

# Interactive Doodles: A Comparative Analysis of the Usability and Playability of Google Trademark Games between 2010 and 2012

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**Abstract.** By using artistic mutations, called Doodles, Google has been commemorating important events and personalities. This fun approach started with still images, evolved to increasingly complex interactions, and has resulted in games based on the configurations of its logo. Thus, the company which was born in the digital world has introduced a new interactive approach to its logo in cyberspace, thus offering new experiences to the user. This article sets out to present a comparative analysis of usability and playability of five interactive Doodles by applying the RITE (Rapid Iteration Testing and Evaluation) approach so as to investigate ergonomic criteria of invitation, suitability, immediate feedback and user control.

**Keywords:** Interactive Doodles, Mutated Logo, Google, Game, Playability, Usability.

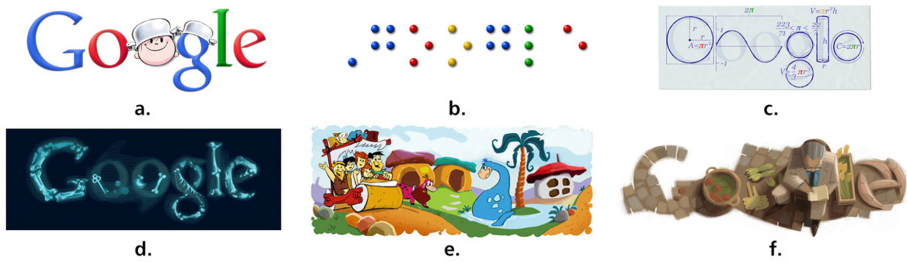
## 1 Introduction

In 1999, from a simple drawing of a person behind the second "o" in the word Google, the search engine, born in cyberspace, changed its logo in a humorous way to celebrate important events, which gave rise to the mutations of its logo, better known as Doodles<sup>1</sup> (**Fig. 1**). What started as a simple joke is now looked forward to by Internet users who access the company's search page looking for new updates.

Google, in addition to commemorating important events, began developing more elaborate and complex alterations to its logo to broadcast information of a political, social and cultural nature all over the world, by means of visual composition, sometimes in stills, sometimes in animation, of the characters of its logo. However, starting in 2010, Google reinvented a way for its users to interact with their identity. What hitherto had only been done visually for the user, now has a new approach which

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<sup>1</sup> Doodle "consists of changes in the look of the Google logo in order to celebrate holidays, anniversaries, and the lives of famous artists and scientists" [1].



**Fig. 1.** A. The Crazy Kid's birthday; B. Louis Braille's birthday; C. Pi's Day; D. Discovery of the X-Ray; E. Flintstones' 50<sup>th</sup> birthday; F. Centenary of Czeslaw Milosz (Poland)

provides the netizen with an immersion experience, interfaced by its own logo based on manipulating the company's logo. This manipulation enables creative interaction, thus making it possible for the user to play with the logo.

The aim of this paper is to set out a comparative study of interactive doodles, based on games released on the company's search page in 2010 (commemorating 30 years of Pac-Man) and 2012 (celebrating the London Olympics). Two aspects of the Human-Computer Interaction in the games were evaluated, viz., the issues of usability and playability, by means of applying the RITE (Rapid Iteration Testing and Evaluation) approach, to investigate the ergonomic criteria of invitation, suitability, immediate feedback and user control. Moreover, factors related to playability were measured such as the challenge set, the attention required, loss of self-awareness and changing the perception of time.

## 2 Doodles: Making the Logo Dynamic so as to Interact with the User

Mankind has always used signs to express an idea. This need to demonstrate meanings and information set off a relentless pursuit to develop mechanisms and graphical and visual elements to transmit the message quickly and efficiently. Brands, at first, were created with the aim of identifying tools, properties and livestock. Subsequently, the signs were transformed into symbols and began to signal an attribute of the quality and reliability of a product [2].

