

# Challenges Of Citizens Adoption Of E-Government Services In Ghana

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*Abstract: The standpoint of the system of e-governance has become a global phenomenon of which Ghana is no exception. As one of the driven forces that enhance smooth administrative catalyst to sustaining a serene political atmosphere in countries that practice this system, it might come with certain constraints. The task of this paper is therefore to unearth these predicaments per the analytical view of the Ghanaian citizen. Per the task of mitigating some of these challenges, this paper highlights a considerable number of such hindrances threatening its adoption processes in Ghana and provides some propositions that would serve as springboard in harnessing its effectiveness and efficiency in delivery when considered.*

*We employed a qualitative method where a structured questionnaire was administered with the aid of interviews to ascertain concrete evidence. The questionnaires were administered to 340 respondents comprising users of e-government services in Ghana. It revealed that the major hindrances for a successful embracement of the said system are; financial affordability of acquiring ICT devices representing 19.40 percent. Citizens lack of adequate skills in Information and Communication Technology (ICT) representing 18.24 percent. Lack of awareness of the existence of e-governance representing 17.07 percent.*

*Keywords: E-Government service, Challenges, Citizens' Adoption*

## I. INTRODUCTION

The Government of Ghana (GoG) has recognized e-government as a modern global phenomenon, and an engine to reengineer the performance of government in the provision of public electronic services (e-services). Since 2006, the World Bank approved a loan for the Government of Ghana through the Ministry of Communications for the launch the of e-Ghana project. The aim was to assist the Government of Ghana to generate employment and growth by leveraging Information and Communications Technology (ICT) and public-private partnerships. (Agboh, 2017).

Several scholars have defined and explained extensively on the importance of e-government. E-government is the use of ICTs and internet by the government to provide public services with the mission of improving managerial

effectiveness and promoting democratic values (Gil-Garcia & Luna-Reyes and cited by (Mensah, 2016)). E-government facilitates service delivery and productivity in government administration. It further enhances the exchange of standardized format of information, hence enabling better coordination and interaction among the respective MDAs, private businesses and citizens (Mensah, 2016). Bactus (2001) noted that e-government aims to enhance the interaction between government and citizens (G2C), establish an efficient relationship between government and businesses (G2B) and finally improve inter-agency relationships among government departments (G2G).

Following the Government of Ghana implementation of e-government, most ministries, departments and agencies are connected to the network infrastructure and the traditional operation of government business have been transformed and

are now more paperless, transparent and efficient. The government websites now provide information in real time to the citizens via the government online portals 24/7. The e-government service platforms have created an opportunity for the public sector workers salary budgeting, accounting and revenue collection administration (Mensah, 2016).

However, despite the importance of e-government some citizens are still not able to access these services. Therefore, the main objective of this survey is to examine the challenges that confront citizens in their adoption of e-government services based on the citizens' perspective.

The paper commences with brief introductory information on Ghana's e-government development. It continues with the various stages of e-government development, the maturity levels of e-government and the general challenges of e-government adoption. This follows with a description of the survey methodology, discussions of the survey results and finally a conclusion and further areas for study.

#### A. STAGES OF E-GOVERNMENT

Previous studies have classified e-government into four categories with reference to the users of the services. They are; Government-to-Government (G2G), Government-to-Business (G2B), Government-to-Employees (G2E), and Government-to-Citizen (G2C) (Christensen, 2007).

##### *GOVERNMENT-TO-GOVERNMENT (G2G)*

G2G describes a model that facilitates the interaction and provision of services between various government departments and their agencies through the use of ICTs platforms (Christensen, 2007). Through G2G, interoperability frameworks are designed for the implementation of E-government, this enables government departments to share information resources that would not have been possible in the traditional environments, thus creating a faster and quality decision-making environment. G2G incorporates activities of stakeholders and other coordinating authorities from the local to the national level governments (Division, 2008).

##### *GOVERNMENT-TO-BUSINESS (G2B)*

G2B e-government is the process by which the government interacts with private sector businesses through procurement and tax assessments in a technologically facilitated environment (Ebrahim & Irani, 2005). Through this, the acquisition of operating licenses by businesses and the award of contracts by governments are made in a transparent and efficient manner, hence enabling fair competition among local businesses and promoting an environment conducive for businesses (Division, 2008).

