Curaçao: Smart Nation
From Smart city to Sage society

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ABSTRACT

Purpose – The purpose of this article is to describe the case of Curaçao striving to become a smart nation. Many in Curaçao talk about Smart Nation, Smart Island and the blue economy. In practice not much is noted, till now. Why? Methodology – For this study, a literature review was conducted and interviews were held with key figures. Several webinars were conducted and a conference was attended. The draft version of this article was discussed with key persons. Findings – In general Curaçao is not good at implementing policies. Some of the causes include the fragmentation of the society as well as its leadership; as a consequence of patronage and nepotism, incompetent managers and professionals are appointed in key positions. For Curaçao to become a smart island the mindset of the people must shift. Originality – The paper contributes to the understanding of obstacles in the development of small island states. Conclusions – The small scale of Caribbean SIDS is a disadvantage. There are not enough resources and smart people around. Small scale leads to an island mindset characterized by nepotism and patronage, among other issues, and this is an underutilization of the bright minds needed to create the smart city. The possibility of moving from developing country to developed country in one generation is theoretically possible (Lee, 2000). One condition sine qua non is education and the proper mindset. The other is zero tolerance for corruption.

Key words: Caribbean, Small Island Developing States, Curaçao, National Development Plan, Smart city, Smart Island, Blue economy

INTRODUCTION

During the last two elections in Curaçao (5 October 2016 and 28 April 2017), several political parties campaigned on the issue of developing the island into a Smart Island (SI) (PAR, 2017). Just prior to the elections the island government organized a conference on the topic of a Smart Nation. It was probably inspired by the case of Singapore's intelligent island (Curaçao Chronicle, 2017). The agreement the new government coalition signed states:

> *The government will develop and promote economic activities and investments in the downtown area based on the vision for Willemstad in the 21st century ("Smart City"); a city on the world heritage list of UNESCO but with a modern, futuristic, inclusive ecosystem for a vibrant entrepreneurial sector, access to state-of-the-art ICT technology and connectivity, hospitality and modern housing for tourist and locals (especially the younger generation), and a center for education, culture and recreation accessible to the whole population. This development must be the model of how to improve the quality of living in all the other neighborhoods of the island (Samenwerkende partijen, 2017).*

In other policy domains presented in the agreement there are also other statements referring to the smart city (SC) and smart island (SI). These will be discussed later in this paper. This is not totally new. The National Development Program of Curaçao (Government of Curaçao, 2015), the long-term vision for the island of Curaçao, already mentions the concept of a smart city.

The purpose of this article is to assess the efforts of the government of Curaçao to develop the SC. The questions are: What are the specific actions the government and other stakeholders have undertaken to move toward a smarter city? What is the level of ambition of the government? What is the current situation of the city? What is the gap between the level of ambition and the current state and what is being done diminish this gap?

The challenge is that Curaçao is famous for making plans and not implementing them (van der Maas, 2008; Goede, 2011 a). It is quite possible that there will be many documents and statements on SI or SC but not enough action. On the other hand, this would not be unique to the island. For example, research in the Netherlands has shown that this is also the case there (Wijs de et al., 2017).

METHODOLOGY

For this study, a literature review was conducted. After that a model was adopted. Interviews were held with key figures. A mini-webinar was held on 31 October 2017 to discuss the research. A second one was held 20 November 2017, and a third on 24 November 2017. A CINEX conference was held from 29 November 2017 till 1 December 2017.The draft version of the article was sent to key persons for their comments.

The primary data consisted of interviews of key figures like public representatives, managers of organizations and institutions, co-working spaces and specialists on innovation. Secondary data were obtained from the Bureau of Statistics, compilations of press articles and the online content of web pages. Altogether, the author has followed a data triangulation strategy to seek data validation based on the cross-verification of the analyzed data sources.

LITERATURE REVIEW

The term smart city was first coined in 1998 by Van Bastelaer (Anthopoulos, 2015), but the term smart city remains not clearly defined (VINCI Energies, 2015). In this article a smart city is defined as: "a well-defined geographical area, in which high technologies such as ICT, logistics, energy production, and so on, cooperate to create benefits for citizens in terms of wellbeing, inclusion and participation, environmental quality, intelligent development; it is governed by a well-defined pool of subjects, able to state the rules and policy for the city government and development" (Dameri, 2013, p. 2549).

Smart Island Initiative, a European organization of small islands, defines a "Smart Island as an insular territory that embarks on a climate resilient pathway, combining climate change mitigation and adaptation efforts, in order to create sustainable local economic development and a high quality of life for the local population by implementing smart and integrated solutions to the management of infrastructures, natural resources and the environment as a whole, supported by the use of ICT, all while promoting the use of innovative and socially inclusive governance and financing schemes" (Smart Island Initiative, 2017).
The emphases differ between SI and SC. SI puts more emphasis on climate change, while SC accentuates technology more. In this case of this article the words city and island are interchangeable; however, SI emphasizes the issue of climate change.

Other terms that have been used include cyberville, digital city, electronic communities, flexicity, information city, intelligent city, knowledge-based city, MESH city, telecity, teletopia, Ubiquitous city, wired city.[1]

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[1] *Smart city*. (2017). *En.wikipedia.org*. Retrieved 4 December 2017, from
https://en.wikipedia.org/wiki/Smart_city

Mahizhnan (1999) published an article titled "Smart cities: the Singapore case". Singapore wanted to be known as an Intelligent Island. He describes several stages that Singapore went through, beginning in the 1960s by focusing on industrialization and attracting multi-national corporations (MNC). The 1980s saw the rise of the service sector and the development of the vision of the Intelligent Island, focusing on IT and its advantages. The island invested huge sums in IT infrastructure. The educational system was always synchronized with the vision. Another key factor was the clean government policy—no corruption. Mahizhnan concludes that bandwidth was key, but also what he called bandwidth of the mind. ICT can be used for good and evil. The smart community should make smart choices; it is about attitude or mindset.

Clancey (2012) describes Singapore's move from Intelligent Island to biomedicine in the 1990s. "This essay tells a cultural and political history of biomedicine in Singapore. It takes as its starting point the 'Intelligent Island' discourse of the 1990s. It argues not for continuity but dissonance between the two projects, while embedding them in local as well as global cultural politics. Singapore's adaptation of biomedicine was more than an economic decision, and has had more than economic consequences" (Clancey, 2012).

Internet of Things
Wantmure and Dhanawad state in their article based on India that the Internet of Things is essential to the concept and the realization of the smart city (2016). The Internet of Things is a network of internet-connected objects able to collect and exchange data using embedded sensors (Meola, 2017).

