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## SIGNIFICANCE OF EDUCATIONAL OUTCOMES FOR SOCIETY

**Abstract.** *The level of development of modern society is characterized by the favourable conditions for the development of a person in all spheres of social life.*

*Education is a common precondition of economic and political development, the only proper path towards democracy and social justice. Striking examples of higher institution training of creatively-minded and ethics-based generation, which possesses profound knowledge and competencies, are investigated in the article.*

*To interpret the dialectic interrelation between the level of education of the society and the main social-economic factors of the state development – life expectancy at birth, crimes recorded and average wages, the equation of three regressive models has been analyzed, built on the options of the Eastern Europe countries, Ukraine in particular, and the Middle East countries. We have concluded that there is a direct sufficient relationship between the Gross enrolment ratio in tertiary education and Life expectancy at birth and Average wages. When Gross enrolment ratio in tertiary education increases, Life expectancy at birth and Average wages are increased too. The values of determination coefficients ( $R^2 = 0,9395$  and  $R^2 = 0,9171$  correspondingly) testify, that the growth of Life expectancy at birth by 93,95 % is caused by the growth of Gross enrolment ratio in tertiary education. The growth of Average wages by 91,71% is caused by the growth of Gross enrolment ratio in tertiary education too.*

*The relationship between Number of students in tertiary education per 100 000 inhabitants and Crimes recorded is medium retroactive – the growth of Number of students in tertiary education causes the decrease of Crimes recorded. Determination coefficient ( $R^2 = 0,2002$ ) shows the decrease of Crimes recorded by the police in 20,02% of cases.*

*Thus, the change of the established social-political society, improvement of economic-social conditions becomes possible only when the level of people education and their awareness are increased. That is why nowadays the task of the University is to train educated personality, who is able to provide the stability of the economic development of the state.*

**Keywords:** *education, development of society, economic development.*

**Introduction.** The level of development of modern society is characterized by the favourable conditions for the development of a person in all spheres of social life. Nowadays most countries try to create ideal conditions for the development of a personality, having realized the importance of human capital in providing effective changes in the national economy. It should be stressed that UN uses three main criteria for estimation of the level of development of every country: life expectancy at birth, people living standard and gross enrolment ratio in tertiary education.

Education is a common precondition of economic and political development, the only proper path towards democracy and social justice. Striking example of higher institution training of a new creatively-minded and ethics-based generation, which possesses profound knowledge and competencies, is the “Revolution of Dignity” in Ukraine (November 21, 2013), initiated by the University students, who went into the streets of Kyiv to protest against the solution of the Cabinet of Ministers of Ukraine to stop the process of joining EU and signing the Agreement on association between Ukraine and EU. Precondition of fundamental social-political changes in Ukraine was the “Orange revolution”, which was also initiated by the middle class protest against fake elections of the President (November-December, 2004). “Arabian spring” should be mentioned as well as the series of street manifestations, revolutions and interior military conflicts in some Arabian countries of the North Africa, which started in the late 2010 in Tunisia caused by the so-called “Jasmine revolution” and are in process still now in some countries. In some territories these revolutions turned into civil wars (Syria, Libya).

Important role in creation of public opinion in Ukraine and North Africa countries played political and social-economic problems such as lack of democracy, deepening of inequality between the richest and the poorest, low wages, high unemployment, rise of consumer goods prices, disproportion in economy, etc. The youth happened to be the most affected, who didn't have the possibility to realize itself, while the smaller portion of the society, top politicians, took advantage of all material wealth being engaged in corruption and irresponsibility. Similar to such uprisings as “Revolution of Dignity” in Ukraine and “Arabian spring” are the protests of students and intellectuals, doctors, engineers, teachers, who were deprived the rights and future, the struggle of educated layer of the society to take part in the decision making, to have access to free labour market, to real future prospects.

**Results and discussions.** While studying mass social-economic phenomena and processes statistics faces variety of indicators (fluctuation of indicators), which specify some units of the aggregate. The values of indicators change under different factors. The more variable are conditions, which affect the value of the given indicator, the greater is likely to be its variation. Investigation of social-economic phenomena is based on calculation of the size and variation intensity values. Thus, to prove the dependence of the indicator change (social-political system) on the specific for it factors (gross enrolment ratio in tertiary education, in particular), let us calculate the variation coefficient ( $V$ ), which is the criterion of the average typicalness. The greater is the variation coefficient, the less homogeneous is the aggregate and the less is the typical average for the given aggregate. The aggregate is quantitatively homogeneous, if the variation coefficient does not exceed 33%.

