

# **Design of Creative Web Pages for E-Government**

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## **ABSTRACT**

Creative website design is a way of attracting people's attention and interest when government providing information and services to citizens, and facilitating interactions between citizens and governments; and therefore, benefiting all the parties involved. In this paper, a conceptual model was developed based on literature review to categorize the dimensions of creativity for e-government website. Within four categories (Originality, Form, Function, and Source), 12 creativity dimensions were developed. This model could be a helpful tool for system developers to develop an efficient e-government websites by integrating creativity.

**Keywords:** creativity, e-government

## **1. INTRODUCTION**

Globalization and the evolution of information technologies have profoundly affected most aspects of everyday life. The Internet is an example of this trend, as it has modified the way people communicate and the way businesses work, among other things. Around the world, governments are now using the worldwide web "for serving information and services to their citizens" (Yücel & Özok, 2008). This concept is known as e-government, and it is gaining popularity although the number of people that can access and e-government websites is still limited.

E-government should be beneficial to all citizens, which requires a widespread use of the websites. Several tools can be used to motivate people into accessing and using e-government websites. Creativity is one such tool, as the more creative a product is, the more interesting and/or appealing it will be to people.

Existing research literature studies e-government websites in several ways. Typically, different features within government websites from all around the world have been examined to measure e-government. However, there is no standard measurement method agreed upon. No specific literature was found on creativity applied to e-government websites. Therefore, the purpose of this paper is to study creativity in e-government websites. We will try to define what makes an e-government website creative, find out how creativity can be measured, what

dimensions creativity can be applied to, and thus develop a framework for creativity in e-government websites.

## **2. LITERATURE REVIEW**

### ***2.1 Creativity***

The concept of creativity has been largely addressed by research; and one can find different approaches and models referring to creativity. However, there is no consensus among researchers in the field of creativity on one clear definition of the concept (Warr & O'Neill, 2005; Horn & Salvendy, 2006.). Varied definitions of creativity can be explained by the fact that creativity is not “confined to one particular subject area” (Park & Seung, 2008, p.1) and has been recognized as multidimensional (Zeng & Salvendy, 2008). As a result, different researchers have focused on “different combinations of dimensions in terms of the specific problems of interest” (Zeng & Salvendy, 2008, p.2).

In 1998, Amabile developed a three-component model of creativity which combined expertise, creative skills, and task motivation (Amabile, 1998). Expertise refers to the experience and knowledge developed by trained professionals. Creative skills are a combination of personal characteristics such as talent or imagination. Task motivation refers to the intrinsic and extrinsic motives related to a specific task: interests and enthusiasm while doing work; “as they are driven by aspirations, satisfactions and values, [people] work proactively, challenging themselves and have more creativity” (Lin et al. 2008, p.358). Therefore, the greater the combination of expertise, creative skills, and task motivation; the greater the creativity. Indeed, creativity can be an innate characteristic, “a quintessential attribute of human beings” (Ishaq, 2003), driven only by creative skills, but it can also be enhanced by various means (Park & Seung, 2008), including expertise and motivation.

According to Zeng and Salvendy, there are six dimensions of creativity. The first dimension looks at creativity as four types of property: property of a person or a group, property of cognitive process, property of resulting products, and property of corresponding press (Schneiderman et al., 2005; Lobert & Dologite, 1994). Creative individuals possess specific characteristics which assist them in their cognitive processes, ultimately resulting in the formation of creative ideas or thoughts (Zeng & Salvendy, 2008). These processes are influenced by factors of the external environment such as press and organizations, which can enhance or hinder creative activities (Warr & O'Neill, 2005; Couger & Dengate, 1992). The second dimension regards creativity as being either domain dependent and specific, or domain independent and general (Zeng & Salvendy, 2008), i.e. it can either be tailored to specific domains, or the general concept can apply to various domains. The third dimension focuses on creativity types in terms of either a social/cultural or a personal phenomenon; studying H-creativity versus P-creativity (Zeng & Salvendy, 2008). The fourth dimension deals with the frequency of creativity: is it rare or is it a common/widespread attribute? The fifth dimension addresses the qualitative and quantitative aspects of creativity, as different individuals can be more or less creative, in very different ways. Finally, the sixth dimension is concerned with the factors behind the creative process: is creation attributable to a certain individual, or is it the result of collaboration (Schneiderman et al., 2005; Warr & O'Neill, 2005; Horn & Salvendy, 2006; Zeng & Salvendy, 2008)?

As evidenced by the multiple dimensions and definitions in existing research, creativity is a concept that is difficult to clearly capture. However, the most widespread conception of

creativity in literature defines creativity as being manifested in the production of a creative work that is both original and useful. As Horn & Salvendy put it, creativity is “the individual or group process that results in an artifact (solution, thought, product, art, music, etc.) that is judged as original and useful” (Horn & Salvendy, 2006, p157).