Some authors state that Barcelona is the number one smart city. They also highlight the role of the Internet of Things (Wi-Fi, Smart Mobility, Smart Water Management System, Smart Lighting System, Smart Parking System), but there is much more to it. Cities are very attractive to life. The other side of the coin is that cities occupy 2% of the surface of the earth and produce about 70% of the pollution. These challenges also stimulate the development of the smart city to seek solutions (Madakam & Ramachandran, 2015; Capdevila & Zarlenga, 2015). The World Economic Forum (WEF) is also increasingly referring to the SC. WEF is a Swiss foundation with a mission statement of "commit[ment] to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas." WEF states that SCs will eventually be more important than nation states (Tavares, 2017). In an infographic (Figure 1), they illustrate why.
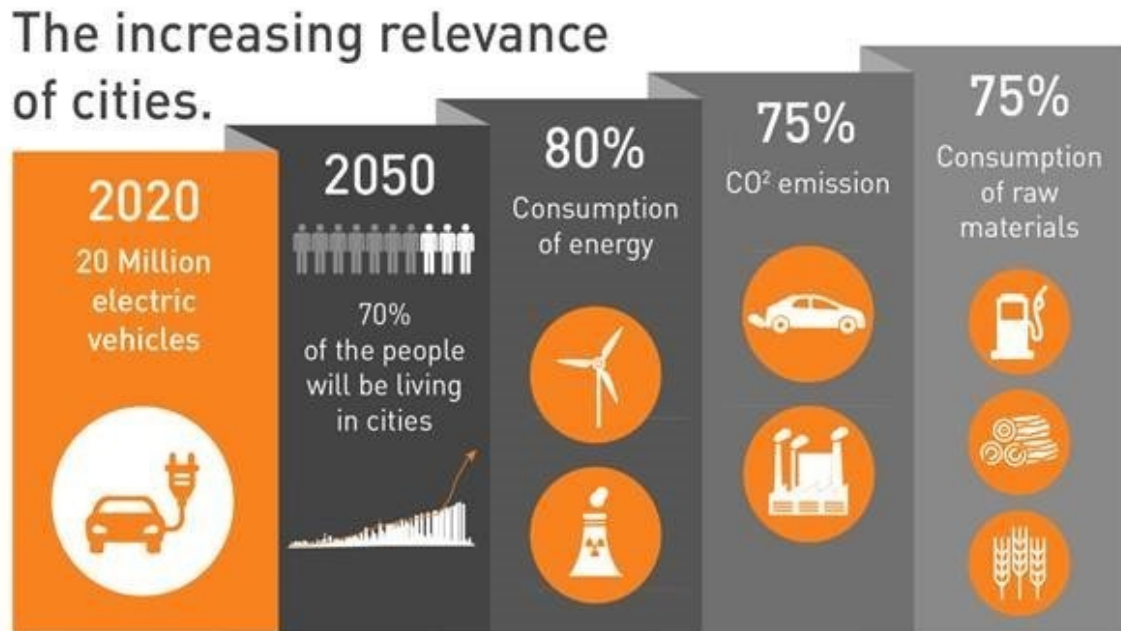
Figure 1: Visual Capitalist (Desjardins, 2017)

Technology might solve the problems created by cities. Visual Capitalist presents the following model to picture the SC (Figure 2).
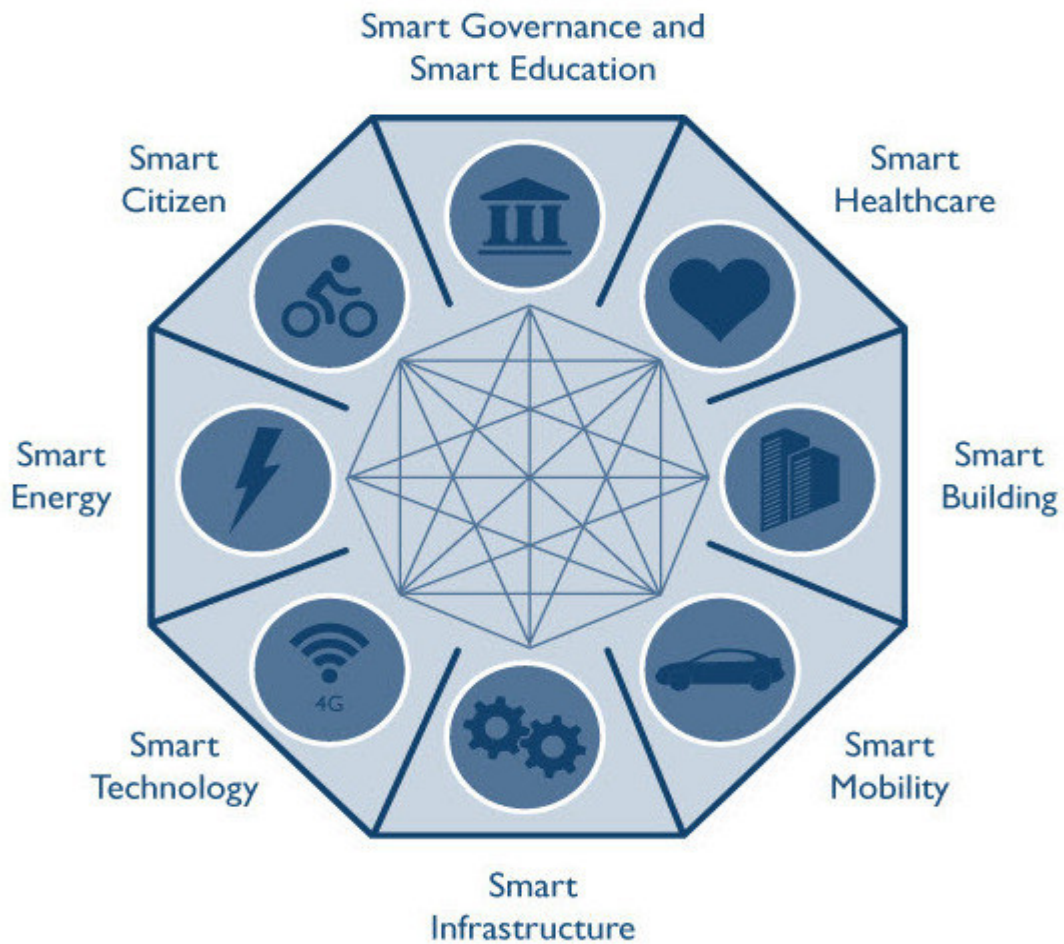

Figure 3: Visual Capitalist (Desjardins, 2017)

Zhou (2014) presents an interesting evolution line of the city in his article based on his experience at the 2010 Expo in Shanghai China with the theme 'better city, better life'.

Smart city	Economic crisis in 2008	The smart technological revolution
Information city	Economic crisis in 1987	The information technological revolution
Digital city	Economic crisis in 1929	The third technological revolution
Industrial city	Economic crisis in 1857	The second technological revolution

Figure 4: Evolution line (Zhou, 2014)

Zhou states that the smart city is not only about technology; it is the synergy between the physical city and the digital city. It is also about all-around innovation of urban space, economics, society, system and management (Zhou, 2014). Maggie Aderin Pocock's vision of the SC of 2116 includes people transporting themselves by drone and printing their food (Montaqim, 2016).

Li et al. (2017) also studied the development of SCs in China. They mention the role of IMB, which introduced the concept "Smart Planet" in 2009. In 2013 there were 193 approved pilot projects of SCs. They identified three actors and four layers, as illustrated in the next matrix (Figure 5).

Application layer Smart transportation, Smart Energy, E-Hospital			
Platform layer Internet of Things platform			
Network layer 4G			
Sensor layer Smartphone, Sensor			
	Government	**Society**	**Market**

Figure 5: Li et al. (2015).

Big data
The SC is also associated with

> *how cities are being instrumented with digital devices and infrastructure that produce 'big data'. Such data, smart city advocates argue, enables real-time analysis of city life, new modes of urban governance, and provides the raw material for envisioning and enacting more efficient, sustainable, competitive, productive, open and transparent cities. (Kitchin, 2014)*

In his inaugural speech as professor in the Netherlands, Meijer (2015) presented interesting concepts. He perceives smart cities as a datapolis. There are three variations of the datapolis: cockpit, hybrid or flock of birds (Figure 6). The two extremes are top-down and bottom-up approach (Capdevila & Zarlenga, 2015).

Cockpit	Hybrid datapolis	Flock of birds
Paternalistic	Coproduction	Participative society

Figure 6: Three variations of data polis (Meijer, 2015)

The datapolis has a nature, has promises and holds premises (Figure 7).

		Criticism
nature	A community that uses data for individual as well as collective objectives. Politics is influenced by data.	
promises	Effectiveness Innovation Legitimacy	
premises	The usage of data can be controlled. Everybody benefits from the datapolis. We can better the world thanks to the datapolis. We can solve problems by using data.	It is unpredictable. There are special interests. Technology frames the problems we identify. Not all problems are data related and data systems create problems of their own.

