a set of separate, objective facts about an event /3/. The basic division of data collection comes down to internal and external data. Internal data refers to available data within a particular organization and is stored in the organization's database. External data are all those that do not arise from the business of the organization, and these are data about the market, users and competition. In the data warehouse, data is collected and organized in a way that is easily accessible to management, which must use it quickly and easily for the purposes of business analysis and decision-making that will improve business. The data warehouse is designed to enable data retrieval and analytical processing.

Although data collection and archiving is an integral part of any organization's business, their use value is relatively small until they become information, which is their basic drawback. The data only give an objective view of the event, and do not provide answers to the questions why something happened, what were the consequences or whether the event will happen again. Therefore, data is the basic input for creating information. Information can be defined as a message, most often in the form of a document or personal communication, that has its sender and recipient /4/. Information is actually data that has some meaning. Proper management and use of information represents knowledge /5/. With the increase in the amount of information and knowledge needed for quality business, the need for better access to information and knowledge and ways to locate and transmit it began to appear.
The volume, quality and relevance of information are crucial for the operations of organizations, and in financial institutions, this is even more important, given the nature of services they provide and the risk of placing money, which further strengthens the need for continuous inflow of usable information. They should answer a number of questions, such as: What is the number of users? Who are the users of a particular financial service? Who are the owners of certain accounts? What factors affect preferences for certain financial services? Which customers use a particular financial service and why? The list of similar questions is long, and the data that allow financial institutions to answer them are the basis for creating a database of clients. Creating, maintaining and using databases in financial services is a great challenge but also a potential. Each contact of the user with the service enables the collection of various data, but only their proper organization, analysis and use makes them significant and suitable for future business decisions.

Given the speed of changes in the market, it is necessary to achieve efficient management of information from the market but also information within organizations. Banking is characterized by a large number of clients, their accounts and transactions, then a wide range of products and services and a high degree of dependence on technology. Therefore, proper information management is the most important in any bank. Special attention is paid to market information in developing new products.

With the technological development, and especially information technology, globalization and the availability of resources, information and knowledge that the organization possesses, become an important source of competitiveness of the organization. Therefore, many organizations have recently made increasing efforts to manage information. Digital technology enables continuous and personalized research of target group preferences. There is a need to use technologies that enable comprehensive, fast and efficient use of all available data and information, inside and outside the organization important for successful information management in order to make an accurate analysis of individual market segments for a more successful concept of new product or service. Expectations from information systems are related to almost all areas of management in the organization. A positive impact on developing new products is expected.

MARKET RESEARCH AND NEW PRODUCT DEVELOPMENT

Business research results give necessary information for making managers decisions. The information system; the flow, analysis and distribution of data from the market, are important for making management decisions and their successful implementation. In the centre of the business is meeting the client's needs and desires. Financial institutions have realized that it is much more profitable to have loyal customers than to constantly seek and attract new customers, which is confirmed by more and more loyalty programs. It can be concluded that customer research is a link between the financial institution and the user, the market, but also the basis for creating new products for users. Market informations are used in order to create greater value for the user, based on the information obtained. All departments of the company should be involved in this process. The collected information must include information about competitors and other stakeholders in the market, because their reaction and performance in the market largely depends on how the company will react to the given information. When we talk about a product or service of a particular company, it is necessary to analyze the supply well in order to provide guidelines for further development. When we talk about the development of financial products, we actually mean the development of services that will be offered to customers. The first problem with the products of a financial institution is the weak possibility of different services, which
leads to extremely easy copying of the designed service by competitors.

Another very common occurrence in financial institutions is the existence of a large number of services, many of which are often unnecessary for ordinary business. This situation often occurs due to mergers or acquisitions among financial institutions in which the services of each institution are retained, and thus the number of services grows.

The basic preconditions for using information from the market in the function of understanding the situation, trends and changes that affect the business of a financial institution are insurance of the following dimensions /8/:

- Objective research - open to new ideas and ways of understanding the market.
- Distribution of information - mutual exchange of information about users and competitors, which must be the basis for decision making management.
- Interpretation of information - with each other between all influential people at all levels in order to implement the strategy.
- Available data base - previous events or experiences of employees are important for future business and must be integrated into the information system.

Research in financial institutions can be grouped according to time, method of organization and subject of research. The basic categories are:

a) continuous,
b) occasional strategic research and
c) operational, tactical research.

