

Change of needs of library users caused by the changes of conceptualisation of experiencing time and information under the influence of modern technologies

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ABSTRACT: Through the observation of changes in the way of conceptualising the experience of time and information, caused by the impact of information technology, especially the Internet, the changing needs of library users are examined. Implementation and modern concepts in librarianship are presented as a means of satisfying user needs - shared cataloguing systems and the concept of "Library 2.0". An aspect of modern concepts realization is the inclusion of all library collections into shared cataloguing systems, such are COBISS or BISIS, which includes school and higher education libraries, as well as research institute and institution libraries, implying constituting of virtual, school, higher education and research libraries. Implementation and presentation of these concepts are done for improving the services and achieving a higher degree of modern user needs satisfaction.

KEYWORDS: time frames, the physical time, digital time, internet, virtual space, hypertext, hypermedia, COBISS, virtual research library, Library 2.0

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1. Aspects of influences of modern technologies

Sociological phenomena and changes in the way of functioning and operating in all the spheres of modern society are most often interpreted through the influence of information technologies and their obvious development. The aspects of this influence are diverse. What is usually meant when talking about this influence, is the inevitability of usage and application of information technologies, following

their development and education relating to the information technology.

Even more researched lately is the aspect of influences of the modern technologies that are directly relating to the psychology of modern man, and by that his way of life, i.e. changes in priorities and requirements, concept of time, causing a change in the way information is experienced.

Having in mind that the information technologies, primarily the Internet, and their way of functioning have permeated all spheres of life, their characteristics also influence the change of personal experience and needs, which is something individuals are often not sufficiently aware of.

The consequences of these changes influence the change of organisation and the manner of operation in librarianship. In order to satisfy the users' needs to a greater degree, aside from following the development and trends of information technologies, it is necessary to examine which changes in experiencing time and information occurred, what kind of changes they were and what was their extent, in order to adequately answer the expectations of a modern library user.

This examination requires consideration of several aspects – conceptualisation of the experience of time, implying the existence and modification of certain timeframes that are changing under the influence of modern technologies; influencing the changes in all walks of life, and in librarianship as well, causing fundamental repercussions in the form of changing the methods of cataloguing, customer support services, changed relations and roles of

a librarian and a user. In order for all these changes to have the most positive effect possible, for both libraries and users, it is necessary to consider the change of the way time and information are experienced by the internet users in other spheres of life and work, and then compare the complementarities of those changes with modern concepts in librarianship, as well the degree of fulfillment of a modern user requirements. To achieve that, it is required to determine what exactly is implied by the changed needs of a modern user, which is also defined by the cause of its changes.

It is evident that the change of needs arose under the influence of information technology, which was a subject of a lot of discussion. Unfortunately, very little attention is afforded to the constituents of this change, meaning the change in the way of conceptualising the experience of time and information, as well as reasons and stages by which these changes in the experience came into being. The fact that this change influences the area of librarianship additionally requires an answer to these questions, which opens up the issue of human experience of time and information before and after the development of information technologies.

2. Time Frames

If we were to view life from the perspective of different times, we would get an exceptionally complicated graph full of overlapping, in which every aspect of life would be placed into a unique time frame. The number of time frames would be the same as the number of communities the observed subject belongs to and is described by. Those different time frames, which form the complex network of a life time, can also be called "times to/for", or "times when".

If we observe the journey of education in the technologically advanced countries, there is a time when people start elementary school, there is a time when they start secondary education and the right time to enroll in a college or a university, and in the same way there is a time when the school ends and time of year when all the exams should be passed.

An individual who fulfills all their obligations in the foreseen time is considered successful in the eyes of the community, and if they do not fulfill them, an individual feels discontent and anxiety in communication with others, which can often be seen in the example of students who have missed their time for graduation or a child who has failed a year in school, so it is automatically considered problematic. For those who do manage to fulfill their socially predetermined education process, what follows is employment, which has the extension in the form of the deadline for getting employed, and then time for business advancement and time to retire. Failing to meet these times, aside from conflicts with the community, also causes a person who is getting older to have less and less time to change, and if they are not employed

by certain age, in the eyes of the community they must be weird. Such people, according to the stereotype that was until recently held true, are most often the ones that sit in front of a computer. In time, we got used to coexisting with information technologies, so this stereotype is not generally considered correct in the same degree as before. Today, the person who spends several hours in front of a computer is no longer thought of as weird, and this manner of work or spending time is regarded as usual.

Of course, that manner of spending time has its advantages and disadvantages, the ones that cause positive and negative repercussions for an individual and the quality of their life.

If we observe time from the aspect of a person's romantic life we get strictly established, "times to/for", founded by medical, religious and social reasons. So we have time for a first kiss and time for first sexual intercourse, as well as time for having a long term relationship. As an individual grows and matures, there comes time for marriage, time for babies, as well as time for grandchildren. Any instance of missing one of these times, aside from the social judgment, unlike all other missed times, causes pity, since this set of "times to/for" is considered the only recipe for happiness, and following that, in order for that kind of norm to function, failure to fulfill it must be considered either pitiful or a perversion of some kind.

From the aspect of health and body, we will note that the frequent statements like: "she is too young to be sick," or "considering her age it is no wonder she is in pain", then "time heals everything", as well as "it will pass in time," and "having lived as long as she has, she has had her fair share of life", could lead us to think that a man 'has', maybe subconsciously, 'time for illness', and very consciously also 'time for death'. We should also not omit to mention friendship as an important aspect in which there is separation of time for friends as a proof of utmost devotion, reflected in actions such as "Even if he called me at 3AM, I would certainly go" , which is the proof that the friendship exists at all. All this confirms the existence of time frames independent from the information technologies. A sense of them, as

well as (not) observing them, is sociologically conditioned and in that way it is well-grounded and imminent to a human being. The question of how the information technologies influence the change of these frames has a twofold answer - both positive and negative. In some cases, the Internet saves us time, we get to the information faster, giving us the extensions of a time frame for "time to" and in some cases it takes away the free time by its interesting and entertaining contents.

The balance of these positive and negative consequences among other things is accomplished by a higher degree of inclusion and presence of educational contents on the Internet, which certainly implies the presence of libraries and library material. This presence cannot be accomplished in any manner, but only in accordance with the changed user needs and the change in the way of conceptualisation of experience of time and information. To accomplish that, we must consider separately the change of the way we experience information and the change of conceptualisation of time, which is more complex since some characteristics of the modern technologies have been included in the experience of time.

If we observe time from all these social aspects, we can conclude that a human life is divided on one side into: seconds, minutes, hours, days, weeks, months and years, and on the other side into "times to/for" and that the overlapping of all these times, despite its intricacy and complexity causes great stress and fear of not fulfilling the deadlines.