Figure 7: The datapolis has a nature, has promises and holds premises; criticisms of the premises (Meijer, 2015).

Meijer (2015) formulates the conditions for shaping the datapolis (Figure 8).

Not a city for people but a city of people	Citizens are directly involved in and co-owners of the datapolis.
A city for all people	There are no outcasts.
A city for all aspects of humanity	All citizens interact and grow personally.
A city for people of today and tomorrow	The datapolis is sustainable for the next generation.

Figure 8: Meijer (2015) formulates the conditions for shaping the datapolis.

Corporations, telecom companies and consultancy firms

IBM is one of the drivers of SCs (Scuotto, Ferraris, & Bresciani, 2016). Also, the major consultancy firms have started units focusing on helping cities to become smart (Deloitte Nederland, 2016). Multinational corporations are important drivers. They partner with cities and try out their technology. One example is the developments in Toronto by Google (Garfield, 2017).

Telecommunication service providers still benefit from their advantage in networks and

expand into other areas. The local government plays a key role in developing SCs, because they buy SC solutions from companies. In the future the construction of SCs will become market-oriented and the government will focus on standardization, law making, planning and comprehensive arrangements, and there will be more Public Private Partnerships (PPP) in developing SCs (Li et al., 2015).

Neirotti, De Marco, Cagliano, Mangano, and Scorrano (2014,) in their extensive literature review, refer to Mahizhnan's (1999) article on Singapore.

> *The results of this study have revealed that there is no unique global definition of SC, and that the current trends and evolution patterns of any individual SC depend to a great extent on the local context factors. City policy makers are therefore urged to try to understand these factors in order to shape appropriate strategies for their SCs. This study is in particular based on a framework that could also be applied to make a better selection of investment opportunities in periods of limited financial resources and to prioritize SC initiatives in the various domains and sub-domains of potential implementation, considering their ability to maximize the benefits associated with the specific competitive characteristics of an SC.*

Another such study by Lombardi, Giordano, Farouh and Yousef, (2012) reached the same conclusion. There is no consensus on the definition of smart city.

Models

The Centre of Regional Science (SRF) of Vienna University of Technology, in its research "Smart cities – Ranking of European medium sized cities", discovered that there are many fields of activity in relation to the term smart city. This led the group to develop this list of six characteristics:

1. Smart People
2. Smart Economy
3. Smart Governance
4. Smart Mobility
5. Smart Environment
6. Smart Living

Even within these key characteristics there is still a lack of uniformity within smart cities (Figure 9).
(Pilloni, 2017; Giffinger, Fertner, Kramar, Kalasek, Pichler-Milanovic, & Meijers, 2007).

SMART ECONOMY (Competitiveness)	SMART PEOPLE (Social and Human Capital)
• Innovative spirit • Entrepreneurship • Economic image & trademarks • Productivity • Flexibility of labor market • International embeddedness • Ability to transform	• Level of qualifications • Affinity to lifelong learning • Social and ethnic plurality • Flexibility • Creativity • Cosmopolitanism / Open-mindedness • Participation in public life
SMART GOVERNANCE (Participation)	**SMART MOBILITY (Transport and ICT)**
• Participation in decision-making • Public and social services • Transparent governance • Political strategies & perspectives	• Local accessibility • (Inter-)national accessibility • Availability of ICT-infrastructure • Sustainable, innovative and safe transport system
SMART ENVIRONMENT (Natural resources)	**SMART LIVING (Quality of life)**
• Attractivity of natural conditions • Pollution • Environmental protection • Sustainable resources	• Cultural facilities • Health conditions • Individual safety • Education facilities • Tourism-attractive • Social cohesion

Figure 9: Characteristics and factors of a smart city (Pilloni, 2017; Giffinger, Fertner, Kramar, Kalasek, Pichler-Milanovic, & Meijers, 2007).

Neirotti et al. (2014) developed a matrix of smart city domains and sub-domains. The domains coincide with those presented by Anthopoulos (2015).

Domain	Sub-domain	Description
Natural resources and energy	Smart grid	Electricity networks able to take into account the behaviors of all the connected users in order to efficiently deliver sustainable, economic, and secure electricity supplies. Smart grids should be self-healing and resilient to system anomalies.
	Public lighting	Illumination of public spaces with street lamps that offer different functions, such as air pollution control and Wi-Fi connectivity. Centralized management systems that directly communicate with the lampposts can allow reducing maintenance and operating costs, analyzing real-time information about weather conditions, and consequently regulating the intensity of light by means of LED technology.
	Green/ Renewable energies	Exploiting natural resources that are regenerative or inexhaustible, such as heat, water, and wind power.
	Waste management	
	Water management	Collecting, recycling, and disposing waste in ways that prevent the negative effects of an incorrect waste management on both people and the environment.
	Food and agriculture	Analyzing and managing the quantity and quality of water throughout the phases of the hydrological cycle and in particular when water is used for agricultural, municipal, and industrial purposes.
		Wireless sensor networks to manage crop cultivation and know the conditions in which plants are growing. By combining humidity, temperature, and light sensors the risk of frost can be reduced and possible plant diseases or watering requirements based on soil humidity can be detected.
Transport and mobility	City logistics	Improving logistics flows in cities by effectively integrating business needs with traffic conditions and geographical and environmental issues.
	Info-mobility	Distributing and using selected dynamic and multi-modal information, both pre-trip and, more importantly, on-trip, with the aim of improving traffic and transport efficiency as well as assuring a high quality travel experience.
	People mobility	Innovative and sustainable ways to provide the transport of people in cities, such as the development of public transport modes and vehicles based on environmental-friendly fuels and propulsion systems, supported by advanced technologies and proactive citizens' behaviors.
Building	Facility management	Cleaning, maintenance, property, leasing, technology, and operating modes associated with facilities in urban areas.
	Building services	Various systems existing in a building such as electric networks, elevators, fire safety, telecommunication, data processing, and water supply systems. Computer-based systems to control the electrical and mechanical equipment of a building.
	Housing quality	Aspects related to the quality of life in a residential building such as comfort, lighting, and Heating, Ventilation and Air Conditioning (HVAC). It includes all that concerns the level of satisfaction of people living in a house.
Living	Entertainment	Ways of stimulating tourism and providing information about entertainment events and proposals for free time and night life.
	Hospitality	Ability of a city to accommodate foreign students, tourists, and other non-resident people by offering appropriate solutions to their needs.
	Pollution control	Controlling emissions and effluents by using different kinds of devices. Stimulating decisions to improve the quality of air, water, and the environment in general.
	Public safety	Protecting citizens and their possessions through the active involvement of local public organizations, the police force, and the citizens themselves. Collecting and monitoring information for crime prevention.
	Healthcare	Prevention, diagnosis, and treatment of disease supported by ICT. Assuring efficient facilities and services in the healthcare system.
	Welfare and social inclusion	Improving the quality of life by stimulating social learning and participation, with particular reference to specific categories of citizens such as the elderly and disabled.
	Culture	Facilitating the diffusion of information about cultural activities and motivating people to be involved in them.
	Public spaces management	Care, maintenance, and active management of public spaces to improve the attractiveness of a city. Solutions to provide information about the main places to visit in a city.
Government	E-government	Digitizing the public administration by managing documents and procedures through ICT tools in order to optimize work and offer fast and new services to citizens.
	E-democracy	Using innovative ICT systems to support ballots.
	Procurement	Allowing the public sector to improve procurement procedures and the associated contract management, with the purpose of assuring best value for money without decreasing quality.
	Transparency	Enabling every citizen to access official documents in a simple way and to take part in the decision processes of a municipality. Decreasing the possibility of authorities abusing the system for their own interests or

		hiding relevant information.
Economy and people	Innovation and entrepreneurship	Measures to foster the innovation systems and entrepreneurship in the urban ecosystem (e.g., presence of local incubators).
	Culture and heritage management	The use of ICT systems (e.g., augmented reality technologies) for delivering new customer experience in enjoying the city's cultural heritage. Use of asset management information systems to handle the maintenance of historical buildings.
	Digital education	Extensive use of modern ICT tools (e.g., interactive whiteboards, e-learning systems) in public schools.
	Human capital management	Policies to improve human capital investments and attract and retain new talents, avoiding human capital flight (brain drain).