Given the nature of financial services, continuous strategic research /9/ is often much more significant, contributing to measuring and monitoring market share, predicting future changes and managing branches. On the other hand, this type of research enables the collection of information on the position of a financial institution in relation to the competition, helps to identify changes in individual services, monitor segments that use certain financial services and detect changes in their behavior. This information provides an opportunity to assess the relative profitability of different types of financial services, find market niches for which new services could be developed, and allow decisions to be made about which financial institutions want to invest in /10/. In order for strategic research to succeed, it is necessary to provide a large enough sample of users.

The second group of surveys consists of occasional strategic surveys conducted to measure corporate image. They aim to monitor categories such as the image of the financial institution in the provision of services, the price of services, financial stability, customer relations and other. In this case, it is about aspects related to the quality of services and the reputation that the financial institution has in public.

Operational or tactical research focuses on geographical division, individual market segments or services, and is conducted with the aim of identifying short-term instruments that can be provided /11/:

- extracting profits and market advantages from certain market segments or financial services,
- short-term competitive advantage due to access to newer or better analyzed information in relation to that available to the competition, and appropriate support for meeting previously set goals.

Research, aimed at achieving some of the stated goals, can use secondary data, most often those collected within the management information system. They are collected with an emphasis on the specifics of financial services, and are aimed at monitoring characteristics of users, the financial institution's experience in doing business with certain segments of users, and their reactions to the business and strategy of the financial institution.

Financial institutions organize market research in effort to answer questions related to the size and structure of the market, the needs, characteristics and behavior of users, which relates primarily to the following /9/:
• Exploring the potential for revenue and profit through the sale of additional services, segments that already use the services of a financial institution. These sales and research activities help to identify opportunities to develop additional services and are therefore extremely important.
• Research aimed at identifying potential customers is an integral part of the process of segmentation, target market selection and positioning. Thanks to information about potential customers, it is possible to more precisely define the elements of the offer and position the financial institution.
• Testing the concept of new financial services should answer the following questions:
  • how to place a new package of services intended for different market segments and
  • which marketing strategy to apply in each segment.

Therefore, it continues the previous phase, given that the elements of the marketing mix are defined according to the observed potential users. In addition, this research provides an opportunity to choose the right marketing strategy and increases the chances of market success of the services they introduce.
• Effectiveness research. Respecting the goals and interests of different shareholders, it is necessary to ensure the optimization of the use and allocation of marketing resources. For example, research into the effectiveness of advertising can contribute to improving the effects and results on the goals of promotion to a particular segment.

The whole process is based on several key elements of the information management process [8]:
• Data storage - creation of corporate knowledge (if possible data storage) that allows appropriate analysis (identification of user groups suitable for targeted marketing actions). The data model should minimize duplication and data inconsistency.
• IT systems - database integration is necessary when integrating IT systems. The integration of technology, its acceptance by employees, should be ensured before access to the user and storage of user data in databases.
• Analytical techniques - enable the analysis of collected data with the aim of creating quality bases for decision-making or knowledge. Namely, even a large amount of data that financial institutions have is useless if it is not processed and prepared for decision-making, using analytical techniques.
• Front and back-office applications - involve user interaction with the financial institution and activities that serve to support the provision of financial services. The customer's contact with the employee in the contact center must be supported by an application that allows the employee to contact the appropriate service or support workplace, to provide the requested information. Such integration is only possible by creating an appropriate IT system that includes suppliers, employees, finance and logistics.
• CRM technologies - serve as a basis for building and implementing customer relationship management systems. When it comes to financial services, part of the customer data comes from employees who are in contact with customers. Even if a financial institution does not have a formal form (questionnaire) for collecting customer data, the information that employees gather in conversations with customers, or just by observing their behavior, is invaluable. In order for this to have an impact on decision-making and supply, this information must be systematized and centralized, and delivered to all employees, especially those in whose jurisdiction changes need to be made. Employees who come into direct contact with customers have the opportunity to continuously collect data on their reactions, complaints and grievances. All the information they can gather, related to the service, is extremely important for noticing any difference between the existing supply and what users think about the supply. That is why it is very important that employees take advantage of every situation and get as much information as possible from the users. Therefore, employees...
must be educated and motivated (rewarded) for the job, but also the preconditions for timely and unhindered placement of the collected information to the competent managers must be met. If the collected information does not find the right way to the decision maker, the whole procedure is questionable and has a bad effect on the readiness of employees for future actions. If employees in contact with users in a conversation notice that the user is angry or disappointed with some experience in their organization, it is important to notify the authorities, especially if a similar case occurs again. Employees get information about how users perceive a financial institution or its marketing communication, but also how satisfied they are with the fulfillment of previously made promises. On the other hand, through targeted dialogue that employees have with service users, through comments on the price of services or elements contained in the offer, it is possible to obtain information about what is popular in the market, especially in competing financial institutions that have a similar offer and target the same market segments. It is very rare for a user to decide on a certain financial institution without having previously done a significant preliminary and targeted research. It is common to visit those shortlisted financial institutions after evaluating the available alternatives. In this case, employees have a wealth of information in front of them that can be accessed through a carefully planned interview.

