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## **INFORMATION MODELS FOR ASSESSING THE MATURITY OF THE WEBSITES OF THE JUDICIAL AUTHORITIES IN BULGARIA**

**ABSTRACT:** Officially, there is currently no uniform standard and minimum requirements for what should be contained in the website of the court, although the need for this is found in the Law on the Judiciary.

This led to the need to establish a methodology for monitoring the information resources of the authorities oriented towards the requirements for the composition and nature of the information to the official sites of the authorities.

Started in 2013, the study continued in the coming years, complementing and analyzing the results of empirical research, to formulate recommendations to the SJC. The evaluation of sites was held to previously developed and discussed parameters. The results obtained in the 13 sets of indicators are shown in total number of points obtained from maximum possible number - 81. Displayed indexes are grouped by degree of maturity in 5 levels.

**KEYWORDS:** *Web-page, parameters, indexing, maturity level, evaluation methodology.*

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## Introduction

The deployment and use of information technology in the judicial system is implemented in accordance with the information strategy for the judiciary of the Republic of Bulgaria [2].

The strategy for Internet development of the judiciary should be based on passing from the method of providing information on individual request (reactive access) to the method of providing all the relevant information on the official sites of the courts (proactive access) [3, p.75]

On 7.04.2015, in the National Assembly was submitted a new bill amending the Law of the Judiciary and a new chapter was introduced - XVIII "a" on Verification statements and proceedings in electronic form and in art. 360 of the Act is assigned high priority level to the requirements for websites, electronic documents, electronic statements from the judicial authorities, electronic evidence, storage and access to electronic cases etc. [12].

This revolutionary for Bulgaria act aimed at transparency of the judiciary in the context of the development of the Internet, contains two important obligations for the courts: to create official websites with specific content and publish judicial acts there.

The first stage of the study was conducted in the period 15-30.01.2013 in partnership with students in the master's program "IT in judiciary and the executive" of the University of Veliko Tarnovo "St. Cyril and Methodius" [3]. The second stage was held in 15-30.04.2014, while the third - implemented in June 2015 with an expert team of the Association for European law<sup>3</sup>.

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<sup>3</sup> The results of the study are presented on a national conference "E-PRAVO. BG" by M. Petrova in *The Bulgarian court on the Internet - results of longitude study of the internet performance of the courts in Bulgaria 2013-2015*, <http://e-pravo.bg>.

### **Scope, purpose and methodology of the study**

The courts in the Republic of Bulgaria are: regional (RC), district (DC), administrative (AC) military (MC), appeal (ApC), a Specialized criminal court, Appellate specialized criminal court, Supreme Court of Cassation (SCC) and Supreme Administrative Court (SAC) [12].

**The object** the monitoring are the official websites of the courts in Bulgaria. It covers 174 of all 182 courts in Bulgaria.

**The subject** of monitoring - compliance of the content of the official Internet pages with the legal and expert requirements to them [11, 12].

Among the existing global ratings, the most authoritative, comprehensive and robust evaluation of the level of development of eGovernment is the rating of the United Nations, Global E-Government Survey, published in 2003

Through an expressly developed methodology, adapted to the methodology of the UN for index of readiness of the countries in the world to use e-government (Global EGovernment Survey) [9], in 2013 an index was developed to study the contents of the web pages of all 113 regional courts (RC) in Bulgaria [12]. 81 indicators, divided into 13 groups, are developed. The analysis covers the results by groups of indicators, as well as by court area of District and Appellate courts.

In order to optimize future research, it is needed to move out or to identify (experimentally after analysis or experiment or by expert assessment) weights, in order for the obtained results to have more informative value.

Research in 2013 showed generally very low scores and small differences, from the maximum possible 81 points from all 113 websites, only one scored 36 points (RC Blagoevgrad), barely 44.44%. The smallest score is 6 points (RC Nikopol and RC Byala).

### Research tool (EXPERIMENT)

Based on the research objectives, the theoretical concepts are transformed into empirical indicators that allow the collection and aggregation of information on the content of the websites of the courts in Bulgaria.

When examining the content of the websites of the courts, the method of web-content analysis is used, which is a study by experts of the content of the website in online mode to determine the presence or absence of pre-selected characteristics [1].

The specially developed web-scanning tool is in the form of an interactive MS Excel application. It allows the one carrying out the evaluation of a website to immediately note (with the mouse or keyboard) valid answers to the included in the tool questions, and as a result for each site a numerical value is selected: 1 (YES) or 0 (NO), as well as automatic evaluation by summary score for the site.

