

# Libraries in Social Networks: Opportunities and Presentations

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**Abstract.** The article is devoted to the research of the latest virtual forms of social activity of libraries in the network environment. Social media is considered as a means of forming communication links in library science, the presence of libraries in social networks, interaction with readers through social media. Also provided are social networking tools that help you communicating information to users, promote the activities of the library. The approach to assessing the activity of libraries based on the metrics of assessing the effectiveness of business conduct in social media marketing is proposed.

**Keywords:** Information Society, Library, Social Media, Social Networks, Metrics of Estimation of Efficiency.

## 1 Introduction and Motivation

In modern science, per the most well-known theories of progressive social development, there are concepts of the information society whose task is to understand the future of mankind, the place and role of information, communications, etc. in it. The rapid process of informatization of society makes information a key object in human life.

## 2 Related Research

Several works by foreign authors are devoted to the definition of basic concepts that characterize the information society among which are the work of D. Bell, K. Verbach, R. Can, M. Castells, R. Katz, E. King, J. Masudi, T. Merrill, M. Porata, L. Roberts, C. Robinson, E. Toffler and others.

The Ukrainian researchers focused on the study of the phenomenon of the information society and the peculiarities of its development in Ukraine: V. Belousov, S. Hnatyuk, E. Golovakh, O. Dzoban, D. Dubov, O. Kartunov, V. Kondrusyev, Y. Lyubiv, V.

Lyakh, O. Marukhovskiy, M. Mikhalychenko, O. Ozhevan, V. Pazenok, V. Pylypchuk, K. Rida, O. Rubanets, V. Fedorchenko and others.

The priority of the state information policy of Ukraine at the present stage of state formation is the formation of an information society and a complete entry into the world information space. In accordance with Principle 5 of the "Concept for the Development of the Digital Economy and Society of Ukraine for 2018-2020" "Integration of Ukraine into European and Global Systems and Infrastructures is, in particular, the result of conscious and full implementation of information and communication and digital technologies" [1].

Today, electronic information technologies have not only revolutionized the formation of the information sphere of modern civilization but have also become a qualitatively new factor in the development of globalization, have created opportunities for global information exchanges, a real prospect for the unification of civilization into a single information organism.

In the conditions of the formation of the information society and the strengthening of the role of information as a strategically important resource, the importance of libraries to meet and form the information needs of both individuals and society increases significantly.

**The purpose of the present research** is to determine the features of the use of social networks in the activities of libraries.

### 3 Basic Points Statement

Modern information and communication technologies open completely new possibilities of functioning of libraries, which raises requirements to the library-information sphere and its specialists in terms of designing, forming, changing the image of the library. The most widespread among the latest technologies that libraries use today are Web 2.0 technologies.

The Web 2.0 technology provides new marketing solutions that allow you to change the principles of promoting a specific set of social, educational and library services. This is made possible by creating interactive links between the library and users. The synergy of such communication in the library environment allows several times to increase the efficiency of using information, which greatly stimulates the strengthening of the positive image of the library, can significantly enhance the information, communication, educational and cultural and educational role of libraries in modern society.

It is worth noting that the implementation of essential social functions of libraries is now connected with certain difficulties, including: reduction of budget financing of library activity; increasing competition from commercial information structures involved in the storage, processing and provision of electronic information; distribution of modern Internet systems, etc. Consequently, communication processes based on digital technologies are gaining a special significance in the activity of the bookshops. One of the most dynamic Internet communications channels is social media. In terms of the technological component in general, social media is an online application based

on the ideological and technological Web 2.0 platform that allows users to create and share content.

Social media is an interactive way of delivering information that is both a communication medium and a platform for communication and content sharing, where the Internet is a communicative source, with the main features being universality, interactivity, accessibility, mobility and communicativeness [2].

Social media is defined as a set of all online platforms that enable online users to communicate with each other and produce user content. In other words, these are web resources designed to communicate with users online. Communication can take different forms - users can share their thoughts, experiences and knowledge, interact with each other, set up contacts, and share news, information, videos, photos, music, and recommendations.

Social Media includes:

- social networks;
- blogs;
- forums;
- dating sites;
- Wiki (a website whose structure and content users can independently modify through the tools provided by the site itself);
- video hosting (a site that allows you to download and view videos in a browser, for example, through a special player);
- social bookmarking, etc.

In the context of the formation of communication links in librarianship, social media play an important role in spreading knowledge, become an instrument for international exchange of operational scientific information, offer tools for improving social communication, which brings the scientific community closer to the level of relations and interconnections characteristic of civil society [3].

In addition, today's social media for libraries is an advertising platform that helps to learn the target audience, demand for library services, receive feedback, increase attendance at events, and more. Based on collective functionality, communicating with users, social media offers libraries already ready tools for building a horizontal model of interaction with users, which is mutual, equitable.