##### *GOVERNMENT-TO-EMPLOYEE (G2E)*

Every year individual citizens are being employed by governments thereby creating a relationship between the citizens and their respective governments. G2E e-government describes the technology-mediated interactions between the employees and government with the main focus on ensuring

coordination of government projects and enhancing efficiency on government operations. This improves internal communications and inter and intra agency coordination respectively (AlAwadhi & Morris, 2009).

##### *GOVERNMENT-TO-CITIZEN (G2C)*

This classification is clearly referred to as a citizen-centric approach to e-government services. Through this approach government information is generally and freely available online or on demand. Online services are provided to satisfy the needs of citizens and allow them to be heard and also actively participate in the affairs of government (McNabb, 2009). This can be achieved through the use of government portals with hyperlinks together with pre-existing structures to deliver the e-government services (Ebrahim & Irani, 2005).

#### B. MATURITY LEVELS OF E-GOVERNMENT

The maturity levels of e-governance describe the various evolutionary maturity models in e-governance processes. Bactus presents an overview of such models beginning from the early 1990s. The e-governance initiatives started with the creation of a "web-based presence", followed by the "information" stage, "interaction" phase, known as "transaction" and finally to "transformation" (Bactus, 2001). With the growing interest in ICTs in contemporary times there is the need to monitor the degree of ICT penetration and diffusion across the world. In response to this need, the United Nations therefore conducts and releases periodic series of Global E-Government Readiness reports. The first global e-readiness report was released in 2003 detailing e-government levels as discussed below (UN, 2010);

##### *STAGE I: EMERGING STAGE*

At this stage government websites provide basic information. This may include information on; public policy, governance, laws, regulations, relevant documentation and types of government services provided. Basic, limited, and static information is provided through hyperlinks created for ministries, departments and other branches of government (UN, 2010).

##### *STAGE II: ENHANCED STAGE*

Here stage I is enhanced to include databases and sources of current and archived information, such as laws and regulation, newsletters, reports and downloadable databases. This enables users to search for documents online (UN, 2010).

##### *STAGE III: INTERACTIVE*

Government websites are improved to deliver enhanced one-way or simple two-way e-communication between government and citizens. Here the citizens are able to download application forms online for government services. Some sites include both audio and video capabilities and may be multilingual. Citizens are able to make requests for limited e-services for non-electronic forms or personal information to

be mailed to them at home (UN, 2010).

#### *STAGE IV: TRANSACTIONAL*

At this level, government websites are able to engage citizens in a two-way communication. Services here may include requesting and receiving inputs on government policies, programs and regulations. Some public institutions are able to do electronic authentication of citizens identity to enable them successfully complete some services requested. Some typical examples are; downloading and uploading forms, e-voting, applying for certificates, filing taxes online and applying for licenses and permits. Furthermore, they are able to handle financial transactions where money is transferred on a secure network platform to government (UN, 2010).

#### *STAGE V: NETWORKED*

At the final stage, governments have moved from a government-centric to citizen-centric approaches. Government migrates from all the above stages to engage the citizens in an interactive communication on its websites. Government is proactive in requesting for citizens' opinions in decision making using Web 2.0 and other interactive tools. Various departments and ministries are able to provide e-services and e-solutions in a seamless manner. Government agencies are able to transfer information, data and knowledge through integrated applications. Tailor-made e-services are targeted at citizens and segmented groups through lifecycle events (UN, 2010).

### C. CHALLENGES OF E-GOVERNMENT

The challenges of e-government adoption and implementation are not peculiar in Ghana alone but in all other developing countries. Mensah (2016), categorized the challenges in the contexts of Ghana into six main factors; political, organizational, financial, socioeconomic, human and infrastructure factors.

#### *POLITICAL WILL*

Support for e-government initiatives by government leadership is very relevant to the successful implementation of e-government initiatives (Furuholt & Wahid, 2008). In the case of Ghana, there has been some level of political unwillingness among various government regimes to support ongoing government projects with e-government projects inclusive. This lack of support from politicians and high level bureaucrats poses a challenge for e-government sustainability, which habitually leads to underdeveloped e-government platforms (Schwester, 2009). Some public institutions like Driver and Vehicle License Authority, Passport Office, Birth and Death Registry has digitized their service through the eservice portal. However, some bureaucrats still prefer to have applicant's face-face as a result of the illegal earnings they make in the name of fast tracking their application processes.

