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# Is Internet Making Us More Creative?

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*"Logic will get you from A to Z; imagination will get
you everywhere"*
Albert Einstein

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**Abstract.** This essay answers the question 'Is Internet making us more creative?'. The essay begins by defining 'creativity' based on concepts on which diverse authors agree. The ability to generate ideas is what helps us find a solution, make the best decision and take new challenges. This work makes reference to both utopian and dystopian authors in relation to Internet use and shows, based on the different concepts of creativity, how Internet, despite the lack of trust from some people keeps fostering new creations. In the last years it has been suggested by some authors that Internet is affecting our creativity, which is concerning to hear if we are taking into account the time we spent on Internet every day.
**Key words:** Creativity, Internet, Collaboration, Innovation, Decision.

### ¿El Internet nos está volviendo más creativos?
**Resumen.** Se responde a la pregunta ¿el nternet nos está volviendo más creativos? Con base en diversos autores, se define el concepto de creatividad. Es la habilidad de generar ideas lo que nos ayuda a encontrar la solución a un problema, tomar la mejor decisión y enfrentar nuevos retos. De acuerdo con los diferentes conceptos, se hace referencia a autores utópicos y distópicos en relación con el uso del internet y se muestra que este sigue alentando nuevas creaciones a pesar de la falta de confianza por parte de algunos. En los últimos años se ha sugerido que Internet afecta nuestra creatividad, lo cual resulta alarmante si tomamos en cuenta el tiempo que pasamos en línea cada día.
**Palabras clave:** creatividad, internet, colaboración, innovación, decisión.

## Introduction

We make decisions every day, we are faced with problems in our lives that require solutions and we live situations that change over time demanding us to evolve. How can we do all of this without intelligence, without making use of our knowledge and experience to succeed? It is the ability of being creative which helps us to generate ideas and find a solution, make the best decision and take new challenges. In a way, it is our ideas that strengthen our personality and make us unique.

If Internet is affecting our creativity, as suggested by some authors, and if we take into account the time spent on Internet every day for work, study, information and entertainment, it is concerning to hear that it may be making us less creative. It is then a topic worth exploring and for some of us, fascinating.

The objective of this article is to address the question, 'Is Internet fostering creativity?' The aim is to provide insights that show evidence of the positive effects of Internet in the process of creation.

## 1. What is creativity?

A general definition of creativity is the following. Creativity is the ability to think up and design new inventions,

produce works of art, solve problems in new ways, or develop an idea based on an original, novel, or unconventional approach (Britannica Online Encyclopedia, 2012).

There are diverse concepts that define creativity, however many authors agree on the following three.

The first concept relates to innovation, to all acts of novel work and new productions of certain value, an "act that produces effective surprise" (Bruner, 1962 cited in Sternberg, 1988: 118). For Bruner (1962), the surprise associated with creative accomplishment often has the quality of obviousness after the fact. Bohm and Lee state that "to experiment with the formation of new structures is seen as a creative act, in part because it suspends the constraints of both personal and historical conditioning, thereby enabling one to acquire a new perspective" (Bohm and Lee, 1952: 11). Ghiselin (1952), defines it as the process of change, development, of evolution, in the organization of subjective life. For Stein it is "that process which results in a novel work that is accepted as tenable or useful or satisfying by a group at some point in time" (Stein, 1953, cited in Sternberg, 1988: 118). Examples of this type of creation are the development of a new product or service or the use of a new method.

Other authors refer to the association concept of creativity, the combination of ideas. According to Rawlinson, creative thinking is "the relating of things or ideas which were previously unrelated –or bisociative thinking "(Rawlinson, 1981: 8). Haefele defines it as the "ability to make new combinations from two or more concepts already in the mind" (Haefele, 1962: 5). On his view, this new combination is termed an innovation. For example, the application of ideas from a different discipline –and linking it to others in

our area of expertise– often leads into interesting new concepts. For Haefele (1962), brainstorming is part of the creative process being its principal function "to feed new, pertinent, perhaps remote associations to the one or two high-creatives in the group under prime conditions of motivation, interest, permissiveness, and opportunity for achievement" (Haefele, 1962: 9). Adair considers that "you will be creative when you start seeing or making connections between ideas that appear to others to be far apart" (Adair, 1990: 6). For Adair (1990), creative thinkers are also those who have a habit of curiosity leading to give searching attention to whatever is of interest to them.