Size matters

Some research highlights the triple-helix model in the pursuit of becoming a SC. It is about synergy between the intellectual capital of universities, the wealth creation of industries, and the democratic government of civil society (Leydesdorff & Deakin, 2011).

Cocchia (2014) also published a systemic literature review, concluding that there was still no consensus regarding the definitions of digital city and smart city and that the concepts emerged around 2000 and are related to the diffusion of the Internet. A third conclusion was that the larger city, the stronger the drive toward the smart city because there are bigger challenges but also more knowledge available. These findings concur with the theory and research findings on the creative class and creative city by Florida (Florida, 2002).

Wijs de, Witte, and Klerk de (2017) did an empirical study in the Netherlands. They referred to the Neiroti et al.'s (2014) article and concluded that especially smaller cities had not heard of the concept of SC. They concluded that the size of the city matters: The bigger the city, the more people with information are around. The bigger cities have ambitions regarding SC but lag behind in realizing the concept.

All the studies indicated that there is a need for more empirical studies regarding cities implementing the SC concept.

Critique

There are also critiques of the concept of SC (Colding & Barthel, 2017). The question is for whom is the SC? There should be more attention on the health of the city dweller. There should be more attention on resilience and cyber security. Other issues are the autonomy of urban governance, personal integrity, and the effect on the resilience of the infrastructure of basic needs, food, energy and water. Another critique is that the SC changes the relationship between humans and nature. How should children be taught their relationship with nature and how will the SC affect pro-environmental behavior as a whole? Kitchin in particular offered

> *a critical reflection on the implications of big data and smart urbanism, examining five emerging concerns: the politics of big urban data, technocratic governance and city development, corporatization of city governance and technological lock-ins, buggy, brittle and hackable cities, and the panoptic city. (Kitchin, 2014)*

Case of Smart Island Curaçao

In this section the island is briefly described and the ambitions and efforts regarding becoming a SC are presented. Curaçao is a Dutch Caribbean island of 444 km2, with a population of approximately 160,000. It is approximately 70 miles of the coast Venezuela. The island from 10 October 2010 is an autonomous country within the Kingdom of the Netherlands, consisting of the Netherlands, Curaçao, Aruba and Sint Maarten. The three islands, Bonaire, Sint Eustatius and Saba, together form a special municipality of the Netherlands.

Curaçao has an OCT status related to the European Union. The overseas countries and territories (OCT) are dependent territories that have a special relationship with one of the member states of the EU and have been explicitly invited by the EU treaty to join the EU-OCT Association (OCTA).

In the context of the United Nations Curaçao has a SIDS status.

> *Small Island Developing States (SIDS) are maritime countries that tend to share similar sustainable development challenges, including small but growing populations, limited resources, remoteness, susceptibility to natural disasters, vulnerability to external shocks, excessive dependence on international trade, and fragile environments. Their growth and development is also held back by high communication, energy and transportation costs, irregular international transport volumes, disproportionately expensive public administration and infrastructure due to their small size, and little to no opportunity to create economies of scale[2]*

Curaçao does not embrace either of these two statuses. It is barely aware of them. Both these statuses are relevant to forward the SC agenda. OCT status gives the island the possibility of three axes of cooperation:
- the competitiveness of OCTs in key areas such as education and training, innovation, the small and medium-sized enterprises sector, and good political and economic governance;
- reducing their vulnerability to economic shocks, environmental issues, energy dependency and natural disasters;
- regional integration through increasing intra-regional economic exchanges, carrying out cooperation projects (specifically for cross-border environmental protection) and increasing cultural exchanges.[3,4]

Maybe the terrible experience of the Caribbean with hurricanes Harvey, Irma and Maria in 2017, will make all islands in the Caribbean realize that they are indeed SIDS.[5] Late September 2017 via social media and the influencers in the media it was demanded that the climate change issue to be put on the political and policy agenda. This has not been realized.

Curaçao is coping with a period of over ten years of almost no economic growth. At the end of October 2017 the Central Bank reported via the media that the economy has contracted almost one percent in the first quarter of the year ("Ekonomia di Kòrsou a kontraé durante promé kuartal di 2017," 2017). In 2019 the contract with Venezuelan state-owned company (SOE) PDVSA will expire, the grandfather clauses of the tax treaty with the United States will end and the island will have to start carrying its national debts again. After 2010 the Netherlands carried the debt as part of the new constitutional arrangement. To mitigate the consequences

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[2] Small Island Developing States. (2017). En.wikipedia.org. Retrieved 19 September 2017, from https://en.wikipedia.org/wiki/Small_Island_Developing_States
[3] *EUR-Lex - dv0010 - EN - EUR-Lex*. (2017).*Eur-lex.europa.eu*. Retrieved 20 September 2017, from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:dv0010
[4] (2017). *Eur-lex.europa.eu*. Retrieved 21 September 2017, from http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX%3A32013D0755&from=EN
[5] (2017). *Economist.com*. Retrieved 21 September 2017, from https://www.economist.com/news/americas/21729007-region-must-adapt-climate-change-not-simply-rebuild-how-hurricane-irma-will-change

the government is negotiating with the Chinese state-owned company Guangdong Zhenrong Energy (GZE) and alternative corporations to step in after the Venezuelans leave. From the end of 2017 this deal still looked uncertain. Venezuela, the third biggest trade partner of Curaçao, headed by president Maduro, is coping with a crisis of its own. In January 2018 Venezuela closed the border with the ABC islands for an indefinite period of time.

In October 2017 many companies, including state-owned companies, started to lay off employees. These took place in airlines, telecom companies, banks and small and medium enterprises. It was like suddenly the technological changes and disruptive technology impacted all sectors.

In September 2017 unemployment rose to 14.1%, an increase of 2% compared to 2014. "The youth unemployment rate (15-24 year old) has decreased 4 points, from 36.8 in 2016 to 32.8 in 2017. The biggest increase is in the category of 25-34 year olds. The unemployment in this group has increased 4.1 percentage points, from 14.7 (2016) to 18.8 in 2017."[6]
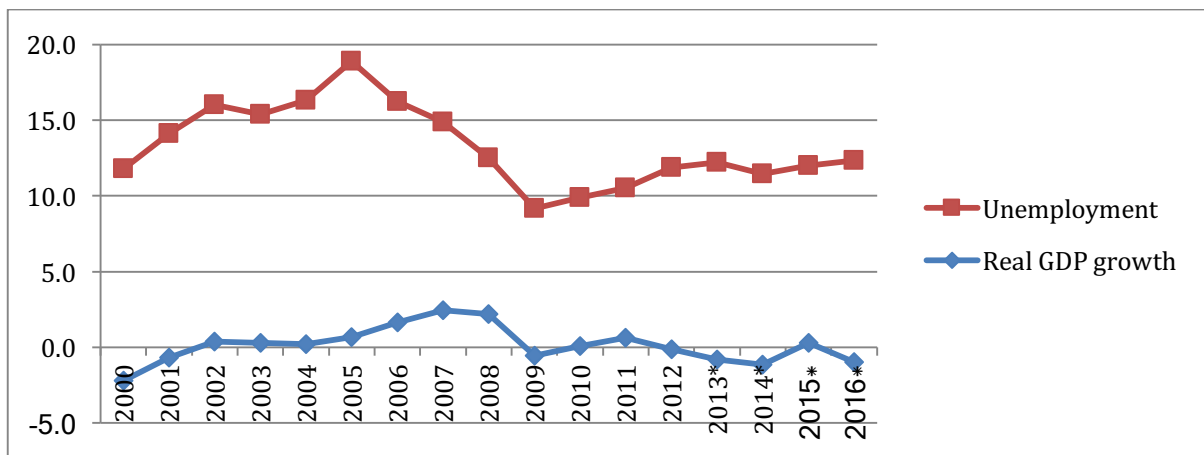

Figure 11: Data provided by CBS. Unemployment rate of 2010 and 2012 are estimates. CBS had no data for these two years on this variable.