There is therefore the need to further put policies that will deter these bureaucrats from engaging in these illegal acts in

order to improve e-government services to citizens in Ghana. However, the Unfortunate issue is the fact that some government officials perceive e-government as a threat to their position, power and viability and therefore become resistant to the idea of online transactions (Nkohkwo & Islam, 2013).

#### *SOCIO-ECONOMIC CONDITIONS*

Most cultures are of the view that the implementation of e-government have the higher possibility of affecting some aspects of their values and norms hence such societies consider the initiative as a threat and they feel reluctant to embrace the initiative. The economic status of some citizens in Ghana is a challenge to implementation of e-government services. Citizens living on less than USD 1 a day coupled with illiteracy and language barrier pose a major challenge to e-government adoption. Not everybody in Ghana can write and speak the English language so the challenge is how Ghana can design e-government initiatives such that other major local language speakers would also benefit from the benefits of government services (Mensah, 2016).

#### *ORGANIZATIONAL AND HUMAN FACTORS*

Commitment to values and vision of e-government by participating ministries, departments and agencies coupled with inadequate ICT skill by public sector workers are a major challenge for a successful adoption and implementation of e-government services. Most of the staff in the various Ministries, Departments and Agencies lack adequate ICT skills to manage the ICT (e- government) related projects within the public sector. Usually this ICT services are sourced from the private sector that have adequate ICT experts to perform the task that should have been managed by the public sector agencies if they had the required ICT skills. In addition, the elderly "Born Before Computer" (BBC) will be left out in the adoption of e-government services, since majority of those with the ICT skills are the younger ones. Furthermore, lack of computer literacy among citizens, businesses and government sector workers is a worry to the adoption and utilization of e-government (Mensah, 2016).

#### *FINANCIAL FACTORS*

The major source of funding for the public sector organizations usually comes from the central government. (David Clifford, Frida Geyne Rajme, 2010). However, the current economic challenges facing Ghana, coupled with the untimely release of allocated budget for Ministries, Departments and Agencies hinders IT initiatives and e-government projects (*Budget Statement and Economic Policy*, 2018). In Ghana, Internet services are provided by privately owned network companies at a higher cost. The Internet cost, cost of e-government services among other financial constraints poses a major hurdle to the successful implementation of e-government initiatives in Ghana (Mensah, 2016).

**INFRASTRUCTURE FACTORS**

Infrastructure has been identified as the major challenge for e-government adoption and implementation (Alshehri, Mohammed, Drew, 2010). Despite the fact that, Government of Ghana has benefited from a world bank funding for its ICT infrastructure, there are still a number of lapses that must be filled to enhance successful operation of e-government services. The ICT infrastructure challenges include issues such as power supply, internet access, interoperability, security, privacy and connectivity. Furthermore, differences in the number of computers per head, internet users, mobile handset, or telephones between the rich and the poor are among the challenges in Ghana’s implementation of e-government services (Mensah, 2016). Nkwe (2012) noted that countries with thriving economies are by and large associated with increased access to ICTs compared to those whose economies are doing badly. And so considering the dwindling economy of Ghana, such challenges will persist until serious mechanisms are put in place to enhance e-government services.

**II. SURVEY METHODOLOGY**

A structured questionnaire with 5 scale point was developed and administered. The questionnaire consisted of fifteen multiple choice questions and one opened ended question. In order to get the target participants to respond to the questionnaires, the questionnaires were administered both online and offline.

The first section was used to collect data on demographic features of participants, their internet access and use of government websites. The second section focuses on participant’s usage of e-government services and challenges encountered during usage. The third section contains opened ended questions on participants’ opinion on other challenges of e-government services.

To ensure validity and reliability, the questionnaires were pretested and reviewed by four academic staff and members of the general public. Statistical Package for Social Sciences (SPSS) was used to analyze the data.

**III. SURVEY FINDINGS**

Out of the 400 questionnaires, 50 and 350 were administered online and offline respectively. An analysis of the data from the survey reveals that about 75.2 percent of participants have continued access to internet through their computers, android phones, and other related gadgets. 24.8 percent did not have continued access to internet, implying that they get internet intermittently. For the use of government website, 87.6 percent of the participants have ever used whiles 12.4 percent never used. The common uses among them were accessing pay slips online, accessing examination results and making applications online.

