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A New Theatre Experience: Page Experience Signals

Abstract: In the digital age struggling with the pandemic, theatres strive to gain new and retain old audiences by providing user experiences online. Information about events, electronic ticket purchasing, and live streaming require improved website functionality, where Page Experience Signals, the latest practice recommended by Google, have been gaining importance. As part of this research, five experiential signals were analyzed on a sample consisting of 18 Belgrade theatres' homepages: Core Web Vitals, Mobile-friendliness, Safe browsing, Secure connection, and the absence of intrusive interstitials. All analyzed websites were found to provide safe internet search and generally did not contain disruptive content on their homepages. Given that an increasing number of visitors are using mobile devices to search for and purchase tickets, several theatres should pay attention to the need to optimize their website for mobile visits, and to secure the data transfer protocol. In addition, common weaknesses in the theatres' Page Experience Signals were highlighted – the slow homepage loading performance and achieving their visual stability; the webmasters were also given proposals on overcoming them during the transition period after the algorithm change. The recommendation for future research is to assess at the end of 2021 whether the Page Experience Signals of the Belgrade theatres have contributed positively or negatively to their organic search performance on Google.

Keywords: user experience; website; theatre; search engine optimization; Page Experience Signals.

Introduction

The life of theatre keeps evolving through history, changing its ideas, vehicles of expression, narratives, modes of influence – choosing the way and the parts of society it wishes to present itself to.[1] As a performance field, the theatre embodies itself through engagement and commitment to an ensemble, as a group process, supported by meaningful individual contributions.[2] The goal of the social and artistic experience of theatre is to capture the audience's attention and incite its emotions, embodied

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[1] Ana Uzelac, "Digitalno pozorište – predstava 'Bit0. Simbioza virtuelnog i stvarnog sveta u pozorišnoj umetnosti" (PhD dissertation, Belgrade, University of Arts in Belgrade, 2016), 5.

[2] Robin Philip and Jennifer Nicholls, "Theatre Online: The Design and Drama of E-Learning," *Distance Education* 28, 3 (November 2007): 261.

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through the desire to achieve a direct connection with the artists during the performative act. In the era of steadfast exponential growth of digital technology, the internet has become a valuable resource for expanding the approach to culture – one that can go beyond the limitations of live cultural interactions.[3] Online streaming is providing the public with the possibility to experience theatre live from their homes and allows actors to maintain closeness with their audience even when physical theatre visits are not possible. The pioneer of the online theatre event was the UK's National Theatre – the first theatre company in the world to start with online show streaming – "NT Live" in 2009.[4] Moreover, the popular Digital Theatre[5] platform allows for exclusive online access to the world's leading theatre productions, bringing the theatre art to those unable to enjoy it due to busy schedules or lack of financial resources. Streamed versions of theatre performances became increasingly popular during the lockdown and curfew that were in effect worldwide due to the global pandemic. Since the middle of March 2020, the Serbian National Theatre began with the daily online streaming of its performances, and the number of views during that month surpassed 77,000.[6] Another positive note, as far as online theatre performance is concerned, is that the audience can choose when, where, and how they wish to experience theatre art. Considering the fact that the theatre, along with music and dance, constitutes an inherent element of human existence from its inception, in this day and age everybody should be able to access the experience it provides. Within that context, digital technologies are building a new kind of behavioral environment that differs from the experiential physical environment, as they can simulate any medium, directed at any of the human senses,[7] by generating, simulating, presenting, and deriving information based on internet networks and computers, i.e., their actualized and functional relationships towards cultural and societal power discourse.[8]

While theatres are slowly facing their return to physical spaces, it is worth noting that the "digital turnaround" may influence future conventions and spectator expectations. Online theatre is helping the audience cope with the difficult times of the global pandemic, while simultaneously introducing a new audience, particularly young people, to productions and shows coming from the art industry. Pandemic-driven ideas

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[3] Pablo de la Vega, Sara Suarez-Fernández, David Boto-García, and Juan Prieto-Rodríguez, "Playing a play: online and live performing arts consumers profiles and the role of supply constraints," *Journal of Cultural Economics* 44, 3 (2020): 425–50.

[4] "From Live-To-Digital, Understanding the Impact of Digital Developments in Theatre on Audiences, Production and Distribution" (AEA Consulting for Arts Council England, and UK Theatre and Society of London Theatre, October 2016: 9), https://www.artscouncil.org.uk/sites/default/files/download-file/From_Live_to_Digital_OCT2016.pdf, acc. on April 17, 2021.

