Beyond SmartCities: How to create an Attractive City for Talented Citizens

Más allá de las smartcities:
cómo crear una ciudad atractiva para ciudadanos talentosos

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ABSTRACT: In the recent context of general economic stability and peace, cities have become the world's key centers for human development. Without a clear leader in the 4th Industrial Revolution, cities are fiercely competing to attract talent. Investing in technology and innovation (SmartCities) is an essential and mandatory condition to draw that talent in, yet it is not sufficient alone. Choosing a city to live in is a complex decision, akin to making a major purchase, getting married, or signing a contract. So, the question arises: what makes a city attractive to talent?

In this article, it is postulated that, as with every human decision, there is a compromise between two parties: the emotional component, which we call *city magnetism*, and the rational component, which we call *city profitability*.

We study the world's top 140 most attractive cities according to international studies in a custom model made up of more than 100 indicators. The objective is twofold: to help talented citizens evaluate cities in order to find which ones will best help them reach their potential; and to help politicians and city officials create the conditions that make their city as attractive as possible. This is not simply a question of technology or investment; identity, urban planning and social sustainability are determining factors too.

KEYWORDS: City Attractiveness; SmartCities; magnetism; profitability; citizenship contract; talent.

RESUMEN: En el contexto actual de estabilidad económica y paz, las ciudades lideran el mundo como centros clave del desarrollo humano. Sin un claro líder en la 4ª revolución industrial, las ciudades compiten ferozmente por el talento. Invertir en tecnología e innovación (SmartCities) es fundamental y condición necesaria para este propósito, pero no suficiente. La decisión de optar por una ciudad es humana, y por tanto compleja. Es como una decisión de compra, como un matrimonio, como un contrato. ¿Qué hace a una ciudad atractiva para el talento?

En este artículo se postula que, como toda decisión humana que implica un compromiso entre dos partes, tiene un componente emocional que llamaremos *City Magnetism*; y un componente racional que llamaremos *City Profitability*.

Estudiaremos las 140 ciudades más atrayentes según estudios internacionales en un modelo compuesto por más de 100 indicadores. El objetivo es doble: ayudar a los ciudadanos talentosos a valorar las ciudades para encontrar las que mejor les ayuden a desarrollar su potencial; y ayudar a los alcaldes y los poderes públicos municipales a generar las condiciones que hagan su ciudad lo más atractiva posible. No es sólo cuestión de tecnología o de inversión: la identidad, el urbanismo y la sostenibilidad social son determinantes.

Palabras clave: City Attractiveness; SmartCities; magnetismo; rentabilidad; contrato ciudadano, talento.

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RESUM: En el context actual d'estabilitat econòmica i pau, les ciutats lideren el món com a centres clau del desenvolupament humà. Sense un clar líder en la 4a revolució industrial, les ciutats competeixen feroçment pel talent. Invertir en tecnologia i innovació (*SmartCities*) és fonamental i condició necessària per a aquest propòsit, però no suficient. La decisió d'optar per una ciutat és humana, i per tant complexa. És com una decisió de compra, com un matrimoni, com un contracte. Què fa a una ciutat atractiva per al talent?

En aquest article es postula que, com tota decisió humana que implica un compromís entre dues parts, té un component emocional que anomenarem *City Magnetism*; i un component racional que anomenarem *City Profitability*.

Estudiarem les 140 ciutats més atraients segons estudis internacionals en un model compost per més de 100 indicadors. L'objectiu és doble: ajudar els ciu-

tadans talentosos a valorar les ciutats per a trobar les que millor els ajuden a desenvolupar el seu potencial; i ajudar els alcaldes i els poders públics municipals a generar les condicions que facen la seua ciutat el més atractiva possible. No és només qüestió de tecnologia o d'inversió: la identitat, l'urbanisme i la sostenibilitat social són determinants.

PARAULES CLAU: *City Attractiveness; SmartCities;* magnetisme; rendibilitat; contracte ciutadà, talent.

1. Introduction. City Attractiveness

Cities are the epicenter of human activity, the central nervous system of economic growth, social interaction and innovation. In a context of global stability (in terms of both economy and peace), cities are a hotbed for creativity and human development. We are living, indisputably, at the best moment in the history of mankind. Technology allows us to increasingly dominate our environment and enjoy a longer and more comfortable life, yet we must not idolize it.

The main challenge for modern cities is how to become *attractive* enough to both retain brilliant brains and draw in talented citizens and investors. This is fundamental for cities that want to play a role in the 4th Industrial Revolution, rather than simply languish in an aging social structure until they eventually disappear.

Western cities need additional human capital. Eastern and emerging countries are working to build up their own human capital (their young populations) and retain it as the cornerstone of their prosperity.

The main aim of this research is to understand what is being done and what is needed to make a city attractive for these talented citizens. There are many partial studies about employment, safety, happiness, treatment of expatriates, economy, cost of living, and so on, but none has attempted to give talented citizens an integrated vision of this new world of cities.

1.1 The Recipe for a City's Prosperity. Always Talent

"While [the city-state] comes into existence for the sake of life, it exists for the good life" (Aristotle, 596 BC). Aristotle's 'good life' is not about enjoying a life full of leisure and pleasure. Rather, he refers to the good life that is enjoyed by the 'good citizen', someone who makes the most of living in the polis by using their skills and rationality to lead a 'good life' and contribute to the polis. The polis, in turn, offers the necessary conditions to develop and exercise this good life.

All the most prosperous cities have undergone a profound social transformation due to past industrial revolutions. In all of them, a surge of new disruptive technology affecting the way we work, manufacture, trade, and develop human activity has attracted talented citizens. In addition, this new technology brings with it the creation of highly qualified and well-paid jobs, which then raises any city's attractiveness to new heights. With rampant new technology in place and talented people developing it, we only have to provide them with a place to connect: a city.

One of the main factors in making this happen is the exercise of tolerance, opening the door to anyone who demonstrates talent and a willingness to contribute to the city's development while respecting local laws and customs. Thus, we can say that the recipe for prosperity of most advanced cities has been determined by the rule of the 3 T's: technology, talent and tolerance (Florida, 2007), with technology being the lynchpin of each industrial revolution and its main enabler.

The 4th Industrial Revolution is all about artificial intelligence and robotics. Simplifying it into an equation, artificial intelligence is made up of massive data (from the Internet of things and social networks) + computing power (from large cloud datacenters) + algorithms (coded by talent in order to analyze, predict, visualize, obtain insight and real-time reactions, etc.). As yet, no city is leading this revolution, but none wants to be left behind, so competition for talented citizens is even more crucial.