## ***2.2 Website Creativity***

With the evolution of information technologies, the World Wide Web has become a major element in our society. The Internet is not only a professional tool anymore: it is also a part of every individual’s lifestyle. As a result, websites need to cater to the needs of both professional and non-professional users.

Websites should include specific features so that they are functional and appealing to their target users. Past research identifies, “artistic ideal” and “engineering ideal” as two main concerns of website design. Indeed, websites need to provide effective solutions to users, while letting designers express their creativity: “there is a need for art, fun, and general goodtime on the web... the main goal of most web projects should be to make it easy for customers to perform useful tasks” (Lavie & Tractinsky, 2004, p.276). Therefore, while usability is the basis, creativity is a crucial criterion as it allows creating affect in web users’ minds, and thus better attracting people’s attention.

According to existing literature, website creativity encompasses several elements such as aesthetics, fun, and originality. For instance, Lavie and Tractinsky state that designers’ creativity and originality, as well as ability to break design conventions make up the expressive aesthetics of a website (Lavie & Tractinsky, 2004), which is why creativity plays a key role in website aesthetics. Gait and Shneidermann focus on interesting interfaces and fun features as good ways for websites to differentiate and maintain users’ attention. They suggest that web designers should be more creative in adding features and designing interfaces so as to provide consumers with appealing websites (Shneidermann, 2004). Based on the available research, we can say that website creativity is a broad concept encompassing many elements. Zeng and Salvendy define website creativity as “the subjective judgment of a website to exhibit novelty and appropriateness that elicits arousal and pleasure and is compatible with the consumer’s preferences” (Zeng & Salvendy, 2008, p.6).

## ***2.3 E-Government***

The growing use of internet technologies and e-business practices has encouraged the creation of electronic government activities (Carroll, 2005). Indeed, as they realized the success of the Web as a marketing tool, governments around the world, from local to national level, recognized the need for providing services through the internet (Henriksson et al., 2007; Jaeger, 2003; Davison et al., 2005; Saxena, 2005). E-government can be defined as the use of information and communication technologies (ICTs) in government service operations (Holden, Norris & Fletcher, 2003; Wu et al. 2009). E-Government also refers to the use of ICTs in the governmental directives and obligations defined by each country’s rights, principles and level of development (Garcia, Maciel & Pinto, 2005). Simply, e-government can be defined as the use of ICTs in an attempt at improving the government process (Thomas, 2002).

According to Beynon-Davies, e-government can be hard to define given the different levels of involvement by different government agencies, and the different types of services being

provided electronically (Beynon-Davies, 2004). Indeed, implementation quality and levels of service across nations at national or sub-national levels of government can vary significantly (Henriksson et al., 2007). However, most definitions of e-government concur with the fact that e-government involves the computerization of existing paper-based procedures, in order to foster the “development of new leadership styles, ways of debating and deciding strategies; improve methods for business transactions” (Wu et al. 2009, p.4); and develop more effective and faster ways of communicating with citizens and communities (El Kiki & Lawrence, 2006).

### 3. METHODOLOGY

The conceptual model developed here was an attempt at categorizing all the possible dimensions of creativity in e-government website. First, the dimensions cited in the literature review of website creativity were categorized. Over 20 dimensions were found, some of which having different names, but being similar enough so that they could be grouped together. Table 1 lists all these dimensions and links them to the authors that discussed them. Detailed explanations of each dimension can be found in the literature review section of this paper.

*Table 1. Website Creativity Dimensions in Existing Literature*

Literature	PROPERTY OF...	DOMAIN	LEVEL OF CREATIVITY	FREQUENCY	QUANTITATIVE	COOPERATION	ORIGINALITY/ NOVELTY	USABILITY	USEFULNESS	FUN/EXCITEMENT	ART/AESTHETICS	INTERESTING INTERFACES	APPROPRIATENESS	APPEAL/PLEASURE	PRODUCT FORMS	PRODUCT FUNCTION	EXPERTISE	CREATIVE SKILL	MOTIVATION
Amabile (1998)																	X	X	X
Ishaq (2003)																		X	
Park & Seung (2008)																	X	X	X
Zeng & Salvendy (2008)	X	X	X	X	X	X													
Shneiderman et al.(2005)	X	X	X	X	X	X													
Lober & Dologite (1994)	X																		
Horn & Salvendy (2006)							X	X							X	X			
Lavie & Tractinsky (2004)							X	X		X	X								
Shneidermann										X		X		X					

(2004)																			
Zeng & Salvendy (2008)	x	x	x	x	x	x	x		x	x			x	x					
Horn (2005)									x	x	x	x			x	x			

Based on these dimensions, a model that would be more specific to creativity for e-government websites was developed. Table 2 combines elements from the studied literature into 12 different dimensions. By studying each of these dimensions in a creative product, one might be able to assess the level of creativity.