A third group of definitions is related to solution thinking, the ability to solve problems and make decisions. Guilford defines creativity in terms of discovery and divergent-thinking factors. The former, representing the ability to develop information from what is given by stimulation and the latter being related to "one's ability to come about in different directions when faced with a problem" (Guilford, 1959, cited in Sternberg, 1988: 118). When we are in a problematic situation, for example, the main road we are used to walk through is closed and we are in a hurry, finding another way to get to our destiny in a short period of time, requires some level of creativity. Dacey links creativity to intuition, he defines it as the "ability to solve problems through the use of the subconscious" (Dacey, 1989: 8). For Runco and Albert, "creativity begins with and is expressed through the decisions one makes, not through the particular media used or the products generated" (Runco & Albert, 1990: 19).

These different concepts lead us to agree that creativity lies on novelty and change, on association and perception and on solution thinking and decision making.

## 2. Gain of originality versus Loss of trust

The Internet, with the reshaping of media and the provision of new forms of interaction, is fostering creativity.

Digital technologies have enabled creations of novel works and new ways of expression. According to Lessig (2002), these products grew out of the ability of innovators to add value at the edge of the network. From innovations that Internet made possible, new forms of art keep emerging. Examples are the MP3 to compact the size of digital music recording, the range of tools for manipulating and editing digital images for films, the use of digital technologies via Internet to include user interaction in arts and the creation of html –basic elements for building blocks of websites– to aid the reader or guide him or her to other relevant texts.

All these technologies h ave eased the emergence of 'sound art' where one can listen together with visual perceptions, YouTube video blogging and user generated videos, digital art including new media art, virtual reality, net art and finally e-books which have encouraged a novel kind of writing. An example that includes digital work, user interaction and media, resulting in a new product attractive to some is 'We tell stories' from Penguin Publishing, where stories are serialized through social media blogs and Twitter accounts. Through it, game designers work together with authors to provide a different experience. Posing questions to the writer while reading a book through e-reader Kindle, is possible. Following other readers and seeing their comments, if available, is possible as well. Alternative ending stories are also more common now, thanks to the multiple hyperlinks Internet makes possible.

Going back to Stein (1953), who refers to creativity as that process which

results in a novel work that is accepted as tenable or useful or satisfying by a group at some point in time, we can see how Internet is fostering creativity by these examples and that the product is considered of value for some.

However, for some, the novelty produced in Internet is of low quality and threatens creativity. For Keen (2007) there is a lack of experts to filter Internet content, according to him, an avalanche of amateur content is threatening our values, economy, and even innovation and creativity itself (Keen, 2007). The sociologist Jurgen Habermas is among these too. Habermas, on 'Internet and the public sphere', confirms this by stating that on the Internet, contributions by intellectuals lose their power to create a focus as there is a decentered, multi-focus public sphere emerging by computer-mediated communication (Habermas, 1989).

For others, the mere experimentation on the Internet can increase creativity. Clay Shirky gives the example of a 'lol-cat' -funny picture of a cat-, claiming that creations are of all kind but that among all the new ideas, some will be of value. For example, there is a lack of trust on Wikipedia's content, even though some level of review takes place. Wikipedia has a network of contributors and editors who vet the accuracy of its 'prosumer' entries. A contributor is later promoted to editor when he or she is approved by certain percentage of peer rating (Kazman & Chen, 2009).