1.2 Components of City Attractiveness

Like any human decision involving a compromise between two parties, the motivation to settle in a city due to its attractiveness responds to two main drivers: the emotional and the rational. (Tybout, Calder, 2010). The emotional component we call city magnetism ('I like it, I feel comfortable, it enriches me, it inspires me'); and the rational component, city profitability ('it's a good deal, it has good city services, high well-being, affordable cost of living, the conditions match my circumstances, preferences and lifestyle').

In the rational sphere there are no emotions, only purely functional and economic facts. But humans are emotional beings, so the emotional component is very relevant, and often holds sway.

2. City Magnetism

"I hope I go to Heaven, and when I do, I'm going to do what every San Franciscan does when he gets there. He looks around and says: It ain't bad, but it ain't San Francisco." (Caen, 1957)

This section explores the emotional component, the magnetism that attracts us to a specific city. Each city's unique appeal cannot easily be explained by someone who has never lived there, because it is about the emotions it conjures up, a kind of love affair with the city associated with the elements that define it and its essence; because, essentially, a city is the sum of collective past and present experiences (Marias, Ridruejo, Chueca, 1983) that make up its past identity and present dynamism. This emotional component is closely related to our tastes, preferences and feelings, and has to align perfectly with the city's aesthetic and ethical facets.

If we humanize the concept of cities, as a live ecosystem, clearly this emotional component would be the city's soul, while the rational part would be its physical features, its body. Cities are not just places and spaces where you can live; they are living entities with emotional components. They have a 'soul' (Alcalde, 2017), which can be felt, breathed, and appreciated in all cities, and makes them 'special'. It is part of their DNA, a series of emotional, intangible, and qualitative elements that make them stand out and distinguish

them from the rest. It has to do with the environment and, above all, with the people who live there and their lifestyle. This personification of the city is made patent in many famous literary works (Vanderbeke, 2007) such as Paris, a main character in Victor Hugo's *Notre Dame de Paris* (1831), Dublin in Joyce's *Dubliners* (1914) and *Ulysses* (1922), New York in Tardi and Legrand's novel *Roach Killer* (1984), London in Ackroyd's book *London: The Biography* (2000), and many more.

The opposite of a magnetic city is the 'generic' city (Koolhaas, 1997). The generic city is an empty city, without history, superficial, sedated, as though drugged and numb; a city where the street has died because it is not walked on and life happens vertically or in shacks, where the edges are marks of disruption (vertical–horizontal) leaving no opportunity for meeting up or creative density; a city of fractal repetition where everything that is not strictly useful or functional has no place; a city whose center features formally directed architecture and where wealth is concentrated, leaving a diffuse broad stain of low-income areas around it, accentuating inequality.

2.1 Components of City Magnetism

City magnetism can be assessed through certain preconditions and three main components that are driven by the permanent creation of living history.

Preconditions: language, landscape, religion. The predominant spoken language or the ability to be understood and talk to local residents is a major primary enabler/blocker. Landscape (seashore, mountains, or both) is also a strong personal preference. Finally our personal spiritual or religious dimension and beliefs need to align with or at least tolerate local religious cultures.

Historical methodology can offer us an accurate analysis of any hypothesis about a city because in itself, the city is a repository of history (Rossi, 1978). This will help us understand its foundations as a physical structure, as a synthesis of values, as a collective imagination, as if we could see past, present and future intertwined in the city. Cities are living history. They are in constant historical evolution, a reflection of the passage of time. The city must respect and balance the preservation and retention of its historical heritage with modern development (Pinto, 2009). A city without history is like a

person with no memory. People leave traces of their lives, experiences, efforts and work—in short, their history—in the city. These vestiges take the form of neighborhoods, monuments, constructions, spaces, parks, libraries, institutions, universities and so on. All this constitutes the city's collective legacy and enables its residents to understand where they come from and to prepare for the future.

City magnetism, therefore, is the result of human action, and covers three moments in time—past, present and future—in an ascending line during progress and prosperity, and a descending line during destruction and decline, following the human cycles in a perfect and infinite helix. We could say that "nothing human is alien" to the city (Terence, 163 BC).

'Magnet cities' (Haynes, 2014) are characterized by having strong leaders, a great ability to raise funds (fundraisers) and attract young wealth creators (talent), and undergoing constant physical renewal, thereby generating a new definable city identity.

- **City identity (past):** The past marks, defines and writes the city's identity in stone. It is like its DNA, the accumulation of collective contributions from its former inhabitants, all adding to that DNA, evolving, constantly recombining itself. It can evolve, albeit slowly. It can be transformed, but through a long, complex process.

  A city's identity is thus defined by its culture, customs, gastronomy, and type of society and government and other aspects that make up its essence and that have been defined throughout its history. Fixed determinants such as geographic location, climate and environment, green spaces, density or the risk of natural disasters also come into play. Additionally, a city has to nurture its reputation, its external or projected image, its brand, through its media impact, often by organizing cultural or sporting events.

  The permanent construction or destruction of a city by its citizens throughout history turns it into a historical archive (Chueca Goitia, 1968a), like a diary written each day since its foundation, with many chapters: happy and sad, glorious and painful, brilliantly splendid and decadent. Cities, more than simply linked to history or to the events

that have happened there, are history in themselves, as part of their essence. The city is a changing physical structure and it is a spirit (soul), making it a historical being (Chueca Goitia, 1968b). By establishing itself as a historical being, a two-way relationship is developed with history: history is made in the city, and this forces the city to become history. Universal history is urban history (Spengler, 2013). A city's reputation is built on long-established perceptions, but it can easily be ruined in a short time (The Reputation Institute, 2017).

City branding is based on three fundamental pillars: uniqueness, authenticity, and image (Riza, Donatli, Fasliet, 2012). The uniqueness of a city is determined by its culture, its geographic location and its history, and by what makes it special, its hallmarks. For new cities, creating a city brand takes at least 50 years because it has to build up its authenticity, a voice that speaks its truth and makes it a city we can trust, with clear civic and ethical standards. It can become an open, respectful and inclusive city, but without relativisms that may blur its identity; one which welcomes and integrates outsiders, without modifying its authenticity. And finally, a city needs its own image in the outside world, an advertising claim that is highly imageable (apparent, readable, visible) and that can evoke a strong mental picture in the external observer (Lynch, 1960). To approximate a model of measurable variables for a city's projected image, we turn to the seven specialist areas that UNESCO attributes to a creative city: crafts and folk art, design, film, gastronomy, literature, music and media arts (UNESCO Creative Cities, 2019). Here, we consider culture as the identity (past) expressed in the city (monuments, museums, events, etc.), not as a service or benefit.