With the development of trade and increasing competition, institutions began to invest in the design of these signs, of these brand names in search of a unique identity that would stand out from the others and which their customers could easily identify. The design of a brand name evolved into a logo so as to create a visual identity, formed, in most cases, by a configuration of alphanumeric characters (logo), whether or not tied to a symbol, in addition to signaling a chromatic standard.

Besides identifying products, logos also convey emotions and keep a memory of moments, thereby serving as a criterion in the choices that people make every

day. According to Strunck [3], a logo is the intangible sum of a product; its name, its packaging and price, its history, its reputation and how it is promoted. The logo is also defined by consumers' impressions about the people who use it; as well as because of their own professional experience.

Technological advances and the development of mass communications oblige companies and designers to seek a differential so they may continue to lead the dialogue between the brand and its consumers. According to Purvis [4] the word *Zeitgeist* "means the spirit of the times and refers to trends and characteristics of cultural preferences was determined." Thus designers need to be connected, incessantly, to social, political and economic society to express with accuracy the *Zeitgeist* of their time and space, building visual symbols that make the most sense for their users.

The technological advance and the development of mass communications obliges companies and designers to seek a differential so they may continue to lead a dialogue between the logo and its consumers. According to Purvis [4] the word *Zeitgeist* "means the spirit of the times and refers to trends and cultural preferences that characterize a certain epoch." Thus designers need to be connected, incessantly, to social, political and economic aspects of society in order to express accurately the *Zeitgeist* of their time and space by constructing visual symbols that make the most sense to its users.

In this context, some designers have constructed logos that are more flexible, dynamic, multishaped and multicolored, thereby producing a new discourse so as to materialize emotions and allure the expectations of the active target public. In a relationship of humans with visual identity, the static view of a univocal image is transformed into a subjective or open identity that makes it possible for the onlooker to identify his/her values in the object observed.

In the globalized world connected to cyberspace, companies need the concept of branding (brand management) to transmit emotions to consumers and entice them to consume such products and/or services. According to Kreutz and Fernández [5], a brand can evoke memories and provoke emotion, and thus maintain a more affective and lasting relationship with its public, thereby allowing them to have a sentimental attachment to the brand, by identifying themselves with it.

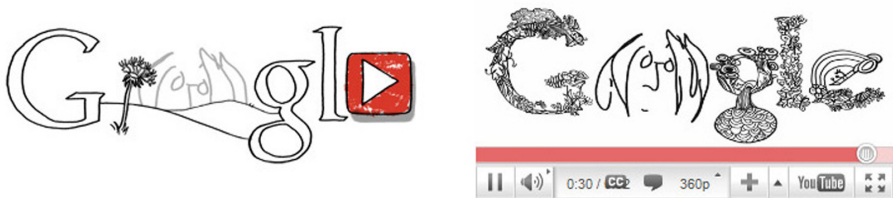
The logo interacts with consumers starting with the interface presented by graphical items, namely billboards, packaging, print ads and television commercials. These, for their part, comprise words, images and signs (the message), signaled by the company's visual identity. "The logo, graphically speaking, is always presented to the consumer as a seal in the print and electronic media, a lifeless and passive element." [6].

Born in the dynamic universe of the internet, Google introduced this concept of a mutating logo for brand identity in 1999 when it created its first doodle (**Fig.2.**) to pay tribute to a festival that took place in Nevada, USA, by adding a mannequin (the icon of the *Burning Man* festival) behind the second "o" of the logo. After this experiment, the home page of the Google search engine began to display more elaborate mutations, and to exploit all the possibilities of the hypermedia environment.



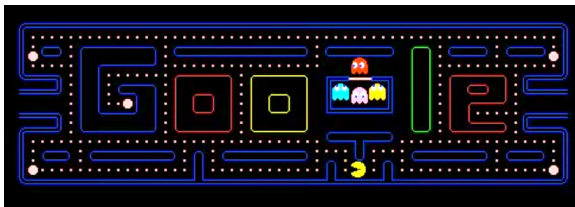
**Fig. 2.** First *doodle* made by Google

Google doodles (**Fig. 3**) are the convergence of interactive and non-sequential multi-media, the fusion of verbal and non-verbal signs with the written text, the audiovisual and computing, i.e., representations of all the matrices of language [7]. In 2010, the company evolved the interaction of its logo with its users by putting a digital game in the interface, namely, the doodle commemorating the 30th anniversary of the Pac-Man game (**Fig. 4**).



