# Smart Companies, Inspiring the Future: A Theoretical Review

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## Abstract

*The economic and financial global crises have accelerated the search for alternative business models. The aim of this article is to describe the main characteristics of smart companies capable of overcoming the shortcomings of the current economic system. After conducting a theoretical review of the main studies related to this area, we conclude that there is a need for smart companies championed by leaders who promote the use of information technologies and communication as means of improving citizens' quality of life. There is a need for corporate policies and values that fit with a sustainable social, economic and environmental corporate culture. Smart companies may be a useful alternative in overcoming the shortcomings of the current economic model that has triggered profound economic and financial crises. Society requires companies and customers to act in the free market in a fair, ethical, caring and responsible manner, as economic growth must be made compatible with the distribution of wealth.*

**Keywords:** Smart companies, Leadership, Information technology, Communication

## 1. Search For Alternative Economic Models

In today's economic environment, companies are increasingly adopting competitive strategies to counter the growing threat of a new economic market based on emerging countries with low production costs. To this end, they are developing complex relocation and internationalization processes to combat effects on traditional local production (B. F. García, Mora, & Alés, 2009).

Economic and financial crises are becoming more frequent, profound and global and their impact is mainly in the social sphere. In this context, the economic slowdown has significantly increased the number of people in situations of poverty and exclusion, who have fewer resources available to them as they receive less social protection and fewer welfare benefits. The crisis has led to the destruction of thousands of jobs, a more precarious labour market and a significant increase in foreclosures and evictions: a social impact that directly affects the living conditions of the most disadvantaged(Hadad Hadad & Valdés Llanes, 2010).

According to Eguiguren (2011), this economic and social situation has accelerated the search for alternative economic models capable of minimizing the effects of the crisis and overcoming the gaps existing in the current capitalist system. This author states that in order to manage companies, there is a need for corporate policies and values that fit with a sustainable social, economic and environmental corporate culture. Companies whose mission is based on ideals and values committed to people and the planet contribute to the common good while generating similar profits to other companies.

In respect of this, the alternative model developed by Fisk (2010) - People, Planet and Profit (3P) - addresses the need to establish links between the social, environmental, corporate and economic spheres to overcome the shortcomings of the current model. Smart companies operate in the market with a sense of accountability, transparency, democracy, participation and ethics (Klionsky et al., 2012). The aim of this theoretical review is to present the results of a methodological, structured and systematic process for selecting a set of valid, useful and relevant articles on smart companies in order to lay the scientific foundations for the future creation of an alternative model for company creation, administration and management.

## 2. Smart Companies

According to Angel, Parent, Civco, Blei, and Potere (2011), 54% of the world population lives in industrialized urban areas, compared to 49% in 2005 and 33% in 1960. This is expected to grow to approximately 60% by 2030 and 75% by 2050, when it is estimated that cities and industries will be responsible for between 60% and 80% of global energy consumption and greenhouse gas emissions. Industrial environments need to address problems such as pollution, safety, transportation, waste management, employment, energy, urban planning and the supply of household amenities in general.

Smart companies are characterized by offering more efficient services to improve the quality of life and wellbeing of citizens. Their founding missions include such aims as overcoming the economic crisis, combating social inequality, eradicating climate change, counteracting population aging and slowing the rapid spread of urbanization. We live in an era of great technological innovations, which have the potential to resolve most of the problems facing companies(Dameri & Garelli, 2014).Kramers, Höjer, Lövehagen, and Wangel (2013) Define a smart company as one that takes advantage of ICT - information and communication technology - to provide products and services that meet their customers' needs and manage their own infrastructure. Within this environment, they highlight concepts such as **leadership and information technology and communication** as being key in quantifying and evaluating the degree of companies' intelligence or smartness.

### 2.1. Leadership

Castells and Pasola (2004) State that in an environment of crisis business leaders have discovered, in the concept of intelligent or smart business, a way of obtaining more with fewer resources thanks to information technology and communication.

According to Seisdedos et al. (2015), transforming a vision into reality in any organization requires strong leadership, inspiring change in people and mobilizing the right resources to carry out the project. Entrepreneurs have the ability to set the agenda and allocate resources, and are also responsible for driving organizations that implement and facilitate synergies among all departments through the use of information technology. Each individual company must define its vision and the pace of its transformation towards smart management and leadership. In addition to leaders with willpower and vision, there is also a need for employee consensus and involvement to achieve effective progress and ensure long-term survival (Hollands, 2008).