City Dynamism (present): *"What is the City but the people?"* (Shakespeare, 1609) This aspect describes a city's psychology and ethics, how people make a living, and the kind of relationships among its inhabitants. The present represents city dynamism. If identity lays the foundations of magnetism, dynamism marks the actions. A city attracts me because of its identity. When I arrive it delights me, welcomes me, motivates me, encourages me, moves me, helps me, or it does just

the opposite, through its dynamism or lack thereof. The identity of a city is like a travel agent's brochure; dynamism is what I can do at the destination.

City dynamism is marked by creativity, competitiveness in business and in human activities, by how well it attracts investors, promotes entrepreneurship and generates employment, and also, through its human relationships, participation, accessibility for all, inclusion and integration. Dynamism can be seen in the happiness of its citizens, which grows in cities with ethical values, marked by parameters of equality and tolerance.

In the era of accelerated adoption of new technologies, speed is attractive and immobilism is dull. The main difference between our current model of society and previous ones is the speed of change. A city is a work of art in permanent production (Chueca Goitia, 1968c). It aims to balance construction and destruction, respecting history, traditions and identity, but at the same time adding dynamism: constant growth at a rate that allows its identity to be consolidated without wrecking it.

We divide city dynamism into four indicators. First, competitiveness: the elements that measure action, relationships, city creativity and motion, and that turn it into a social and economic hotbed creating complex interrelations of human development. Second, we measure how a city treats those who come to live there, how easy or difficult it is to integrate socially in the city. Third, we measure the city's ethical principles and social equity, inclusiveness and justice; and fourth, we evaluate equality.

- **City Strategy (future):** How can the future become a driver for a city's attractiveness? What do we expect from a city with a future? We expect it to have a solid plan (a SmartCity plan), which includes strategies to cope with city challenges.

  What makes that plan work? The rule of city prosperity, the 3 T's (technology, talent, tolerance). We need investment in innovation as a fundamental and permanent driver and, of course, talent (human capital), too.

Based on the above, we conclude that a model for city magnetism can be approached by studying the following main areas:

- Identity (past)

- Dynamism (present)

- Strategy (future)

Our research uses 67 indicators, selected from international bodies, previously published key studies and analyses, and our own work. Each of the 140 cities selected is also analyzed with data taken from city websites and their published SmartCity plans.

3. City Profitability

The world is a marketplace of cities where citizens, guided by their preferences at a given moment, decide to 'buy' a city and move there to live. They will therefore give more weight to employability when they leave university, or to social services when they reach retirement age. Their priorities will also vary according to their family dependents (children, older relatives, etc.).

City profitability is associated with the concept of 'is moving there a good deal?' This non-emotional part is more closely related to the pure merits of a city (economic and performance indicators).

City profitability has two components: a city performance component (functions, services, variable tangible and valuable elements that a city provides its citizens) and an economic component (citizens' ability to acquire things or the net purchasing power that a citizen will have in that city compared to others). It is, in short, a deal. City profitability (yield) is therefore made up of the combination of services the city offers and the cost of living in that city. We call this implicit, virtual agreement between the individual and their chosen city the *citizenship contract*.

3.1 Citizenship Contract

Since the time of the first cities, a series of norms of coexistence, an ethic, have been established. This is known as the social contract, in which individuals give up part of their individual freedom to the power of the city/state

in exchange for protection, opportunities and well-being. Hobbes and Locke studied and debated this concept extensively in the mid-17th century. Later, Rousseau, in On the social contract (Rousseau, 1762), completely reassessed the individual–state relationship in the years prior to the French revolution. Hobbes wondered how a serious, predictable, reliable and stable social order could emerge from an enormous mass of isolated individuals, among whom only a few skilled elites were able to coordinate through agreements. Hobbes' proposal, known as the social contract and "a mutual transferring of right" (Hobbes, 1651), states that order is produced by the laws and authority of an almighty ruler whose power lies in the use of coercion. Since then, the concept of the social contract has been associated with labor relations between citizens and companies, and workers' rights, all of them highly influenced by the social revolutions of the19th century.

The time has come to redefine our relationship with the city. Modern cities increasingly resemble Greek city-states. Despite the differences that social achievements have brought to our society since the times of Ancient Greece, cities want to and must redefine the terms of their agreement with their citizens: the *citizenship contract*. This is a virtual contract that we all implicitly hold with our city. It is the value proposition that our city offers both to us and to the potential talent that wants to settle in our city. It is the city's list of *gives* and *takes*, a billboard of what the city offers. It is a contract because the city offers us a series of services, benefits and development opportunities in competition with other cities in the world, in exchange for our contribution to the city's common project. This contribution has many facets, not only our taxes, but the generation of wealth, ideas, creativity, competitiveness, values, experience, co-creation, city development and drive to achieve its future goals. This is what today's millennials are now evaluating, and what talented local citizens weigh up before deciding to emigrate in search of better opportunities.

In summary, the citizenship contract sets out the *gives*: the long list of city services, all with different levels of performance and different opportunities to improve one's life, self-realization and well-being. On the other hand are the *takes*; when someone decides to live in that city, their salary will be in line with the salaries paid in that city (compared to the salary for the same job in

other cities), and they pay direct taxes and make social contributions. They then spend their final net income on the goods and services of their choice. At the moment of purchase, indirect taxes are levied and net purchasing power will depend on the city chosen. In other words, at the end of the month, one's choice of city will determine the quality and quantity of what one buys. That is the price one pays for living in that city. To this must be added the opportunity cost based on different cities' potential. So, the question is: Would it be a good deal for me to move to that city? This short evaluation of the proposed citizenship contract takes the outsider's view. Locals use the same evaluation but are better informed, comparing their own city's list of gives and takes with attractive propositions from another. A good deal matters, but as explained above, this decision is also emotional, and the magnetism component matters too.

3.2 Components of City Profitability

To define the citizenship contract, we must detail the series of benefits and services the city offers. This contract does not cover aesthetics, customs or emotional components, which we addressed earlier under city magnetism, but instead includes quantifiable rational benefits. The following list of ten performance indicators will be evaluated and used to group all the quantifiable services that a city can offer:

- *Digital government:* A democratic, efficient, transparent, participatory, digitalized city government.