There are numerous ideas about plurality of social times, George Gurvitch (1964) shaped one of them into eight types of social times, by which each and every type is determined by a specific manifestation of sociality. Enduring time is described as time spent with one's family, as the regular everyday life and time that passes slowly, and Deceptive time represents time of one day in life with all its routines and surprises. Erratic time is described as time of irregular life, great world events and general insecurity during great historical turning points, time of irregular oscillations, between disappearance and reappearance of regular

ones, while the Cyclical time, on the other hand is time of safety and confidence in life. Retarded time is time of social symbols and institutions which, having reached full accomplishment, are already in the past, the opposite of which is the Alternating time, a time between delay and progress, and it is also based on the past, but its purpose is moving in the direction of changes, not stagnating. Time in advance of itself is time of innovation and the aspiration in which we reach with our hands towards the future and pull ourselves forward, and in the end Explosive time, time of collective creation and revolution, enabling changes of the existing structures and general restoration. All the areas, librarianship as well, go through and suffer the consequences of alternating changes of these social times, so it is good to anticipate a possible time that

is ahead and prevent or reduce the negative repercussions.

These social, physical and personal times are contemporaneous and make the basic schematics of the human life, while causing great burden for an individual. With their advancements, technologies and civilisation cause even greater burden with the overflow of information, since it is becoming more apparent that some times are mutually exclusive and that in the end one man does not have time for all types of time. With the development of technology, this leads to expansion and great popularity of the so called digital time¹, as a unique escape from certain failure in one of the areas and under the pressures of today's society.

3. Time: From Physics to Metaphysics

In order to fully comprehend the concept of time we should remember all aspects of time.

From the physics standpoint, time is a part of the metric system and it is used for sequencing and assorting events, as well as the comparison of the length of events, intervals between them and quantification of object movement. It is one of the seven basic quantities in the SI² system and a component of formulas used to state speed and frequency. Observing a certain number of repetitions of a cyclical event constitutes one standard unit of time, used in everyday life affairs as well as for experimental purposes. Cycles of day and night, pendulum swings and heartbeats would not be measurable without a strictly predetermined duration of one second, which is defined as a unit of time during which an atom of caesium emits radiation. An operational definition of time such as this one sets aside the philosophical question of existence of time and relies on the characteristics of passage and measurability and observes time exclusively from that angle.

There are two forms of temporal measurement: a calendar – a mathematical abstraction used to

express certain time periods (day, month, year, style, era) and a clock – a physical mechanism that counts the ongoing passage of time. A supporting historical science of chronology deals with determining time periods, and chronometry deals with determining the physical division of time into hours and smaller units.

The lunar calendar is probably the oldest type of calendar and it is based on a division to twelve months, with the year comprised of 354 days. This calendar was used in Mesopotamia, Egypt, ancient Greece and ancient Rome (where it was called Calendar of Numa by the king Numa who introduced it) (Bourgoing 2001, 14-16). Caesar's reform in 45 BC introduced a solar type of calendar in Rome, based on seasonal changes synchronized with the apparent movements of the Sun. This type of calendar was devised by Sosigenes and it was called Julian calendar and had an error of 11 minutes per year.

Pope Gregory XIII corrected the Julian calendar in 1582, by removing the ten "excessive" days. This type of calendar is called Gregorian and slowly, over the subsequent

¹ Digital time (internet time or virtual time) is the amount of time that passes from the perspective of an individual (it is most often a far shorter interval than the interval of actual physical time) during usage of computer and/or the Internet.

² International System of Units, fran. Le Système International d'Unités

centuries found its place among many nations. The most modern and perfect calendar was devised by Milutin Milanković as a part of his research of the Earth's planetary cycles at the beginning of 20th century.

The devices used for measuring the passage of time shorter than one day have been developing through history. Development started with Egyptian T-shaped clock, the precursor of the sundial, which measured time according to the movement of the shadow, then continued with water clock (clepsydra), the earliest example of which was found in Amenhotep's tomb; the candle clock and oil-lamp clock which were mostly used in the Far East, up to the hourglass used by Magellan, and the Chinese mechanical clock from the 11th century. We should not neglect to mention Richard of Wallingford, the abbot of St Alban's Abbey, who made a precursor of the astronomical clock at the beginning of the 14th century, and Galileo Galilei, who came up with an idea for a pendulum clock. (Watson 1979)

At the very end, as the most precise, we should mention the atomic clock. Today, clocks are reduced to the size of a chip, they are worn on a wrist and aside from time, they also show longitude and latitude, atmospheric pressure and temperature, and can synchronize via satellite with any clock on Earth³.

On the other hand, philosophy observes time from two standpoints. One school of thought is that time is a part of fundamental structure of the Universe, a dimension unto itself, in which the events are divided into sequences⁴ and by that they enable thinking about time traveling, because time is envisioned as a sequence of linear images, therefore their manipulation would be possible. The other view

denies time per se and proposes time as a part of the intellectual structure of humans which serves only so that humans could sequence and compare events, meaning that time is not an object, it is not measurable and cannot be manipulated (Dowden).

Kant describes time as an a priori intuition which enables us to comprehend and sort out what our senses are sensing. Certainly, the perception of time is through movement, so that would mean that periodic events and movements are indications of passage, and the angle of observing them splits these two comprehensions of time to internal and external (Kant 1922, 24-33).

Religion has a somewhat different view on time. According to it, there are two kinds of perceiving time – linear and cyclical, and we should also mention the introduction of "time to" into human life. In a book from the Old Testament it is mentioned that there is a predetermined time for everything – to be born, to die, to sow, to reap, to heal, to laugh, to cry – which would be the first noted examples of "time to".

According to the Bible, God created time as linear; it has its beginning, and consequently has an end. According to ancient Indian civilisations, as well as Mesopotamian, Ancient Greek, Indian and Buddhist civilisations, time is cyclical and is comprised of time between the birth of the world and its destruction, which repeats itself cyclically. Ancient Greek language differentiates between two principles Chronos and Kairos, as principles of numeric, chronological time and actual, exalted time, as a difference between quantitative and qualitative.

4. The Quicksand of the Internet

The Internet is a global information and communications system, comprised of networks through which the information is freely exchanged. It is a communications technology used by almost two billion people all over the

world without which life as we know it today would be impossible.

As Del Brutto pointed out, entering of the Internet into the domain of privacy brought about the revolution of life of its users. Internet

³ International Atomic Time (TAI)

⁴ Newton's time

relay chat (IRC) was the beginning of this change long before the 21st century and long before the existence of the Internet as we know it today. IRC was designed for multiple users with a multitude of channels which allowed the Internet users to chat in real time (without physical or visual contact), using textual messages. Modern social networks are more advanced forms of social media, compared to forums, chat rooms and blogs, and the new generation of social media pages boomed with the appearance of Friendster.com in 2002, and it soon became a part of the Internet mainstream.

Already in 2003 the Internet population was defined by large virtual entities like the MySpace portal or the most popular social network of today, called Facebook.