It is very important that management accepts and analyzes this information because any neglect of the efforts made by employees to provide information has a negative effect on their willingness to continue to act. Managers are able to come into direct contact with employees and customers of the bank, and to receive information that is the basis for eliminating the first potential quality problem /12/.

It should not be forgotten that the key problem in this process is to provide adequate support to employees and motivate them to actively take on their role. However, as the management of organization often fail to motivate employees to perform these tasks or do not pay enough attention to their efforts, a large amount of information remains unused. Quality information from the market about competition and users, their characteristics and behavior, necessary for the process of segmentation, selection of target markets and positioning, are major for making appropriate business decisions and profitable operations. That is why the information system; flow and analysis of information from the market, is the key importance for making manager decisions. There is a need to create, develop and maintain an appropriate information system that enables the observation and monitoring of user profitability. Financial institutions should lead the whole process as follows /13/:

- Clearly define market segments.
- Try to understand the characteristics of the observed market segments - the dynamics of development, the complexity of the structure and the degree of risk that comes with doing business with the segment.
- After segmentation, consider what kind of internal organization should be created - the information system and procedures must be in accordance with the characteristics of market segments.

The development of new products and services is a major challenge for financial institutions. Under strong pressure from competition and new technological changes, as well as the turbulent changes in the environment, financial institutions must continuously develop new products and services. They are often a combination of existing services. The exception is the development of new services related to e-business, which requires significant investments in technological resources and education of employees and users. The development of new financial services is achieved through /9/:

- adding new services to the existing offer,
- a new combination of existing services,
- modification or extension of existing services,
- a combination of all of the above.

When a new service is added to an existing offering, it is most often an innovation in the...
market either technological or just in product concept. In this way, the bank makes difference from the competition. Unfortunately, financial services are easily copied and this is where the problem arises. If competitors start to follow and market similar products, in such a wide range of products and services it will be difficult to reach users and communicate the benefits of the new service.

The combination of existing services is done with product packages. Due to the wide range of services available, users are often not even aware of the options available to them. Therefore, the new combination, better adapted to the specifics of a particular segment, is easy to perceive as a new product.

Modification of existing services actually represents better versions of existing products and services, such as a newer version of internet banking with additional functionalities.

The combination of all the above possibilities is most often used for large changes in the market, depending on whether it is technological, competitive or changes in user preferences.

The whole process of developing new products is extremely complex, requiring a high level of information security and minimal errors. It represents a very demanding manager job that involves meeting customer needs and innovation /14/. Financial institutions regularly research the market, customers and trends and launch new products. New product development needs information from changes in the market from the economic point of view, then innovations and changes in customer needs and competition responses.

**EMPIRICAL ANALYSIS IN BANK**

The empirical research was done in the bank’s branches on a representative sample of 1008 respondents over the age of 30, in the five largest cities regions (Banja Luka, Doboj, Prijedor, Bijeljina i Trebinje) of Republic of Srpska in Bosnia and Herzegovina from January 25th, 2021. until April 29th, 2021. The survey question was filled exclusively by the users of the non-purpose cash loans at the time it’s approval. Therefore, the survey did not involve persons who applied for a loan, and to whom the loan was not approved for a certain reason, if they did not meet the requirements of the prescribed procedures.