- *Digital government as a service.*

- *Education:* Lifelong training. Quality business schools, professional training and development.

- *Employability:* The demand for talent.

- *Connectivity:* Internet infrastructure. Deployment of 4G or 5GHealthcare / social services.

- *Environmental sustainability:* Water and energy efficiency. Air quality. Carbon emissions reduction, carbon neutral plans. Circular city.

- *Culture-tourism:* Culture as a city service, not traditions or emotions, but valuable services.

- *Urban mobility:* Traffic, public transportation. Mobility as a service.

- *Urban planning:* Urbanism as a city service.

- *Safety:* Physical and virtual safety.

We must then weigh up these aspects against the cost of living in that city, or, in other words, the final net purchasing power (what I could buy with my final, after-tax income). The objective is therefore to compare what I get from the city with what I get from my professional activity. The higher the result, the more profitable it will be for me to move to live in that city.

The city profitability model comprises 33 indicators, selected from international bodies, published studies and analyses, and the author's own work.

4. City Attractiveness Model

Our objective is not to create yet another city ranking. Cities abhor rankings, unless they are at the top. As the concept of attractiveness is subjective, the most attractive city for me may not be as attractive for another person, depending on the scale of values we use to rate a city's performance indicators, aesthetic, personal preferences (mountains or seashore or both, languages spoken, religion, etc.), and personal situation (family dependents such as children, elderly people, etc.). The model we present allows for comparisons between cities in the same geo cluster, and obtains each city's 'attractiveness profile', which helps prioritize areas requiring improvement, and also provides a list of cities that best fit a particular citizen's values and preferences.[1] A total of 100 indicators is evaluated, but many of them include a large number of sub-indicators, raising the final number of dimensions analyzed to around 500. The indicators were selected using meta-analysis methodology: research all available indexes, then choose those best matching previous criteria while avoiding biases. The full list of indicators and components is provided in Figure 1.

1.　Readers can test the model using either of the following applications. Enter your city preferences /scale of valued performance to obtain your short list of best matching cities: AttractiveCities.

　　Android Store. https://play.google.com/store/apps/details?id=com.trackglobe.attractivecities

　　IOS Store. https://apps.apple.com/us/app/attractive-cities/id1487782051

Main	W	Area	W	Subarea	W	Class	W	Indicator	W	Subindicator	Entity
City Attractiveness	50	Magnetism		User Input / Identity	20	History. Culture		Age	70	Foundation	Wikipedia
								UNESCO	20	World Heritage	UNESCO
								Top Museums	10		Wikipedia
						Government Basics	10	Democracy Index	50		The Economist
								Safe City Index	50		The Economist
						Reputation	10	Reputation	100		Reputation Institute
						Space. Density	10	% Natural Space	50		World Cities Culture Forum
								Density (inh/km2)	50		Demographia
						Climate	15	Avg. Temperature Variation	33,3	Gradient	Climatemps
								Avg. Precipitation Variation	33,3	Gradient	Climatemps
								Avg. Daily Sunshine	33,3		Climatemps
						Geo Risk	5	Natural Disaster Risk	100		WorldRiskReport
						Geoeconomics	10	GDP Proximity	100	%WW	Own Work
						Gastronomy	5	Food Index ranking	50		OXFAM
								Michelin Guide	50	#Rest/Mich	Via Michelin
						Branding. External Image	15	Movies	25		Wikipedia
								Sports	50	Soccer Basketball Other Sports Events, Marathons	Football Database NBA Topendsports
								Main Events	25	Olympics Universal Expo Cultural Events	Olympics org Wikipedia Day Zero Project
				User Input / Dynamism	25	Competitiveness	25	Creativity Index	25		Martin Prosperity
								Global Competitivenes	25	Economic	World Economic Forum
								Cities In Motion	25		IESE
								Global Talent Competitiveness	25	Talent	INSEAD - GTCI
						Expatriate Social Experience	25	Life Style - Quality	33,3		HSBC Expat Explorer
								People Around	33,3		HSBC Expat Explorer
								Relationship - Social Life	33,3		HSBC Expat Explorer
						Ethics. Well-being	25	Happiness	40		Happiness Report
								World Giving Score	20		Charities Aid Foundation
								Civic Engagement	20		OECD. Better Life Index
								Work-Life Balance	20		OECD. Better Life Index
						Equality	25	GINI Index	25		WorldBank
								Gender	25	Female Graduates	INSEAD - GTCI
										Gender Development Gap	INSEAD - GTCI
										Leadership opportunities for women	INSEAD - GTCI
								Tolerance	25	Tolerance Minorities	INSEAD - GTCI
										Tolerance Immigrants	INSEAD - GTCI
								Poverty	25		IndexMundi
				User Input / Strategy	20	Human Capital	20	Population Age Average Per Country	20		Wikipedia
								Ranking Human Capital	80		IESE Cities Motion
						Smart Cities Plan	50	Plan Smart Cities	100	15 Areas	Own Work
						Innovation	30	R&D (% GDP)	25		INSEAD - GTCI
								Global Innovation Index	25		Cornell INSEAD WIPO
								Innovation Cities	50		2ThinkNow
	50	Profitability	50	Services	50	User Input / Digital Government		Online Service Index	25	eGovernment Survey	United Nations
								eParticipation Index	50	eGovernment Survey	United Nations
								Digitalization of Government	25	SmartCities Index	Easy Park Group
						User Input / Education. LifeLong Training		Quality of Management Schools	33,3		INSEAD - GTCI
								Prevalence of Training in firms	33,3		INSEAD - GTCI
								Employee Development	33,3		INSEAD - GTCI
						User Input / Employability		LinkedIn Talent Hiring Demand	50	Talent Insights	LinkedIN
								Employability	50		INSEAD - GTCI
						User Input / Connected City		4G LTE	20	SmartCities Index	Easy Park Group
								Internet Speed	20		INSEAD - GTCI
								Wifi Hotspots	20	SmartCities Index	Easy Park Group
								ICT Infraestructure	40		INSEAD - GTCI
						User Input / Health/Social Services		Social Expenditure (% GDP)	40		OECD
								Life Expectancy at age 60	20	WHO	United Nations
								Physicians (per 1k)	20		INSEAD - GTCI
								Public Health Expenditure (%GDP)	20		World Health Organization
						User Input / Environmental Sustainability		Sustainable City Index	50	Planet	Arcadis
								Environment	50		IESE Cities Motion
						User Input / Culture-Tourism		Culture Creative Jobs %	50		World Cities Culture Forum
								City Destination	50		Euromonitor International
						User Input / Urban Mobility		Smart Parking	10	SmartCities Index	Easy Park Group
								Car Sharing Services	10	SmartCities Index	Easy Park Group
								INRIX Traffic Congestion	40		INRIX
								Mobility and Transportation	40		IESE Cities Motion
						User Input / Urban Planning	100	Urban Planning			IESE Cities Motion
						User Input / Safety		Safe Cities Index	50		The Economist
								Personal Safety	50		INSEAD - GCTCI
				Cost Of Living. Net Purchase Power	50	Real Net Income	50	Avg Wages/month	100	SINGLE, No CHILD	UNECE, ILOSTAT
								Direct Tax + Social Contributions	100		OECD
								Indirect Tax	100		OECD
						Cost of Living	50	Purchase Power Parity Plus Rent (NY=1)	100		Numbeo
ADDITIONAL PRE-CONDITIONS:								Landscapes			Own Work
								Language			Wikipedia
								Religion			Wikipedia