To construct, reflect and organize social relationships, their positioning, libraries are actively using the capabilities of Internet communities (social), social networks, blogging for their positioning.

The presence of libraries in social networks of text, visual, video and audio content, interaction with readers through social media in various dimensions was researched by both foreign and domestic scholars, including T. Granchak, T. Usov, I. Kirichok, M. Nazarovets, O. Marina and others.

A social network is a structure based on human relationships or mutual interests. As an Internet service, the social network be a platform by which people can communicate with one another and group them per specific interests. The task of this site is to provide users with all possible ways to interact with each other - videos, chats, images, music, blogs, and more.

A. Tarasevich characterizes the social network - as a "social structure consisting of nodes (they can be both people and groups of people, communities and organizations), which are interconnected in one way or another through social relationships" [4].

The number of social networking users in the world is steadily increasing. Per the 2019 Global Industry Report, prepared by We Are Social and Hootsuite, by the beginning of 2019, the number of social networking users around the world has nearly reached 3.5 billion - data from the most popular social platforms in more than 230 countries and territories. Only in the last 12 months, 288 million new accounts were registered in social networks, resulting in a 45% penetration rate for social networks in the world. In general, the Internet audience is spreading at a rate of 1,000,000 new users per day.

Per the research, as of 2018, 25.6 million Internet users live in Ukraine, accounting for 58% of the total population, and 13 million of them use social networks.

The amount of time that users spend on social networks this year has grown, and averages 2 hours and 16 minutes. Interestingly, in different cultures, the time spent on social networks varies considerably - in Japan, for example, Internet users spend on social networks for just 36 minutes a day. Filipinos spend on average 4 hours and 12 minutes on social platforms.

In such a situation, it is obvious to libraries that it is necessary to use social media and social networks in their activities. Social networking tools help to communicate information to users in a very convenient way, as well as promote the library's activities. Social networking tools help to communicate information to users in a very convenient way, as well as promote the library's activities [5].

The social network for the library is:

- additional resource;
- platform for the implementation of library projects;
- an opportunity to declare yourself;
- the ability to directly communicate with colleagues, readers, learn about their opinions, wishes, remarks;
- an opportunity to inform about the activity of the library;
- marketing research tool [6].

Particularly relevant is the targeting of remote users who want to have online access to the library and its resources, to visit it only in a virtual environment, to receive services and information about them in any convenient form.

Important is the integration of library sites with social services, which improves the image of the library site, the active attraction of visitors (traffic), indexing the site search engines and increasing the number of external links.

The use of social networks opens the library with broad opportunities for communicating with users, forming interest groups and working with the target audience. It is social networks that allow to quickly receive and share professional information with colleagues, to enter discussions and to be involved in the discussion of urgent and urgent issues in the professional field.

The presentation of a library in social networks enables users to share information with a wide audience; communication between the library and users using feedback; provides an opportunity to conduct surveys and research in various fields, such as social, marketing, etc., to establish cooperation and partnership with various organizations and institutions, to attract users to partnerships.

The libraries of Ukraine actively use the opportunities of social networks as a channel for the promotion of information and library resources and services, for personal branding, the dissemination and development of professional ties, the creation of their own information platforms, the conduct of various interactive actions, etc. They are most featured on social networks such as Facebook, YouTube, Instagram.

In the domestic segment of the library community Facebook personal profiles presented librarians Official website of library and information institutions and their departments, higher education and some university faculties direction of library and information education, professional organizations, projects and community created for users or colleagues. Representative offices of libraries and associations of librarians of separate regions are created; The groups are created for informational support of various professional projects; thematic groups (methodological and ethnographic work, work with readers with special needs, information technologies), groups of discussion of issues and finding solutions to pressing problems in the professional field ("Library Electronic Statistics and Reporting", "Universal Decimal Classification (UDC) in Ukraine"), informal communities.

Obviously, "informing is one of the most popular components of library representation in social media. In general, libraries are informed about events, events, news, funds, cooperation with libraries, universities, information and social centers, the schedule of work of the library, etc. [7].

By using the "create event" tools provided by social networks, libraries act as initiators – moderators – co-authors – the formation of topical events, surveys. This allows you to create conditional subpages with a description, time, date and place of conduct, provided for the readers the option to mark their participation, to report on their own pages about the interest in the event [7]. And the use of the survey tool in social networks makes it possible for libraries to create questions with presented variants of answers based on which analysis of certain topics for further use in work. The library can quickly learn the user's opinion about the actions it conducts or changes in the working regime, to find out their interests, tastes and wishes [8]. Evaluate the effectiveness and correctness of the selection of content possible using the following parameters: the number of likes ("Like" mark); number of comments; page attendance (using the built-in function of obtaining statistics); number of material reposts.