Answers about the purpose of spending a non-purpose cash loan, are extremely important for bank and new product development. The purpose and goal of this research is the development of new credit products with regard to the percentage of demand or use of non-purpose credit for specific purpose. Knowing that a non-purpose loan, together with approved account deficit, is the most expensive loan for the user, it has the highest interest rate, it is assumed that a large percentage of clients would prefer to use cheaper special-purpose loans if they exist in the credit institution’s offer.

With the restrictions set by the regulatory authorities, it is to be expected that with the expansion of the offer of special-purpose loans, banks would increase the number of users, what will lead to various other services per user, with the end result of increasing total profit. This is supported by the fact that the expansion of the offer of banking services is necessary because nowadays the world’s financial conglomerates generate over 50% of their total income from non-interest income.

**Survey question:**

For which purpose will you use the approved non-purpose loan?

**Reply Options:**

1. I will give money to a family member to buy a car, pay a college, pay for a wedding.
2. Payment of regular monthly expenses (bills for electricity, water, heating ).
3. Household maintenance (food and beverage).
4. Heating material (pellets, wood, coal).
5. Renovation of a house or apartment (renovation of a roof, bathroom, pipes, floors, etc.).
6. Security savings.
7. For travel.
8. For arranging a funeral, tomb and monument.
9. For health treatment.
10. To repair a car.
For which purpose will you use the approved non-purpose loan?

| Purpose                                                                 | N  | %    |
|-------------------------------------------------------------------------|----|------|
| 1. I will give money to a family member to buy a car, pay a college, pay for a wedding. | 66 | 6,548|
| 2. Payment of regular monthly expenses (debt for electricity, water, heating). | 152 | 15,079|
| 3. Household maintenance (food and liquid necessities). | 64 | 6,349|
| 4. Heating material (pellets, wood, coal). | 158 | 15,675|
| 5. Renovation of a house or apartment (renovation of a roof, bathroom, pipes, floors, etc.). | 150 | 14,881|
| 6. Security savings. | 12 | 1,190|
| 7. For travel. | 10 | 0,992|
| 8. For arranging a funeral, tomb and monument. | 26 | 2,579|
| 9. For health treatment. | 136 | 13,492|
| 10. To repair a car. | 22 | 2,183|
| 11. To buy a car, motorcycle, bicycle. | 6 | 0,595|
| 12. For vehicle registration. | 42 | 4,167|
| 13. To buy a computer or washing machine or dishwasher, etc. | 30 | 2,976|
| 14. For the purchase of PVC doors or windows- | 34 | 3,373|
| 15. For agriculture (purchase of livestock, seeds, machinery). | 66 | 6,548|
| 16. To refinance other loans. | 4 | 0,397|
| 17. For the cost of gifts, for example baptism. | 4 | 0,397|
| 18. For the costs of resolving the property status of real estate (lawyers, notaries, taxes). | 22 | 2,183|
| 19. To start a personal business. | 4 | 0,397|
| 20. None of the above. | 0 | 0,000|
| **TOTAL:** | **1008** | **100** |

From the table above, we can see that the most non-purpose loan was used for heating material (15,675%), payment of regular monthly expenses (15,079%) and renovation of house and apartment (14,881%). Health treatment is next, 13,492%. So, almost 60% of non-purpose loans are used for 4 categories responses. Such large percentages for a particular consumption purpose are a direct indicator of what a credit institution should pay attention to in the future; it knows exactly what customers are spending on a raised loan. With such results, it is justified and desirable to offer a dedicated loan to the credit products market for the stated purposes. The advantages of special-purpose loans are mutual, both for the credit institution and for the users.

CONCLUSION

This paper emphasizes and demonstrates the benefits of successful information management in the process of developing new products. A well targeted group of respondents from empirical research proves that gathering information directly from users of products or services in the business of a financial institution is a condition “sine qua non” in creating and developing new products and services in the financial market. Quality products are incorporating more and more knowledge about users, which contributes to increasing the value of a new product. Products become personalized, customized to the user. There is a marketing relationship that indicates the importance of long term relationships of the institution with customers. This primarily emphasizes the lifelong need of users for financial services. This ensures the financial development and growth of
the financial institution in relation to strong competition in the global financial services market, and its long term survival.

Notes

/1/ Bettiol, M., Di Maria, E., Micelli, S. (2020). Knowledge Management and Industry 4.0: New Paradigms for Value Creation (Knowledge Management and Organizational Learning, 9), Springer.
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