In the next paragraph the case of Smart Island Curaçao will be described applying the matrix developed by Neirotti et al. (2014) as a framework.

The ambition level of the government of Curaçao
In this section the ambition level of Curaçao is assessed by analyzing the government agreement that is the foundation of the program of the government formed for the period of 2017 – 2021 (PAR, MAN, & PIN, 2017).

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[6] *Results of the Labour Force Survey for 2017 - Press Releases 2017 - Media - Website - CBS*. (2017). *Cbs.cw*. Retrieved 8 December 2017, from http://www.cbs.cw/website/press-releases-2017_3241/item/results-of-the-labour-force-survey-for-2017_1888.html

Domain	Sub-domain	Curaçao government agreement / ambition
Natural resources and energy	Smart grid Public lighting Green/ Renewable energies Waste management Water management Food and agriculture	To adjust the energy policy to include recommendations with emphasis on sustainability, including the possible use of liquid natural gas when possible and waste to energy technology. To continue to develop and implement a water management policy and maintain the already existing infrastructure to capture the rainwater and use it for agriculture, fishery and husbandry. The state-owned waste management company should start a process to categorize the waste and so encourage recycling in accordance to the principles of blue economy. Also study and implement waste to energy projects. To materialize a vision entailing an ecologically balanced community endeavoring to produce as much as possible its own food, within a mixed economy, consisting of industry, service and hospitality. A technologically advanced community, in which the neighborhoods and corporatism fulfill an important role.
Transport and mobility	City logistics Info-mobility People mobility	To reform the public transport system to increase the level of mobility of the population. To this aim a study must be conducted to determine the best option. The state owned bus company and the whole of individual privately owned buses must be integrated in a system that connects all neighborhoods on the island. To that aim the government will encourage the creation of a corporate group of buses with the purpose of lowering their cost of doing business. The government will seek the assistance of experts to renew the public transportation law.
Building	Facility management Building services Housing quality	Housing is a problem. Many citizens do not have a house. Another issue is the illegal construction of houses. The government will evaluate the functioning of the foundation for public housing and change the system of priority setting on the waiting list. The government will instruct the foundation to develop several alternative model houses biased on the principles of sustainability, with a focus on energy, water and use of recycled material. This should be evidence based. To that end the university will be involved and to that end the government departments involved will be fortified.
Living	Entertainment Hospitality Pollution control Public safety Healthcare Welfare and social inclusion Culture Public spaces management	The objective is to create a more inclusive society. To that end all platforms will engage in a dialogue.
Government	E-government E-democracy Procurement Transparency	The processes supporting the most solicited public services and products will be transformed to e-government services and products. All government processes will be revised to be made more customer-friendly. To that end and for the sake of transparency quality management and certification will be implemented. The objective of the government is to restore the trust of the public in politics and government by operating transparently,,with integrity and good governance. We must join forces to restore stability and tranquility to transform Curaçao in a nation run according to the principles of good governance, trust, progress, innovation and progress.
Economy and people	Innovation and entrepreneurship Culture and heritage management Digital education Human capital management	The government strives to fortify commercial ties with countries in the Caribbean and Latin American region via economic diplomacy to amplify the opportunities for cooperation between governments, economic sectors, institutions of education and enterprises and so stimulate entrepreneurship, innovation, exports and the earning of foreign exchange.

The ambitions of Curaçao are further detailed in the government program for the period 2017 – 2021 (Gobièrnu di Kòrsou, 2017a). The program follows the Results-Based Management or Policy (RBM) methodology and totally embraces the Sustainable Development Goals 2030 as formulated by the United Nations. RBM uses the concepts of theme, impact, outcome, and activities.

One of the priorities of the government is the reduction of poverty. According to the program 25.1% of the households have an income below the poverty line.[7] The strategic goals are inclusive society, active citizenship, well-developed population, and sustainable development. The central themes are education and development, economy and employment, healthcare and environment, family, community and safety and good governance. After this the program is detailed for all the nine ministries. It appears the government is letting the UN dictate local policy. On the other hand the government totally ignores its Small Island Development State (SIDS) status and the related climate change issues.

This is ironic because this SIDS status is also created by the UN and specifically addresses the issue of the impact of climate change. This has become painfully and extremely relevant after hurricanes Harvey, Irma and Maria hit the Caribbean islands in 2017, especially Sint Maarten, who is a partner within the Kingdom of the Netherlands. The ideas of smart city and blue economy have been reduced to an "outcome" of the "impact", "sustainable economic growth" of the "theme" "Economy and employment".

A few days after the presentation of the program, on 12 September 2017, the governor addressed the parliament at the opening of the opening of the new parliamentary year. During that address the government addressed the issue of smart city, e-government, blue economy, creative economy, small business, housing and inclusiveness (Gouverneur van Curaçao, 2017). This was probably a reaction to the recent feedback given by the citizens on the government program via social media.

The island was always ambitious when putting ideas onto paper. For example, in 2001 the Mirant Company published "Curaçao – Island of Education and Sophistication". This plan was never executed because it was distrusted as a plan of an energy company wanting to sell more energy.

In 2010 the concept of a knowledge zone in Curaçao was presented by the president of the university (Goede, Neuwirth, & Louisa, 2012; Somers, 2012). This was a vision to create a smart city around the university. This project was abolished after the change of government.

Current state of Curaçao
What is the current situation in Curaçao concerning the process of becoming a smart island? The matrix of smart city domains and sub-domains developed by Neirotti et al. (2014) is applied.

Natural resources and energy
In the area of natural resources and energy, for years Curaçao has been talking about a smart grid and meters[8] but there was no bold move to implement this. The public lighting is good although some neighborhoods are still in the dark. In general maintenance is an issue. A few years a pilot project of streetlights powered by the sun was undertaken. Within a limited amount of time, all the lights were vandalized and never replaced.[9]

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[7] The Bureau of Statistics established the poverty line in 2017. For a family composed of one adult and two children it is 1,966 gulden ($1,109). According to this line 51,402 persons live in poverty. This is 25.1 percent of the population.

[8] *Caribbean's Aqualectra seeks electricity and water AMI system*. (2017). *Metering.com*. Retrieved 19 December 2017, from https://www.metering.com/caribbeans-aqualectra-seeks-electricity-and-water-ami-system/

[9] *More streetlights in Curaçao*. (2014). *Curaçao Chronicle*. Retrieved 19 December 2017, from http://curacaochronicle.com/politics/more-streetlights-in-curacao/

In the area of renewable energies Curaçao has made significant progress. With 30 % renewable energy it is one of the greenest islands in the Caribbean (Lillian, 2017). There are investors ready to invest in waste to energy projects but the government is reacting slowly.[10] Waste management was last innovated twenty-five years ago when the government agency Selikor[11] was transformed to a state-owned company.