According to a survey by "Nielsen Online" it can be noted that social networks became the fourth most frequent activity of Internet users. Time spent on social networks is almost three times longer compared to the time a user spends on other internet pages⁵. Average social network users around the world during December 2008 spent more than five and a half hours on sites such as Facebook and Twitter during December 2008 state the result of the market survey conducted by "Nielsen". It is an increase of 82% compared to December 2007, when an average user spent around three hours per week on social networking, which increases the fear that the usage of internet could lead to a social collapse of an individual, their alienation, putting their psychological and living welfare at risk, reducing social activity and the degree of social inclusion, and undermining the quality of family life. The stereotype of an Internet user seeking online acquaintances consists of an image of a lonely person (Putnam 2000), inadequate and unattractive to others, an image of time being wasted in an escape from reality caused by some personal failure. Various researches conducted on this topic so far show that there are more researches whose results confirm the theory of alienation than the theory of globalisation, but the image of wasted time stays universal and undeniable.

Perception of time of an Internet user playing

video games over the web with millions of other strangers is a good example of distorted time. Video games, aside from virtual world and virtual personalities also have virtual time. So in most games there are cycles of day and night, seasons, and sometimes years. The indicator of passage of that virtual time are visual effects in the virtual world, as well as having a date and a clock for that virtual time placed on a not very prominent place. An additional problem is caused by the fact that the video game users are physically sitting on very distant points of the Earth, and that while in the game two virtual characters observe a winter morning sunrise, the two players are sitting in front of their computers, one in the middle of the night in Los Angeles, and the other one in the early afternoon, sitting on a beach in Australia. If we observe this situation from Kant's standpoint of time perception, we can ask the question: What is actually time for the two of them?

The most popular video games organize public celebrations of both fictitious and actual holidays, so they celebrate New Year, the great religious holidays of all religions, Samhain, Beltane, Valentine's Day and both equinoxes and also celebrate imaginary holidays of that virtual world. The problem arises since digital time passes much faster than the real time, seasons and years change, holidays are celebrated, and then without warning the time to celebrate a real holiday comes. Players often lose perspective for the real passage of time, feeling connection to their roots through respecting both their own and other's agrarian cycles and religious holy days, creating the bridge to the imaginary, since the holidays are celebrated by a virtual character in a virtual city in the company of virtual people, and finally, not even all existing holidays pass in that manner.

What internet certainly brings is instantaneity. Getting information a few moments after they are created, a possibility to overcome spatial obstacles through "face to face" conversation with a person on a different continent, attuning your free time to that of a stranger's to achieve a common goal in one of the online games, timed and coordinated mass suicides and a

⁵ www.en-us.nielsen.com (accessed on 12 October 2010)

lot of other things open up a new dimension – the dimension of digital time concurrency. Our everyday work changes as the internet grows, a lot of tasks we used to accomplish through interpersonal communication, like banking, various shopping, various business communications, getting news, sending letters, going to the library to check if a certain book is available in its collection etc., have moved to the internet and can be done at the same time and faster than before. The Internet made life simpler and more independent, and by extension faster, although we are not really going anywhere.

By its content variety, simple shortcuts and attractive colors, the Internet encourages the user to become emerged into its information empire, always searching for one more piece of information, but in fact, while one more purchase is done, we check our mail, chat with a friend, check if a book is available in a certain library, and everything else which is within our reach, while we (users) are already there, two different times have passed – the real one, the physical and the digital time. The digital time is always shorter than the physical one, and that influences our expectations concerning speed of getting information – we always want to get information in the shortest time possible.

Did doing all these activities require less time, than if the user went to the nearest store? Conceptualisation of time as a derivate of constitution of our existence implies that the human perception of time can be changed, and paradoxically timeless time which has its root in digital time and occurs as time that passes for the internet identity of a user, and in overlapping with the real time, enables us to be at several places at once and take part in several different activities. Linear perception of time becomes arbitrary with this approach, and time becomes chained, conditioned by the events (Castells 1996), while the development of not only technology, but also science is already influencing the biological time and is developing the need for strongly rooted "times to/for", manipulating the length of life, delaying death.

Time becomes composed of successive

moments (Eriksen 2001), completely dependent on the information flow, without looking back or forward, here and there. The internet user today looks a couple of moments into the future, waiting for the next information and that drastically changes the perception of existence as such. The entire construction of the personal identity undergoes constant changes, reevaluations, maintenance and restoration due to the constant influx of information and the increased expected speed of response to merge all spheres of life into one, crisscrossed with various expectations, obligations, information inflows and reactions.

Technology is leading more towards chaotic storing of information than towards orderliness. An individual who learns from a chaotic system will have a much harder task to arrange and systematize his knowledge. In order for a person to manage the information overload, it is needed to bring order into chaos. Actually, it is only needed for them to find their way in that chaos. Information literacy today does not imply just the knowledge of how to use a computer. It is becoming more about a skill to search for information and surf the Internet. It is required to pay attention to the choice of information, relevancy of searching the web and intention while using internet. What is also very important is the strategy of browsing and the development of one's own filter for relevant information. In this process, the old "cumulative, linear organic growth" is questionable, in the process of gaining knowledge in an individual, as well as in the process of building and systematising of knowledge available in the world. It would be beneficial to observe the linearity in terms of communicology and the process of semeiosis, forming of messages.

If we accept the division of messages to semantic and esthetic, we can see that they feature two different symbol languages – discursive and presentational symbols. Discursive symbols, e.g. letters, are used to represent only what can be expressed with words. They convey the messages in a liner fashion, like reading a text, and we gradually comprehend the essence of it. Presentational symbols, when used in art, enable simultaneous

comprehension of several layers of the message, similar to observing a painting or a sculpture. These messages are not communicated linearly and can transfer greater amount of information in shorter period of time. New technologies, especially the Internet, use both kinds of symbols, but give them new quality and means of application.

Hypertext is a way to form a message with a discursive symbol, while at the same time giving it depth and breadth characteristic of a presentational symbol. Hypermedia is even more successful at this. This way of organising information on the Internet leads to the phenomenon known as "wilfing". That is an abbreviation for 'What was I looking for', and

people who spend hours aimlessly wondering the web are known as Wilfers. While surfing, an Internet user reaches a great number of different interesting destinations, led to them by hypertext, and at one moment he no longer remembers what he was originally looking for. This is only one of the examples of disruption of the linear cognition flow, since the way of reaching the information is completely different in comparison to reading a book from cover to cover. It already leads to books not being read in the sequence of its pages, but in a manner that suits readers, browsing them or using subject or author index to look only for the things they need.

5. Quick Multitasking

Despite the belief of technological optimists, who dominated in the Age of Enlightenment and Modernism that followed, the progress of science and technology never moves only in the direction beneficial for human kind, but sometimes directly or indirectly jeopardizes it. It is always a double-edged sword. Information technologies today enable a much faster flow of information the technological mechanisms can process, which on one hand assists, and on the other hand hinders.