The selection of indicators for conducting of the study is based on the legislation: Indicators explore sites for compliance with the SJC - Protocol № 30 from session of the SJC from 26.09.2007 [11] and are consistent with the Bill amending the Law on judiciary [12]. SJC proposals [11] have been supplemented and developed in certain indicators.

The results obtained by 13 groups of indicators for the courts are shown in the total number of points obtained from the maximum possible number - 81.

The total number of points scored for each site is normalized to range from 0 to 1. The value of online index for a site is calculated as follows<sup>4</sup>:

$$I_x = (C-Y) / (A-Z),$$

where:

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<sup>4</sup> Using the adapted methodology of the United Nations, which uses current minimum and maximum values.

$I_x$  – Index (court „X”)

C – total score of court X

Y – lowest overall score for all courts

A – highest overall score

Z – lowest score for all courts.

For example, if the court „X“ has an overall score 33 points is reduced with the lowest possible overall score equal to 0 points, the highest score for all courts is equal to 81 points, the score of the court „X“ would be:

$$I_x = \frac{[33 - (0)]}{[81 - (0)]} = 0,4074$$

Displayed indexes of the regional courts are grouped by degree of maturity in 5 levels [3, p. 295]:

Table 1. Maturity levels

<b>Maturity level</b>	<b>Index (range)</b>	<b>Compliance (number of points)</b>
FIRST	0,0000 до 0,2000	0 до 16
SECOND	0,2001 до 0,4000	17 до 29
THIRD	0,4001 до 0,6000	30 до 48
FOURTH	0,6001 до 0,8000	49 до 64
FIFTH	0,8001 до 1,0000	65 до 81

Table 2. Distribution of the 113 RC by levels of maturity  
(in 2013)

I level		II level		III level	
Index	Number of courts	Index	Number of courts	Index	Number of courts
0,0741	2	0,2099	3	0,3951	2
0,1111	2	0,2222	4	0,4074	6
0,1235	1	0,2469	4	0,4444	1
0,1358	3	0,2593	10		
0,1481	6	0,2716	4		
0,1605	2	0,2840	9		
0,1728	1	0,2963	2		
0,1852	2	0,3086	4		
0,1975	3	0,3210	3		
		0,3333	13		
		0,3457	3		
		0,3580	23		

As it becomes clear in the results of the conducted study in 2013, there is not a single RC in the fourth and fifth maturity level. In the third level of maturity there are 9 courts, in the first - 22, and the most are in the second level of maturity - 82.

As a result of the monitoring carried out in June 2015 (see. Table. 3) in the 4-th level of maturity fall the websites of three RC, in 5-th level falls none. There are 17 courts in the third level of maturity, and in the first - 17, and most are in the second level of maturity - 76 [7].

Table 3. Maturity level of the websites of the Regional courts in 2015

I level		II level		III level		IV level	
index	Number of courts	index	Number of courts	index	Number of courts	index	Number of courts
0,1235	1	0,2099	4	0,4074	2	0,7160	1
0,1358	3	0,2222	4	0,4198	3	0,7284	1
0,1481	4	0,2346	2	0,4444	2	0,7531	1
		0,1605	4	0,2469	4	0,4568	2
		0,1728	2	0,2593	5	0,4691	1
		0,1852	1	0,2716	5	0,4938	2
		0,1975	2	0,2840	7	0,5309	1
				0,2963	1	0,5432	1
				0,3086	3	0,5679	1
				0,3210	5	0,5926	2
						0,3333	5
						0,3457	5
						0,3580	11
						0,3704	7
						0,3827	6
						0,3951	2

Table 4. Alteration of the maturity of Regional courts websites in 2015 compared to 2013

Maturity level		Regional court	Index		Alteration in 2015 compared to 2013	
2015	2013		2015	2013	index	In %
1	2	RC Radomir	0,1235	0,3580	-0,2345	-65,51%
1	1	RC Dulovo	0,1358	0,1111	0,0247	22,23%
1	2	RC Teteven	0,1358	0,2099	-0,0741	-35,30%
1	2	RC Lukovit	0,1358	0,2593	-0,1235	-47,63%
...						
2	1	RC Balchik	0,2099	0,1852	0,0247	13,32%
2	2	RC Elhovo	0,2099	0,2099	0,0000	0,0%
2	2	RC Petrich	0,2099	0,2593	-0,0494	-19,06%
...						
3	2	RC Haskovo	0,5926	0,3580	0,2346	65,53%
3	3	RC Kardzhali	0,5926	0,4074	0,1852	45,46%
...						
4	3	RC Momchilgrad	0,7160	0,4074	0,3086	75,76%
4	3	RC Krumovgrad	0,7284	0,4074	0,3210	78,79%
4	3	RC Ardino	0,7531	0,4074	0,3457	84,85%

In 2015 is recorded the fastest rate of growth in the websites of RC Byala, RC Svilengrad, RC Ivaylovgrad, RC Peshtera (Table 5), which in the last two years have gone to a higher level of maturity of their websites.