The current economic environment means leadership is essential in achieving effectiveness in work teams and the organizations of which they form a part. According to Seisdedos et al. (2015), technology is the means required to move towards the smart management of companies and improve citizens' quality of life. With this in mind, it is necessary to explore new forms of leadership which result in effective responses to new requirements in the workplace, such as design for change and innovation, cultural diversity, complexity, knowledge-based work and virtual organizations. Response to these demands has led to the development of new approaches, such as new leadership and authentic, cross-cultural, complex, shared and remote leadership (Review, 2011).

Within this context, it is worth highlighting the concept of "leadership by values" posited by García Sánchez and Dolan (2003), according to which management by values is a new way of understanding business management. It is management that relies on striking a balance between three types of values to achieve its vision and fulfil its mission: a) economic-pragmatic, control or praxis values, usually predominant and never sufficiently developed (efficiency or quality, for example); b) emotional, developmental, "poietic", creative or generative values (imagination or warmth, for example), abusively and wrongly denied or belittled on many occasions within the pragmatic efficiency-minded perspective; and c) ethical values (generosity, respect and honesty, for example), being integrated as the norm within economic and emotional values, and not locked inside codes or considered a separate category, and certainly not outside the core element of productive business.

The concept of authentic leadership developed by Walumbwa, Avolio, and Zhu (2008) also plays an important, if complementary, role. According to these authors, the emergence of this concept is mainly due to two factors which, for different reasons, call for the existence of a new kind of leadership: on the one hand, the disappointing response to the economic crisis by political leaders, and on the other the response of the financial sector in its attempts to address the situation.

From this point of view, the loss of trust towards leaders underscores the importance of ethical and moral aspects of leadership. Indeed, in recent years, positive psychology has proposed changing the approach to psychology away from a concern to treat negative aspects, such as deficiencies and pathologies, to encourage the development of positive qualities. These include, for example, creativity, integrity, ethics, leadership, wisdom, being a good citizen and satisfying work. Within such an environment, authentic leaders are profoundly conscious of their values and beliefs, how they behave and, in turn, how they are perceived by others(Walumbwa et al., 2008).

In this context, (Love, 2013) proposes the principles of authentic leadership be integrated within an organization based on the principles of management by values, and advocates:

1) Using social technologies and collective intelligence tools.
2) Creating spaces that facilitate the joint creation of innovative solutions.
3) Using the inspirational qualities of improvisation and play in promoting innovation and creativity.
4) Connecting with others through authenticity to catalyse the talent of the group and learn to work together.
5) Generating positive changes in the world through personal transformation.

Below, we highlight two methods for managing and achieving leadership aims:

a) The **Search inside Yourself Leadership Institute** is a training programme designed by Google and comprising three stages: mindfulness training; self-knowledge and self-control; and creating mental habits. It is based on the scientific concepts of emotional intelligence and mindfulness. Thanks to this training program, emotional intelligence skills are developed while generating trust and better communication between employees and the company. Meditation helps to reduce stress, generates happiness and calm and clears the mind (Tan & Sullivan, 2012).

b) **The Art of Hosting conversations that matter (AoH)** is a new approach to authentic and transformational leadership which scales up from the personal to the systemic using practices such as facilitation, dialogue and the co-creation of innovative solutions to complex challenges. Co-creation has been successfully implemented in organizations such as Apple and Google to achieve more creative, flexible and innovative outcomes than their competitors (Boyatzis & McKee, 2005).

In addition, and in line with the conclusions drawn by Seisdedos et al. (2015),for companies to move in a smart direction, leaders must implement actions in the following areas: 1) **vertical** - the company equips itself with the necessary technology to improve its management; 2) **horizontal**–a cross-departmental platform is developed to connect the different departments of the organization; 3) **connected**- different companies begin to share information and interoperate with each other via the management platform; and 4) **smart**–it becomes possible to conduct advanced, predictive and real-time management of the business and provide information and services with high added value to customers, employees and suppliers, creating an innovation ecosystem.

## 2.2. Information technology

Adapting the conclusions reached by Seisdedos et al. (2015),standard, open and interoperable platforms facilitate improvements in the management and development of a smart business ecosystem. Complementary to this, according to Guzmán and Palacios (2006), creative thinking strengthens and promotes productivity in business. To be competitive, as well as having high-quality technology, companies must be able to create and produce a product that favours its market penetration and customer loyalty. At the same time, they must have a management style capable of seizing opportunities and managing resources, especially human capital, to optimize results.

Similarly, according to Suárez (2003)specialist training should lead to changes in content and the training of future professionals to allow abilities and skills to flourish such as creativity, talent and innovation, facilitating the execution of certain tasks. It is important, above and beyond content, to facilitate personal development tools to ensure that trainees enhance their skills and abilities in relation to creativity, leadership, communication, etc. This will allow work teams to identify more with their duties, performance and responsibilities in the medium and long term (García Sánchez & Dolan, 2003).