[5] See: https://www.digitaltheatre.com

[6] "Onlajn predstave Narodnog pozorišta do sada imale više od 77.000 pregleda," *N1*, March 26, 2020, http://rs.n1info.com/Kultura/a582399/Onlajn-predstave-Narodnog-pozorista-do-sada-imale-vise-od-77.000-pregleda.html, acc. on April 17, 2021.

[7] Uzelac, "Digitalno pozorište – predstava 'Bit'. Simbioza virtuelnog i stvarnog sveta u pozorišnoj umetnosti," 21.

[8] Miško Šuvaković, "Postajati mašinom; od teorije preko filozofije digitalne umetnosti, teatra i performansa... i natrag," *тkX*. 7 (2004): 4.

about approach, community, and interactivity, born out of necessity, may turn out to be an opportunity to re-evaluate the paradigms of experience that the audience was receiving from the theatre. However, it is necessary to consider the potentially dangerous side of it too – compromising intellectual property rights, and ticket sale revenue loss as an important element of theatre sustainability.[9]

However, to what degree are the theatres actually digitalized and prepared to deliver a quality online experience to their visitors? Even before the pandemic outbreak, most Belgrade theatres offered the option of online ticket purchase via their respective websites, sent out newsletters to their loyal audience, and kept an active social media presence. Despite this, the mentioned Belgrade National Theatre was faced with a problem when its website crashed due to high interest in show streaming.[10] The theatre responded by directing viewers to its YouTube channel to watch the performances, as the audience interest exceeded the existing website capacity. Therefore, discussing theatres' digital presence usually refers to their social media presence,[11] while web content usability,[12] digital storytelling narratives,[13] online visitor experience (electronic word of mouth – eWOM),[14] and website functionality get neglected.[15]

Page Experience Signals

The importance of cultural institutions' websites keeps rising because visitors' activities consist of searching for information (about artists or events) and online ticket purchase – so search engines, led by Google, present the most common model of active search, even among older generations.[16] Google and its platforms (Google Images, Google News, Google Art and Culture) generate more traffic to cultural institutions' websites than any other online channel, which makes them an indispensable tool for raising their online visibility.[17] Consequently, apart from optimizing the website to the

[9] Sonja Ćirić, "Pare i muzika," *Vreme* 1052, March 3, 2011, https://www.vreme.com/cms/view.php?id=979072, acc. on April 17, 2021.

[10] "Izvinjenje publici zbog problema u vezi sa emitovanjem snimka predstave Bela kafa," Narodno pozorište, https://www.narodnopozoriste.rs/sr/vesti/izvinjenje-publici-zbog-problema-u-vezi-sa-emitovanjem-snimka-predstave-bela-kafa, acc. on April 17, 2021.

[11] Dušan Stojaković, "Srpsko pozorište na društvenoj mreži Fejsbuk," *Kultura* 136 (2012): 292.

[12] Mirna Leko-Šimić and Anton Biloš, "Theatre Marketing: Using Websites to Attract Young Target Audience," *Irish Business Journal* 10, 1 (2017): 32–49.

[13] Michael Mascioni, "Expanding Transmedia Theatre," *Stage Directions* 27, 10 (2014): 20.

[14] Andrea Hausmann and Lorenz Poellmann, "eWOM in the performing arts: exploratory insights for the marketing of theatres," *Arts and the Market* 6, 1 (2016): 111–23.

[15] Camila Pérez Lagos, "The place of the public within the websites of the French National Theaters. A semio-discursive analysis," *Études de Communication* 52, 1 (2019): 169.

[16] "Digital Audiences: Engagement with Arts and Culture Online" (Arts and Business, Arts Council England and MLA, 2010: 27), https://www.aandbscotland.org.uk/documents/2012-05-28-13-11-39-10-Digital-audiences-for-arts-and-culture-november2010.pdf, acc. on April 10, 2021.