Shirky argues that increased freedom to create means increased freedom to create throwaway material, as well as freedom to indulge in the experimentation that eventually makes the good new stuff possible (Shirky, 2010). The term 'prosumer' adopted to define the production-consumption phenomenon by Kazman and Chen is also confirmed

by Shirky. He explains how previous generations used their spare time for activities where they only 'consumed', instead of 'producing' as it is with the use of Internet. Shirky refers to the Gin Craze in Britain and to TV consumption in later generations as maladaptive and self-anesthetizing responses to epochal social disruptions (Shirky, 2010). Therefore, Shirky recognizes that Internet can be a response to our social environment too, however, the difference lies in the 'production' and creation. According to Shirky, the 'cognitive surplus' we have —all the spare time we decide to dedicate to different activities—, is so large that even the smallest amount of time dedicated to produce can generate positive effects.

Hence, we can conclude that, while there is still a trust concern on the quality of Internet content by some, we cannot deny that new productions of value for some others —or creations—, are taking place.

## 3. Information overload versus Brainstorming

Nicholas Carr, in 'The Shallows', argues that skimming and scanning are activities that stimulate our working memory only and that they are not reading itself (Carr, 2010). On his view, 'distractions' caused by Internet such as receiving information updates and suggestions to read for example, constitut interruptions to a deep reading, and that is what is making us 'shallow thinkers'. As our working memory is overloaded we cannot think properly and according to him, that causes the loss of our long term memory. "When the load exceeds our mind's ability to store and process the information —when the water overflows the thimble— we are unable to retain the information or to draw connections with the information already stored in our long

term memory" (Carr, 2010: 125). For Carr, it is the long term memory that generates creative thinking.

However, Carr recognizes that skimming and scanning are important activities, as they stimulate our working memory, in charge of decision making and problem solving (Carr, 2010). If we recall, both of these activities are also considered to be part of the creative process. While Carr's argument is valid if we focus on the amount of information received while doing the process of thinking, as seems to be his concern, it is the 'availability' of the information via Internet, what has helped people to be able to read more, acquire knowledge and therefore, create. For some authors, scanning can help increase creativity as more sources can be reached, what can be considered a brainstorming process itself. Tapscott and Williams argue that if you give people the data, they will be able to provide solutions (Tapscott & Williams, 2010). For a government issue for example, where a city is facing trouble with limited transportation, users may have a good suggestion now that they have access to the data. Pulitzer Prize winning author, Thomas Friedman, claims he has never been more creative than recently and he attributes it to his blog and the ability to review and scan 'tons' of information on the web (Carr, 2010). For Hemp (2009), we cannot deny that in the knowledge economy, information is our most valuable commodity. One can generate solutions more easily and make decisions when one is better informed.

Therefore, by having more information one can connect ideas in a way that results in the creation of a new solution or a new product.

### 3. 1. The free market
Supporting this argument is the fact that the Internet is a free market.

The fact of being Internet a 'free content market', encourages creativity. With the low content distribution costs, acquisition of knowledge is more feasible and so is the possibility to contribute and create. The self-publishing feature that Amazon has recently encouraged is an example of this. People are able to share their creations in a worldwide platform, and by this, reach more minds.

Taking the case of scientific publishing, Tapscott and Williams consider that publishers have done much to accelerate the publication process in response to increased competition on the Web. According to them, "the vast majority of published research today is still only available to paid subscribers, despite the availability of much cheaper electronic publishing methods" (Tapscott & Williams, 2010: 175). On their view, scientific publishing is both slow and expensive for users, and these issues as a result, are increasingly big problems in science (Tapscott & Williams, 2010).

In 'Macrowikinomics' Tapscott and Williams present the example of PLoS ONE as a possible platform of innovation. In this open access peer-reviewed scientific journal, authors pay to be published and it is a decision of the reader whether to use the content or not. It is their task to "filter, annotate, and apply the growing body of public knowledge that scientists generate" (Tapscott & Williams, 2010: 176). According to the authors, this gives everyone the opportunity to tap new insights and contribute their own. Therefore, if more people had access to scientific journals, more knowledge would be generated.

Consequently, the free information and data available on the Internet help more people acquire knowledge and create. This together with, as stated previously, our curiosity leading to give searching attention to whatever is of interest to us (Adair, 1990), will continue making us creative thinkers.