A research by Stanford University USA shows that the total of human knowledge that had existed before 1900 had been doubled by 1950, and since then the knowledge has been doubling every 5-8 years. According to some assessments in countries with developed communications, over 60% of business hours of employees is spent on various forms of information exchange, and that results in reduced attention and concentration, lack of initiative (large amount of data prevents assortment of information under time pressure and leads to not making decisions, or making decisions based on instinct instead of information), increased stress levels, reduction in the quality of work (answering requests for information distracts from the main duties) (Manager Dolphin 1999). On the whole, life is becoming faster, the markets

and the required knowledge are increasing in volume, and dimensions of concurrency do not leave us the possibility of slowing down.

The mind considered worthy and useful⁶ today is one that has the ability to quickly process more things simultaneously, solve several problems in parallel, not in sequence, gather information on the fly and superficially encompass a greater area of the information pool. Speed is so much a required ability that any kind of slowness is gradually being equated with mental dullness. In that kind of environment it is becoming increasingly harder to attract and hold the attention of others, which reflects on all aspects of life. Today, if we do not get something quickly, we lose our desire for it, and if it is not colorful and attractive enough at first glance, we do not even notice it. Private life is becoming subordinated to the needs of business, and it is more and more often being referred to as the life that wastes time and distracts from the real, business one. On the other hand, that speed exists as long as the information is simple, if it does not require permanent memorisation. It exists while everything is manual; a manipulative performance of mechanical tasks, but the problem arises with more complicated tasks that require precision and a somewhat longer

⁶ Although today often equated, they are not necessarily the same.

time to accomplish, like bringing up children, which causes great slowness or even inability to accomplish the task due to impatience. People, who based their lives on speed, perceive the real flow of time as frustrating, slow and limiting.

Leisure activities, due to the pressure of various "times to/for", the stress caused by the everyday activities and the desire to control the world paradoxically become organized like work and are approached in the same manner. And consequently those who wish to experience more different things must, due to the lack of free time and general impatience, do things in parallel, simultaneously, but in shorter time. Since the distance no longer automatically means the duration, the world appears smaller, products on the market change very rapidly, and this noticeably causes a reduction in quality, precision and carefulness. Doubling the entire world's knowledge in all the areas in increasingly shorter intervals could bring to a critical breaking point in the future, where an individual would lose knowledge as such and wield only the information, having memorized only what is necessary to manipulate the data.

Frequent use of the Internet develops short-term memory at the expense of long-term memory (Žiropađa 2006), which leads to various types of information, assumptions and activities to be concentrated in even smaller units of time.

The problem of information overload is a very complex one and today it has a strong influence on the society as a whole and changes the way it functions. It can be defined in different ways, but in the light of negative consequences which are primary point of interest for us, the most important is its influence on man and his capacity to process information. This capacity is important for quality decision making, which includes efficiency. Here the problem of information overload must be related to the available time an individual has for accomplishing a task, as well as with demands that are put before them. The quality of information and their usefulness should also be taken into consideration (Eppler 2003). From the perspective of subjective experience, what should be taken into consideration are the

issues of physical and mental health of a person who uses that information, his productivity and free time, and many other aspects, influenced by the overabundance of information.

Unlike the classical and traditional view of time and knowledge which has a structure and a sequence of events, the Internet era brings disorganisation and randomness of fragments which are deprived of deeper meaning and mutual connection. It brings collage knowledge when it should be cumulative, and brevity as a principle of informing, when it should be informativity. From today's perspective it is justified to observe the development of technology within the frame of dichotomy good/bad, useful/useless, since its effect is not foreseeable, and the visible part of the effect also brings an individual into a position in which they are at the same time limited in several ways, but also in certain ways free.

Like Miroslav Pečulić noted, „The Essential feature of information technology, from its very beginnings, was its duplicity, the light and the dark side" (Pečulić 2002). With this in mind, we should also remind ourselves of the Ulrich Beck's thesis (Beck 2001) about a high risk, and the ever increasing uncertainty concerning the consequences of scientific and technological development.

A major factor that speeds up time is too much information. It requires increasingly more time for their processing, which creates a larger number of work tasks for an individual to accomplish. That is why we always have the feeling that there are several tasks that we should do before we approach the main task. And the number of those "small tasks" is increasing daily. In order to be able to accomplish everything, we fill in the intervals between obligations, so that not a single moment during the day is empty. Waiting for the bus, we read the newspaper, drinking the morning coffee, we answer our email messages, and in the same manner we start doing more and more things at the same time. Despite the fact that the technology is there to increase it, the productivity is declining due to the information and work overload.

Time acceleration is also evident in the

speed of pedestrians in large cities of the world. Researches from The British Council have determined that the pedestrians move 10% faster on average, compared to 10 years ago (BBC 2007). According to this criterion, Singapore is the fastest city in the world, since the speed of pedestrians there increased by as much as 30%. Researchers have reached the conclusion that this acceleration was caused partially by the usage of technology. They state that people are constantly in touch with each other, that they are answering the messages and

calls as fast as they can and that it leads to the opinion that everything should be happening instantaneously. This acceleration has an adverse effect on people's health, since those who live fast probably eat faster, see less of their family and friends, are frequently nervous and being still is difficult for them. Today, we fear that we could miss something important, so we constantly cruise through the enormous supply of information in search for the things that are essentially important.

6. Changes in Ways of Experiencing Time under the Influence of Modern Technologies

Constant changes occur a lot faster than any one person is able to adapt to them. This adaptation should occur as a part of everyday activity, when it is expected from an individual to effectively and efficiently arrange their time and cope with information in a manner that would contribute to better decision making. Where the consequences of information overload on society are concerned, they are reflected in the new demands placed before an employed man, in the educational and cultural changes. Society based on information technologies requires from an individual great adaptability and readiness for permanent education. In order to keep a job, they must be concurrent with the newest inventions, researches, developments of techniques and technologies. A person cannot allow themselves to relax, since spending an entire carrier lifetime in one workplace is in the past, as well as is the time when once acquired education was enough for permanently accomplishing one's work. Continuing education is achieved by economic compulsion, since those who constantly learn do not fail, and skills needed by society are constantly changing (Anđelić 2003, 2-3).

It is undeniable that the acceleration of time, the overly large volume of information and constant communication influence the language as well. The language is becoming simplified and changes symbolically. One of the main demands placed by the media and the

public is for a message to be concise. There is always a variety of courses for quick reading that should make studying more effective. They are often based on quick scans of a text in search for keywords, but this way of dealing with the matter defeats the purpose of acquiring knowledge. The entirety of insight into thought is lost, and attention is paid exclusively to the facts. Comprehension of the author's train of thoughts and things written between the lines escape us. We think ever faster, and when we express those thoughts in writing, we abbreviate them as much as possible. What is gone is the respect for reading at leisure and contemplating needed to connect the new knowledge with the already existing ones, to feel an emotion or discover a new point of view are gone. Today, abstracts, abridgements, and so called "digested" versions of the books and articles (digests) are being read most often.