[17] Nataša Krstić and Dejan Masliković, "Pain points of cultural institutions in search visibility: the case of Serbia," *Library Hi Tech* 37, 3 (2019): 497.

search engine good practice recommendations, it's also important to pay attention to the announced changes in search engine algorithm.[18] In this regard, Search Engine Optimization (SEO) is the application of a proactive, structured approach that aims to improve the visibility of a website in internet search results.[19] Google defines SEO "as making small modifications to parts of the website; when viewed individually, these changes might seem like incremental improvements, but when combined with other optimizations, they could have a noticeable impact on your site's user experience and performance in organic search."[20]

One of the latest practices recommended by Google is improving Page Experience Signals. This is a new Google search engine initiative, based on previous research on human-computer interaction,[21] conducted to identify the possibilities for improvement of website visitors' user experience (UX).[22] While researching the UX that keeps the visitor on a website, Sascha Mahlke found that the contributing factors are its perceived usefulness, ease of use, hedonic quality, and visual attractiveness.[23] From the search engine perspective, users searching the internet are on a journey of sorts, and each of their actions along the way represents a step towards the set goal. That journey can be cut short due to display latency, slow webpage loading or attention disruption - leading users to make mistakes, which in turn leads to decreased satisfaction and bouncing the website. To avoid this, removing possible interruptions and obstacles that could disturb website use proved to be key to obtaining visitor satisfaction and a positive experience.

In this regard, Google announced that, starting May 2021, as a result of updating its algorithm, Page Experience Signals will become a criterion for their webpage search ranking and will consist of the following parameters:[24]

1. Core Web Vitals, measuring page loading time, interactivity, and its visual stability.
2. Mobile friendliness, ensuring that webpages perform well on all devices.

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[18] Dale Askey, and Kenning Arlitsch, "Heeding the signals: applying web best practices when Google recommends," *Journal of Library Administration* 55, 1 (2014): 57.

[19] Cheng-Jye Luh, Sheng-An Yang, and Huang Ting-Li Dean, "Estimating Google's search engine ranking function from a search engine optimization perspective," *Online Information Review* 40, 2 (2016): 239–255.

[20] "Search Engine Optimization (SEO) Starter Guide," Google Search Central, last modified May 5, 2021, https://developers.google.com/search/docs/beginner/seo-starter-guide, acc. on April 17, 2021.

[21] Stuard K. Card, Thomas P. Moran, and Allen Newell, *The Psychology of Human-Computer Interaction* (USA: L. Erlbaum Associates, 1983).

[22] Amar, Sagoo, Annie Sullivan, and Vivek Sekhar, "The Science Behind Web Vitals," Chromium, last modified May 21, 2020, https://blog.chromium.org/2020/05/the-science-behind-web-vitals.html, acc. on April 17, 2021.

[23] Sascha Mahlke, "Factors influencing the experience of website usage," article presented at the *Conference* on Human Factors in Computing Systems – Proceedings, CHI 2002, Minneapolis: Association for Computing Machinery, April 20–25, 2002: 846.

[24] Jose Jeffrey, "Timing for bringing page experience to Google Search," Google Search Central (blog), last modified November 10, 2020, https://developers.google.com/search/blog/2020/11/timing-for-page-experience, acc. on April 17, 2021.

3. Safe browsing, or the non-existence of harmful content to user safety, including malware, deceptive pages, harmful and uncommon downloads.[25]
4. Hypertext Transfer Protocol Secure (HTTPS) which protects the integrity and confidentiality of data between the user's computer and the visited website.[26]
5. No intrusive interstitials, or the absence of disruptive content in the form of pop-up banners or advertisements.[27]

The five parameters listed above have the common goal of providing webpage visitors with an outstanding UX in terms of speed and content display, equally presented on all devices,[28] and providing them with safety in the form of anonymity and protection of personal data they leave during the visit – knowingly in the electronic sales process, or unknowingly – by accepting the Cookies Policy. When a site meets the threshold in the Page Experience Signals, users are 24% less likely to abandon page loads by leaving the page before any content has been painted.[29] Due to all the factors mentioned above, Google announced that it will start labeling web pages in search results that provide visitors with a good UX, as measured by Page Experience Signals,[30] recommending them as such to internet users.

The following article is structured as follows: after the introductory considerations concerning the theatre art experience paradigm shift during the global pandemic in the digital age, and the recent algorithm changes announced by the most dominant search engine in Serbia[31], the following research question was stipulated: "*What are the current Page Experience Signals of the Belgrade theatre websites?*" This is followed by presenting the research methodology, which is based on software analysis of Belgrade theatres' homepages. Obtained results suggested some common strengths but also the most frequent challenges that lead to bad UX. In the conclusion recommendations are offered concerning the possible ways of improving the online theatre customer experience via particular elements of Page Experience Signals.