## 4. Collaboration versus Copyright

Very related to the open access that the free market provides, is the so called 'wisdom of the crowds'. Creativity is increased by the connections of groups online, the addition of their experiences and knowledge, and their collaboration to provide solutions.

Castells and Cardoso (2006), states that the productivity of the networks challenges the traditional 'inventor' image of personal virtuosity, which attends the psychological representations of creative accomplishment. They emphasize by this, the change of individual creativity to a collective one. Crowdspring is an example of a site that promotes work collaboration by allowing graphic designers generate designs together. Another example is ODesk, a site that helps people from remote locations perform different kinds of jobs or provide together a solution to a task.

Other authors have studied the evolution of collective creativity as well. From 'learning and consuming' activities such as finding similar others, absorbing content, learning rules and techniques, gaining sense of membership, reflecting on feedback and sharpening skillsets, we seem to be moving to the 'doing and producing' ones as part of a group, where we post comments, ask questions, receive feedback, get involved in projects, assess and review, and take leadership roles (Kozinets *et al.,* 2008). For utopian Howard Rheingold, a potential for 'collective intelligence' was foreseen in Internet. In 'Smart Mobs', he referred to the potential for technology to augment collective intelligence (Rheingold, 2012). According to him, peer-to-peer networks are changing the way in which people share information to reach new forms of collective action. If we are part of a collective intelligence,

then we are also part of the product result of such collaboration.

'Crowdsourcing' is a term that has been given to the "commons-based peer production used to create value in information technology, the arts, basic research, and retail business" (Kamzan &Chen, 2009: 76). Referring to collaborations such as Linux applications, Firefox add-ons, Wikipedia articles, and Facebook applications, these authors confirm that it is the 'prosumers' who deliver the vast majority of end-user value (Kamzan & Chen, 2009). That value is product of the application or solution generated by someone within the crowd.

Derived from the evidence provided, we can argue that due to the exchange of ideas among people, possible via Internet collaboration networks and tools, new products and solutions emerge.

### 4. 1. The controllers
The innovations result of such collaboration, are defended by many. The fact of considering the initiatives to limit Internet openness as a threat to creativity, confirms how it highly encourages the creative process.

The US government claims that content should be regulated to direct users only to 'lawfully' sites as was proposed with PIPA (Protect Intellectual Property Act) and SOPA (Stop Online Piracy Act). Its aim is to restrict Internet sites to ensure none of the sites available allow illegal content access or download (Forbes, 2012). While piracy is indeed a matter to be addressed by authorities, extreme measures can inhibit the creative process taking place on the Internet. As Forbes explains, sites like Google received millions of requests to take down material or links to websites which infringe on valid copyrights, and the intent of SOPA and PIPA was to do the same for foreign-based sites (Forbes, 2012). These initiatives were criticized by many users and technology

companies, claiming that SOPA poses a serious risk to the industry's track record of innovation and job creation as well as to the US cybersecurity.

On the other side, there are authors who defend Internet openness in favor of creativity. For Lessig, "a society that defends the ideals of free culture must preserve precisely the opportunity for new creativity to threaten the old" (*The Economist*, 2004). He suggests that, by the use of Public General Licenses –as codes work in a communications system– , the content can be protected in a way that it does not prevent the rest of the users from having access to the creation and add to it (Lessig, 2002). Tim Berners-Lee, considered as the father of the World Wide Web, expressed his concern about a closed Internet: "One of the things I like about the computer that I use is that I can write a program on it or I can download a program on to it and run it. That is important to the whole future of the Internet […] obviously a closed platform is a serious brake on innovation" (Katz, 2012).

As stated by Lessig, unregulated technology frees creativity and decentralizes the control of the network, allowing it to remain a common (Lessig, 2002). Thus, it is the openness of Internet and the user collaboration it allows that boosts creativity.

## Discussion and conclusion

This paper has addressed the question whether Internet is helping us be more creative. In other words, is Internet fostering creativity?