For gender composition, 237 participants were males, representing 69.9 percent whiles 102 were females, representing 30.1 percent.

Variable	Category	Frequency	Percent
Gender	Male	237	69.9
	Female	102	30.1
Age	Below 15	8	2.4
	16-30	149	44
	31-45	152	44.8
	46-60	20	5.9
	61+	10	2.9
Educational Level	Others	11	3.2
	Senior High	37	10.9
	Diploma/ Bachelors	253	74.6
	Postgraduate	38	11.2
Continued Access to Internet	Yes	255	75.2
	No	84	24.8
Use of Gov’t Website	Yes	297	87.6
	No	42	12.4

Table 1: Demographic Profiles of Respondents

**A. CHALLENGES OF CITIZENS’ ADOPTION OF E-GOVERNMENT SERVICES**

The figure 1 below highlights a number of challenges of citizens’ adoption of e-government services and the citizens’ responses on each factor in percentage terms. Some of the challenges were financial affordability to acquire information and communication technology gadgets, awareness of existing e-government services, Culture of preference for face-face communication, Inadequacy of ICT skills by citizens and the age of users. Additional challenges were identified in the course of the interviews.

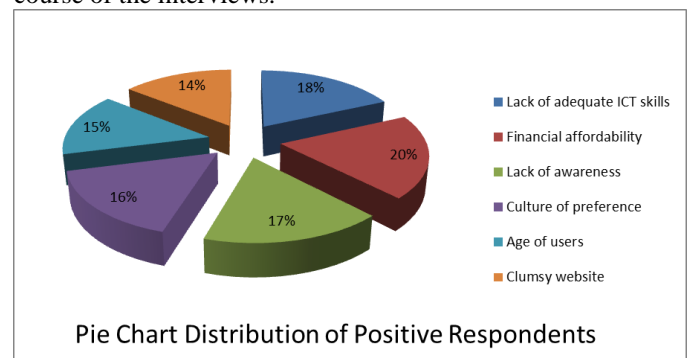


Figure 1: Challenges of Citizens’ Adoption of E-government Services in Ghana

**FINANCIAL AFFORDABILITY TO ACQUIRE ICT GADGETS**

This refers to the ability of the citizens to purchase ICT gadgets like computers, tablets, android phones etc to enhance their use of e-government services.

A total of 20 percent of the participants that responded positively acknowledged that inability to acquire the gadgets is a hurdle for their usage of e-services. Some of the participants mentioned that since they could use the gadgets but have no money to purchase the gadgets, it means e-government services are not accessible to them. Statistic shows that about 24.2 percent of Ghanaian citizens live below

the poverty level. This means about 24.2 percent of Ghanaians measuring some 6.4 million people cannot afford to spend GHS3.60 on food a day talk less of ICT gadgets (Cooke, Hague, & McKay, 2016). This implies that they most likely will not be able to afford computers and internet connections to access the e-government services.

#### *CITIZENS LACK OF ADEQUATE SKILLS IN ICT*

18 percent of the participants indicated that low ICT skills and low computer literacy are barriers for their e-government service adoption. Generally, citizens require digital skills and knowledge on the use of specific network devices including the internet and social media to enable them adopt e-government services.

Odat (2012) noted that there is a lack of IT skills among leaders, employees, and citizens. He considers this as one of the key barriers to e-government service adoption.

Citizens require two types of skills to use e-government services: firstly, general skills in using computers, known as computer literacy; and secondly, specific skills related to information security.

#### *LACK OF AWARENESS OF EXISTING E-GOVERNMENT SERVICES*

Another challenge encountered by citizens is lack of awareness of the existing e-government services. 17 percent of the participant's responded that lack of awareness of the services was a barrier to adoption. One participant mentioned that sometimes they are not even aware of the public organizations providing e-services online. Several other studies have shown lack of awareness as a barrier to citizens' adoption.

It has been proven that awareness plays a significant role in the acceptance of new technologies, and a lack of it inevitably influences potential users adoption of e-government services (AlAwadhi & Morris, 2009). It is further noted that as a result of unawareness about e-government services, citizens are unable to adopt the technology (Malik et al., 2014).