Ukraine and the Middle East countries are countries-representatives for carrying out such calculations.

According to the calculations the variation range is 19,5052% (gross enrolment ratio in tertiary education), variation coefficient is  $V=13,93\%$ , which testifies the aggregate homogeneity, that is, confirms the determination of mass protests caused by the growth of population educational level, their better awareness.

The carried out investigations are confirmed by the following statistic data (Table 1, Table 2).

Table 1

**Dynamics of Gross enrolment ratio. Education. Tertiary, %\***

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	2	3	4	5	6	7	8	9	10	11	12
Algeria	16,75	17,74	18,18	19,76	20,22	22,29	25,88	28,67	28,76	30,28	31,46
Egypt	32,27	28,99	30,33	31,62	31,45	31,86	31,65	32,36	33,47	28,75	30,06
Lebanon	44,87	43,03	43,61	44,22	44,1	46,67	48,3	48,21	47,78	49,74	46,26
Morocco	10,21	10,71	10,88	11,6	12,19	11,77	12,85	13,45	14,32	16,16	..
Tunisia	22,67	25,98	28,38	29,95	30,99	31,07	33,51	34,56	36,06	35,22	35,2
Ukraine	56,48	60,49	64,86	68,67	72,771	75,44	77,35	78,01	76,66	79,25	79,70
Belarus	59,26	61,88	63,84	66,17	68,09	70,16	70,03	73,59	78,99	85,7	91,45
Moldova	32,20	33,3	34,36	36,10	39,40	41,20	39,99	38,29	38,15	39,45	40,11
Romania	32,95	38,03	41,59	44,90	50,03	53,96	59,59	61,30	56,78	51,60	..
Bulgaria	40,86	41,52	41,94	44,27	45,82	49,53	51,35	54,10	57,99	59,63	62,70
Hungary	44,56	52,29	60,15	65,10	67,62	67,35	64,48	61,71	60,38	59,51	59,63
Czech Republic	34,61	37,31	44,21	48,91	50,65	54,49	58,05	60,68	63,21	64,58	64,17
Slovenia	66,30	69,15	72,68	79,71	83,14	84,91	85,55	86,12	88,47	85,09	86,02
Poland	58,40	59,84	61,23	63,60	65,19	66,69	69,36	71,19	73,52	73,51	73,19

\* Data from the World Bank (<http://data.worldbank.org/>)

The growth of the level of awareness of the society is testified by the number of Internet-users per 100 people, which is presented on Table 2 and depicted in Fig. 1.