[25] Kelly Hope Harrington, "More Safe Browsing Help for Webmasters," Google Search Central (blog), last modified September 7, 2016, https://developers.google.com/search/blog/2016/09/more-safe-browsing-help-for-webmasters, acc. on May 25, 2021.

[26] "Secure your site with HTTPS," Google Search Central (blog), https://developers.google.com/search/docs/advanced/security/https/, acc. on May 25, 2021.

[27] Aleh Barysevich, "What Counts As an Intrusive Interstitial?" Search Engine Journal (blog), last modified December 6, 2016, https://www.searchenginejournal.com/counts-intrusive-interstitial/180023/, acc. on May 25, 2021.

[28] David Schubert, "Influence of mobile-friendly design to search results on Google search," article presented at the 19th International Conference Enterprise and Competitive Environment, Brno: Procedia – Social and Behavioral Sciences, 220 (May 2014): 424–33.

[29] Sagoo, Sullivan, and Sekhar, "The Science Behind Web Vitals."

[30] Matt Southern, "Google: Core Web Vitals Becoming Ranking Signals in May 2021," Search Engine Journal blog, last modified November 10, 2020, https://www.searchenginejournal.com/google-core-web-vitals-ranking-signals/387142, acc. on May 25, 2021.

[31] In April 2021, Google had a 92.26% market share in Serbia (https://gs.statcounter.com/search-engine-market-share/all/serbia, acc. on May 25, 2021).

Methodology

Eighteen Belgrade theatres[32] were included in the research conducted in May 2021. Homepage Experience Signals were analyzed in relation to the five parameters listed in the Introduction of this article, for which software analysis and observation of the sampled websites were used.

For the analysis of the Core Web Vitals, Google's PageSpeed Insights tool was deployed.[33] This tool measures page loading speed, interactivity and visual stability in real time, via three basic metrics:[34]

1. The time it takes for a page's main content to load (Largest Contentful Paint, LCP), or the render time of the largest image or text block visible within the viewport, relative to when the page first started. In other words, this metric measures the time it takes until the visitors notice that most of the webpage content is visible. To provide a good user experience, LCP should occur within 2.5 seconds (s) from the moment a page first starts loading, 2.5 to 4 seconds calls for its improvement, and everything longer is considered a bad UX and the most common reason for abandoning the page.

2. The time it takes for a page to become interactive and responsive (First Input Delay, FID), or the time from when a user first interacts with a page (i.e., when they click a link, tap on a button) to the time when the browser is actually able to begin processing in response to that interaction.[35] To provide a good UX, pages should have an FID of 100 milliseconds (ms) or less, the time between 100 and 300 ms warrants metrics improvement, while everything above is considered poor performance.

3. The measure of webpage visual stability (Cumulative Layout Shift, CLS), which helps to quantify how often users face unexpected layout shifts during its download. Unexpected movement of the page content usually happens because resources are loaded asynchronously, or when DOM elements[36] get dynamically added to the page above existing content. To provide a good UX, pages should maintain a CLS of 0.1 or less, 0.1 to 0.25 calls for improvement, while a higher value is a sign of bad UX.

In the conducted analysis, according to stated metrics, results that indicated excellent UX were awarded 1 point, the average results 0.5, and the weak UX results got 0 points.

As for the other four Page Experience Signals, the following search engine recommended software was applied:

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[32] "Pozorišta", Grad Beograd, http://www.beograd.rs/lat/upoznajte-beograd/1289-pozorista, acc. on April 12, 2021.

[33] See: https://developers.google.com/speed/pagespeed/insights/, acc. on April 12, 2021.

[34] Philip Walton, "Web Vitals," Web.de, last modified April 30, 2020, https://web.dev/vitals/, acc. on April 12, 2021.

[35] Rick Viscomi, "Experimenting with First Input Delay in the Chrome UX Report," Web (blog), Google, last modified July 2018, https://developers.google.com/web/updates/2018/07/first-input-delay-in-crux/, acc. on April 12, 2021.

[36] Such as an image or video with unknown dimensions, a font that renders larger or smaller, or a third-party ad or widget that dynamically resizes itself.