Figure 1. City attractiveness indicators. Source: the author.

5. City Attractiveness Research and Findings

Our main objectives are:

- To help people choose the best city in order to realize their full potential, achieve their goals both as citizens and individuals, and make the greatest possible contribution to society.

- To advise politicians and city managers on how to create the best possible attractive city to draw in and retain talented citizens and build a more prosperous, innovative, fair, and human city.

5.1 City Attractiveness Research. Surveys

We study the world's top 140 most attractive cities according to international studies in a model comprising more than 100 indicators.

The city selection criteria used were the top cities in the Quality of Living Ranking (Mercer, 2018) and IESE's Cities in Motion (Berrone, Ricard, 2018), and cities scoring over 50 (no personal risk or severe living restrictions) in the Global Liveability Index (The Economist, 2018). The first two are high quality reports featuring a wealth of details and indicators, published by renowned, highly reputable sources, while the Liveability Index's minimal threshold is based on the notion that nobody wants to live in a city where their life will be threatened, or basic living conditions are severely restricted.

Surveys. To test the model and ensure the relevance of its components, we carried out two surveys at two SmartCity events. Surveying attendees at these events has two advantages: they are familiar with the concept of city performance, and they can be regarded as talented citizens.

- Survey of 4,500 participants at the Nordic Edge event in September 2018, held in Stavanger, Norway. This is the largest SmartCity event in the Nordic countries.

- Survey of 21,334 participants at the Smart City Expo World Congress, in November 2018, held in Barcelona, Spain. This is the largest international Smart Cities event. Due to the large response (n=1550), the data obtained will be used to fine-tune weights on magnetism and performance for global analytics.

The survey reliability was high. Our intention is not to develop a scientific analysis, but a human sciences study. Results will vary among individuals and life situations (age, dependents). The model obtained from the two surveys yielded a 95% level of confidence, <2% error.

Results. The average age of our respondents was 42; half the respondents had children (51%) and a quarter had older people in their care (25%). The sample was unbalanced in terms of gender (67% male), which is, however, consistent with a very male-driven technology market.

In the area of Magnetism, dynamism (present) predominated, followed by identity (past) and strategy (future). Identity and dynamism are significantly more important than strategy, confirming the trend that a city's future and potential are less valued than its present situation or the experience it gains from its identity. This result is easily associated with the southern European 'Latin' lifestyle, which prioritizes the present moment, looks fondly on the past and places less emphasis on the future. However, the differences are not so large as to consider strategy (future) as irrelevant, since this was a worldwide survey. Identity (past) is increasingly appreciated as people get older (particularly over the age of 50), and no differences were found in terms of gender: men and women coincide in their opinions on magnetism, which means they have essentially the same preferences regarding aesthetics, education and customs.

In the area of Profitability, three zones are clearly identified in city services (Figure 2): high (positions 1–4) scoring more than 8.30, intermediate (positions 5 and 6), and low (7–10). There are appreciable differences among age groups, but all these services fall within these general zones. All ten areas studied are relevant, scoring, on average, a minimum of 3.5 out of 5 in our original survey on their importance; we can therefore conclude that none is irrelevant and none has a much higher score than any of the others.

The predominant area is urban mobility, the city service that all respondents recognize as crucial to keeping a city alive. We therefore term this service the 'city's blood'. Because we define a city as a point in space and time where people meet each other, which is made possible by this service, this result comes as no surprise. Three services, health/social services, environmental sustainability, and safety follow in close succession with only small varia-

tions in scores. Safety is the most important factor for those over the age of 60. These three services are followed by education, and employability. It is somewhat surprising that these services are not rated higher, although these scores may be due to the composition of our sample: talented individuals who face no challenges in these aspects. However, less surprisingly, education rises to third position among younger respondents. Employability falls to the bottom position for those aged over 60, and therefore on the point of retiring. Urban planning, governance, connected city, and cultural services occupy the lowest positions. Although we expected the connected city factor to score higher, perhaps this lower position was due to misunderstanding of the concept and the disruptive implications that 5G will bring, or perhaps respondents considered this as an unchanging service like water or energy, and see little or no difference among cities. Governance and urban planning are not perceived as priority city services, but rather as "business as usual", as regular tasks that must be guaranteed, not as outstanding services perceived as new, innovative or disruptive.

CITY SERVICES - SCALE OF VALUES	Rank	1-10
Urban Mobility/ Transportation	1	10,00
Social services/Health	2	9,04
Env. Sustainability	3	8,95
Safety (Physical/Virtual)	4	8,37
Education	5	7,67
Employability	6	7,11
Urban Planning	7	4,78
Governance	8	2,85
Connected City	9	1,83
Cultural Services / Tourism	10	1,00

Figure 2. City Performance/Services Ranked by Smart City Expo Attendees. Source: the author.

Few differences were found by gender, mainly in the top-scoring factors; for instance, women ranked health/social services in first place, whereas men ranked environmental sustainability in second position. Those with children gave more consideration to environmental sustainability (perhaps conscious of the planet future generations will inherit); childless respondents presented average scores in this category. People with an elderly person in their care

ranked health/social services in first position, as expected; those without these responsibilities gave greater priority to environmental sustainability. Finally, and disappointingly, cultural services/tourism is the least appreciated city service. This is clearly a major pending issue for most of our cities: how to serve as a kind of permanent university for citizens by constantly offering, incentivizing and promoting cultural services. A more skilled society is always a more prosperous one, and vice versa.