Water management has deteriorated over the years. Too much rainwater goes directly to sea and is a burden to the coral reef. This problem has worsened due to the periods of massive rainfall after periods of extreme drought due to climate change.[12] Food and agriculture have always been a small economic sector, less than 1% of GDP. Almost all food is imported. Campaigns and programs to produce food locally till now had no lasting effect.[13]

Transport and mobility
The downtown area has been a UNESCO site for twenty years in 2017.[14] The city is not in good shape, despite the comeback of some areas like Scharloo and Pietermaai (Goede & Louisa, 2012). Many premises are empty due to the competition of other locations like the mall Sambil,[15] e-commerce and high rent. There are a lot of plans and some investments to turn this development around.

Info-mobility is non-existent. During rush hours traffic is congested. A project to install cameras in strategic places to fight crime is in phase one of implementation.[16] The first results are very promising. At the end of October 2017 the Minister of Finance announced that the new car license plate would carry a chip for GPS tracking. This is to reduce car theft. It is unclear if the two systems are integrated, and the continuation of the last project is uncertain. Traffic and public transportation are bottlenecks in Curaçao. Several plans were developed but never implemented due to the political leverage of the privately held buses.[17] The state-owned bus company is struggling. Late in 2017 the bus company started to implement changes to become smart and become an alternative to cars. As a consequence public transportation services are poor and expensive, and so is owning a car. Over the last couple of years people started importing right-hand drive (RHD) vehicles that are considerably less expensive, although the island traffic is right-hand driving. In 2017 almost ten percent of the cars are RHD

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[10] *Aqualectra and Selikor sign agreement for waste treatment - Aqualectra*. (2017). *Aqualectra.com*. Retrieved 19 December 2017, from http://www.aqualectra.com/en/news/aqualectra-corporate-news/aqualectra-and-selikor-sign-agreement-for-waste-treatment/
[11] http://www.selikor.com/
[12] *Caribbean Island Curacao is changing into desert - BetterWorldSolutions - The Netherlands*. (2015). *BetterWorldSolutions - The Netherlands*. Retrieved 20 December 2017, from https://www.betterworldsolutions.eu/caribbean-island-curacao-is-changing-into-desert/
[13] *Minister of Economic Development to promote agricultural sector*. (2016). *Curaçao Chronicle*. Retrieved 20 December 2017, from http://curacaochronicle.com/economy/minister-of-economic-development-to-promote-agricultural-sector/
[14] *20 years of world heritage*. (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from http://curacaochronicle.com/local/20-years-of-world-heritage/
[15] www.sambil.cw
[16] *Installation CCTV cameras by Inspur*. (2016). *Curaçao Chronicle*. Retrieved 20 December 2017, from http://curacaochronicle.com/judicial/installation-cctv-cameras-by-inspur/
[17] *Public transport routes are still the same since 1970*. (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from http://curacaochronicle.com/local/public-transport-routes-are-still-the-same-since-1970/

and are brought in at a rate of two hundred a month. Because of the significant number of these cars it has become a difficult political issue to handle.[18]

Building

Facility management for years was done by the involvement of the Curaçao Downtown Management Organization (DMO)[19] and the Sosiedat Komeriantenan Otrobanda (SKO). The result is poor but would have been worse without their involvement. Many premises are empty and in decay and some parts of the area are poorly lighted and grubby.[20] There are some good elements, like free Wi-Fi in the downtown area, but the quality should be improved. The involvement of artists, with their creativity, is also positive.[21] There are no smart buildings, although many buildings have Wi-Fi and some have solar panels.

For years the government foundation responsible for public housing was not able to build more than a few houses per year. There are approximately 6,200 citizens waiting for a house. There are big plans to build 4,000 houses but till now nothing significant has happened. It is unclear if these plans are based on the concept of smart housing.[22]

At the end of 2017 the Bureau of Statistics reports that one third of the houses have no fixed connection to the Internet and 64.5% have access to the Internet. In 2011 53.1% had access. The relatively high price seems to be an obstacle to higher penetration rate ("Een derde nog zonder internet thuis," 2017).

Living

Tourism is slowly increasing, although Curaçao was not able to hold on the world-renowned Curaçao North Sea Jazz Festival.[23] Luckily the festival will continue in 2018. At the end of 2017 Curaçao opened a new mega pier and was breaking records in the area of cruise tourism, with 650,000 arrivals.[24]

Hospitality: In Pietermaai, a downtown area consisting of several blocks of old houses is being reconstructed and now provides housing for mainly Dutch internship students. This brought new life to the town, especially at night. For years the Curaçao Tourist Board (CTB)[25] has tried to implement the strategy of getting tourists involved in local cultural activities. Progress is slow. Curaçao lost its national theater. The new government announced plans to build a new national theater downtown. In October 2017 Curaçao started the project to become the first Caribbean island to be present on the Google Street View platform ("Curaçao verkennen met Google Street View," 2017).

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[18] *Minister deliberating import ban RHD cars*. (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from http://curacaochronicle.com/politics/minister-deliberating-import-ban-rhd-cars/
[19] http://www.downtownwillemstad.com/about-dmo.php
[20] *Find solution for empty buildings in downtown Punda*. (2017). *Curaçao Chronicle*. Retrieved 20 December 2017, from http://curacaochronicle.com/economy/find-solution-for-empty-buildings-in-downtown-punda/
[21] *Art Walk Otrobanda*. (2017). *Curaçao*. Retrieved 20 December 2017, from https://www.curacao.com/en/dont-miss/2017/6/25/art-walk-otrobanda-170625/
[22] *Government ready to construct 62 houses at Wechi*. (2016). *Curaçao Chronicle*. Retrieved 20 December 2017, from http://curacaochronicle.com/main/government-ready-to-construct-62-houses-at-wechi/
[23] http://www.Curaçao northseajazz.com/en/
[24] *Recordjaar cruisetoerisme*. (2017). *Antilliaans Dagblad*. Retrieved 20 December 2017, from http://antilliaansdagblad.com/nieuws-menu/16663-recordjaar-cruisetoerisme?platform=hootsuite
[25] https://www.Curaçao .com/en/

The construction of several new hotels was announced by the government and the investors.[26]

Pollution control has always been an issue.[27] It briefly appeared that the new minister for public health would enforce the law regarding the pollution of the refinery. Awareness on the issue of pollution has risen. The closing down of the refinery is publicly debated and a Green Town to replace it is an alternative.[28]

A project installing Chinese-produced police cameras is being implemented to improve public safety.

Healthcare: The building of a new national hospital has become a difficult project but is expected to be finished with some delay in 2018, surpassing the original budget considerably.[29] The cost of healthcare is one of the highest on the budget, but there are many concerns about the quality.

Starting in 2017 the government began inspecting and enforcing the law in the food industry. This brought to light many cases where business puts the health of the consumer at risk.

Welfare and social inclusion: Although Curaçao might score better than the region, 60% of the population has an income below the income needed to life a decent life. In 2011 25% of the households lived below the poverty level of $ 14,000 per year (de Bruijn, year?). In August 2017 45% percent of the population lived under the poverty line, according to another definition ("Segun sifra ofisial espantoso: 45% di kurasoleño ta biba bou di liña di probresa," 2017). In August 2017 the government published its urgency plan to alleviate poverty and exclusion in five pilot neighborhoods (Gobièrnu di Kòrsou, 2017). The plan did not mention the words digital, smart or blue. In an interview one of the authors acknowledged this, but pointed out a pilot project connecting community centers was integrated in the plan.

Although there is a general basic pension, elderly are not taken care of well enough. This problem is likely to increase as the population ages. There is no up-to-date government policy on this matter. In December 2017 the government announced new legislation to adjust the system so that everybody will save for their pension.