Table 5. Temp of development of the websites  
of the Regional courts

Maturity level		Regional court	Index		Alteration in 2015 compared to 2013	
2015	2013		2015	2013	Index	%
2	1	RC Byala	0,2840	0,0741	0,2099	283,20%
2	1	RC Svilengrad	0,3457	0,1235	0,2222	179,90%
2	1	RC Ivailovgrad	0,3086	0,1111	0,1975	177,81%
2	1	RC Peshtera	0,3457	0,1358	0,2099	154,55%
1	1	RC Nikopol	0,1728	0,0741	0,0987	133,25%
2	1	RC Asenovgrad	0,2840	0,1358	0,1482	109,09%
2	1	RC Karlovo	0,2840	0,1481	0,1359	91,73%
4	3	RC Ardino	0,7531	0,4074	0,3457	84,85%
2	1	RC Panagyurishte	0,3580	0,1975	0,1605	81,28%
4	3	RC Krumovgrad	0,7284	0,4074	0,3210	78,79%

The scope of the study by 30 June 2015 includes 174 courts by type: 5 Appeal; 28 district; 113 Regional; 26 Administrative Courts (without AC Sofia city and AC Sofia region), SAC, SCC. Of the studied 174 courts, the websites of 19 of them are in the initial level of maturity, 101 - in the second level, 50 - in the third and 4 - in the fourth level of maturity (see Table 6). There is no Bulgarian court in the 5-th level of maturity.

A thorough analysis of the results is to be made by judicial area of the District and Appellate Court, analysis by group questions, etc.

Table 6. Maturity levels of the researched courts on 30.06.2015

Courts	MATURITY LEVEL			
	I level	II level	III level	IV level
RC	17	76	17	3
DC		5	22	1
AC	2	18	6	
ApC		2	3	
SCC / SAC			2	

Table 7. Distribution of the 174 courts by levels of maturity (in 2015)

I level	Number of courts	II level	Number of courts	III level	Number of courts	IV level	Number of courts
0,1235	1	0,2099	5	0,4074	4	0,6173	1
0,1358	3	0,2222	7	0,4198	3	0,7160	1
0,1481	4	0,2346	5	0,4321	5	0,7284	1
0,1605	5	0,2469	5	0,4444	5	0,7531	1
		0,1728	2	0,2593	7	0,4568	6
		0,1852	2	0,2716	7	0,4691	3
		0,1975	2	0,2840	7	0,4815	3
				0,2963	1	0,4938	5
				0,3086	4	0,5062	1
				0,3210	6	0,5309	3
				0,3333	6	0,5432	3
				0,3457	8	0,5556	1
				0,3580	12	0,5679	1
				0,3704	10	0,5802	3
				0,3827	7	0,5926	4
						0,3951	4

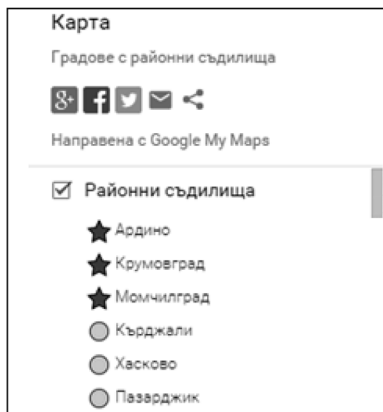
## Results

Based on the results of the study a national map of the studied regional courts is prepared [10], consistent with the level of maturity. The map is made with the tools of Google My Maps, the icons for each of the 4 levels of maturity (there are no Regional courts in the 5-th level) are in a different color, allowing you to see more clearly their place.

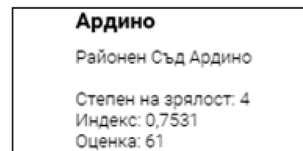


Fig.1. Search by string

Option to search by entering the name (initials) of the court (location).



Фиг.2 Списък с РС, групирани по степен на зрялост.