1. For analyzing how the homepage performs on mobile devices: Mobile-friendly test[37], which points to the ease of consuming a webpage on a mobile phone or tablet device. Since mobile internet search surpassed desktop search in 2016,[38] providing the visitors with the same UX regardless of the device used to access the website becomes indispensable.
2. For internet search safety: Safe Browsing site status,[39] which warns visitors when they are trying to access dangerous web locations or download malicious files from the Internet. Additionally, this tool warns web administrators in case a website gets compromised and helps them with the diagnostics and finding the solution for the problem, to provide safety for their users.
3. For a secure version of the Hypertext Transfer Protocol (HTTPS): information is displayed to visitors by the Chrome browser – the security status of the website (Secure, Not Secure, Dangerous) is stated in front of its Uniform Resource Locator (URL).
4. Webpage observation to determine whether disruptive content is present – annoying web banner or an ad that covers a large part of visitors' visible surface.

Excellent UX, according to parameters listed above, is awarded 1 point, and a bad one 0 points.

The aim of accessing the Page Experience Signals was to identify common strengths and weaknesses that affect the UX of online theatre visitors, and to provide web administrators with recommendations for the announced algorithm update.

Results and discussion

Considering the posited research question, an analysis was conducted of homepage Page Experience Signals of 18 Belgrade theatres, according to the five parameters that have recently become Google ranking criteria.

The Belgrade theatres that made up the sample were scored according to their ability to fulfill the set methodological criteria. Table 1. shows their homepage performance in terms of Core Web Vitals (loading time, interactivity, visual stability), Mobile-friendliness, Safe browsing, HTTPS, and the absence of intrusive interstitials - which have an integrated impact on the visitor's UX.

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[37] See: https://search.google.com/test/mobile-friendly, acc. on April 12, 2021.

[38] Greg Sterling, "It's Official: Google Says More Searches Now on Mobile Than on Desktop," Search Engine Land (blog), last modified May 5, 2015, https://searchengineland.com/its-official-google-says-more-searches-now-on-mobile-than-on-desktop-220369, acc. on April 12, 2021.

[39] See: https://transparencyreport.google.com/safe-browsing/search, acc. on April 12, 2021.

Table 1.Page experience signals – the case of Belgrade theatres

Theatre website	Loading (Largest Contentful Paint, LCP)	Interactivity (First Input Delay, FID)	Visual stability (Cumulative Layout Shift, CLS)	Mobile friendly	Safe browsing	HTTPS	No intrusive interstitials	Score
operatheatremadlenianum.com	2.1 s (1)	14 ms (1)	0.00 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	7.0
buha.rs	2.4 s (1)	14 ms (1)	0.88 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	7.0
pozoriste-slavija.co.rs	3.7 s (0.5)	17 ms (1)	0.05 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	6.5
atelje212.rs	2.8 s (0,5)	33 ms (1)	0.00 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	6.5
bitef.rs	4.1 s (0)	30 ms (1)	0.00 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	6.0
pozoristancepuz.com	2.0 s (1)	14 ms (1)	0.03 (1)	No (0)	Yes (1)	Yes (1)	No (1)	6.0
jdp.rs	5.6 s (0)	14 ms (1)	0.11 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	6.0
zvezdarateatar.rs	3.2 s (0,5)	20 ms (1)	0.12 (0.5)	Yes (1)	Yes (1)	Yes (1)	No (1)	6.0
narodnopozoriste.rs	1.9 s (1)	234 ms (0.5)	0.21 (0.5)	Yes (1)	Yes (1)	Yes (1)	No (1)	6.0
bdp.rs	2.8 s (0)	17 ms (1)	0.01 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	6.0
teatarvuk.rs	8.0 s (0)	27 ms (1)	0.23 (0.5)	Yes (1)	Yes (1)	Yes (1)	No (1)	5.5
kpgtyu.org	0.7 s (1)	620 ms (0)	0.23 (0.5)	Yes (1)	Yes (1)	Yes (1)	No (1)	5.5
pozoristeterazije.com	6.4 s (0)	830 ms (0)	0.033 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	5.0
dadov.rs	2.5 s (0,5)	241 ms (0.5)	0.00 (1)	No (0)	Yes (1)	Yes (1)	No (1)	5.0
panteatar.rs	5.9 s (0)	690 ms (0)	0.05 (1)	Yes (1)	Yes (1)	Yes (1)	No (1)	5.0
pinokio.rs	9.6 s (0)	550 ms (0)	0.25 (0.5)	Yes (1)	Yes (1)	Yes (1)	No (1)	4.5
malopozoriste.co.rs	4.7 s (0)	230ms (0.5)	0,00 (1)	No (0)	Yes (1)	No (0)	No (1)	3.5
teatar78.com	8.4 s (0)	470ms (0)	0.23 (0.5)	Yes (1)	Yes (1)	No (0)	No (1)	3.5

Software analysis done on May 28, 2021; source: author.