Of comprehensive, classical works people mostly learn from interpretations and digests of others, since there is not enough time for those to be read at leisure. Reading one of the greatest novels of the 20th century *In Search of Lost Time* by Marcel Proust, in every sense, with its 3200 pages, to school students of present day seems more like a way to lose time again. We actually come to a question of whether our comprehension of the term general knowledge will change and in what way? Could we soon expect for the great works of art to be less read

and works that do not exist in digital form to be completely forgotten.⁷

As writing externalizes thought, so does clock externalise time. One of the greatest consequences of information overload is the acceleration of time. It is important to observe information overload from the perspective of subjective experience. What is essential in this case are the consequences this phenomenon leaves on an individual, like: stress, concern, low motivation, anxiety, fear. The acceleration of time is reflected into ever more present feeling that a man no longer has time for everything, so his life is accelerating in an attempt to accomplish as much as possible.

Time of which we are speaking is not the one that can be measured by a calendar and a clock. It is the internal time which was forcefully synchronized because of the functions of the society, even when it does not suit our natural clock.

Technology leads to acceleration. Time we are speaking of is no longer our internal time, our natural tempo, rhythm that we require in order to function properly. It is a perception of time, a feeling that it moves increasingly faster. And that feeling is acquired based on the experience and the increasing strain caused by the lack of time, which affects our activities, health and moods. It is natural that with age a man experiences time itself as faster. But alongside these natural factors that influence the perception of time, the question still remains: does a fifty-year-old today notice greater acceleration of time compared to a fifty-year-old person during the fifties of the 20th century (Tien and Burnes 2000)? If we agree that the answer is positive, it tells us that this acceleration of time is caused by environmental factors. The most prominent among the factors influencing an individual's sense of time is change, actually the increasing number of changes, which are getting more frequent.

Three decades ago a futurologist Alvin Toffler created a detailed study of accelerated

changes and their psychological effect on a man. He called these changes "future shocks". This author compares them to culture shocks an individual experiences when they find themselves in an unknown culture. Alvin Toffler defined the culture shock as a constant mental and physical stress, caused by overload of the adaptive system of an individual and his decision making mechanisms. Basic effects that accelerated changes and the sense of lost time have on an individual are a sense of confusion, crowdedness and feeling of being lost in the messages which should be used to reach the decisions. This leads to anxiety, tension and fear caused by the sense of losing control over the situation. Constant worries, overexertion by the lack of time, increasing number of obligations and tasks placed before an employee cause the feeling of insufficiency and displeasure. Stress as one of the most common affliction is the result of precisely these kinds of pressures imposed on a man by the new rhythm of life. That rhythm is dictated by the technology.

It is evident that the acceleration is approaching the degree a man cannot handle and that it is needed to find a way to decrease it. If we would allow ourselves a slower tempo to create richer memory, more useful for thinking, it would allow a man, as well as the society on the whole, to react to surprises in its environment more effectively. Memory is not just a cumulative process. Filled with various contents, deeper and better integrated memory provides more sophisticated abilities for anticipation. It appears that neither the psychological structure of a man, nor his social environment can adequately cope with such speed of changes and the new amount of information. Still, these are pretty abstract problems which are hard to encompass. That is why a rather small number of people are aware that they contribute to their own anxiety. Technology is taking control over our time and we are even not entirely aware of the fact. It has penetrated all aspects of life to such an extent

⁷ There is an illusion that the entire world knowledge is on the internet, but we still have not even examined all that exists in our local libraries. The material which is not digitalized and uploaded online is under the threat of falling into oblivion. Digitalization of books is a very expensive undertaking, therefore The Library of Congress in the US can in the near future digitalize only 10% of their total content. („Struggling to preserve collective memory in an online world,, Politika, appendix The New York Times, 19 March 2007, page 1)

that we do not even notice it until something malfunctions, and then we start panicking. To cope with these problems; it is needed to protect ourselves, to respect our own time as well as the time of others, which reflects in the application of modern concept in librarianship, i.e. inclusion in the systems of shared cataloguing and the application of the concept Library 2.0 in all the libraries. In that way we would show that we respect time and the needs of a modern user.

This can be accomplished in several ways but first of all it is important to prioritize, both with the choice of information and with the

choice of what we desire to accomplish, as well as comparing the accomplished to the (un) fulfillment of user needs. Direct criteria for achieving that (un)fulfillment of user needs are visible through the concept of Library 2.0, where every user can leave his comments.

All the choices exclude as much as they include, so it is up to the individual to create their own strategy for healthy cohabitation with technology, and it is up to the librarians to improve and satisfy user needs by implementing modern concepts.

7. Change of Time Frames of Library Users under the Influence of New Technologies

The influence of the modern technologies, primarily the Internet and the fast flow of information has a frustrating effect on the personal experience of time. It was pointed out that the digital time is shorter than the real, physical passage of time. Regardless of this fact, the modern man wants to increase the speed of the information flow since he has inadvertently projected the features of the Internet and the manner of functioning of the digital time – instantaneity and availability – to his own expectations of other areas of influence and life in general. These expectations place new demands and imperatives before the libraries and librarian line of work.

The users from the beginning of the 21st century are different, as are their needs, demands and expectations, from the needs of the users from the '80ies, '90ies and earlier years of the 20th century – even if they are the same people. The usage of internet has, among other things, influenced the change of the frames of "times when" and "times to/for".

Today's users of the library material do not consider going to the library and checking availability of books or magazines that they need as a part of the process. That information can be acquired at home, through the Internet. In case of our libraries it is done by accessing the system of shared cataloguing - COBISS⁸,

i.e. BISIS (system of shared cataloguing of the libraries on the territory of the city of Belgrade).

This option leads to the extension of the frame "time when" – the time frame of the information: 'material available' is no longer defined by the working hours of a library, but is extended to a 24-7 period. According to the official data of the New York Public Library, during 2012, there were 32 million online visits compared to 18 million regular visits.

Also, the availability of this kind of information on the internet shortens the time interval required to acquire the information – i.e. shortens the time frame of "time to". For this information, a user had to go to the nearest library and spend a minimum of half an hour, and now it can be acquired in an interval of less than one minute.

Modern technologies, primarily the database of shared catalogues available on the internet to every user, aside from the effect on personal experience of time reflecting the characteristics and the speed of digital time passage to real, physical time, also affects the change of how information is experienced. Observing the information in its basic meaning ("news", "unknown", "redundant") for the modern user of a library information: "does a book or a magazine exist in a collection or not", actually is not an information, since that datum is known

⁸ Abbreviated from: Co-operative Online Bibliographic System & Services

to the majority of users (through COBISS or BISIS), before they come to the library. So, the employees in the libraries must, aside from taking care of the physical processing of the collection, be electronically literate and

qualified to work with the systems of shared cataloguing. Aside from shared categorisations, digital editions of books and publications are a separate segment, and are an inevitable addition.

8. Access to COBISS Virtual Library

Participating in the system of shared cataloguing implies appropriate telecommunications and computer equipment, additional specialized qualifications and a license for operating in the system for computer and informational library networking (COBISS) which are provided by the parent library.