Moreover, as Herzberg (2003)concludes, when a company manages to obtain high-performance teams the achieved result is generally significantly greater than the sum of individual results. One way to measure a company's creativity, although difficult to do, is to compare the number of products, services or processes it has before and after introducing innovation strategies.

According to Herzberg (2003), most executives do not consider the need for or importance of creativity in their teams, even though they do see the need to innovate. However, innovative companies have often emerged out of creative companies, and business creativity and innovation can be applied in various fields within the organization, above and beyond marketing: human resources, production, finance, etc.

In this environment of innovation and creativity, the concept of **collective intelligence** stands out. This refers to a way of maximizing the knowledge and cognitive abilities of a group, promoting collaboration and cooperation among its members. The term was first used to refer to the behaviour of certain species such as insects or ants that work together to function as a single organism. It is also used when the Netis used as a collaborative environment. Among the resources aimed at collaborative use for generating collective intelligence we find **TED, Technology, Entertainment, and Design**, a non-profit association which aims to share ideas in communities around the world. Ideas are spread through short talks which make a big impact. TED now covers a wide spectrum of topics ranging from science to business, in over a hundred languages. It is based on an understanding that ideas can change attitudes, lives and ultimately the world. It is, therefore, a place for the exchange of free knowledge, formed by thinkers, aimed at spreading great ideas and provoking debate. Many companies use it as a source of inspirationJacobson (2000).

Other tools that facilitate knowledge-sharing and contribute to generating cooperation and collective intelligence are the so-called **MOOCs (Massive Online Open Courses)**, an open education programme on the Internet. If connections between nodes of content and people are promoted, this facilitates learning and consequently knowledge creation. Thus, MOOCs promote the democratization of learning while also opening up educational environments, allowing people around the world to follow different free educational initiatives provided by the most prestigious universities in the world, such as Harvard, Stanford and Massachusetts Institute of Technology.

It is thought that the current growth in online collective creation applications may lead to a more efficient, fair and inclusive society(Kuklinski, 2007). The following table provides a definition of key concepts related to information technology being developed and applied in the field of intelligent or smart companies (Seisdedos et al., 2015):

| Table 1: Concepts related to smart companies (Seisdedos et al., 2015) |
| --- |
| — **Big data**: Rapid processing and analysis of large volumes of data in real time from various sources, with a very short response time. The capacity to generate intelligence from stored information is being successfully applied in fields such as health services, disaster management and collaborative projects. |
| — **Cloud computing:** Processing capability through scalable and flexible technology made available to customers using the Internet. Its use rationalizes investment, reduces obsolescence and provides instant scalability, due to the user paying by capacity used. |
| — **Cognitive computing:** Systems based on big data, cloud computing, new security tools, etc. which are not programmed like current systems as they are able to understand the natural language people use, learn and answer complex questions in a few seconds due to their advanced capacity to analyse data (Paniagua, 2013). |
| — **Internet of Things (IoT):** Different devices connected to the Internet via fixed and mobile networks represent a source for capturing highly relevant and useful information, which is filtered and interpreted to provide a suitable real time response. |
| — **Lean Start-up:** System for introducing new products or services based on a validated learning market, whereby constant experimentation and iteration shorten development cycles, measure progress and constantly feedback to ensure their implementation(Ries, 2011). |
| — **Open Data**: Making information available to third parties, enabling models based on the participatory economy and entrepreneurship. |
| — **Open technological solution**: The use of standard, horizontal, interoperable and scalable technology allows the integration of all systems on a single management platform and ensures the development of an **innovative ecosystem**. |

## 2.3. Communication

Seisdedos et al. (2015)State that "The outbreak of the digital revolution is creating a hyper connected and collaborative society that decisively transforms the relationships between citizens". According to Contreras (2010),new technologies offer individuals the opportunity to engage in new forms of participation. Thanks to the Internet, users are able to develop, give opinions on, collaborate on and distribute content virally or in a personalized way, as well as customizing applications. Currently, content can be produced in different formats, including text; images, video and audio, and multiple platforms allow its production and distribution, principally via instant messaging, email, websites, blogs and social networks. Customers, employees and suppliers have ample opportunities to create and publish content and leave a testimony of their experiences with companies. This reality contrasts with the usual chain of publication in the traditional media and the processes of selecting and preparing publishable content. It is worth noting that the time needed for its creation and distribution has also been significantly reduced.

