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# ASSEESING TECHNICAL UNIVERSITIES' WEBSITES. ROMANIA VS. BULGARIA

Case  
Study

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## Keywords

*Technical Universities,  
Romania,  
Bulgaria,  
Website*

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## JEL classification

*M31*

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## Abstract

*In a technology era, institutions have to be present on the World Wide Web (www), not only because of the competitiveness but also for a better presentation of their academic offers. Being a communication channel, universities' websites must contain a series of information addressed not only to students or future students but also to the foreign students, academic staff, governmental institutions and press. While assessing Romania's and Bulgaria's Technical Universities' websites, in March 2017, we searched and analyzed 104 criterion. We have grouped them into four dimensions: content, interactivity, navigation and appearance. Each criterion and dimension received a certain score (a grade for the presence / absence of a criterion) using the ProfNet procedure. Of the two countries that we have analyzed (Romania and Bulgaria) we have concluded, that the websites of the Romanian Universities possess a little more functionalities, gathering a score of 14.39 points (the means on all dimensions), compared to the Bulgarian ones which scored 14.25 points.*

## INTRODUCTION

There are numerous studies that present education as being the main engine in the economic growth of a country (Lefter et al., 2010, Andrei et al., 2010 a, Andrei et al., 2010 b, McMahon, 1999, Hanushek & Wößmann, 2007, Aghion et al., 2009, Mallick et al., 2016). For our study we have decided to analyze Romania and Bulgaria, two neighboring countries. The reason we have decided to analyze these two countries is because they are in almost all official EU statistics on the last places and competitiveness between them is present at all levels (Floroiu, 2015), including higher education.

In the past, universities offered education to those who could meet their prescribed entry criteria (Alexa, 2012), but nowadays changes in the global environment, made them to rethink their marketing strategies. Due to the relatively low costs of online marketing, compared to the traditional printed materials (Alexa, 2012) and increasingly developed communication technologies, more and more institutions use websites to improve their image (Bonsón & Escobar, 2002) or to gain competitive advantages. The websites are used for reaching a large palette of potential students, for disseminating academic results, for a better interactivity between the students and university personnel (Alexa, 2012), for disclosure of financial information, corporate governance, social responsibility and strategy (Gallego et al., 2009) programs, course offerings, location, and relevant accreditations (Schimmel et al., 2010). Furthermore they are also used as a marketing tool for attracting and informing foreign students that want to experience a "local" culture, for creating interactive conversations, as well as empowering students through personal and academic development (Apperson, 2015).

The design of the website is a constant concern and challenge for both the institution and the responsible website creator as the users / consumers are becoming more and more demanding (Maver, 2002). A study (Hasan & Abuelrub, 2011) shows that users want adequate page content, speed, efficiency in navigation and security of information. Therefore, it is claimed that the corner stone of a website must be its functionality (<http://2012books.lardbucket.org/books/online-marketing-essentials/s04-introduction-to-emarketing.html>). It was thus suggest that the optimization of the entire website must be made according to a pyramid, where the basis is functionality, followed by Search Engine Optimization (SEO) and design (the least important criterion).

Jabar at al. (2012) and Mentés & Turan (2013) suggest that in assessing a university's website we have to consider the following criterion: attractiveness, controllability, efficiency, helpfulness and learnability. Zhang and Dran (2001)

take into consideration the user satisfaction when assessing a website. Others measured the usability of websites (Lautenbach, 2006) and investigated and evaluated the design of a university's website (Yoo & Jin, 2004).

## RESEARCH METHODOLOGY

For our study we have decided to use the ProfNet procedure, being inspired by a study made by Catana et al. (2006) in which they have used a methodology developed by the ProfNet Institut for Internet Marketing, Münster. ([http://www.profnet.de/dokumente/2009/rptStudie\\_B\\_80\\_Welt.pdf](http://www.profnet.de/dokumente/2009/rptStudie_B_80_Welt.pdf)).

For assessing the Romanian and Bulgarian Technical Universities' websites we have first looked for all Technical Universities that dispose of a website in both countries. In Romania, there are seven technical universities (Gheorghe Asachi Technical University of Iași, Oil & Gas University of Ploiești, Politehnica University of Bucharest, Politehnica University of Timișoara, Technical Military Academy of Bucharest, Technical University of Civil Engineering of Bucharest and the Technical University of Cluj-Napoca), all supported by the Romanian state and having their own web page, while in Bulgaria there are six state technical universities.