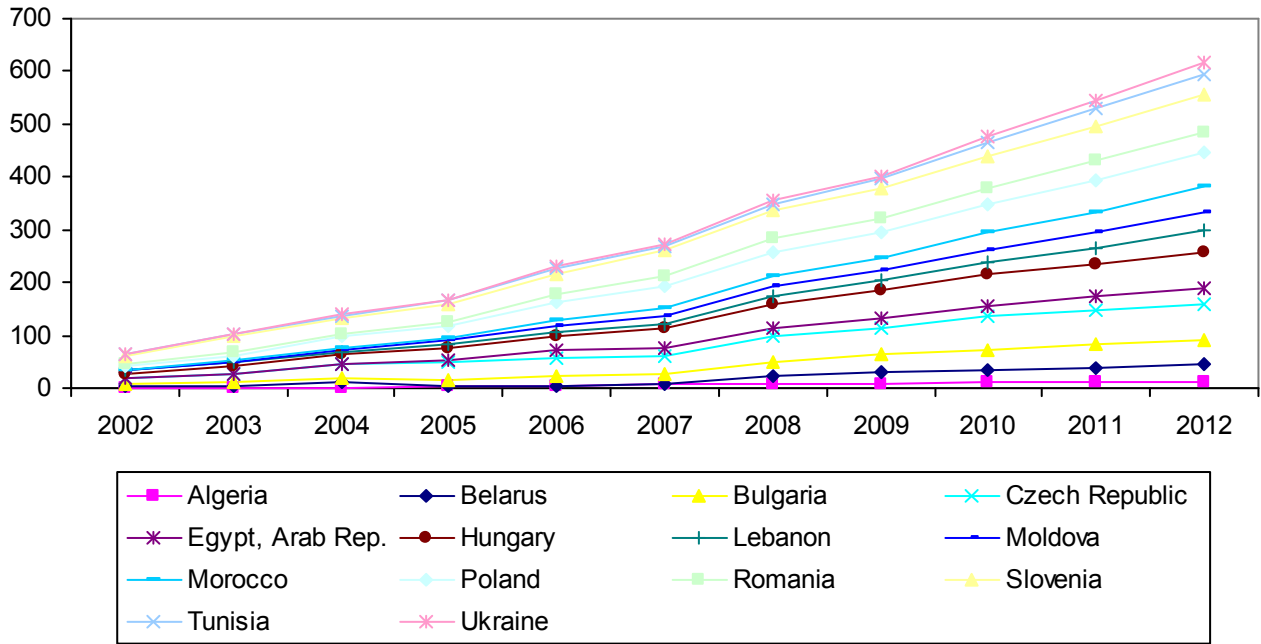
Table 2

**Internet users (per 100 people)\***

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Algeria	0,49	0,65	1,59	2,20	4,63	5,85	7,38	9,45	10,18	11,23	12,5
Belarus	1,86	4,30	8,95	..	..	..	16,2	19,7	23	27,43	31,8
Bulgaria	5,37	7,61	9,08	12,04	18,13	19,97	27,09	33,64	39,67	45	46,23
Czech Republic	9,78	14,7	23,93	34,3	35,5	35,27	47,93	51,93	62,97	64,43	68,82
Egypt	0,64	0,84	2,72	4,04	11,92	12,75	13,66	16,03	18,01	25,69	31,42
Hungary	7	14,53	16,67	21,63	27,74	38,97	47,06	53,3	61	62	65
Lebanon	7,95	6,78	7	8	9	10,14	15	18,74	22,53	30,14	43,68
Moldova	1,28	1,49	3,79	7,41	10,63	14,63	19,62	20,45	23,39	27,5	32,3
Morocco	0,69	1,37	2,37	3,35	11,61	15,08	19,77	21,5	33,1	41,3	52
Poland	7,29	9,90	21,15	24,87	32,53	38,81	44,58	48,6	53,13	58,97	62,32
Romania	3,61	4,54	6,58	8,9	15	21,5	24,66	28,3	32,42	36,6	39,93
Slovenia	15,11	30,18	27,84	31,85	40,81	46,81	54,01	56,74	58	64	70
Tunisia	2,75	4,29	5,25	6,49	8,53	9,66	12,99	17,1	27,53	34,07	36,8
Ukraine	0,72	1,24	1,88	3,15	3,49	3,75	4,51	6,55	11	17,9	23,3

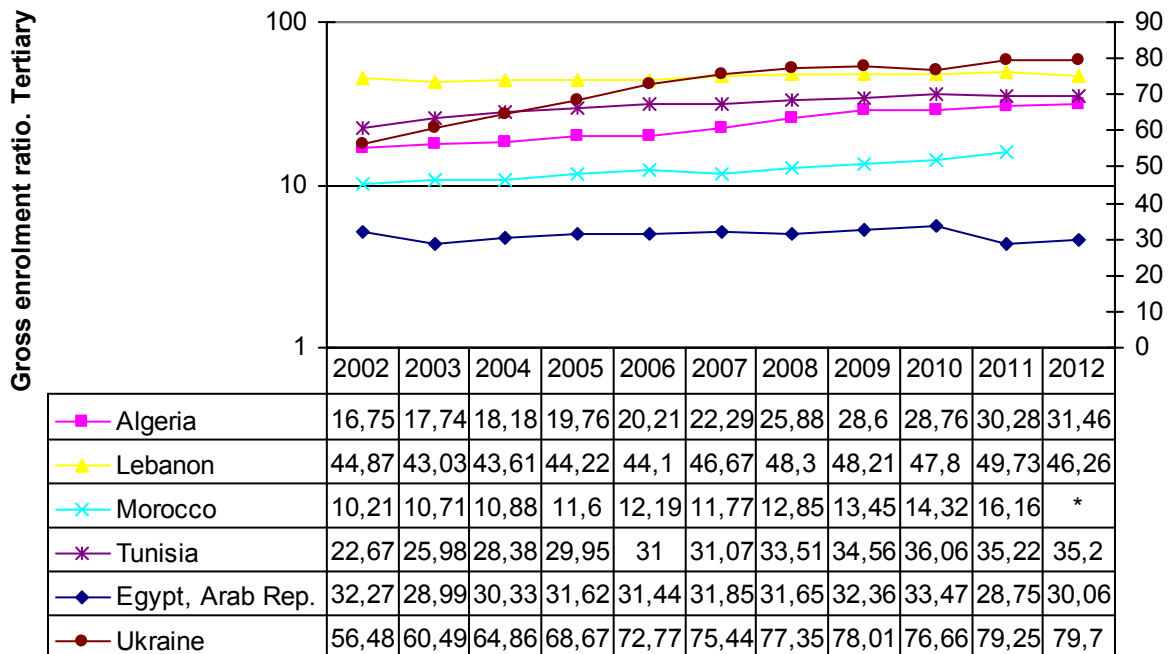
\* Data from the World Bank (<http://data.worldbank.org/>)

