The development of New Songdo City between the poles of Smart City Planning, Real Estate investment and Financialization[1]

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Smart City concepts have increasingly been connected with large scale urban development projects in cities around the world. While promising a new way of urban life, questions are raised if their implementation keeps up with the promises. At the same time, the realization of large development projects often aims to facilitate foreign investments in a city and is thus influenced by processes prone to financialization and entrepreneurial urbanism. This study is set to explore the intersection of smart city development, real estate, and financialization It examines how smart city initiatives, designed to promote urban innovation and economic growth, are intertwined with financial practices, using New Songdo City in South Korea as a case study. The project is characterized by significant private sector involvement, particularly from real estate developers and multinational tech companies like Cisco, which provide smart infrastructure and data services. The study highlights how financialization, through mechanisms like land speculation and international investment incentives, drives urban development, often prioritizing profit over local needs. Furthermore, the found evidence suggests that the implemented smart city appliances do function as profit-generating assets for the technology-firms involved. Thus, the study concludes that the smart city model of New Songdo City serves more as a speculative marketing tool to attract investment rather than a sustainable urban solution that improves residents' quality of life.

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1 Introduction

In recent years, smart city strategies have received much attention and financial support. While it often appears that such measures have a positive impact on urban economic growth, the exact interplay of effects and the intentions of the actors involved are often difficult to decipher at first glance. While statistical data suggests a positive relationship between the implementation of smart city strategies and the economic performance of cities (Caragliu and Del Bo 2018: 2), the exact mechanisms also remain not all that easy to disentangle. One possible way in which smart city policies can have a positive impact on economic performance and growth is through the promotion of urban innovation. In fact, smart city projects often emerge through a strategic collaboration between large multinational companies that make significant investments in these technologies and municipal or regional authorities that seek to improve local conditions by adapting such technologies to local needs. While the latter aim to maximize public benefits (Anthopoulos et al. 2016: 70), cities also rely on private investors as an additional financing option and as partners to implement public investment strategies (Galati 2017: 19).

Based on this, on a different scale, so-called "planned cities" or even "mega-cities" are also emerging with increasing frequency, expressing many promising sustainable and at the same time new innovations in the course of their development and realization. Above all, the intentions of the actors involved, the use of innovative technologies and the associated collection of personal data repeatedly lead

to controversy and a need for discussion.

It is precisely this interplay between the development and construction of the completely new smart city "New Songdo City" in South Korea, the historical background behind it, the intentions of the actors involved and what role the real estate sector plays here that will be broken down and analyzed in the following paper. In detail, with a focus on Songdo City, the following research questions will be examined:

» How are financialization-related processes and measures integrated into smart city projects?
» What kinds of profit-generating possibilities are offered in the course of developing smart cities to appropriate actors and how do they come about?

Initially, a quick overview over the concept of smart cities will be given, before the connections between urban development projects and smart cities with financialized actors and practices will be investigated. Afterwards, a detailed case study of the smart city development project New Songdo City will be conducted, with an analysis whether there was or is involvement of such financialized actors and practices as mentioned before in the development project to find.

2 What makes up the "smart city" construct – The sunny and dark sides

First of all, what are smart cities anyway? Smart city is a general term for cities in which development concepts are systematically implemented aimed at making them more livable by supporting economic activities by increasing their efficiency, arranging ecologically more sustainable uses of the environment, setting incentives to increase the inclusiveness of social relations as well as to strengthen resilience for the case of crises and to meet these challenges by using technologies as much advanced as possible within the limits of scarce resources. It is particularly important to use digital technologies wherever feasible to succeed in dealing with economic, social and political problems in predominately post-industrial societies. These include poverty in a part of the population, environmental pollution, demographic change, population growth, financial crises and resource scarcity non-technological innovations are also required to achieve a better and sustainable climate and life in the city. One important example is sharing the use of goods if they are easily accessible for more than one owner and have free capacity for usage. Another example is citizen participation in public decision making. So, the major motivation for carrying out smart city projects lies in improving the quality of life for the residents. The decision making units involved in applying these concepts are the members all four classes of actors in our society, i. e. public institutions at different levels and enterprises as well as non-profit organizations and private households.

In addition, smart city projects are aimed at creating a sustainable environment through more efficient infrastructure, better transport links and quality of public services. Moreover, the use of environmentally friendly technologies and practices is favoured generally. Furthermore, a basic goal is to create economic opportunities for all stakeholders and to establish a dynamic, technology-based economy that also contributes to job creation, economic growth and innovation.