#### *CULTURE OF PREFERENCE FOR FACE TO FACE COMMUNICATION*

The effect of culture of preference for face-face communication can be described in different forms including deliberate resistant to change, religious/tribal concerns and issues of multiple local languages.

A total of 16 percent of the participants were of the opinion that culture of preference was a barrier to adoption. A participant stated that he was aware of the online services but prefers going to the offices directly. This is a typical example of resistance to adoption. Some participants complained that when they call the service centers they are not able to communicate in the English language as required.

Culture plays an important role in the adoption of e-government, with resistance to change being one of the main cultural factors influencing adoption. Furthermore, in some countries religion and tribal system are significant factors in the adoption of e-government, as are other cultural

concerns, such as language and education of the citizens (Alzahrani & Goodwin, 2012).

#### *THE AGE OF USERS*

14 percent of the respondent indicated that the age of children was a challenge to e-government adoption. Parents were overly concerned about the identities of the persons that may be chatting with their kids online. They were specifically worried about the exposure of their kids to pornographic content, child molestation and the risk of aggressive conduct. The kids under the age of 16 that participated recounted that their parents did not allow them to use the internet. This is incongruous with the findings of (Mingmei, Yuen, & Park, 2012) reiterated an important point that family environment factors affect students' use of ICT.

Despite this effect, increasingly around the world, both today's children together with their families and schools rely on the internet for all dimensions of childhood (Livingstone, Mascheroni, & Staksrud, 2017). This may include; 'the internet of things' (IoT), smart homes, wearable devices, robotics, augmented and virtual reality, and children and young people are likely going to be pioneers in their appropriation (Thomas & Lupton, 2016).

#### *CLUMSY WEBSITE DESIGN*

14 percent of the participants further complaint that clumsy website design hampers their usage of e-government services. Participants explained that they have a difficulty in navigating through some service providers' websites. Some web page links do not tally with the content purported to be contained in the heading. Web page color combination makes it difficult to read the text. Some web pages did not separate the different kinds of information such as links and normal webpage text.

Suitable website design motivates citizens to use e-government services, and certain factors considered important, such as usability, accessibility and perceived ease of use, need to be considered when designing a website (Alateyah, Crowder, and Wills, 2012).

Asiimwe & Lim further argue that a good government website should have a simple user interface. The layout for webpages should be consistent so that people find it enjoyable and comfortable to access the desired information needed without hassles. A good color scheme and well-structured design elements make content easy to read (Asiimwe & Lim, 2010).

#### *UNAVAILABILITY OF E-GOVERNMENT SERVICES*

The unavailability of e-government services 24/7 is one of the main barriers to citizens' adoption of e-government services. Respondents recounted moments they travelled long distance to service centers only to be told that there was a link failure or the system was slow. Other participants complained that the service facilities were completely unavailable to them because of their geographical location.

Alharbi et al. reiterated that one of the factors that may cause the unavailability of the services are the system's

inability to accept a lot of requests at the same time, this can lead to services working very slowly or even stopping completely. Also, services can be halted due to several types of attack, such as Denial of Service (DoS) (Alharbi, Papadaki, & Dowland, 2014). Barriers like this should be explained to the users to understand rather than mere excuses by service providers.

#### *INACCESSIBILITY OF E-GOVERNMENT SERVICES*

Closely related to the unavailability barrier is inaccessibility of e-government services, and it was clear from the participants' responses that majority agreed that e-government services were not accessible to them.

E-government services must be designed to allow all users to access the services easily. This implies that consideration must be given to users with disabilities to be able to access them. Users must also be encouraged to use the e-government services, and multi channels must be provided to allow users to access them. For example, the government of Qatar provides free wireless Internet to its citizens, which helps them access and use e-government services (Alzahrani and Goodwin, 2012).

#### **B. PROPOSITIONS TO THE CHALLENGES OF CITIZENS' ADOPTION OF E-GOVERNMENT SERVICES INGHANA**

Despite the fact that the main objective of the survey was to identify the challenges of citizens' adoption of e-government services, the survey also sought for some propositions from the respondents. This was meant to enhance the efficient use of e-government services.