As it is seen from Table 2 the most drastic growth of Internet-users was in Algeria, Tunisia, Morocco, Egypt, Bulgaria, Czech Republic, Hungary. Slightly lower is that in other countries, but one general feature is the constant growth from year to year. This dynamics is presented in Fig. 1.



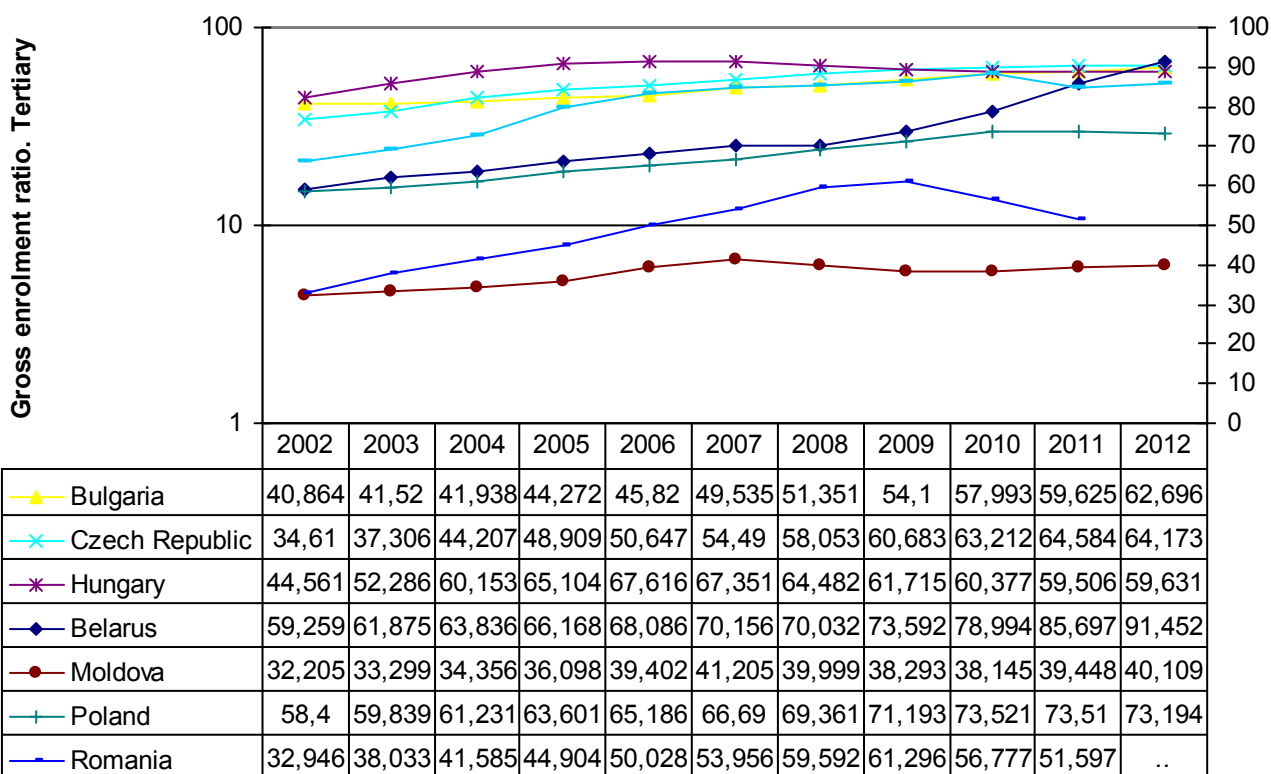
**Fig. 1. Dynamics of Internet-users growth**