Public spaces management: Starting in 2010, and maybe even earlier, Curaçao started implementing a policy dedicating more attention and resources to public spaces. Most of these projects, like Caracasbaai and Marie Pampoen, have been very successful. However, responsible use and maintenance remains a challenge. Curaçao is less successful with landscaping, especially landscaping of the roundabouts.

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[26] *Cornerstone ceremony for two new hotels in the first week of September.* (2017). *Curaçao Chronicle.* Retrieved 20 December 2017, from http://curacaochronicle.com/economy/cornerstone-ceremony-for-two-new-hotels-in-the-first-week-of-september/

[27] *Environmental pollution in Dutch Kingdom ranks top 10 worldwide (on Curaçao).* (2016). *Curaçao Chronicle.* Retrieved 20 December 2017, from http://curacaochronicle.com/local/environmental-pollution-in-dutch-kingdom-ranks-top-10-worldwide-on-curacao/

[28] *Green Town presents its plan B for the future of the oil refinery area.* (2017). *Curaçao Chronicle.* Retrieved 20 December 2017, from http://curacaochronicle.com/local/green-town-presents-its-plan-b-for-the-future-of-the-oil-refinery-area/

[29] *HNO fors duurder.* (2016). *Antilliaans Dagblad.* Retrieved 20 December 2017, from http://antilliaansdagblad.com/nieuws-menu/12791-hno-fors-duurder

Government
For years, starting in the 1990s, there has been talk about improving government and implementing e-government but little progress has been made. From 2003 till 2010 Curaçao was one of the first islands to vote electronically in elections. The island was a front runner in e-democracy. In 2010 this was reversed because two political parties were paranoid about hacking and hijacking of elections. After 2010 a group of young citizens developed a web-based tool to assist voters to determine their vote for the next elections in Curaçao. By answering many questions on election issues, the tool advised the voters on which party to cast their vote. Political parties have web presence and use social media. In August 2016 the Minister of Internal Affairs announced an ICT master plan after visiting Jamaica. This was not the first ICT master plan. In 2015 the Knowledge Platform of Curaçao published an update of such a master plan. Not surprisingly, not much was implemented and the plan was not evaluated ("BPD werkt aan een masterplan," 2017). In October 2017 the government re-launched the government website. It became interactive and the organization behind the website was restructured. Instead of one webmaster there are now nine, one for each ministry ("Gobiernu.cw nu interactief," 2017)

Procurement: Curaçao has a good legal framework regulating procurement. In practice this system is misused to favor suppliers with the right political ties. This is the case in all economic sectors.

Curaçao is very transparent. Curaçao has a law making it possible for citizens to demand information from the government. Also, Curaçao has a broad spectrum of media: about 30 radio stations, 9 newspapers, and 4 television stations. On top of that Curaçao is very active in social media. Many media are struggling financially and lately some have ceased to exist due to disruptive technology and not adapting to it. In that respect the society is very democratic (Goede, 2010). On the other hand it is said Curaçao has a culture of fear. People are afraid of political reprisals (Marcha & Verweel, 2003).

Corruption in Curaçao is relatively high and is one of the main causes for its sluggish economic growth.[30] After the report of Transparency International in 2012 nothing happened. In 2017 a group of citizens started a foundation and an awareness campaign against corruption.[31]

Economy and people
Human capital management: The brightest high school students leave the island to study abroad, mainly in the Netherlands. They leave with a student loan. There is no policy in place as to which careers are more in demand. Getting the graduates to return after graduation is not a priority (Groot, Pin & Vasquez Villaseca, 2014).

In 2014 the government approved a policy in the area of Transnational Education, creating the conditions to attract institutes for higher education. In practice the emphasis is more on education and not on research and development and the stimulation of collaboration between universities and industry.

The youth have created clusters and are striving to start their own startups. Some have taken off. Despite the existence of the Curaçao Innovation & Technology Institute (CITI)[32] foundation,

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[30] *Country Report Curacao*. (2013). *Rabobank*. Retrieved 20 December 2017, from
https://economics.rabobank.com/publications/2013/september/country-report-curacao/
[31] https://www.facebook.com/KòrsouTransparente/
[32] https://citi.cw/

entrepreneurship and innovation have never been a priority of government policy. Several years ago, around 2011, the Dutch TNO specializing in innovation wanted to start a regional center in Curaçao. They got a better reception in Aruba and established over there instead.[33, 34]

In December 2017 it appeared the minster was dedicating more time to the SME sector. There was a lot of lip service to the idea of digital education. In practice not much has happened due to lack of available bandwidth for schools and political will.[35] This is a consequence of no shared vision and action. Providers still consider the schools as clients and not as investment objects to invest in human capital.

At the end of September 2017 the CITI, who is the owner of the almost twenty-year old Innovation Award,[36] launched a platform to stimulate startups.[37] Two interesting details are that the platform refers to the notion of smart city and that the Minister of Economic Development was involved. This might give the impression that smart city policy is being implemented.

The primary focus of the government has always been on big projects, ranging from hotels to investments in the refinery. A group of higher educated graduates has created a cluster of start-ups. They still remain unnoticed by many, although some of them are quite successful.

In August 2017 the new minister of economic affairs signed a cooperation agreement with his colleague in the Dominican Republic to collaborate in the area of small and medium businesses (Martina, 2017). In October 2017 a group of citizens announced that they are developing a local digital currency.[38] In March 2014 a tier-IV datacenter opened. In 2016 the company went bankrupt and was continued by the local telecom company UTS and had become profitable by 2017.

Curaçao must be doing something right in this area because Isaca (Information Systems Audit and Control Association) announced that Curaçao was their most successful small member in 2015 and 2016 ("IT-conferentie Isaca Curaçao: 'Be agile'," 2017).

The island has a top ICT infrastructure. Seven fiber cables land on the island and the company Digicel has announced another one for 2018 ("Nieuwe kabel in zee, "2017). The situation is that Curaçao has a top infrastructure but lacks content and ideas to take real competitive advantage of this infrastructure.

What is being done to close the gap?
In November 2017 CINEX, a government entity, hosted an international conference on Curaçao as a smart nation. They did an assessment on the current state of Curaçao. They used the model developed by The Centre of Regional Science (SRF) of Vienna University of Technology. Before

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[33] https://www.tno.nl/en/focus-areas/energy/sustainable-energy/new-markets-and-users/smart-community-aruba/

[34] *TNO: Aansprekend voorbeeld*. (2017). *Antilliaans Dagblad*. Retrieved 20 December 2017, from http://antilliaansdagblad.com/en/curacao/10275-tno-aansprekend-voorbeeld

[35] Pilot 'One laptop per child'. (2010). *Antilliaans Dagblad*. Retrieved 20 December 2017, from http://antilliaansdagblad.com/curacao/1944-pilot-one-laptop-per-child