**Fig. 3.** Video *doodle* of John Lennon's 70<sup>th</sup> birthday, Shown in October 2010

This new approach enabled its users to have a new experience, just by extending the length of stay on the search engine page, but by triggering a strong emotional and communicative appeal. According to the website Olhar Digital (Digital Look) [8], as there were 500 million views on the day, this was one of the most accessed doodles.



**Fig. 4.** Doodle for the 30<sup>th</sup> anniversary of the launch of Pac-Man. Shown in May 2010

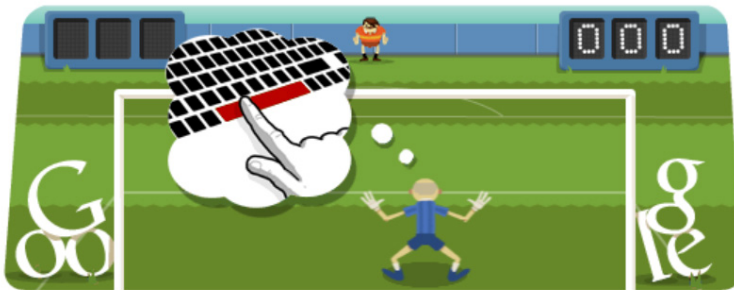
For Marc Gobé [9], companies must not only reject conventions, but must also institutionalize innovation, improvisation and imagination in their discourse. "To humanize the logo so that it is reflected in people is crucial to 'bringing to life' the emotions which move the passion of a company's workforce as well as clients' aspirations". [9]

As it had positive feedback from its users, Google began to develop some doodles based on games to convey, in a playful way, information and feelings. In 2012, four

different sports (hurdling, football, basketball and canoeing) were launched to celebrate the London Olympics (**Fig. 5.**). These mutant logos require a process of differentiated creation and to pay attention to aspects of usability and playability. For Laitinen [10], on applying heuristic tests of "usability in games, it is common to come across problems in game interfaces such as menus, which are complicated to use, displays the meanings of which are unclear and controls that are difficult to learn". (**Fig. 6.**).



**Fig. 5.** Doodles of the London Olympics. A. Hurdles; B. Basket-ball; C. Canoeing; D. Football. Shown in August 2012



**Fig. 6.** Football Doodles. The interaction screen is presented. Shown in August 2012

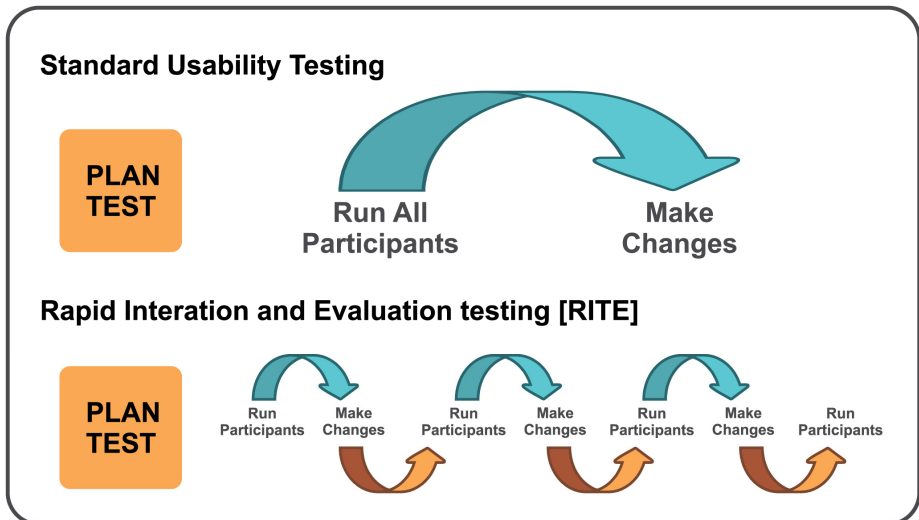
### 3 Methodology Used for the Test of Usability and Playability

According to Cybis [11], simply put, the usability of a game is about not presenting challenges not related to the game so that the player is focused only on having fun, viz., nothing in the interface apart from the ergonomic criteria that may make the player lose the focus of his/her objective in the game. The concept of playability is

about the player undergoing these challenges with the game while having fun, and understanding the increase in the difficulty and changes of levels.