When we apply these survey scores to our model, the top-ranking 15 services (Figure 3) are found in several cities in Australia, Switzerland, and the Nordic countries, as well as Berlin, Vienna, Amsterdam and Phoenix (Arizona, US). Extraordinary profitability with good wages and reasonable taxes push some of them into those top positions, while cities with excellent scores in magnetism (e.g. Stockholm, Vienna and Amsterdam) compete on other factors. The summary of results is balanced and unsurprising in terms of the most highly ranked cities (based on responses from the Smart City Expo attendees). Given the large number of responses and small margin of error, we can conclude that the model is fit for purpose, easy to understand, and correctly reflects the complex reality it describes.

City	Country	MAGNETISM	PROFITABILITY	ATTRACTIVENESS	ATTRACTIVENESS INDEX
Melbourne	Australia	9,23	9,01	83,16	1
Adelaide	Australia	8,34	9,96	83,09	2
Stockholm	Sweden	9,62	8,39	80,74	3
Zurich	Switzerland	8,32	9,46	78,71	4
Berlin	Germany	8,95	8,54	76,41	5
Bern	Switzerland	7,47	10,00	74,75	6
Sydney	Australia	9,41	7,88	74,19	7
Montreal	Canada	8,26	8,75	72,28	8
Oslo	Norway	9,02	7,97	71,86	9
Gothenburg	Sweden	8,04	8,73	70,23	10
Basel	Switzerland	7,34	9,30	68,32	11
Vienna	Austria	9,34	7,26	67,87	12
Canberra	Australia	7,20	9,25	66,57	13
Phoenix	United States	7,15	9,11	65,08	14
Amsterdam	Netherlands	9,61	6,67	64,07	15

Figure 3. Top15 Attractive Cities according to Smart City Expo attendees. Source: the author.

5.2 City Attractiveness Findings

The list of the top 140 cities worldwide can be grouped into four tiers:

Advanced: positions 1 to 70 can be characterized as advanced, western cities. The four Australian cities in the study achieve the highest scores and are placed in the top 13, with Melbourne in first position; in the same geographic zone, Wellington (New Zealand), appears in position 25. In Western Europe, Stockholm is ranked in third place; other Nordic cities also fared well. Central European cities such as Zurich (4), Vienna (12) or Amsterdam (15) reached high positions, with the UK capital, London, (21) close behind. Other notable European cities are placed as follows: Paris (47), Barcelona (40), Madrid (50), Dublin (51), Antwerp (61), Milan (69) and Rome (70). The highest-ranked city in North America is Montreal (8), with Toronto (20) also representing Canada near the top. The US list is led by Phoenix (14), followed by New York (27). The top-ranking Asian cities are Seoul (34), Tokyo (49), Singapore (60) and Hong Kong (73), reflecting fierce competition in this leading group. Climbing a few positions requires heavy investment, solid, well-executed plans and dedicated teams with a generous budget and some international influence. Southern European cities may drop down into the next, lower group if they do not accelerate their smart investments. Their magnetism and quality of life are very high, but their position in this top group is uncertain to last without a strong component of innovation. Italy in particular is at risk of falling down into the second tier.

Challengers: This tier covers cities from positions 70 to 90, which are progressing rapidly, competing to join the leading group, following the example of the Asian tigers. The Challengers include Tel-Aviv in Israel (71) and Istanbul (99) in the Middle East; Prague (76) in Eastern Europe; and Dubai (82) in the Emirates and the Gulf. Any of these cities could join the top-tier group if their recently gained prestige and advances continue to rise and consolidate.

Emerging: Positions 91–122. This tier comprises most of Latin America, led by Buenos Aires (91); then Mexico City (100); Montevideo (102); Rio de Janeiro and other cities in Brazil (103-112); and Bogotá (117) and Medellín (121) in Colombia. Much of China is represented in the positions between Shanghai (95) and Shenzhen (116). Finally, Russia is represented by Moscow (96). The Emerging cities tier closely matches the BRIC group of countries, but

without India, where intense urban transformation is still required (although an ambitious plan is in place to create 100 Smart Cities). The 'I' in BRIC could be substituted by Indonesia—although with obviously different dimensions—as Kuala Lumpur lies at position 107 in the list. The cities in this group have plans, recognize this global competition, and are making fast progress.

Starters: Positions 123–140. Among the Starters are Cape Town in South Africa (123); Delhi in India (124); Tunis (135) and Cairo (139) in north Africa; and Bangkok (122), Manila (131), and Hanoi (134) in southeast Asia. These cities are beginning to plan their strategies for the global competition for talent, although they continue to be burdened by unresolved basic social and economic issues.

AREA	n	MAGNETISM	PROFITABILITY	ATTRACTIVENESS AVERAGE
Africa	5	122	133	129
Asia-Pacific	17	69	64	66
Central & E Europe	17	90	96	92
China Ext	9	102	101	103
India	3	131	125	128
LatinAmerica	17	110	112	112
Middle East	10	108	84	98
North America	18	43	34	38
Western Europe	44	34	41	38
	140			

Figure 4. Average positions. Attractive Cities by geographic area. Source: the author.

Figure 4 shows the average position attained by each geographic area. Interestingly, competition between North America and Western Europe is very tight, as both attain the same average position (38). Western Europe enjoys more magnetism, history, culture, and human values, but it pays a high price in taxes to maintain its welfare policy programs, which cause its profitability to fall. The opposite case is seen in North America, which makes up for a lack of historical, cultural and human factors with strong economic and competitiveness traits in which North American cities rank high—and take the lead—in all categories, offering high profitability, high wages, moderate taxes and a reasonable cost of living.

We used the weights from the Smart City Expo survey to create the honors board displayed in Figure 5.