COBISS access frees the library from the formal and comprehensive electronic processing.

In order to access COBISS virtual library it is required to make a contract with the Centre for Shared Cataloguing (with the National Library of Serbia), which in the cooperation with the supplier and the owner of the COBISS equipment - "IZUM" (Institut informacijskih znanosti from Maribor), which performs the required installation, system maintenance, organizes specialized courses, performs the help desk function, supplies the required literature, etc.

COBISS is a model of organisation used for combining libraries into one uniform librarian information system with a shared catalogue. A librarian (now as a cataloguer) accesses the database from a RS work station, over ssh access on the work station. Access is accomplished over IP address of the service, the name of the database and a username and password, through which the shared cataloguing is performed.

Users access catalogue databases over RS work stations and the internet services.

Browsing is performed over WEB OPAC, and it is available to any user who is connected to the Internet.

By shared cataloguing COBISS contributes to:

- regular update of information technologies-related knowledge and the latest accomplishments in all the areas;
- better and faster spreading and exchange of information between libraries;
- using the convenience of innovations in academic communication;
- developing new services;
- modifying the work environment which has a stimulative effect on the employees, as well as the users.

Considering the changes in experiencing "time for" and "time when" and the ability of getting information about a librarian collection over the shared cataloguing system, it becomes necessary to reshape all the libraries according to the model of the information-librarian centre. Aside from the public libraries in our country, it is required to implement this model in school libraries, faculty libraries and scientific institution and institute libraries, since most of these are not connected to any system of shared cataloguing.

9. The Capabilities and Goals of Virtual Research Library Operation According to the Model of Information-Library Centre

This model, aside from the services of a classic library, through realisation of COBISS virtual library enables a special form of cooperation with other libraries, faculties and scientific research centers, as well as the users themselves (researches, associates and others),

which encourages and provides research and educational support, representing the very goals of modern library work.

The inclusion itself into COBISS system automatically grants insight into information about the collection of a certain library to the

users that are not its members, but potential users, since this accessibility of information over the Internet opens up the possibility for increasing the number of users. Aside from this circumstance, COBISS virtual library also accomplishes:

- Contribution to the development of knowledge inside an academic community;
- satisfying and fulfilling information needs of each library user;
- adjusting and monitoring the constant changes in information and technology;
- an adequate selection of resources, in accordance with the needs;
- better organisation and information dissemination;
- the ability of electronic access and search for the desired information;
- easy usage and navigation;
- regular update of knowledge and latest achievements in all the scientific areas;
- faster and better exchange and distribution of information;
- regular notifications for the users about new contents and full range of a library's services;

Reshaping libraries according to the information-library centre model, conditioned by the influence of the modern technologies and the internet on libraries, public libraries well as specialized ones, and especially the research libraries in institutes and having them join the COBISS system has multiple significance. Not all research libraries in our country are a part of the shared cataloguing system. Some parts of these libraries' collections are connected to the shared cataloguing system through the National Library of Serbia database, but the entire collections of these libraries are not. Aside from them not being connected to the shared cataloguing system, collections of some libraries in Serbian institutes have not been reorganized and processed in years, so it is very hard to state any more accurate data of their characteristics. Inevitably all the collections of these libraries have to be processed and

then connected to the shared cataloguing system. Application of the information-library model and the inclusion of the research library collections in the shared cataloguing systems in Serbia is vital and necessary.

The current moment (technology development, globalisation and automatization) influences the fulfillment of these operating conditions, placing new demands before the libraries, due to its imperative and changes in knowledge and information distribution. Those demands, in the widest sense, involve information and resource exchange on the international level. Fulfilling these demands modifies the manner of operation of a classic library, manner and speed of providing services, requiring professionally qualified and specialized staff. Also, because of the large number of sources offered by the information networks, we encounter the problem of information overload, and the need to invent a way to evaluate them is becoming a major imperative of the modern research library.

Research libraries have the task of supporting scientific and research work in all areas of knowledge and to contribute with their own work to the development of scientific research. Those kinds of libraries contain specific funds, cover a specific area and offer special services to certain groups of users. So, their inclusion to the shared cataloguing system is significant for the international cooperation with institutions and institutes from other countries as well, encouraging the development of scientific thought while also encouraging interlibrary cooperation and quick flow of information between kindred institutions, with the goal of resource exchange and implementation of new technologies, which also improves the quality of the services to users.

The shared cataloguing system in our country has still not been fully implemented, and the development of the new technologies, and consequently the user needs, places new demands before libraries. The flaw of the shared cataloguing system, such as COBISS, is that it is one directional – the user can get the information if a title exists in the collection, which means that the information moves only

in one direction – from the library to the user, but not the other way around. Nothing can be discovered about the needs and suggestions of the users themselves in this manner, nor about the degree of their satisfaction. As a result

of these flaws, and because of the constant changes in the needs of the users, because of the possibilities provided by the modern technology, a new stage began for the libraries, symbolically called "Second Life".

10. Second Life of Libraries

Second Life (SL) of libraries takes place in an impressive 3D environment, which aside from entertainment is used for educational purposes. Because of the growing interest for digital services, more and more libraries enable virtual services in Second Life.

Until 2007, there were more than 40 libraries in Second Life, and the number of these libraries is increasing every day. Many of these libraries can be found in "Cybrary City". This is

a place on the web created so that the libraries could offer their virtual services and present their resources. Aside from offering the librarian services, these areas of cyber space also offer the possibility of learning about innovations of the modern librarianship. Aside from the shared cataloguing system, concept of the Library 2.0 satisfies the needs of the modern users to an even greater extent.

11. Web 2.0 and Library 2.0

The term Web 2.0 was first used in 2004, and brought changes in the way the internet can be used. Web 2.0 implies the process of sharing and enables open access through the user defined content such as social networks, blogs and wiki. Enabling the users to take part in creating the content on the web is a new trend in the computer technology.

In the beginning, the term Web 2.0 was used to describe trends and business models that overcame the crisis on the market in technological sector during the nineties of the 20th century. Everybody claimed that the companies, services and technologies that have survived had some shared characteristics. They were interactive, dynamic, and the line between creating and consuming content in those environments was blurry (the users created content in the same amount that the websites consumed it). The term is now both widely used and interpreted, but in its essence Web 2.0 is not a network of textual publishing, but of multisensory communication. It is a matrix constructed from verbal and image dialogs, and not a collection of monologs. In the past the user did not direct and create web like today. This ability to create and to interact especially suits the libraries for communication with users,

assisting with improvements of the services, but also for encouraging interlibrary cooperation.

Web 2.0 is directed to web applications that enable the interactivity of the user, creating and presenting content generated by the users themselves. It emphasizes communication and connectivity over the Internet. It can also be used for new electronic platforms, e.g. e-business, conforming to the online rules with the goal of conducting successful business. These rules are mostly referring to the effect of regulating the networks in order to gain as large number of users as possible.