Every page was analyzed using 104 criterion, grouped into four dimensions: content, interactivity, navigation and appearance. Each criterion and dimension received a certain score (a grade for the presence / absence of a criterion) using the ProfNet procedure ([http://www.profnet.de/dokumente/2009/rptStudie\\_B\\_80\\_Welt.pdf](http://www.profnet.de/dokumente/2009/rptStudie_B_80_Welt.pdf)). The maximum possible score that a website can receive is 98 points, divided as follows: "content" (26 points), "interactivity" (45 points), "navigability" (13 points) and aspect (14).

## RESULTS AND DISCUSSIONS

### Content

When searching for information about the content of a website we are searching for the following criteria: university domain, search engine position, usage of a flash-intro, the existence of a slogan, the targeted group, the quality of the text disposed on the website, mouse-over - function for navigation, lack of Pop-Up windows, screen compatibility, mobile compatibility, number of languages you can find the information in (mother-tongue, English, Others), index, sitemap, full-text, help function, imprint – responsibility, address, privacy statement, history, photos, business hours, organizational chart, overview of faculties and/or extensions. If these

criteria are available we award the website one point for each and if not we note them with zero.

Some of the analyzed criterion scored 0 points for all the evaluated websites. We didn't find any information, neither on the Romanian or Bulgarian universities' websites, related to a text version of the website, help function or imprint responsibility.

Only very few points were granted to criterion such as: existence of a slogan (only the Politehnica University of Timișoara - Romania, Technical University Sofia and Higher School of Civil Engineering "Lyuben Karavelov" - Bulgaria have one on their webpage) and other languages besides the native language and English (Technical University of Civil Engineering of Bucharest - Romania, Technical University of Sofia and Technical University Gabrovo - Bulgaria).

On the other hand, the following criterion scored high: university domain, top search engine position, usage of flash-intros, screen compatibility, mobile compatibility, full-text search button, address and history.

While analyzing the content of the Romanian and Bulgarian Technical Universities' websites, we observed that there are only small differences, more so we can even say that the differences are insignificant. Using the means, Romanian Universities receives a score of 17.4, while Bulgarian Universities a score of 17 points.

None of the Romanian and Bulgarian universities received maxim points. Table 1 presents a top of the analyzed universities.

### Navigation

The elements analysed in our study (from navigation point of view) are displayed in Table 2.

In terms of navigability, we didn't find any data about "annual reports", "links to pages with same topics", possibility of "downloading a screen saver" or "horizontal scrolling". In this area, Romanian Technical Universities score better than the Bulgarian ones, with a means difference of almost 1 point (Table2). In spite all of this, the best and the worst results are obtained by two Bulgarian universities, namely Higher School of Civil Engineering, which received 10 points and the State University of Library Studies and Information Technologies, which received 4 points out of a total of 14 points.

### Interactivity

In our study we have considered following elements as being important when searching information about the interactivity criterion of a website: contact - e-mail-browser window; e-mail-form; list of contact phone numbers and email-addresses; names of the board members; photos - CEO/management; CV and information related to the rector and vice-rectors; photos - employees; job offers; product range description; taxes; glossary; kids' corner;

topical information; awards; information related to the industry sector; press releases; information for the press (archive); press feedback (archives); other content; FAQ; usage of https; university campaigns; info - dates; online activities; online-application forms; online appointments; online tour; individual homepage for students; intranet/extranet; chat/forum; guestbook; call-back-service; newsletter; SMS-letter; send it to a friend; likes on Facebook; student programs; films about the university; e-learning; important events on the home page; research; and entertainment/games.

There are big differences between Romanian and Bulgarian universities when analyzing their websites from an interactivity point of view. Bulgarian universities score 27 and Romanian universities 25 when calculating the means. Thus, we can state that Bulgarian Universities are trying to interact with their web page visitors in a much aggressive manner (Table 3). The Bulgarian university that received the highest score is Higher School of Civil Engineering (VSU) "Lyuben Karavelov" (34 points) and the Romanian university is Gheorghe Asachi Technical University of Iași (30 points). The lowest score received the Technical University of Civil Engineering of Bucharest (18 points) - Romania and the State University of Library Studies and Information Technologies (11 points) - Bulgaria (Table 3).

While the Romanian Technical Universities score 0 points at 13 elements related to interactivity, the Bulgarian ones score 0 at only 10 elements. Even though there are many studies supporting the usefulness of a websites' interactivity (Balasubraman et al. 2002), this is neglected by both Romanian and Bulgarian Technical Universities. The highest score here being 33 points from a maximum of 45 points.