Some see the ideal smart city as an "internet of things and services" in which the urban space is equipped with sensors to collect data and make them available in the cloud. This should create a permanent interaction between city dwellers and technologically advanced devices, making city dwellers part of the city's technical infrastructure. However, the evaluation of such scenarios is controversial (Kumar et al. 2020: 2).

The promises of smart cities are high, and so are the expectations of the general public. However, in the end there is often a huge gap between the reality of technological developments and the "healing promises" of the respective city and the associated actors (Colding and Barthel 2017: 100). This is due, among other things, to the fundamental problems and challenges that the development of a smart city entails. The use and handling of innovative technologies plays a major role in this. Data protection and security concerns, as well as the loss of privacy of residents, are at the top of the list. Smart city systems collect and analyze large amounts of data on residents and their activities. Insufficient data protection or unauthorized access to sensitive data can lead to misuse and identity theft. The installation of surveillance systems, public cameras and networked devices at the same time often lead to the feeling that privacy is being compromized. In addition, the digital divide, as well as the dependence on technology, can be seen as negative. The first is that not all residents of a city may have access or the necessary knowledge to and about the technologies and digital services of a smart city, and the second is that the full deployment of innovative technologies carries the risk of disruptions, outages or hacks. Smart city models are accused of not addressing real societal problems, but of focusing solely on the possibilities and output of the installed technology and innovation (Dax 2014: n.p.).

All in all, the general smart city model holds both many potential advantages for cities, yet it raises just as many questions that need to be clarified both in research and in society more broadly. Moreover, in each individual case, it is important to question separately what the actual background and intentions of the individual participants are. This is also the case in this research regarding New Songdo City.

3 Financialization

3.1 Financialization and Urban Development

In order to analyze the involvement of financialization and private actors in the case study of Sondgo City, it is necessary to describe the different ways how financialization and urban development projects are generally connected and intertwined, and which actors usually are involved in urban financialization processes. First of all, a fitting definition for the connections between the urban realm and financialization and thus this case study, is given by Aalbers, who describes financialization as a process of "increasing dominance of financial actors, markets, practices, measurements and narratives, at various scales, resulting in a structural transformation of economies, firms (...), states and households'' (2016: 2).

Firstly, cities and urban development projects are subject to an increased use of urban land and the housing stock in the city for profit-oriented purposes. Rutland identifies an increased interconnection between the real estate market in cities and global capital markets. This was made possible through the globalization of the finance industry and the invention of mortgage-backed securities, as well as through a shift of company's investments into real estate and the formation of companies specifically for the purpose of buying, managing and trading real estate, like for example real estate investment trusts (REITs) (Rutland 2010: 1172 f.). Reasoning behind this rise of real estate as an investment asset can be found in the search of "capital" for new possibilities of profit-making (ibid.: 1171, van Loon & Aalbers 2016). Especially insurance companies, national pension funds and other forms of institutionalized capital started to invest their capital stock in real estate to further increase their profits (van Loon & Aalbers 2016: 223 f.).

But not only do financialized actors influence a city from the outside, city governance also experienced a shift to finance-orientation, from providing more local needs to focusing on attracting outside investment into the city. According to David Harvey, this shift occurred from the 1970s onwards mostly in Anglo-American cities as a consequence of economic decline and high unemployment due to deindustrialization, bringing cities financially in trouble and forcing them to find other sources of income, in combination with a general rise of market-liberalism in politics (Harvey 1989: 5). This source is provided by facilitating (large scale) development projects in cities, for example in residential or commercial real estate or also entertainment venues like stadiums, museums or landmark buildings, which are expected to lure financial investment into the city, increasing land and real-estate prices and thus the city's tax revenue (Swyngedouw et al. 2002: 543). Thus, cities find themselves in a competitive situation with other cities to attract such investmentscreating the necessity to stand out from one another, to find unique selling points, one of them can be the "Smart City" (Harvey 1989: 5). Therefor such development projects increasingly go hand-in-hand with exceptional planning and policy measures, like the "freezing of conventional planning tools, bypassing statutory regulations and institutional bodies, the creation of project agencies with special or exceptional powers of intervention and decision-making, and/or a change in national or regional regulations" (Swyngedouw et al. 2002: 543). Projects like these are often created on a speculative basis with uncertainty whether the hoped-for outcome (e.g. higher tax income, tourist influx) will actually eventuate (Harvey 1989: 13, Swyngedouw et al. 2002: 566 f.).