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Honor Ranking (TOP 1)

MAGNETISM — ATTRACTIVENESS		DYNAMISM		STRATEGY		PROFITABILITY			
IDENTITY	London / Melbourne	COMPETITIVENESS	New York City / Toronto	HUMAN CAPITAL	London / Copenhagen	PERFORMANCE	Amsterdam / Bern	COST OF LIVING. Net Purchase Power	Kuwait City
HISTORY / CULTURE	London / Rome	EXPATRIATE SOCIAL EXPERIENCE	Madrid	SMART CITY	Copenhagen	DIGITAL GOVERNMENT	Copenhagen	AVG MONTHLY SALARY	Zurich
GOVERNMENT BASICS	Oslo	ETHICS. WELL-BEING	Amsterdam	INNOVATION	New York City	EDUCATION. LIFELONG TRAINING	Zurich	INCOME AFTER DIRECT TAXES	Zurich
REPUTATION	Tokyo	EQUALITY	Helsinki			EMPLOYABILITY	San Francisco	REAL NET INCOME	Zurich
SPACE / DENSITY	Hong Kong					CONNECTED CITY	Singapore	COST OF LIVING. Net Purchase Power	Córdoba (ARG)
CLIMATE	Jerusalem					HEALTH / SOCIAL SERVICES	Paris		
GEORISK	Doha					ENVIRONMENTAL SUSTAINABILITY	Stockholm		
GEOECONOMICS	Prague					CULTURE-TOURISM	London		
GASTRONOMY	Bern					URBAN MOBILITY	Amsterdam		
BRANDING. EXT.IMAGE	London					URBAN PLANNING	Toronto		
						SAFETY	Tokyo		

Figure 5. Attractive Cities rankings: Honors Board by indicator, based on Smart City Expo survey inputs. Source: the author.

6. Conclusions

6.1 Balancing City Magnetism and City Profitability

The key to an attractive city lies in finding a balance between transforming its essence (its physical and virtual shape) while improving its benefits and services. The two aspects feed off each other. A city's essence determines how the services provided should improve, while the new services have an impact on transforming the city's essence. The transition to an information- and knowledge-based economy represents both a revolution, due to its acceleration and blistering speed, and a challenge as we try to balance the concept of the attractive and accessible city with social and environmental progress. (Van den Berg, Van de Meer, Oligaar, 2006)
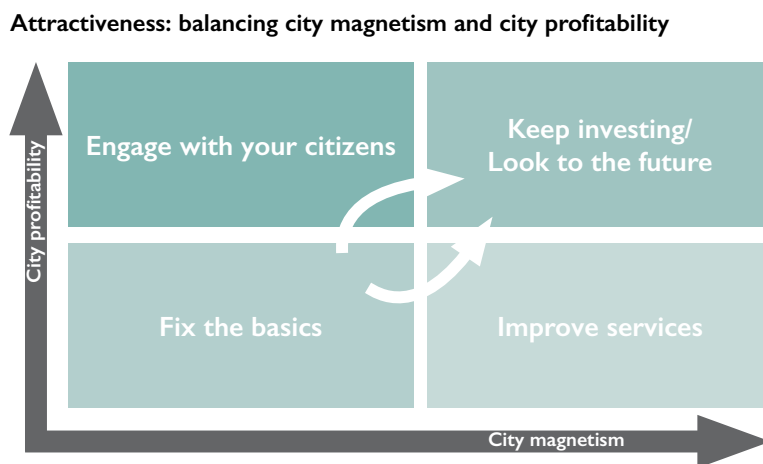
Attractiveness: balancing city magnetism and city profitability

Figure 6. Balancing City Magnetism and City Profitability. Source: the author.

The priority in this process is depicted in the top right of Figure 6: keep investing and look to the future. Cities with high magnetism and profitability are found in this group, mainly from the Advanced and Challengers tiers of the ranking. These cities constantly compete to maintain their position by making gradual but constant steps to improvement through heavy investment. The message for them is clear: keep investing, keep progressing.

The bottom left of the figure represents cities with low magnetism and low profitability. Our message to these Emerging and Starter cities is: 'fix the

basics'. The upper left of the figure represents cities with low magnetism but high profitability. On the whole, these are US and Japanese cities with low levels of magnetism, some very industrial, cold German cities, and Kuwait. They have the opportunity to improve, evolve and move into the first category if they invest to achieve social sustainability, improve their dynamism, cultivate their identity, and design an attractive future plan that engages their citizens. Finally, the lower right section of the figure represents cities with high magnetism but low profitability. These are cities with an extraordinary identity and a wealth of human values, but talent also demands opportunities for compensation and professional success. They must improve their provision of citizen services and the economic equation or they run the risk of falling behind in overall attractiveness. This appears to be the case for Italian and Portuguese cities with high magnetism, but poor profitability, and Hong Kong, with declining profitability during China's integration process.

6.2 Cities of the Future. What might they look like? The race for talent

Transforming city magnetism may take 15 years or more. This slow but constant evolution should not discourage cities from making the transformation, however. Before beginning to develop a strategy to transform city identity/ magnetism, cities must recognize their existing advantages, assets, values, identity, heritage and culture, and build and draw on them to begin to thrive. Certain factors cannot be changed, such as geographic location, landscape, climate, geo-natural risk, or certain customs. The main language, religion or ethics, on the other hand, can change, but very slowly. Nevertheless, we can change and have an impact on many other aspects, such as urban planning of large areas, cultural activities and locations, and promoting and projecting the city internationally through sporting, cultural and arts events. Politicians and managers need to identify their cities' sociocultural strengths and maximize them, and also discover their unattractive points and implement a plan resolve those areas. Cities should be understood as houses to sell, or rather to rent to talented citizens. This 'house' must include the elements talented individuals most appreciate, so they can live, achieve maximum well-being and develop their full potential, all with a reasonable income or cost of living (citizenship

contract). Magnetism is the house itself; profitability is the services available in the house combined with its rent price.

We must balance the preservation of our identity, history and culture with heavy investment in the future, in innovation and in the city's image. Care must be taken to protect the city's reputation, by avoiding populism and manipulation, which can damage its image. We must pay attention to secondary low-magnetism cities in countries that already have a strong, widely recognized capital city. They can transform and stand out globally if the right political decisions are made and all of their citizens contribute.

The transformation plan must be based on the long-term, consensual result of all-party debate. A combination of the three fundamental cornerstones—urbanism, humanism, and technology—is also essential, with urbanism leading and the others in a supportive and complementary role. Fundamental urban transformation can be tackled, as in the case of Bilbao (Spain) in the 1990s, where a devastated industrial city center was recast as an extremely attractive city with very high standards of well-being and quality of life (Haynes, 2014). Because urbanism is pivotal, cities should consider far-reaching urban action, develop a new neighborhood, transform and regenerate an area, build a new sports stadium, convert an industrial area, clean up a devastated natural site, rehabilitate a river walk, build a famous museum, design a huge park, and so on.