According toKolbitsch and Maurer (2006), what the different communities of Internet users have in common is the possibility of participation and openness. In addition, another aspect of the Internet that directly affects democratization is that users have the power to pick and choose which content they want to read, view, consume and leave an opinion on. Historically, according to Parra Valcarce (2008), Internet 0 arrived in 1969 and comprised a communications infrastructure that allowed large computers to connect to one another. By 1993, Web 1.0 had turned the Net into a large information storage space in which the major search engines appeared as key figures. Shortly after that, there was the arrival of Web 2.0, with Internet users worldwide able to enter into dialogue and share content and opinions.

According to Ramonet and Moreno (2004), in democratic environments the press and media have become a resource for citizen protection against the abuse of legislative, executive and judicial powers. Numerous violations of citizens' rights have been uncovered thanks to reports in the media. In this respect, the authors use the term "fourth power" to define the civic sense and loyalty shown towards citizens by journalists and the media, who have a duty to publish, challenge, and address democratically illegal decisions that would be unfair on innocent citizens. However, today the media are controlled by a set of economic groups and globalizing companies with more influence on business than some governments and states. Thanks to their economic power and the digital revolution, these worldwide media groups control the mass media, including radio, newspapers, television channels, news sites, etc.

With regard to the reach of social networks, according to Seisdedos et al. (2015), in the second quarter of 2015 Face book had 1.49 billion active users, while every second 3,600 photos are shared on Instagram and 100,000 tweets are generated. As for mobile access via broadband, wifi and apps, in 2015 there were around 3.7 billion unique mobile subscribers worldwide. In this environment, customers and businesses are destined to interact virtually through social networks, resulting in organizations needing to manage and generate opinion in a new collaborative and participatory reality.This environment has given rise to citizen journalism, conceived byGillmor (2006), which entails the socialization of information. In this context, society's participation is essential in driving discourse and generating information.

Citizen journalism might be termed the fifth power, awarding citizens the democratic and civic strength to oppose the new dominant coalition of media groups, accomplices in their dissemination of liberal globalization.There is an urgent need for the mainstream media to act more ethically on behalf of citizens and with greater veracity of information. In this environment, the new democratic communication allowed by the Internet and the digital revolution can encourage citizen journalism to place conscience and values above the interests of groups, companies and employers. Given this new reality, we propose ecology of information be developed in order to separate significant and truthful information from that which is not.

Companies' freedom of action cannot prevail over citizens' rights to receive verified and accurate information. The strength of democratic communication lies in employees, customers and suppliers being able to evaluate the companies they interact with - whether working for them, buying from them or selling to them - and share their opinions with other citizens and Internet users in an open public environment of dissemination to create an economic environment which is more ethical, responsible, honest and democratic on both a micro and macro level.

Some authors are now referring to the Web 3.0, which is synonymous with a smart network and based on the application of expert artificial intelligence systems.

## 2. By Way of Conclusion

Having described and analysed the most relevant and recent research on different models of creation, management and leadership, we conclude that smart companies may be a useful alternative in overcoming the shortcomings of the current economic model that has triggered profound economic and financial crises. In this theoretical review, we have included models such as People, Planet, Profit, devised by Fisk (2010), some interesting research by Eguiguren (2011), managing by values by S. García and Dolan (1997) and Pin, Espinosa, and López (2005), and the principles of leadership and management based on Owen (2008) andWalumbwa et al. (2008). We have also referred to the digital transformation of cities by Seisdedos et al. (2015)to describe the characteristics of information technology and communication used in this environment.

Of the main elements highlighted here, communication is new to the field of business management models. The authors of this article believe that communication has become a cornerstone of business management, as the emergence of aspects such as citizen journalism, Internet 3.0 and social networks have socialized information and democratized its use, enabling customers, employees and suppliers to create content, give opinions and have an influence on any company. Our review highlights, firstly, the need for an in-depth analysis of companies based on factors such as sustainability and inclusiveness, necessary complements to intelligence or smartness. Secondly, it reveals the need for an integrative model, drawing on the results of this literature review, which bases its principles on three factors: intelligence, sustainability and inclusiveness, aimed at business creation, administration and management.

And thirdly, descriptive studies are needed to define quantitative and qualitative indicators for evaluating this new model. Subsequent to this, there will be the need for studies with experimental designs, capable of evaluating the results of the model. Finally, we recommend developing educational content and informative and training material for the new model, in order to raise awareness among the general population and train managers, employees, suppliers and customers in its use and thus contribute to business sustainability in the medium and long term. The present results and findings require confirmation in future studies. We conclude that, in the face of an uncertain future, research in this area should be constant and cover different disciplines.

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