One of the new Facebook tools was the Notes app, which was introduced to users in 2015. The updated app is positioned by developers as a blog platform - "its own platform for blogging" - its goal is to be "easier for people [to] create" and read long gates" [2].

With the tool "Notes" in libraries are: announcements, press releases, event notes, photo reports, information report, library report, digest, etc. In addition, the Notes functionality allows you to create analytical articles, interviews, comments, long lines and other publications. It becomes obvious that social networking pages greatly in-

crease the efficiency of libraries, and, therefore, it is necessary to continually work to attract the user to their social platform, to bring to it the range of services offered by the library, to make them more popular among potential users. Therefore, in addition to the information of the reference, the bibliographic nature, it is necessary to place entertaining and cognitive information. One way is offered by the New York Public Library, which for several years of analysis has noted: the only thing that invariably attracts the audience is the statement of well-known and influential people. This was followed by a marketing campaign that increased the number of visitors by 35%.

Thus, today Ukrainian libraries are actively working in social networks. For more effective maintenance and promotion of the official account should be engaged employees who have special training in the promotion of the library in the electronic environment, have a flexible thinking, analytical mind, have knowledge in the field of both marketing communications and SMM (Social Media Marketing), to implement creative promotions, targeting. In qualitative analysis - to deeper explore the sensitive content points that affect the online audience.

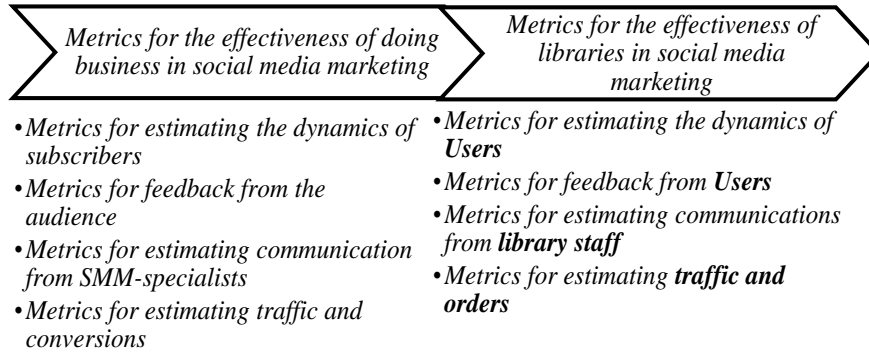
In addition, to create a strategy for managing librarianship in social networks, the employees responsible for filling the account, it is necessary to combine activities in social networks with other channels of communication, to analyze the pages for the continuous study of content, conduct marketing research to identify user interests and adjust content, use marketing impact to connect to audiences.

Given the fact that media consumers are quickly divided into interest groups, they want to read and watch what was done specifically for them, so you need to be able to personalize the content, learn to work qualitatively for narrow-segmented audiences.

A new trend, set by advanced media, is gaming of news. Using the tools available for all media tests and test games vocational subjects, will allow deeper attract audiences like to put the reader into the story, which is described. New era, new formats, new approaches, new gadgets bring the factor of creativity to the forefront. The media market wins' projects that offer readers a fresh approach and enjoy a sense of awareness.

Considering the listed social networking guidelines, libraries can enhance interaction with users, attract new audiences that are difficult to access through traditional media. In the articles 1, 4 of the Law of Ukraine "On Libraries and Library Affairs" the provision of information, research, educational, cultural and other needs of users of the library is placed on the main task of libraries, and the basis of state policy in the field of library business is the implementation of citizens' rights to library services, ensuring universal access to information and cultural property collected, stored and provided for temporary use by libraries. Thus, the activity of libraries requires new approaches to creating effective channels of communication between users and the network of national information resources. Of course, such activities need to be monitored and evaluated.

The approach to assessing the activity of libraries based on the metrics of assessing the effectiveness of doing business in social media marketing is proposed (see Fig. 1).



**Fig. 1.** Categories of performance metrics in social media marketing.

Consider the components of each of the categories of metrics in relation to the efficiency of libraries.

The components of the category of metrics of estimation of user dynamics include the following:

The number of registered users (or users subscribed to receive content). A significant number of users will show that the content is useful on the electronic resource and the interest of users in the materials of such a library. To estimate the dynamics of this indicator in period  $n$ , it is suggested to use the following equation:

$$K_n = \frac{t \cdot x_n}{\sum_{i=n-t}^{n-1} x_i} \cdot 100\%, \quad (1)$$

where  $K_n$  – is the coefficient of change in the number of users;

$x_i$  – number of users who registered in the  $i$ -th period;

$t$  – is the number of preceding periods to estimate the dynamics.