The conducted research led to the following results: The two best-performing theatres, Madlenianum and Buha, provide the best UX measured by Page Experience Signals. Their homepages load quickly, simultaneously providing both interactivity and visual stability, without any disturbing content. The same UX is also provided on all devices. They are safe for visitors in terms of leaving their personal data, which is of utmost importance for websites that offer registration and electronic ticket purchase.

A common weakness of most Belgrade theatres is the time it takes for the main homepage content to load (LCP). According to this metric, as many as nine out of a total of 18 theatre homepages load slowly and create a bad UX, while four of them require improvements. Another weakness of the theatre websites in terms of Page Experience Signals is the interactivity of the homepage (FID), thus providing a bad first impression to its visitors. Homepages of five theatres are visually unstable when opened, while three homepages require improvement. Since the theatre consists of a visual medium and its audience, these metrics require special attention from the web administrator.

Belgrade theatres show the best performance in Safe browsing and the absence of Intrusive interstitials on the homepage, considering that not a single homepage showed negative performance.

Also, Belgrade theatres have shown particularly good performance when it comes to visual stability (CLS). Not a single theatre showed a bad UX according to this metric, although six of them require certain improvements.

A solid performance was also proven when it comes to mobile device friendliness of their websites. Only three smaller theatres provide websites not optimized for mobile visitors. However, despite generally positive findings, the applied Google Mobile-Friendly test indicated that most theatre websites are still faced with the problem of loading certain resources (code and web addresses) over mobile devices (information "Page loading issues" on the test). The following influences how the search engine sees and understands a web page and interprets it for the users in search results they receive on their mobile devices.

When it comes to secure data transfer protocol between the web browser and the devices used by visitors, two of the theatres did not apply it to their websites ("Malo pozorište Duško Radović", "Teatar 78"). A mitigating factor, in this case, was the fact that those theatres do not offer online ticket purchase on their websites. Still, this problem is easily manageable by implementing a security certificate that allows encoding and protection of visitors' data integrity.[40]

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[40] Nataša Krstić, Milan Gajić, *SEO: od teorije do prakse. Optimizacija veb-sajta za pretraživače* (Beograd: Fakultet za medije i komunikacije, 2020), 79.

Conclusions and Recommendations

Search engines, led by Google, put much emphasis on providing an excellent user experience to internet users. Certain experience parameters have been included in search engine website ranking criteria for years, such as mobile friendliness, for example, which is particularly important to users accessing web content using a mobile phone or tablet device. Avoiding the use of intrusive banners and ads that may inhibit UX is also crucial, along with website safety that protects visitor's personal information and data. The novelty is the fact that the search engine decided to conjoin several experience parameters, creating integrated Page Experience Signals, and to start applying them to their search results in 2021, by distinguishing or accentuating the websites that offer them to their visitors.

Based on the obtained results, a conclusion can be made that Belgrade theaters provide a solid UX, but that improvements in loading time and interactivity of their websites are necessary to make the live scene experience equal to the one they provide to their online visitors. The Google tool that was used to measure homepage speed shows that the reasons behind bad loading times are mainly slow server response time, render-blocking resources,[41] unformatted or heavy images,[42] unused Cascading Style Sheets (CSS) for web content styling, and disabled text compression. When it comes to achieving interactivity, which is measuring the homepage's responsiveness during load, factors contributing to bad performance are the impact of third-party code, longer JavaScript execution time, high request counts and big transfer sizes.[43]

It is also necessary for some of theatres to pay particular attention to the indispensable responsive website design and secure data transfer protocol, considering that an ever-growing number of visitors use mobile devices for internet search, as well as online ticket purchase.

Analyzing the results obtained in this manner also implies certain limitations – the most important of which is the fact that Google, aside from Page Experience Signals, uses more than 250 factors to rank webpages.[44] One of them is the webpage authority, measured by the number of quality links a page has attracted, and webpage relevance in relation to a user's query. However, since the topic of this paper was not SEO excellence of the theatres' websites, but rather the quality of Page Experience Signals in advance of the algorithm update, it is to be concluded that Belgrade theatres are achieving solid performance regarding Page Experience Signals and that they have several months ahead of them to increase the speed of the websites, improve their

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[41] For example, the VUK theatre, with the elimination of render-blocking resources, would speed up the homepage loading time by as much as 14.3 seconds.