To testify more thoroughly let us build the graph of gross enrolment ratio in tertiary education change in the countries, where popular uprisings took place (North Africa countries and Ukraine) and in the countries of Eastern Europe (Fig. 2-3), which are characterized by relatively stable social-political and social-economic situation.



**Fig. 2. Dynamics of gross enrolment ratio in tertiary education in the countries, where popular uprisings took place**

From Fig. 2. it is seen that the most positive dynamics of the gross enrolment ratio in tertiary education is in Ukraine, Algeria, Morocco and Tunisia (this is Tunisia, the “Jasmine revolution”, where new wave of uprisings in the Arabian world has started).



**Fig. 3. Dynamics of gross enrolment ratio in tertiary education in the Eastern Europe countries**

Generally the Eastern Europe countries demonstrate greater values of gross enrolment ratio in tertiary education.

Let us group the countries of Eastern Europe and those, in which popular uprisings took place, according to gross enrolment ratio in tertiary education (Fig. 4.).

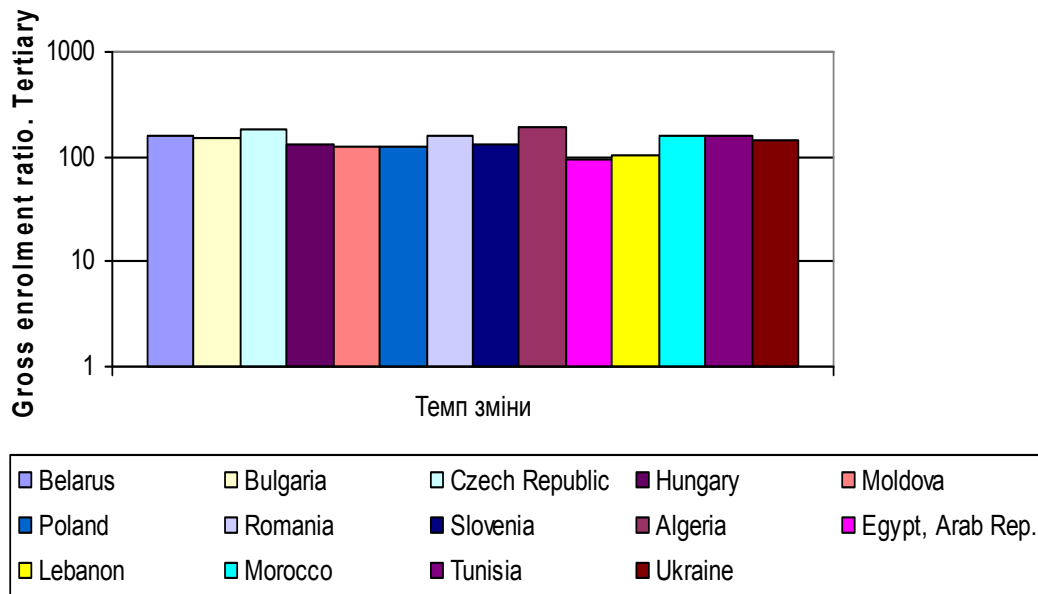
Level of gross enrolment ratio. Tertiary	Countries
lower than 50%	Algeria, Egypt, Lebanon, Moldova, Tunisia, Morocco*
higher than 50%	Hungary, Poland, Slovenia, Ukraine, Belarus, Bulgaria, Czech Republic, Romania*

**Fig 4. Differentiation of countries according to the level of gross enrolment ratio in tertiary education (2012 year.) \* data of 2011 year**

As it is seen the countries, in which gross enrolment ratio in tertiary education is lower than 50%, are those, which experienced the uprisings against their authoritarian regimes: Algeria, Egypt, Lebanon, Tunisia, Morocco, except Moldova, which is in the Eastern Europe, but which comprises self-proclaimed Prednister Moldovian Republic, which was formed as a result of military conflict between Moldova and Russian-oriented population of the Moldovian left-bank Dnister. The conflict has not been settled yet.