[36] https://citi.cw/2017-innovation-award/

[37] https://citi.cw/launchpad/

[38] *'Eigen digitale munt voordelig'*. (2017). *Antilliaans Dagblad*. Retrieved 20 December 2017, from http://antilliaansdagblad.com/nieuws-menu/16464-eigen-digitale-munt-voordelig

the conference Facebook respondents stated that Curaçao scores an average of 2.2 on the scale of SC. This is slightly lower than the average of 2.4 scored by the 140 participants (n=140) of the conference (Figure 13).
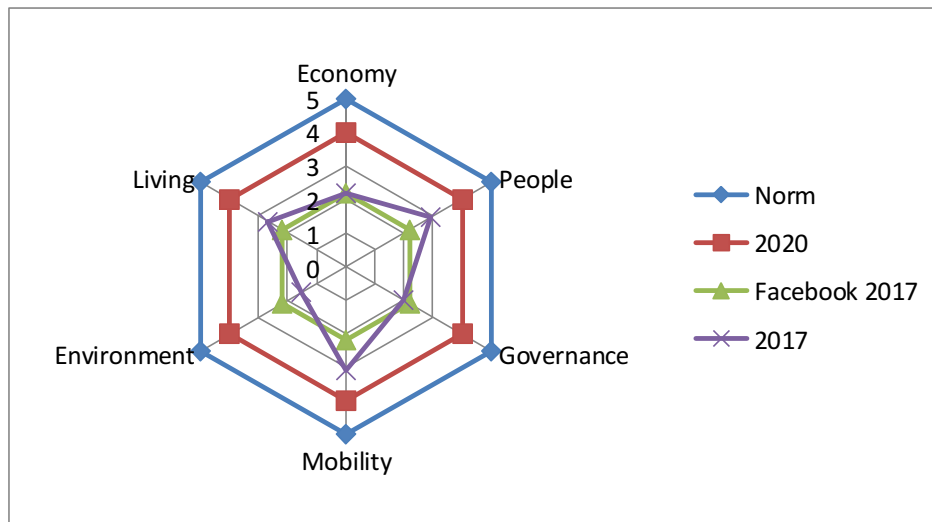

Figure 13: Assessment of Curaçao as a smart city

It is noticeable that the factor "people" scores relatively high. This is partially explained by the fact that most people on the island speak four languages. On the other hand it is somewhat a contradiction with the fact that the respondents state that the mindset of the people is the major challenge to overcome in becoming a SC.

The high score on mobility is peculiar given the current state of mobility, as described earlier. A similar remark is in place for the score on the factor "living".

Some state that the possible arrival of the Chinese partially state-owned enterprise GZE could be a game changer. It will be an influx of capital, knowledge, technology and smart people ('Initiativa pa jega na un desaroyo urbano nobo pa Korsou jegando 2019 i despues," 11 May 2017). However, the entrance of this party is not certain, because the results of the due diligence are unsatisfactory.

The government acknowledges that they are still far away from e-government and that red tape is strangling investments. The government believes that automation can resolve the bottlenecks and reduce corruption ("Red tape bevindt zich in 'loop'," 2 November, 2017).

The government-subsidized agency CINEX in November 2017 hosted the second edition to seek smart foreign investors.[39] Three ministers were present and the organization refers to Curaçao as a smart nation. During the conference the vision of Curaçao as a smart nation was presented in the form of a digital magazine.[40] In the seminar the results of a Facebook survey were presented. The island scored an average of 2.2 as a smart island on a scale from 0 to 5. This scored was confirmed by a live survey (2.4). The minister stated that the ambition of Curaçao was to score 4.0 by the year 2020 and launched a smart platform to work on making

[39] https://smartinvestmentCuraçao .com/
[40] (2017). *VisionsonCuraçao .com*. Retrieved 4 December 2017, from
http://www.visionsonCuraçao.com/DOWNLOADS/visionsonCuraçao _technologyandInnovation.pdf

Curaçao smart. He stated that it is about connectivity, being data driven, and being agile. The minister referred to the innovation policy of the government.

The government has installed an organization watch over cyber security in order to promote the island as a cyber-secure island. It is especially important for the financial services sector.
In mid-December 2017 the government went live with the Curacao National Socio Economic Database[41] to track progress toward the SDG. The government constantly states that it wants to be data driven and evidence based.

DISCUSSION AND CONCLUSIONS

There is a considerable gap between the ambitions of Curaçao to become a SC or SI and its actions and results. There are several factors explaining this gap. Many of the stakeholders interviewed mention the lack of a shared vision as one of the reasons why there is no implementation of steps toward the SC. The question remains if this is totally true and is not contradicted by the many reports written on the subject and documenting vision. Stakeholders also claim that resistance to change on the island is noticeably higher than elsewhere (Goede, 2011 a).

Curaçao is a classic case of the innovation paradox, the unrealized potential of technological catch-up. In theory the island will thrive when it adopts technology. This does not happen because management of organizations is unable to implement the technology, partially because other conditions like financing, stability and imported machinery, for example, are missing (Cirera & Maloney, 2017).

Collaboration is very difficult in Curaçao. There resistance to structure and the trust between people is low. Only 32% state that in essence people can be trusted (van Leeuwen, 1990; CBS, 2016). Curaçao exhibits the characteristics of what in the theory of spiral dynamics is labeled as a red society, a society obsessed with power contested between gangs, seeking immediate gratification and showing no remorse (Beck & Cowan, 2014). The lack of transparency and high corruption have created the conditions for the elite to focus on their own agenda and not so much on pushing the island in the direction of a SC. The elite are more extractive than inclusive (Robinson & Acemoglu, 2012).

A poorly performing civil service due inappropriate appointments does not have the leverage to push the island further in the direction of the SC. Further, higher education is ill developed. It does not generate the knowledge and the mindset required to build a SC. The university lacks vision. Due to this they neglected the UNESCO chair on Caribbean SIDS.

During the conference the international experts stated that the main challenge for Curaçao to become SC is the mindset of the people. The above factors are an illustration of why the current mindset is a challenge.

One might say all the above-mentioned factors are more or less related to the small scale of the island. The society is fragmented and there is not much synergy. Old paradigms, for example, viewing schools as clients and not as entities to be approached from a corporate social responsibility philosophy by SOE, are very persistent. This might be related to the already mentioned role of the elite and higher education. All this might explain why Curaçao is not

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[41] http://www.curacaonsed.org/di7web/libraries/aspx/home.aspx

making real progress toward becoming a SC. The crucial factors inhibiting progress on the road toward the SC are extracting the elite and corruption induced by the elite and practiced in government and SEOs. As businesses, NGOs, citizens and clients have to deal with government, corruption has penetrated in all areas of society.

On a critical note, the SC is presented as a very desirable future, but is it? Some say that these living labs, like the one to be built by Google in Toronto, will be the playground for the rich creative class and exclude the rest of the population (Noort, 2017). Viewed from another lens it is a totalitarian system that sees, records and registers every move of the citizens and the city dwellers. The question is who has access to all the data and what is the legitimization? It seems that in the SC the primacy of the people is abolished and is taken over by government and corporations. Probably the government will serve the corporations and not the people.

The smart city reminds us of the society described by George Orwell in his novel *1984* (1990). It is implemented by applying the shock doctrine, as described by Naomi Klein (2007). It also reminds us of Michel Foucault's statement on how power is exerted by surveillance and not by force (Thompson, 2016). After every crisis smart technology is pushed as the solution for all problems. A couple of examples: After Sint Maarten was destroyed by hurricane Irma, actors started to call for rebuilding the island smart. When crime was rising in Curaçao, surveillance cameras were introduced. When auto theft was high, chips in license plates were announced.

Some foresee a dystopian SC. Four factors might be responsible for this: The SC gets hacked; the algorithms get out of control; corporations become too powerful; government and ICT are a bad marriage (Noort, 2015). The SC might result in Fascism 2.0 or it might lead to a revitalized democracy (Harari, 2016). It is a thin line (Noort, 2016). A smart city must also be a sage society (Goede, 2011b). Some state that the European social model is a much more human model for the future of humanity.[42]

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[42] *Cookiewall | Het Financieele Dagblad*. (2018). *Fd.nl*. Retrieved 15 January 2018, from https://fd.nl/economie-politiek/1230849/smart-nation-singapore-is-nog-niet-zo-slim

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- Ontwikkeling van de Vrije Zone op Curaçao - Bevordering van de uitwisseling van kennis en informatie
- Hulp aan het klein- en middelgroot bedrijf om zaken te doen
- Technische bijstand vanuit de Domicaanse Republiek op het terrein van "internationaal zakendoen"
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