[42] Image formats like JPEG 2000, JPEG XR, and WebP often provide better compression than PNG or JPEG, which means faster downloads and less data consumption.

[43] Philip Walton, "First Input Delay (FID)," Web.de, last modified June 19, 2020, https://web.dev/fid/, acc. on April 12, 2021.

[44] Cheng-Jye L., Sheng-An Y. and Ting-Li D. H. cited work Cheng-Jye, Luh, Yang and Dean, "Estimating Google's search engine ranking function from a search engine optimization perspective," 239–55.

interactivity and implement safety certificates. As far as mobile friendliness of the websites is concerned, this parameter requires building entirely new websites with responsive web design, which could prove to be an expensive investment in the current circumstances of low-ticket sale revenues.

The recommendation for future research is to examine several months after the algorithm update whether the Page Experience Signals of Belgrade theatres' websites have positively or negatively contributed to their search performance in terms of ranking on the search engine results page. This can be conducted by deploying software that calculates and numerically displays the search engine website optimization score (SEO score) according to several set criteria.

References

AEA Consulting for Arts Council England, and UK Theatre and Society of London Theatre. "From Live-To-Digital, Understanding the Impact of Digital Developments in Theatre on Audiences, Production and Distribution." October 2016. https://www.artscouncil.org.uk/sites/default/files/download-file/From_Live_to_Digital_OCT2016.pdf. Accessed on April 17, 2021.

Arts and Business, Arts Council England and MLA. "Digital audiences: engagement with arts and culture online." November 2010. https://www.aandbscotland.org.uk/documents/2012-05-28-13-11-39-10-Digital-audiences-for-arts-and-culture-november2010.pdf. Accessed on April 10, 2021.

Askey Dale, and Arlitsch Kenning. "Heeding the signals: applying web best practices when Google recommends." *Journal of Library Administration* 55 (2014): 49–59. doi: 10.1080/01930826.2014.978685.

Barysevich, Aleh. "What Counts as an Intrusive Interstitial?" Search Engine Journal (blog). Last modified December 6, 2016. https://www.searchenginejournal.com/counts-intrusive-interstitial/180023/. Accessed on March 20, 2021.

Card K. Stuart, Thomas P. Moran, and Allen Newell. *The Psychology of Human-Computer Interaction*. USA: L. Erlbaum Associates Inc., 1983.

De la Vega Pablo, Sara Suarez-Fernández, David Boto-García, and Juan Prieto-Rodríguez. "Playing a play: online and live performing arts consumers profiles and the role of supply constraints." *Journal of Cultural Economics* 44, 3 (2020): 425–50. doi: 10.1007/s10824-019-09367-y.

"Digital theatre." https://www.digitaltheatre.com. Accessed on March 21, 2021.

Google Search Central. "Search Engine Optimization (SEO) Starter Guide." Last modified on May 5, 2021, https://developers.google.com/search/docs/beginner/seo-starter-guide. Accessed on March 25, 2021.

Google Search Central. "Secure your site with HTTPS." https://developers.google.com/search/docs/advanced/security/https/. Accessed on May 25, 2021.

Grad Beograd. "Pozorišta". http://www.beograd.rs/lat/upoznajte-beograd/1289-pozorista/. Accessed on April 12, 2021.

Harrington, Kelly Hope. "More Safe Browsing Help for Webmasters." Google Search Central (blog). Last modified September 7, 2016. https://developers.google.com/search/blog/2016/09/more-safe-browsing-help-for-webmasters. Accessed on May 2, 2021.

Hausmann Andrea, and Lorenz Poellmann. "eWOM in the performing arts: exploratory insights for the marketing of theaters." *Arts and the Market* 6, 1 (2016): 111–23.

Hoxmeier A. John, and Chis DiCesare. "System Response Time and User Satisfaction: An Experimental Study of Browser-based Applications." Article presented at the AMCIS 2000 Conference Proceedings 347 (2000): 140–45.

Jeffrey, Jose. "Timing for bringing page experience to Google Search." Google Search Central (blog). Last modified November 10, 2020. https://developers.google.com/search/blog/2020/11/timing-for-page-experience. Accessed on March 25, 2021.

Krstić, Nataša, Milan Milan. *SEO: od teorije do prakse. Optimizacija veb-sajta za pretraživače.* Beograd: Fakultet za medije i komunikacije, 2020.