It is a challenge to conduct a test that is proposed to test both usability as well as playability, mainly because there are no methods that span the two concepts together. Furthermore, according to the author, the focus of the ergonomic interventions changes in games because it is not about developing interfaces that directly and objectively support the performance of a user's given task. According to Cybis [11], the objective is to offer the right number of challenges in an immersive environment. Thus it can be said that in games both issues of usability and those of playability also contribute to the end-user's experience.

Therefore, this study used some guidelines from the RITE (Rapid Iteration Testing and Evaluation) approach, the evolutionary assessment method described by Medlock et al [12] who propose a freedom to change the format of the test during interviews with users. That is, instead of conducting only one range of tests, the prototype, process and/or questions may be modified and improved for later tests. **Fig 7** shows the difference of this method compared with the traditional method for a usability test.



**Fig. 7.** RITE testing versus “Standard” Usability Testing, based on [13]

10 people were selected from among staff and students of the Center for Communication of the Catholic University of Pernambuco in order to conduct the tests, of whom 8 were men and 2 women aged between 20 and 34 years old, among whom only one user was not familiar with the Doodles. These people had had different experience of using a computer and levels of web browsing that ranges from basic to advanced, which may well generate a range of interesting results for analysis.

The objective of the test was, in a single session with the user, to identify good practice and/or misuse of some ergonomic criteria regarding the game interface. Another goal was also to identify elements that might describe that this Google

experience had good or bad playability. Four doodles from the London Olympics and the Pac-Man doodle were chosen for the tests.

Three types of sessions were held (these sessions were different because within the testing process, some flaws were identified and could be corrected and adjusted using the RITE methodology): remote sessions; sessions with users in their work environment; and sessions with users in the laboratory of the institution with an interview that was more focused on playability.

The first two sessions took place remotely using an online questionnaire that people responded to as they interacted with the games. Two of the ten users were monitored in real time using a voice system by means of which they also commented aloud on what was happening during the experience of each game. The third and fourth users had their evaluation conducted in their work environment, with a moderator by their side, while a camera filmed their reactions and there was a system for identifying their navigation on the screen. The six remaining users were monitored by a moderator and a camera in the laboratory of the institution for a face-to-face interview in which they performed tasks proposed within the environment studied so as to complete the actions in the game and/or elements of the interface where the user had interaction; an important item was that the user could often be asked with this more controlled test about playability, from which interesting aspects about this Google experiment were identified.

## 4 Findings

Only one person did not know the Doodle platform and the other nine found it by browsing on the Google site or because friends had recommended it. Three users commented that they were familiar with the doodles because friends on social networks had recommended them.

First, the difficulties in each of the games tested will be described and then the most important points found will be compared.

In Doodle Athletics, users had no difficulty in understanding how to start the interaction with the game by using the arrow keys and the space bar, as set out in the tutorial interface. Only one person did not manage to finish the challenge set. Two people found the experience with the very easy; seven people found it easy and one found it difficult. A piece of datum important to comment on was that the action of clicking on the buttons quickly and repeatedly to make the character run became tiring for 4 of the users tested.

As to Doodle basketball, all users understood how to start the game. The metaphor of the button to start was well applied in this context. Eight users completed the task set by the game. All users commented that the dynamics of holding the spacebar down to make the basketball gain force when thrown at the basket is tiring. Some users made the comment that their fingers hurt during this process. Another important finding was that users did not have feedback on what force they using to make the ball go farther or less far so as to get the pitch right.