Having in mind that the Web 2.0 application users are at the same time potential or already existing users of libraries, the implementation of these applications in librarianship is multiply useful. The use of Web 2.0 content certainly affected the changes of library user needs, embodied in replicating Web 2.0 features – interactivity, dynamism, possibility of creating the content etc.

Libraries today are increasingly using Web 2.0 technology. In that manner, they keep up with the new trends and approach their users, communicating with them and getting feedback. This is how the concept of Library 2.0 was created.

The term Library 2.0 was coined by Michael Casey on his blog Library Crunch, as a direct match to business 2.0 applications and Web 2.0. Casey suggested that the public libraries should use this technology, improving the quality of the service for their users.

He specifically pointed out the need for the libraries to adopt a strategy of development with constant following of the modern technologies in order to satisfy the needs of their users.

Library 2.0 debuted on Librarian Conference in October 2005, when Michael Stephens of Saint Joseph County Public Library used a Web 2.0 application as an idea on the site of that library.

Library 2.0 is a "loosely" defined model - modernised form of librarian service which presents a transition towards a global library – innovative also for its way of offering services to users. The focus has been changed and directed so the users can participate in the creation of contents and community. That includes online services like the usage of OPAC system and increased flow of information from the user back to the library.

In Library 2.0 the librarian services are constantly updated and reevaluated, so they serve the users of the library in an optimal way. Aside from that, by encouraging feedback and involvement in the content creation, Library 2.0 is attempting to limit the user in terms of design and implementation of librarian services.

In September 2006, an article with the title „Library 2.0: Service For The Next-Generation Library," was published in Library Journal, which started by expressing the advantages of Library 2.0 – a more efficient way of delivering services with the aim of improving their quality, increasing the number of users, and consequently achieving greater profit. The article continued by asserting that the much discussed Library 2.0 radically changes the services and improves interaction with users. "Libraries 2.0" regularly update their data according to the changing needs of the library users. Encouraging participation of the users, they receive feedback, invaluable for development, maintenance and improvement of the quality of the librarian services.

An active library user is a significant component of Library 2.0. Since the information and ideas flow both ways – from the library to the user, and from the user to the library – the quality and efficiency of librarian service is improved, and at the same time it opens the possibility of their permanent development and betterment. In this chain, the user is a participant, co-author, builder and consultant, regardless of whether the product is virtual or physical.

The key principle of Library 2.0 is – browser + connecting Web 2.0 applications = multifunctional OPAC.

Library 2.0 is the new way of delivering services via new internet technologies, with the stress on the "user-centered" principle – interaction between the user and the library. Like Web 2.0, Library 2.0 includes the users into the process of modifying catalogues and sharing content. Librarians have reshaped the library catalogues in order to make them more useful and more suitable for searching, giving the ability for independent organisation and interaction with the information in ways with limitless potential for adjustments.

These new types of catalogues are a step forward from the "isolated information silos" to "interconnected computer platforms", which certainly goes in favor of improving the quality of services and the higher degree of satisfying user needs. In the past the information flow was mostly one-directional, from the library to the user. With new web tools information can be distributed in all directions (from the library to the user, from the user to the library, between two or more libraries, and from one user to another).

Library 2.0 is a library model on which the application of traditional librarian design processes, sharing new information and source development is conducted in close cooperation between the librarian and the readers – users.

Creating and developing the concept of Library 2.0 enabled the usage of interactive features in the new communication technologies, which enables participation of a wider circle of users and the presence in both local and global mass production of cultural content.

Library 2.0 also encourages libraries to motivate user participation by expressing thoughts about the development and work of the libraries, maintenance and quality of library services. Active and authorized library user is an important part of Library 2.0. Due to the constant and quick exchange of information and ideas that flow in several directions – from the library to the user and from the user to the library – library services are constantly developing and improving. In all these directions of communication and flows of information the user changes his roles: a participant, a co-founder, a builder and a consultant, bringing some very accurate data about satisfaction/dissatisfaction as a feedback for the libraries.

Library 2.0 is still a concept in development since there is no clear convention about the precise theoretical definition. This concept represents a set of library services projected to fulfill user needs created as a direct or indirect consequence of influence on the Web 2.0 contents. Those consequences are reflected in the following options:

- application of techniques and concepts developed as a part of Web 2.0 in the existing library services – enabling addition of tags in the electronic catalogue of the library;
- direct application of Web 2.0 services to offer new library services, such as using Flickr service, to enable the users to access the pictures from the library collection;
- exploitation of cultural and sociological phenomena caused by Web 2.0 (using social networks such as MySpace, Facebook, Twitter to promote various aspects of library services and operations);
- modifications of the existing services to the changes in the environment caused by the Web 2.0 (modifying the courses on information literacy and the appearance of Wiki contents);

Library 2.0 illustrates the changes which library services make visible to the users and other libraries, as well as changes in the very definitions of those services. Additions it brings, aside from the way the librarians experience

the services they provide, relate to the very form of these services. The form which serves for the data transfer becomes predominantly multimedial.

Library 2.0 includes the library services accessible outside the library premises, meaning that the library collection is also being moved into virtual space, leading to a kind of electronic systems of the libraries, both in forms of internet presentations or electronic catalogues.

The first move the libraries have to make in order to attract attention of the users is to present the library services and collection contents on certain places on the Internet that are visited by the users. Of course, it is not that simple, since among other things the role of the user is changing, but the same is true for the librarian himself. A librarian becomes the one who provides the medium, platform and the support, and the creation of the content itself is often left to the users, and the roles of the librarian and the customer are not as clearly separated as was the case in the past.

Library 2.0 represents a selection of library services and contents the users truly require and their displacement from the real world libraries into virtual world, to the places visited by the users. These changes of a librarian's role require a higher level of information literacy, which automatically means a reorganisation and training of the employees. Placing the library resources in places that are not visited by the (potential) library users is a failed move. Certain investments into training and prequalification of the staff in librarianship are worthwhile in the long term.

Creating information, connecting the appropriate data to users is a business process which is a characteristic of various profitable activities, so in that sense it could be useful for the libraries, at least for increasing the number of members. This process allows wide possibilities for implementation of social innovations created in the other areas of business. Since librarianship is not a profitable activity, these possibilities are still mostly unused even in the most developed library systems.

12. Potential Negative Effects of Library 2.0 Implementation

Concerns about Library 2.0 are related to the approach to technology, privacy and data security. Since the Library 2.0 concept is not fully developed and represented, these misgivings are a bit premature, and only in the future will we be able to discuss more accurately whether they were justified or not. Library 2.0 became the object of discussions in the blogosphere. Some librarian bloggers claim that the key principles of the concept are not new, but are a part of philosophy of many librarian reformers from the 19th century. Others are bringing up more concrete examples of what the libraries can gain from Library 2.0. Walt Crawford claims that the Library 2.0 encompasses a combination of tools and attitudes which are great ideas, and by that it does not represent a new generation of libraries, because libraries conceptualized in this manner would not service all the users of all the communities of users, i.e. would not be a suitable source for all the users, since it would

not collect all the information. On one hand, this is true, no concept, including this one, can encompass all the users, but if we observe though the number of (potential) users which are active on the web, and which are either already existing or new users of library services, this claim becomes pointless.