### Aspect

The dimension related to the aspect is not very well represented on the universities' websites. We can argue that a website must not use excessive graphic elements because this could distract users. Hackos (1999) is in favor of using a minimalism approach, by stating "That information might come in the form of metaphoric interface structures, assistance in moving users from their goals through the specific tasks that support the goals". Even more so, Beaird (2010), considers that people love the new anti - marketing desig (sites that have an unpolished appearance).The best web site in terms of aspect is the one of the Technical University of Cluj-Napoca (13 points) and Gheorghe Asachi Technical University of Iași (11 points). In this respect we have to state that the maximum number of points that could have been obtained for the "aspect" dimension were 14 (Table 4).

## CONCLUSIONS

As an overall conclusion we can state that the results of our study are not very encouraging. Calculating the country's means on every dimension (content, navigation, interactivity and aspect) we have observed that the smallest difference between the two analyzed countries is related to the content dimension and the biggest difference is connected to the interactivity dimension (Figure 1).

Even though with a small difference, Romania scores overall better than Bulgaria by obtaining a score of 14.39 points (the mean on all dimensions), while the latter scored only 14.25 points.

The university that received the highest overall score is the Technical University of Cluj-Napoca, obtaining 70 points out of 98 possible.

The last place is occupied by a Bulgarian university, namely the State University of Library Studies and Information Technologies, which managed to receive only 33 points.

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ANNEXES

Table 1  
*Technical Universities' webpage, ranked by content*

Country	University name	Points
Romania	Oil & Gas University of Ploiești	13
Bulgaria	State University of Library Studies and Information Technologies	13
Romania	Gheorghe Asachi Technical University of Iași	17
Romania	Technical Military Academy of Bucharest	17
Romania	Technical University of Civil Engineering of Bucharest	17
Bulgaria	Technical University Varna	17
Bulgaria	Higher School of Civil Engineering (VSU) "Lyuben Karavelov"	17
Romania	Politehnica University of Bucharest	18
Bulgaria	Technical University Gabrovo	18
Bulgaria	University of Architecture, Civil Engineering and Geodesy	18
Romania	Technical University of Cluj-Napoca	19
Bulgaria	Technical University Sofia	19
Romania	Politehnica University of Timișoara	21

Table 2  
*Technical Universities' webpage: navigation*

Technical University	Country	Jump to the Homepage	Jump Backward	Print Function	No horizontal scrolling	Pages "not found/ under construction"	Download - Screensaver	Download - Forms	Download - Annual report	Download - for mobiles	Download - others	Links - Parent-/Subsidiary	Links - Pages with the Same Topic	Fastness - Subjective	Links - Others	TOTAL
TUI	Ro	1	0	0	0	0	0	1	0	0	0	1	0	1	1	5
UPG	Ro	1	0	1	0	1	0	1	0	0	0	1	0	1	1	7
UPB	Ro	1	0	1	0	1	0	1	0	1	1	1	0	1	1	9
UPT	Ro	1	1	0	0	0	0	1	0	1	1	1	0	1	1	8
MTA	Ro	1	0	1	0	0	0	1	0	1	1	1	0	1	1	8
UTCB	Ro	1	0	0	0	1	0	1	0	1	1	1	0	1	1	8
UTCN	Ro	1	0	1	0	1	0	1	0	1	1	1	0	1	1	9
<b>Total</b>	Ro	7	1	4	0	4	0	7	0	5	5	7	0	7	7	Mean 7,71
TUS	Bg	1	0	0	0	0	0	1	0	1	0	1	0	1	1	6
TUV	Bg	1	0	0	0	0	0	1	0	1	0	1	0	1	1	6
TUG	Bg	1	0	1	0	1	0	1	0	1	1	1	0	1	1	9
UACEG	Bg	1	0	0	0	0	0	1	0	1	0	1	0	1	1	6
UNIBIT	Bg	1	0	0	0	1	0	1	0	0	0	0	0	1	0	4
VSU	Bg	1	0	1	0	1	0	1	1	1	1	1	0	1	1	10
<b>Total</b>	Bg	6	0	2	0	3	0	6	1	5	2	5	0	6	5	Mean 6,83

Table 3  
*Technical Universities' webpage: interactivity*

University	Country	Score
Gheorghe Asachi Technical University of Iași (TUI)	Romania	30
Oil & Gas University of Ploiești (UPG)	Romania	21
Politehnica University of Bucharest (UPB)	Romania	27
Politehnica University of Timișoara (UPT)	Romania	25
Technical Military Academy of Bucharest (MTA)	Romania	24
Technical University of Civil Engineering of Bucharest (UTCB)	Romania	18
Technical University of Cluj-Napoca (UTCN)	Romania	29
Mean		25
Technical University Sofia (TUS)	Bulgaria	31
Technical University Varna (TUV)	Bulgaria	30
Technical University Gabrovo (TUG)	Bulgaria	25
University of Architecture, Civil Engineering and Geodesy (UACEG)	Bulgaria	33
State University of Library Studies and Information Technologies (UNIBIT)	Bulgaria	11
Higher School of Civil Engineering (VSU)	Bulgaria	34
Mean		27