Фиг.3. Информация за посочен РС, с резултат от 2015

By moving over the icon and selecting a Regional Court, information is presented in a box, containing the following key indicators: city, name of court, level of maturity index (2015), assessment (number of points 2015), and the location of this court on the map.

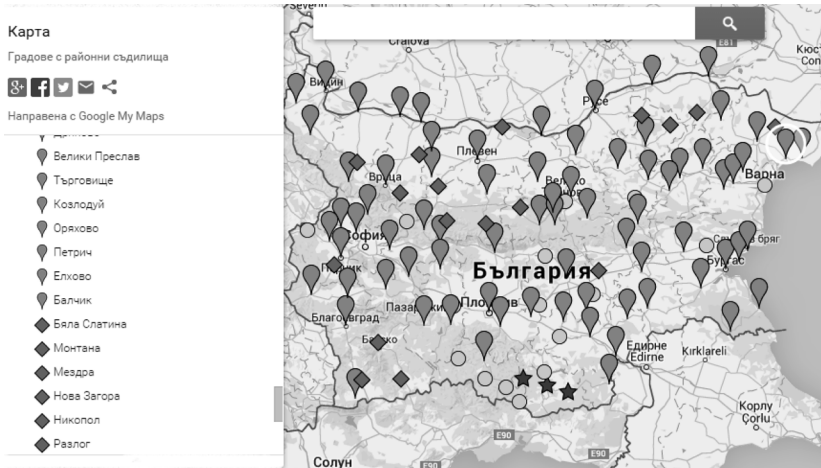


Fig.4. Map of the Regional courts in Bulgaria, by level of maturity.

The map gives a clear idea of any court in the country by the listed indicators with minimal effort. It is possible to access it online from anywhere and any computer or mobile device.

## Discussion

The analyzed websites do not have appropriate functional structure and informational content from a user perspective: their design (information and graphics) is politype; navigation is difficult, almost no cases of functional online services in the context of the European vision.

Payment of fees for various administrative services are traditionally performed by the known for decades service - cash and by bank transfer, but online payment of fees is not offered and practices of electronic technology in this field are not yet implemented.

There is an exceptional variety of structure, content and formats in which the mandatory online publication information is uploaded. However the unification of judicial information is part of equal access to justice.

Hiding basic information such as biographical data of the judges has an extremely negative influence on citizens' perception of those who administer justice.

We can make the following basic conclusions:

- There are different styles considering modular design, architecture of each web page, navigation, design, language of presenting the information;
- The websites are different by style, quality and size;
- Each web page presents different volume of legal basis;
- A few number of web pages provide information in foreign languages (at least a second language version);
- The searched information is not found easily, because of the different ways of its order and presentation;
- Judicial acts are published, but access to them is different on each web page, which creates confusion and difficulties.
- There is no unification of the work with electronic applications and sending information electronically. The samples for requests, sent to the particular court (in 108 websites) have a wide variety of formatting, structure, etc.

## Conclusion

Despite the good prerequisites and adequate conditions, the websites of the courts have mostly representative functions, cur-

rently offering the public mainly information (and it is not full) than actual opportunities for citizens to receive concrete administrative services electronically.

Technology should lead to the transition from static sites like business card“ to dynamic ones, that implement more functionalities. This will allow to achieve greater efficiency of the institutions, greater awareness and active interaction with citizens and businesses. This is expected to meet the objectives of the reform of the judiciary in Bulgaria and meet the criteria of the EU in this area.

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## **ИНФОРМАТИЧКИ МОДЕЛИ ЗА ПРОЦЕНУ ЗРЕЛОСТИ ВЕБ СТРАНИЦА ПРАВОСУДНИХ ОРГАНА У БУГАРСКОЈ**

Апстракт: У Бугарској тренутно не постоје званични стандарди ни минимални предуслови за садржај веб страница правосудних органа, иако је потреба за тим наведена у Закону о правосуђу. Зато смо покушали да осмислимо методологију за надзор над изворима информација органа власти, која је оријентисана на утврђивање критеријума за састављање и природу информација које се постављају на званичне странице органа власти.

Истраживање је започето 2013. и траје већ неколико година. Допуном и анализом резултата емпиријског истраживања формулисаћемо препоруке СЈЦ-у. Евалуација веб страница урађена је уз помоћ раније договорених стандарда. Резултати добијени у 13 сетова индикатора приказани су кроз укупан број поена добијених од максимално могућег броја 81. Приказани индекси су према зрелости груписани у 5 нивоа.

Кључне речи: *веб страница, стандарди, индексирање, ниво зрелости, методологија евалуације.*