Dystopian authors argue that creativity is being threatened by the low quality Internet content making contributions lose their power to create focus (Keen, 2007; Habermas, 1989) and that information overload making us lose our long term memory, prevents us from creative thinking (Carr, 2010). Howev-

er, evidence found shows that Internet is fostering creativity in different ways. Firstly, it has made possible the generation of novel works. As a result, by being the Internet the host to all these new ideas, it is allowing a 'brainstorming' process and as many authors suggest, when brainstorming, one should not judge, but embrace all ideas "…to suspend judgement and allow free wheel, where no evaluation is allowed, either of one's own ideas or those of anybody else" (Rawlinson, 1981: 38, 39). Hence, whether the creations we are currently seeing on the Internet are of value only for some, is not relevant if we consider that the process of creation is still being encouraged.

Secondly, the 'free' concept of Internet has made content available for many people who now have access to that knowledge and to contribute with their creation. Critique to dystopian Carr's argument is that he focuses on the amount of information received while doing the process of thinking leaving out the fact that the mere 'availability' of information on Internet is what has helped people to read more, acquire knowledge and by the linkage of ideas be able to create. Utopian authors agree that Internet openness and low distribution costs of information, give everyone the opportunity to innovate (Tapscott &Williams, 2010; Lessig, 2002).

Finally, 'collective creativity' specially benefits from the media and networks that encourage collaboration for solution generation. Examples of group collaboration show how networks allow people to contribute in performing tasks, generating solutions and making decisions. The evolution from a 'consumer' role to a 'producer' one eased by Internet, leading to a 'mass collaboration', is defended by utopian authors (Shirky, 2010; Rheingold, 2012; Kazman & Chen, 2009).

The contribution of this essay lies on the provision of a different perspective of the creative process on Internet. By introducing a diverse group of concepts of creativity, it argues that Internet is fostering creativity. It shows utopian views that confirm what the basic concepts of creativity tell us. Hence, it contributes to studies on creativity and to give answer to the concerns that may arise in our information society. Concerns on negative effects of the Internet are vanished by authors who consider that a balance between developing new abilities and continue to read, will lead to a deeper immersion in ideas. According to Michelman (2010), we will take our new-found abilities to consume and contextualize multiple ideas and multiple forms of media and combine it with our long-held ability to dive deep into text-based content. Whether that will be possible at the same level for all of us is out of scope of this research. Further studies could be conducted to explore for example the specific case of 'foxes' –multi-taskers between 16 and 24 years old– according to Google Generation experiments, and other six different types of animals which are classified to study the effect of the Internet on reading and knowledge (Nicholas *et al.,* 2011).

## Foresight analysis

If Internet helps individuals increase their creativity, leading to the generation of new products and solutions then equal opportunities need to be created. With only privileged groups having access to Internet, we leave out potentially valuable creations and limit ourselves to certain views of the world. 'Cultural fragmentation' has been identified as a challenge by Vickery and Wunsch-Vincent (2007) with the risk of greater individualization of the cultural environment.

Informed users will make better decisions. People that use Internet health-related Q&A boards –while it is true that the advice given does not substitute medical assistance– are provided with some guidance. Consumers who read online reviews and use price comparison engines are in a better position and can make better use of their resources. Entrepreneurs can find advice online to make their companies grow. Thus, the creativity fostered by the Internet can lead to more independent citizens.

Hence, this study stresses the priority and urgency of extending Internet access in order to decrease the digital divide that still characterizes some countries. At a national level digital literate citizens will be able to contribute with ideas and be more participative. By joining discussion forums for example, people can get together to find solutions to common problems. Participative web technologies can also improve the quality and extend the reach of education (Vickery & Wunsch-Vincent, 2007). Students that make use of Web 2.0 technology are easily encouraged to share ideas, opinions and knowledge. At an international level, the 'collective intelligence' facilitated by technology has implications for research and development. The more creative people - linking ideas and collaborating -, the more advances in science are to be expected.

Shall this need not be attended we are in risk of hindering our growth. First of all, as individuals who need to express ourselves and be independent. Secondly, as communities who need constant development (e.g. in terms of education and culture). And lastly, as countries that need technological and other innovations to drive industrial growth. Once Internet access becomes a norm and not a privilege it will be possible to raise our countries' living standard.

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