In the simplest version, it is enough to compare the number of users of the settlement period  $n$  with the previous period  $n-1$ . In this case, equation (1) will take the following form:

$$K_n = \frac{x_n}{x_{n-1}} \cdot 100\%, \quad (2)$$

1. The number of deleted (closed) accounts (or unsubscribed users). This metric can be calculated by analogy with equation (1). In this case, the value of the variable  $x_i$  of equation (1). will be equal to the number of deleted accounts. Such indicator becomes an indicator of the correctness of the chosen communicative strategy.
2. The growth rate of the user audience is calculated by the equation (3).

$$K_n = \frac{\hat{x}_n - \hat{x}_n}{\sum_{i=1}^n (\hat{x}_i - \hat{x}_i)} \cdot 100\%, \quad (3)$$

where  $K_n$  – the rate of growth of the user's audience in the  $n$ -th period;

$\hat{x}_i$  – number of users who registered in the  $i$ -th period;

$\hat{x}_i$  – number of users who registered in the  $i$ -th period.

Such a coefficient is an indicator of the existing development of the library resource.

1. Number of views (unique and non-unique). Unique views are an indicator that allows you to measure the number of users who have unique characteristics (account, cookie browser, IP address, MAC address, etc.) and are interested in certain content for a certain amount of time (hour, day, month, year, etc.). Unusual views typically show the intensity of the content you want to see.
2. Coverage. The metric shows the number of unique users who at least once interacted with the content of the library. With it, you can segment your user audience with one or more features and / or compare the interest of the content contained in the library.

The components of the next category of metrics "Feedback from users" describe the various types of user interaction with the content: positive, negative, neutral feedback, content download, commentary, referrals, recommendations, etc.

Let's show how you can calculate some of them.

Level of attractiveness of the content.

$$K_i = \frac{x_i}{W} \cdot 100\%, \quad (4)$$

where  $K_i$  – coefficient of attractiveness of the  $i$ -th content

$x_i$  – the number of positive reviews on content of the  $i$ -th content;

$W$  – is the number of users registered in the  $i$ -th period.

An adequate level of content attractiveness is a guarantee of the growth of a user's library audience.

1. The level of sociability is calculated by an equation that is like equation (4). In this case, the number of comments remaining after the publication is used as the value of  $x_i$ .
2. Negative feedback.

Not always metrics reflect positive actions, so it's equally important to follow the negative reaction of users: concealment of posts, complaints, negative reviews. Such reactions may indicate a lack of relevance of content, technical problems with electronic resources, and even reputable losses.

To this category, metrics are usually: spread ratio, audience engagement rate, engagement rate, engagement per day, rate of engagement per view.

The next category, "Metrics for evaluating communications by library staff", contains metrics for evaluating the activities of library staff responsible for content creation, including: the frequency of posting messages.

1. Frequency of publication of messages. This metric can, for example, correspond to the number of events reporting information for the reporting period.
2. Frequency of publication of the content for the reporting period.
3. Average response time. The metric shows the time required by the library administration to respond to user messages. This is an important indicator of service quality and respect for its readers.



#### 4. Feedback frequency.

Another important indicator. It shows the share of questions the users have received. It can be calculated by a simple equation:

$$\nu = \frac{x}{y} \cdot 100\%, \quad (5)$$

where  $\nu$  – the frequency of the response of the library administration;

$x$  – the number of administration answers on the questions posed by users of the library;

$y$  – total number of questions put.

The last metric category Metrics to Measure Traffic and Orders shows how you can evaluate the efforts made to implement the rights of citizens to library services.

In internet-marketing, the number of sales (number of conversions) is the main indicator for estimating the effort expended. In this case, a conversion is understood as the performance by customers of valuable actions on a site, application, or messenger (-s), for example, the indication of payment information, the purchase of a product or service order. When it comes to conversions in libraries, the choice of indicators requires a special approach.

Therefore, it is proposed to use the following indicators:

- number of references to scientific resources of the library;
- number of authors who formed these links;
- the number of patent libraries developed based on materials;
- number of activities conducted based on the library, or with the involvement of library resources;
- number of created thematic portals for self-education and professional education;
- number of certificates received with the support of libraries of advanced training courses;
- participation in cross-border inter-library partnership projects and grant programs.

## 4 Conclusions

Use of social networking tools in libraries helps to promote information and library resources and services, to form personal branding, to disseminate and develop professional relationships, to create their own information platforms

Consequently, the proposed scientific approach to monitoring and evaluating the activity of national libraries will allow to more effectively develop interaction with users and more fully meet their needs, which will strengthen the image of the library in society as a modern information institution, will ensure the effectiveness of the implementation of state policy in the field of library business.

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