Krstić Nataša and Dejan Masliković. "Pain points of cultural institutions in search visibility: the case of Serbia." *Library Hi Tech* 37, 3 (2019): 496–512. doi: 10.1108/LHT-12-2017-0264.

Leko-Šimić Mirna, and Antun Biloš. "Theatre Marketing: Using Websites to Attract Young Target Audience." *Irish Business Journal* 10, 1 (2017): 32–49.

Luh, Cheng-Jye, Sheng-An Yang, and Dean Huang Ting-Li. "Estimating Google's search engine ranking function from a search engine optimization perspective." *Online Information Review* 40, 2 (2016): 239–55. doi: 10.1108/OIR-04-2015-0112.

Mahlke, Sascha. "Factors influencing the experience of website usage." Article presented at the Conference on Human Factors in Computing Systems – Proceedings, CHI 2002. Minneapolis: Association for Computing Machinery, April 20–25, 2002: 846–47.

Mascioni, Michael. "Expanding Transmedia Theatre." *Stage Directions* 27, 10 (2014): 20–23.

Narodno pozorište. "Izvinjenje publici zbog problema u vezi sa emitovanjem snimka predstave Bela kafa." https://www.narodnopozoriste.rs/sr/vesti/izvinjenje-publici-zbog-problema-u-vezi-sa-emitovanjem-snimka-predstave-bela-kafa. Accessed on April 17, 2021.

"Onlajn predstave Narodnog pozorišta do sada imale više od 77.000 pregleda." *N1*, last modified March 26, 2020. http://rs.n1info.com/Kultura/a582399/Onlajn-predstave-Narodnog-pozorista-do-sada-imale-vise-od-77.000-pregleda.html. Accessed on April 1, 2021.

Pérez Lagos, Camila. "The place of the public within the websites of the French National Theaters. A semiodiscursive analysis." *Études de Communication* 52, 1 (2019): 169–90. doi: 10.4000/edc.8846.

Philip Robyn, and Jennifer Nicholls. "Theatre Online: The Design and Drama of E-Learning," *Distance Education* 28, 3 (November 2007): 261–79.

Sagoo Amar, Annie Sullivan, and Vivek Sekhar. "The Science Behind Web Vitals." *Chromium* (blog), May 21, 2020. https://blog.chromium.org/2020/05/the-science-behind-web-vitals.html. Accessed December 30, 2020.

Schubert, David. "Influence of mobile-friendly design to search results on Google search." Article presented at the 19th International Conference Enterprise and Competitive Environment, Brno: Procedia – Social and Behavioral Sciences, 220 (May 2014): 424–33.

Southern, Matt. "Google: Core Web Vitals Becoming Ranking Signals in May 2021." Search Engine Journal (blog). Last modified November 10, 2020. https://www.searchenginejournal.com/google-core-web-vitals-ranking-signals/387142/. Accessed on April 2, 2021.

Sterling, Greg. "It's Official: Google Says More Searches Now On Mobile Than On Desktop." Search Engine Land (blog). Last modified May 5, 2015. https://searchengineland.com/its-official-google-says-more-searches-now-on-mobile-than-on-desktop-220369 Accessed April 2, 2021.

Stojaković, Dušan. "Srpsko pozorište na društvenoj mreži Fejsbuk." *Kultura* 136 (2012): 292–311.

Šuvaković, Miško. "Postajati mašinom; od teorije preko filozofije digitalne umetnosti, teatra i performansa... i natrag." *ткХ* 7 (2004): 3–15.

Uzelac, Ana. "Digitalno pozori*šte – predstava 'Bit0*, Simbioza virtuelnog i stvarnog sveta u pozorišnoj *umetnosti*." PhD dissertation, University of Arts in Belgrade, 2016.

Ćirić, Sonja. "Pare i muzika." *Vreme* 1052, March 3, 2011. https://www.vreme.com/cms/view.php?id=979072. Accessed April 2, 2021.

Viscomi, Rick. "Experimenting with First Input Delay in the Chrome UX Report." Web (blog). Google. Last modified July 2018. https://developers.google.com/web/updates/2018/07/first-input-delay-in-crux/. Accessed on March 10, 2021.

Walton, Philip. "First Input Delay (FID)." Web.de. Last modified June 19, 2020. https://web.dev/fid/ Accessed May 24, 2021.

Walton, Philip. "Web Vitals." Web.de. Last modified April 30, 2020. https://web.dev/vitals/. Accessed March 20, 2021.