The following model stems from findings by Horn & Salvendy (2005, 2006), identifying form and function as major dimensions in the perception of creativity. In literature, we have found that originality and the source of creativity are very often cited as important creativity attributes. Therefore, the following model adds these dimensions to expand the form and function.

**Table 2. Dimensions of E-Government Website Creativity**

Dimension Category	Dimension	Description
A. Originality	A1. Novelty	Views the creative product as something new, never before seen
	A2. Uniqueness	Views the creative product as something original, rare, different from existing products
B. Form	B1. Design	Views the creative product in terms of its structure, its features and interfaces
	B2. Aesthetics	Views the creative product in terms of its graphical aspect and appeal (art and beauty related to pleasure)
C. Function	C1. Usefulness	Views the creative product as something meaningful, providing some sort of satisfaction
	C2. Usability	Views the creative product in terms of its ease-of-use, clarity and efficiency
	C3. Fun	Views the creative product as something that is entertaining and refreshing/relaxing (not a source of stress)
	C4. Interest	Views the creative product as something that prompts curiosity and/or attention
	C5. Purpose	Views the creative product in terms of the needs it addresses
D. Source	D1. Expertise	Views the creative product as a result of knowledge and experience
	D2. Motivation	Views the creative product as a result of the level of interest and enthusiasm
	D3. Creative Skill	Views the creative product as a result of human talent and imagination. Creative skill can originate from culture, society, and can be an individual or a collective dimension.

These dimensions can be further decomposed into 26 features, allowing a clearer assessment of creativity in e-government websites. Indeed, each feature focuses on a single, measurable aspect of e-government websites. Table 3 lists these features with their descriptions.

**Table 3. Conceptual Model for Measuring E-Government Website Creativity**

Dimension Category	Dimension	Features	Description
A. Originality	A1. Novelty	A1-a	The website is new in terms of its content
		A1-b	The website is new in terms of its aspect
		A1-c	The website is new in terms of its applications
	A2. Uniqueness	A2-a	The website's content has elements not typically found on other e-Government websites
		A2-b	The website does not look like any other e-Government website
		A2-c	The website includes applications and links not typically found on other e-Government website
B. Form	B1. Design	B1-a	The website is clearly structured
		B1-b	The website includes all the necessary features/applications
	B2. Aesthetics	B2-a	The website is colorful and eye-catching
		B2-b	The website is esthetically appealing (beautiful, pleasing)
C. Function	C1. Usefulness	C1-a	The website provides useful information
	C2. Usability	C2-a	The website is easy to navigate/user friendly
		C2-b	The website is easy to access
	C3. Fun	C3-a	The website is entertaining
		C3-b	The website is refreshing
		C3-c	The website is not a source of stress
	C4. Interest	C4-a	The website prompts attention (or curiosity)
	C5. Purpose	C5-a	The website provides information about government related issues
		C5-b	The website provides governmental services
		C5-c	The website allows citizens to better communicate with the government
D. Source	D1. Expertise	D1-a	The website comes across as having been developed by/with government experts
	D2. Motivation	D2-a	The website seems to have been developed by e-government enthusiasts
	D3. Creative Skill	D3-a	The website seems to have been developed by imaginative people
		D3-b	The website seems to have been developed by skilled people
		D3-c	The website seems to have been developed by a large group of people
		D3-d	The website seems to be closely related to national culture

## DISCUSSION, IMPLICATION, AND CONCLUSION

As the Internet keeps gaining popularity and is more and more saturated with information, websites have to fight for attention. Governments have joined the ranks of organizations with a Web presence, and they are trying to increase their reach.

Creativity can create positive feelings and appeal towards the creative object. Citizens might be attracted to e-government websites that they find creative, which is why creativity should be emphasized. Many different features of e-government websites contribute to building a

creative image, ranging from how clear and user-friendly the web pages are, to how interesting or “beautiful” they look.

26 features were identified as creativity features for e-government websites. They were grouped in the following categories: Originality (Novelty and Uniqueness), Form (Design and Aesthetics), Function (Usefulness, Usability, Fun, Interest, and Purpose), and Source (Expertise, Motivation, and Creative Skill).

A careful assessment of each of these 26 features for creative web design for e-government developed in this paper should allow to objectively measuring creativity in e-government websites.

Governments try to enhance their role and reach to citizens through e-government websites. Therefore, they should use all the possible tools and research aiming at making these websites better. The 26 features identified in this study should be considered by governments; and they could be used as a framework to develop creative e-government websites.

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