In the game of canoeing all users managed to start the game quickly. However, one point that was criticized was that they did not know the times of other friends in order to see how good or bad they were at the interaction. Six users commented that they did not know how to control the canoe more easily, thus making it difficult for them to control the direction as they wished. Nor was there any feedback during the game when they made a mistake because they had not passed by an item.

In Doodle soccer, all users understood how to start the game. However, only one quickly managed to understand the dynamics of how to start the interaction with the character. Despite this, only 2 users commented that the game was difficult. Eight users commented that playability was flawed and that there was need to increase the difficulty level and to create other levels.

With the Pac-Man doodle this was a bit different: no users had any difficulty in getting started and they also quickly understood the dynamics of playability, and 8 of the 10 users considered this to be very easy. The two users who did not find it easy had had no interaction with the Pac-Man on another console such as Atari.

According to the tests, in general, the experience of using the Doodle as a platform for a game is surprising. However, it is further noted that playability is deficient. Only in the case of Pac-Man were different levels and stages identified. All the other games of the London Olympics had only one way and only one stage to be played.

As to the ergonomic criteria, the one most commented on was user control because the possibilities of interaction with games are minimal and users would like greater freedom to choose elements and improve their performance at the game. In basketball Doodle, users commented most on the control via the space key being tiring and on their not understanding the feedback on increasing ball speed. In Doodle canoeing, the possible keys for interaction with the game confuse players, so although they do understand well the signs and tips on how to start, this confusion makes it difficult for them to achieve a better performance. It was in this Doodle that the lack of a better leveling of the stages was noted. It clearly could have two or three phases with levels of progressive difficulty.

In the ergonomic criterion of invitation, there were few occurrences of error on starting the interaction with the game, concentrated, in the case of Pac-Man, where the form of initial interaction comes about on clicking the image and not on a button. From the point of view of immediate feedback, the lack of a timer or scoring system in 2 of the 4 Doodles of the London Olympics 2012 made users' interaction with the games difficult. This very often reduced their wish to play and merely encouraged users to finish the task proposed. Incidentally, this was one of the most recurrent criticisms, namely, users would like to spend more time interacting with the game and, moreover, to see what the ranking of their friends with regard to Google is.

From the point of view of the playability, the Doodles of the London Olympics have a serious problem related to the value of something in the game and the players' motivations. An example of this problem is that there are many comments about the scoring not opening up new possibilities for games, and thus the experience ends in an ephemeral process of playability. That is, there are almost no rewards for the effort process on performing the activity of finishing the stage or completing the task requested. In the case of Pac-Man the fact that there are some stages opened up



possibilities for the user to build empathy with the game and to want to continue the gameplay to the end. Even though the speed added to the elements is something that makes experiencing it on the website brief.

## 5 Final Remarks

Since 2010, Google has launched a new phase in the changing configuration of its logo. The interaction goes beyond simply looking and listening, to an immersion in the fun learning universe of the game, which leads some users to lose their way in time and space, as they forget, in some cases, the real objective of accessing the web page of the search engine. This makes it possible not only that the user will remain longer on the company's homepage but also that the trademark will be broadcast in other cyberspace environments such as news portals and social networks.

It is noticeable that these interactive Doodles created by Google are still experimental initiatives as they use their own trademark to build platforms which have games on them in cyberspace. Even so, this opens up a path to be explored in the construction of games with a view to offering quick and simple experiences.

Just like Cybis [11] who demonstrates the research on video games and experiences that sprout from this universe, this leads researchers on usability to step outside a certain comfort zone by showing that concern only at the interface with the user is not enough to understand what a good experience of using the game is.

As a result of the tests conducted in the study, it is apparent that users had more empathy with the Pac-Man game because it has other phases and levels of difficulty. However, the doodles of the Olympic Games did not provide the same experience for users, whether through lack of other steps in the games or because they did not have some elements of motivation, a timer or a scoring system.

The knowledge made available and the existing techniques and tools to assess usability aspects and playability together need to advance and improve in order to measure and understand other important aspects for the user's experience, such as getting rid of worries and frustrations (and assimilating concerns and frustrations of the games sector), not investigated in this study.

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