Library 2.0 advocates, like Stephen Abram, Michael Stephens, Paul Miller and others, addressed this kind of criticism, claiming that individual parts and tools of Library 2.0 are not entirely new, but that this service and goals of ideas with Web 2.0 technology are leading to the new generation of library services. That includes using online social networks in libraries. Satisfying the needs of the users and the possibility of an increase in the number of library users are much more important than the questioning whether it is a completely new concept, or it just features models that were previously already used in librarianship.

13. The Commencement and the Advantages of The Library 2.0 Concept

An advantage of this library concept that is rarely mentioned and exploited is the direction of movement and exchange of information between libraries in one or different countries. This cooperation would result in various projects which would have multiple benefits – both in terms of intercultural collaboration, and in promoting the part of funds of various libraries. That kind of upgrade level of this library concept requires a long period of time – primarily for the Library 2.0 concept to gain momentum and become more widespread – before joint efforts of libraries from one or more regions can be undertaken.

For now, this kind of cooperation between libraries is conducted over various portals. One of those is The European Library, where with certain material The University Library "Svetozar Marković" from Belgrade is participating in the exhibition "Science and Machines – scientific and technological development since 1800",

through which it presents parts of its collection to the global audience.

Wider application of the Library 2.0 concept in the future can be seen through application of this model in school, higher education and research libraries. Doug Johnson has published an interesting video on You Tube in which he compares the role and the state of the school libraries both in the past and in the future. The same possibility, aside from the higher presence of scientific papers on internet, was stated by Michael Habib in his lecture "From higher education Library 2.0 to research 2.0: Overview, what we have learned so far, possibilities for development", held in Belgrade in 2009.

The Library 2.0 concept in school, higher education libraries and scientific research institutions in Serbia is almost nonexistent. Application of this concept would create a uniform system of school and higher education libraries, i.e. to the system of research libraries

of related areas, which would more easily communicate and cooperate with the libraries from other countries. This would definitely improve the quality of the service, and raise the exchange and availability of information to a higher level, contributing to a better and faster development of academic thought.

Unfortunately, the capabilities the Web 2.0 libraries afford are underused in Serbia, with the exception of The Belgrade City Library and The National Library of Serbia, but even there these concepts are not developed. Considering the speed of information technologies development, implementation and presence of this library concept is inevitable since it corresponds with many characteristics and needs of the modern user.

The Library 2.0 concept matches the change of the experience of time and time frames, as well as the changed conception of experiencing the information itself and the projected speed

of its flow. Spreading the Library 2.0 concept promotes many aspects of librarianship – starting with the quality of services for users to interlibrary collaborations on an international level, because of which the possibilities of this concept should be better utilized in the future.

Participation of the library users in designing and realising the services improves the quality of the services. Library users should be able to conceptualize and modify the library services they receive according to their needs. This user contribution will also be of use for the development of new library models that would at any moment be ready to implement their needs and substitute them for newer and better services and models.

The advocates of this concept expect that the Library 2.0 model will eventually change the traditional, one-directional offer of services which the libraries have been using for centuries.

References

- Анђелић, Бранислав. 2003. Информационо друштво и Србија, е-волуција 1(1), <http://www.bos.rs/serpit/evolucija/index.htm> (приступљено 10.12.2010)
- Barnett, Jo Ellen. 1998. *Time's Pendulum: The Quest to Capture Time—from Sundials to Atomic Clocks*, New York: Plenum.
- BBC. 2007. What walking speeds say about us, *BBC News*, 2. мај 2007, http://news.bbc.co.uk/2/hi/uk_news/magazine/6614637.stm (приступљено 10.7.2013).
- Бек, Улрих. 2001. Ризично друштво, у сусрет новој модерни, Београд: Филип Вишњић.
- Bourgoing, Jacqueline de. 2001. *The Calendar: Measuring Time*, New York: Thames & Hudson.
- Castells, Manuel. 1996. *The Rise of the Network Society*. Oxford: Blackwell.
- Coates, Del. 2003. *Watches Tell More than Time*, New York: McGraw-Hill.
- Cummings, Raymond King. 1922. *The Girl in the Golden Atom*, U of Nebraska Press.
- Del Brutto. 1999. Relaciones virtuales o relaciones reales. A fines de siglo [Turn of century virtual or real relationships], <http://www.fices.unsl.edu.ar/~kairos/k04-d04.htm> (приступљено 10.8.2013)
- Dowden, Bradley. Time. *The Internet Encyclopedia of Philosophy*, <http://www.iep.utm.edu/time/> (приступљено 5.7.2013)
- Eppler, Martin J. and Jeanne Mengis. 2003. A framework for information overload research in organizations, *CA Working Paper*, Lugano: University of Lugano, <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=BE24068C23911673D9B68225DACD3B7C?doi=10.1.1.172.2724&rep=rep1&type=pdf> (приступљено 8.8.2013)
- Eriksen, Thomas Hylland. 2001. *Tyranny of the Moment. Fast and Slow Time in the Information Age*, London: Pluto Press.
- Gurvitch, G. 1964. *The Spectrum of Social Time*, Dordrecht, Holland: D. Reidel Publishing Company.
- Hodges, Matt. 2008. Rethinking time's arrow : Bergson, Deleuze and the anthropology of time. *Sage* 8(4): 399–429.
- Kant, Immanuel. 1922. *Immanuel Kant's Critique of Pure Reason. In Commemoration of the Centenary of its First Publication*. Translated into English by F. Max Mueller (2nd revised ed.), New York: Macmillan,

http://files.libertyfund.org/files/1442/0330_Bk.pdf
(приступљено 5.4.2013)

Keen, Andrew. 2007. *The Cult of the Amateur: How blogs, MySpace, YouTube, and the rest of today's user-generated media are destroying our economy, our culture, and our values*. New York: Crown Business.

Менаџер Делфин, 1999. Управљање информацијама, Менаџер Делфин 46(10), октобар 1999.

New York Public Library. *NYPL By the Numbers: 2012 Annual Report*, http://www.nypl.org/sites/default/files/nypl_annualreport_2012.pdf (приступљено 10.7.2013)

Печујлић, Мирослав. 2002. Глобализација, два лика света, Београд: Гутенбергова галаксија.

Putnam, Robert. 2000. *Bowling Alone: The Collapse and Revival of American Community*, New York: Simon & Schuster.

Tien, James M. and James P. Burnes. 2000. On the perceived speed of time over time, *Systems, Man, and Cybernetics, 2000 IEEE International Conference on*, vol.1: 583–587.

Watson, E. 1979. The St Albans Clock of Richard of Wallingford. *Antiquarian Horology* 4(11): 372–384.

Жиропађа, Љубомир, Љ. Психологија, Београд, Чигоја, 2006