Gross enrolment ratio in tertiary education is higher than 50% in the countries of Eastern Europe, in Ukraine in particular.

The rate of gross enrolment ratio in tertiary education change is worth being considered (2012 compared with 2002).



**Fig. 5. Rate of gross enrolment ratio in tertiary education change (2012 compared with 2002)**

As it is seen from Fig. 5 all countries under analysis are in the same range (except Egypt, where gross enrolment ratio in tertiary education is 93,13%), which testifies the creation of “knowledge economy” not only in the development of European countries, but in those, in which people struggle for their right to have high living and development standards).

Besides, “to establish the proper system of education the change of social conditions is needed from one side, and from the other, in order to change the social conditions a corresponding system of education is needed” (K. Marx).

To interpret the dialectic interrelation between the level of education of the society and the main social-economic factors of the state development – life expectancy at birth, crimes recorded and average wages, let us calculate correlation coefficients according to the formula:

$$r = \frac{\overline{XY} - \bar{X} \cdot \bar{Y}}{\sigma_X \cdot \sigma_Y}, \quad (1)$$

$$\text{where } \bar{X} = \frac{\sum m X}{\sum m}; \quad \bar{Y} = \frac{\sum m Y}{\sum m};$$

$$\sigma_x = \sqrt{\frac{\sum (X - \bar{X})^2}{n}}; \quad \sigma_y = \sqrt{\frac{\sum (Y - \bar{Y})^2}{n}},$$

where  $r$  – linear correlation coefficient;

$n$  – number of units in the series;

$m$  – frequency;

$X$  – individual (personal) values of the factor determinant;

$Y$  – individual (personal) values of the resultant determinant.

The value of the correlation coefficient varies within «-1» – «+1». If the correlation coefficient equals 1, the relationship is functional, if it equals zero (0) – the relationship is not available. The strength of the relationship is estimated according to the scheme:

- 1)  $r = 0,1 - 0,30$ , insufficient relationship;
- 2)  $r = 0,30 - 0,70$ , medium  $r$  relationship;
- 3)  $r = 0,70 - 0,99$ , sufficient  $r$  relationship.

The results of calculations are presented on Table 3. Initial data for calculations were used primarily data from the World Bank.

Table 3

Correlation coefficient (R)			
Indicators	Life expectancy at birth, years	Average wages, US dollars	Crimes recorded by the police
Gross enrolment ratio. Tertiary, %	0,969302	0,957654	*
Number of students in tertiary education per 100000 inhabitants	*	*	-0,4474

Basing on the analysis of equations of three regressive models, built on the options of the Eastern Europe countries, Ukraine in particular, and the Middle East countries, we may conclude, that there is a direct sufficient relationship between the Gross enrolment ratio in tertiary education and Life expectancy at birth and Average wages. When Gross enrolment ratio in tertiary education increases, Life expectancy at birth and Average wages increase too. The values of determination coefficients ( $R^2 = 0,9395$  and  $R^2 = 0,9171$  relatively) testify, that the growth of Life expectancy at birth by 93,95 % is caused by the growth of Gross enrolment ratio in tertiary education. The growth of Average wages by 91,71% is caused by the growth of Gross enrolment ratio in tertiary education.

The relationship between Number of students in tertiary education per 100 000 inhabitants and Crimes recorded by the police is medium retroactive – the growth of Number of students in tertiary education causes the decrease of Crimes recorded by the police. Determination coefficient ( $R^2 = 0,2002$ ) shows the decrease of Crimes recorded by the police in 20,02% of cases.

**Conclusions.** Thus, ever-growing social-economic and cultural demands of modern and future generations depend on level of education of people and the nation joint intellectual factor. The changes of the established social-political society, improvement of economic-social conditions were proved to be caused only by the growth of level of education and awareness of the people. Nowadays the task of the University is to train educated personality, who is able to provide the stability of the economic development of the state.

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