Table 4  
*Technical Universities' webpage: aspect*

Technical University	Country	Use of 360°-views	Use of 3D-animation	Use of Audio	Use of Animated Elements	Use of Photos	Use of Graphics	Use of Image Map	Use of Livestream	Use of Text	Use of Video	Use of a WebCam	Webphone	Textual Layout	Aesthetic Layout	
TUI	Ro	1	1	1	1	1	1	1	0	1	1	0	0	1	1	11
UPG	Ro	0	0	0	1	1	0	0	0	1	0	0	0	1	0	4
UPB	Ro	0	0	1	1	1	1	0	0	1	1	0	0	1	1	8
UPT	Ro	0	0	1	1	1	1	0	0	1	1	0	0	1	0	7
MTA	Ro	0	0	0	1	1	1	0	0	1	0	0	0	1	0	5
UTCB	Ro	0	0	0	1	1	0	1	0	1	0	0	0	1	0	5
UTCN	Ro	1	1	1	1	1	1	1	0	1	1	1	1	1	1	13
Total	Ro	2	2	4	0	7	5	3	0	7	4	1	1	7	3	Mean 7,57
TUS	Bg	0	0	0	1	1	1	1	0	1	0	0	0	1	0	6
TUV	Bg	0	0	0	1	1	1	1	0	1	0	0	0	1	0	6
TUG	Bg	0	0	0	1	1	1	0	0	1	0	0	0	1	0	5
UACEG	Bg	0	0	0	1	1	1	1	0	1	0	0	0	1	0	6
UNIBIT	Bg	0	0	0	1	1	1	0	0	1	0	0	0	1	0	5
VSU	Bg	0	0	0	1	1	1	1	0	1	1	0	0	1	0	7
Total	Bg	0	0	0	6	6	6	4	0	6	1	0	0	6	0	Mean 5,83

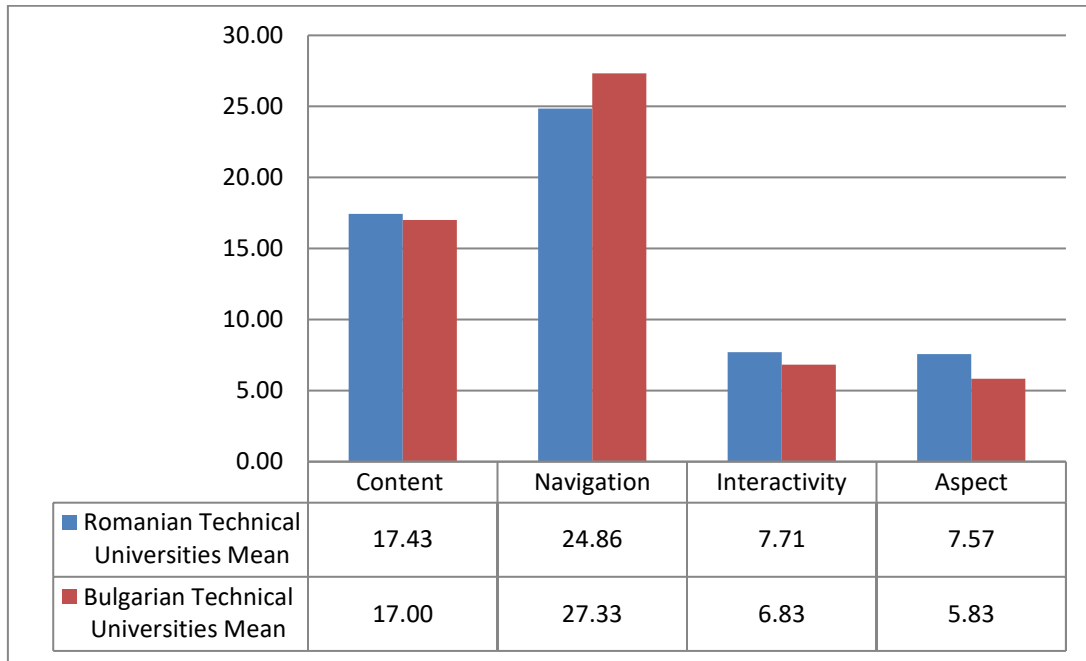


Figure 1.  
*Difference between countries means in assessing Technical Universities' webpages*