The survey summarized a number of propositions that are meant to improve citizens' adoption of e-government service from the citizens' perspective. Some of such propositions include organize computer and IT training and services for users, provide ICT gadgets to citizens and at service centers, organize campaigns to create users awareness, getting citizens to understand the benefits of e-services over face-to-face and parental guidance to usage.

#### *ORGANIZE COMPUTER AND IT TRAINING AND SERVICES FOR USERS*

The government agencies providing the online services through the websites should provide public education on the usage of the websites. This can be achieved by distributing leaflets with illustrations on the procedures in using website to access online services. Trained staff can also use the traditional media such as television and radio to educate users. (Alharbi et al., 2014) revealed that citizens require general skills in using computers, otherwise known as computer literacy and specific skills related to information security to use e-government services.

#### *PROVIDE ICT GADGETS TO CITIZENS AND AT SERVICE CENTERS*

Computers with internet services in addition to other

equipment and gadgets should be provided at the service centers with trained staff assisting first-time users. They further added that when users get positive experiences in using the online service they will likely encourage others to use such services instead of queuing at the offices.

(United Nations, 2017) recommends that the technology infrastructure such as computers, servers, broadband wireless, smart cards together with technology authentication infrastructure that has ID and password be made available to citizens. It further added that the infrastructure consisting of internet services be provided at convenient places such as hospitals, shopping malls, transport stations, government offices, libraries and all vantage points for citizens to use free of charge.

(Seshadri, J. K. A, 2018) also confirms that in order to support operation in present day wireless networks, access devices such as, for example, cellular telephones and wireless personal digital assistants (PDAs) are sometimes provisioned manually, at a point of purchase, by a customer service representative. Alternatively, such access devices may be automatically provisioned via the wireless network of a service provider, based upon customer activity at a web site, or a telephone conversation with a customer service representative they added.

#### *ORGANIZE CAMPAIGNS TO CREATE USERS AWARENESS*

The e-government service providers should create sensitization on the availability of their services online. This can be achieved through the distribution of leaflets, announcement on television and radio stations as well as using social media.

It is further emphasized that governments are responsible for devising appropriate strategies that will increase their citizens' awareness of the existence of e-government services (Alharbi et al., 2014).

#### *GETTING CITIZENS TO UNDERSTAND THE BENEFITS OF E-SERVICES OVER FACE-TO-FACE*

A greater majority of 76.7 percent of the participants agreed that government should use the traditional media and other related forums to educate the citizens on the importance and benefits of the online service over the traditional mode of services. This is in line with (Mensah, 2016) finding that there is the need for government agencies to devote some resources for effective publicity in the media and through forums to create citizens' awareness of the availability and benefits of e-government platforms. Malik et al. (2014), further added that to overcome this hurdle, citizens must be made aware about the usage and benefits of Information Technology.

#### *PARENTAL GUIDANCE TO USAGE*

With the age challenges, 68.7% of the participants agreed that parents should allow their children to use ICT while they monitor. This will enhance the children's adoption of e-government services when they are of age. This finding is in congruence with (Mingmei et al., 2012) work that established

that parents and caretakers were very anxious about their children's use of computers at home. According to them parents followed up with their children's use of home computers to ensure that they never went to indecent websites. Parents influence on their children's relationship with ICT is not only limited to providing technological resources but also communicating their own values and aspirations about their children's ICT use.

#### INCREASE TRUST IN SERVICE PROVISION

To increase the trustworthiness of internet and government, there is the need to reassure users that their bio-data provided online is secured and that the online services provided by government are reliable and dependable just like the face to face services. Short privacy policy statements can be placed on the websites to guarantee users that their information is secured.

#### EASY TO USE WEBSITES

The websites should be designed in a way that only relevant information is provided and the search features should be easy to access with less effort.

A reliable Customer Service Centre should be provided to cater for citizens' complaints and provide feedback to inquiries. With the feedback, the websites can also be redesigned for easy usage.

#### IV. CONCLUSION

In summary, the main objective of this survey has been to investigate the challenges of citizens' adoption of e-government. Through literature review, the study highlighted Ghana's e-government development, the advantages and the general barriers to its successful implementation. The survey further investigated the challenges of e-government solely from the citizens' perspective. The findings revealed the citizens' adoption challenges and confirmed that despite the relevance of e-government, some citizens are unable to use it. As such, there is the need for future research to consider incorporating the citizens' challenges into e-government adoption model.

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