In parallel, investment should be made in the city's image or brand. Examples of this strategy include Barcelona's investment to become part of a Woody Allen film (Allen, 2008), or the impact of teams like Real Madrid in their home city, the Nobel prizes in Stockholm, the film festival in Nice-Cannes, or the Formula 1 race in Monaco. Many cities should seriously consider raising their international profile through similar attention-grabbing events. This investment in projected image and branding is an investment in human perception that must be complemented with a strong reputation and high scores in social and economic sustainability.

There is no correlation between city attractiveness and size, and neither is city attractiveness simply a question of wealth. As we have seen, US cities with the same GDP range from positions 20 to 60, indicating that a city's

capacity and willingness to invest heavily contributes greatly to its attractiveness.

And finally, the technological aspect, which ranges from investment in innovation to the focus on human capital and the proposal of an ambitious SmartCity plan. The SmartCity plan aims to improve citizen services (profitability), while also helping in strategy, reputation, and innovation (magnetism), and is therefore the most powerful tool we have to improve attractiveness. As mentioned above, little can be done about fixed elements such as geographic location, changes to identity are slow and always mid- to long-term projects, and improving economic conditions and net purchasing power is difficult to do quickly. Therefore, the obvious lever, with the most short-term results (even in a four-year legislature), is to invest heavily in a solid SmartCity plan. Cities that fail in this aspect have either basked complacently in the glory of leadership (and are now waking up, like the Swiss) or are losing ground by not taking advantage of their excellent magnetism to climb in the ranking (as in southern Europe). By contrast, cities with disadvantages in the magnetism category—short history as a country (US), climate (Nordic countries) or distance (Australia)—can offset their shortcomings with SmartCity plans to improve their attractiveness.

To end, I would like to share my dream of a new cultural revival brought about by an increasing appreciation of human artwork and the essential principles of human creativity: beauty, goodness, truth, because everything that makes us more human sets us apart from robots and artificial intelligence. Human destiny has long been about labor, but our human future points increasingly toward a creative value mission. To achieve this dream, we must unlock the full capacity of our creative mind. This is not just a question of technology or investment. Identity, urban planning and social sustainability are and will remain determining factors.

References

ALCALDE, I. (2017). «Ciudades con Alma en la Era Digital». *CITIZEN* HTTP://THECITIZEN.ES/CULTURA/CIUDADES-CON-ALMA-EN-LA-ERA-DIGITAL   retrieved by June 2019

ALLEN, W. (2008). *Vicky, Cristina, Barcelona*.

ARISTOTLE (596 BC). *Politics,* Book1, Section 1252b27-30

BERRONE, P. & RICART, J.E. (2018). «IESE. Cities in Motion Index 2018». *IESE*. https://media.iese.edu/research/pdfs/ST-0471-E.pdf retrieved by March 2018

CAEN, H. (1957). *Herb Caen's Guide to San Francisco*, Doubleday & Company, Inc., Garden City, New York

CHUECA GOITIA, F. (1968A). *Breve Historia del Urbanismo*. Alianza Editorial, Madrid p.9

CHUECA GOITIA, F. (1968B). p.250

CHUECA GOITIA, F. (1968C). p.33

FLORIDA, R. (2007). *The Flight of the Creative Class*. Collings. New York, 2007 p.37

HAYNES, C. (2014). «Magnet cities. Decline | Fightback | Victory», *KPMG*. pp. 4-32

HOBBES, T. (1651). *Leviathan,* XVIII

KOOLHAAS, R. (1997). *Acerca de la ciudad,* GG, Barcelona, 2014 from *The Generic City* Domus, núm. 791, Milano, pp. 8-12

LYNCH, K. (1960). *The Image of the City*. The MIT Press, Cambridge (MA, USA), pp.9-10

MARIAS, J., RIDRUEJO, D., CHUECA, F. (1983). *Ciudades*. Editorial Prensa Española, Toledo, p.231

MERCER (published by Feb 2018). «Quality of Living Mercer Index. 2018», https://mobilityexchange.mercer.com/Insights/quality-of-living-rankings retrieved by March 2018

NORDICEDGE (2018). HTTPS://WWW.NORDICEDGE.ORG/ retrieved by March 2018

PINTO, C.A. (2009). «Manifesto for a new urbanity. European Urban Charter II». *Council of Europe*. Strasbourg, p.49 https://rm.coe.int/urban-charter-ii-manifesto-for-a-new-urbanity-publication-a5-58-pages-/168095e1d5 retrieved by Aug 2019

Reputation Institute (2017). *World's most reputable cities.2017* https://insights.reputationinstitute.com/blog-ri/the-world-s-most-reputable-cities-explained retrieved by Oct 2018

Riza, M., Doratli, N. and M. Fasliet (2012). *City Branding and Identity* Procedia - Social and Behavioral Sciences vol 35, Elsevier B.V. Universiti Teknologi MARA, Malaysia, p.294

Rossi, A. (1978). *La arquitectura de la ciudad.* Ed. Gustavo Gili. Barcelona. pp.148-149

Rousseau, J-J. (1762). *On the social contract,* published in Amsterdam*,*

Shakespeare, W. (1609). *The tragedy of Coriolanus.* Act3 Scene1.

Smartcityexpo & Ww Congress (2018). http://www.smartcityexpo.com/en/home retrieved by March 2018

Spengler, O. (2013). *La decadencia de Occidente,* Editorial Austral, Barcelona, vol II, p.131

Terence (163 BC). *(Latin: Publius Terentius Afer) Heauton Timorumenos (The Self-Tormentor)* Act I, scene 1, line 25 (77).

The Economist (published by Feb2018). «Global Liveability Report» https://store.eiu.com/article.aspx?productid=455217630 and https://www.eiu.com/public/topical_report.aspx?campaignid=liveability2018 retrieved by March 2018

Tybout, A. & B. Calder (2010). *Kellogg on Marketing.* WILEY. New Jersey p.8

Unesco Creative Cities (2019). http://www.unesco.org/culture/culture-sector-knowledge-management-tools/09_Info%20Sheet_Creative%20Cities%20Network.pdf p.1, retrieved by Oct 2019

Van Den Berg, L.; J. Van De Meer; A. Oligaar (2006) *The attractive city: Catalyst of Sustainable Urban Development* Erasmus University, Rotterdam. San Sebastián : Eusko Ikaskuntza. p.489

Vanderbeke, D. (2007). *The city as a Superorganism. The Mighty Heart or The Desert in Disguise? The Metropolis Between Realism and the Fantastic.* Tübingen: Stauffenberg Verlag, pp.162-165