3.2 Financialization and data

In the context of smart cities, another aspect of financialization is important to shed light on: datafication, and the financialization of data. Datafication itself is understood as the increased collection of data through technology about things and actions that weren't tracked or connected with data-collection before, caused by a new demand, importance and valuation for data (Wagner 2021: 3, Sadowski 2019: 8). These result from especially digital data's ability to function as a tool to commodify parts of life that were previously not monetized, like daily habits, food consumption choices or health measures (Wagner 2021: 5, Sadowski 2019: 6f.).

The technologies used for the data collection, as well as their extraction, processing and further application are almost exclusively in the hands of profit oriented companies like IBM, Google, or Cisco. For such companies, cities in general and smart city projects especially are increasingly becoming opportunities of investment for and implementation of their data-based services, as partners either in retrofitting existing cities or in planning new ones. In their involvement, firms make cities dependent on them through their know-how in data-related processes (Kitchen 2014: 10, Sadowski 2019). After implementation, they can, according to Sadowski (2019: 5f.), use the generated data to create value for example by:

- categorizing and targeting of individuals for advertisement or credit worthiness (and selling of this data to third parties)
- implementing system optimizations and thus gain higher productivity
- profit from value increase of products outfitted with data-related devices (e.g. "smart fridge" vs. fridge)
- use the data as "building materials" for other digital services

Thus, city services and city governance become profit-generating assets for the firms (Kitchen 2014).

4 The Case Study of New Songdo City

New Songdo City (in the following referred to mostly as just Songdo) is a southwestern suburb of the South-Korean City Incheon. Incheon is situated about 30 Kilometers south of the capital Seoul. Most of the land on which Songdo is built upon was reclaimed from the sea around Songdo Island. By doing that South Korea follows the superior goal of extending the city of Incheon but even more so of creating an important business hub in north-east Asia that can compete with other international centers like Singapore or Shanghai for example (Shwayri 2013: 45). Songdo also claims to be a smart city with focus on all kinds of smart technologies that are being tested and implemented within the city under "an ideal legal environment for testing and experimentation" (Eireiner 2021: 7). The underlying motivation behind Songdo is to make South Korea less dependent on manufacturing, like it has been in the past. Rather than exporting actual goods, South Korea now wants to export knowledge on smart cities and the development of said cities. This is also why Songdo is supposed to function as a blueprint of a smart city that can be recreated everywhere in the world (Yoo 2017: 1).

In total the district of Songdo is over 600 ha big and therefore counts as one of the biggest if not the biggest private real estate development project worldwide. Decades in the making and with costs estimated between 35 - 40 Billion USD however, Songdo is still not completely finished (The Economist 2010: n.p.). In the year 2020 the city counted about 167,000 inhabitants (Da-hye 2020: n.p.). Once construction is completed and all buildings are ready to be used, the city will supposedly house up to 600,000 people (Neidhart 2018: n.p.).

4.1 Development Timeline (from 1970s until now)

In order to grasp the complexity of Songdo as a development project, it is important to get an overview of the overall history and the timeline, that can be seen in the illustration below (Figure 1):

The colors represent different topics: orange stands for everything related to government and/or governance, yellow represents the phases of construction and blue shows the managerial side of the development. In this case gray solely marks the Asian financial crisis as it was a short but very impactful caesura regarding the South Korean economy.

As it can be seen, the first ideas to develop a smart city in South Korea were already mentioned during the late 1970s. However, not until 1988 respectively 1994 the reclamation of land around Songdo Island was concretized. Most of the land that was being reclaimed was formerly tideland that was used for agriculture or fishing as can be seen in the picture (Figure 2) and what has to be viewed very critically: "[...] constructing Songdo wouldn't have been possible without ecological destruction and displacement of local farming" (Müller-Runte 2020: n.p.).

In 1995 the former mayor underlined the importance of supporting urban development projects in South Korea. Nothing really stood in the way of the realization of Songdo but then in 1997 the Asian financial crisis arose and slowed the economy down with South Korea being heavily affected. Gladly the country could recover rather quickly in the years 1998 and 1999 and therefore the planning of Songdo could be resumed (Sharma 2013: n.p.).

Between 2001 and 2002 a very important partnership between the two companies Gale International and POSCO was formed, two firms that until this day lead the

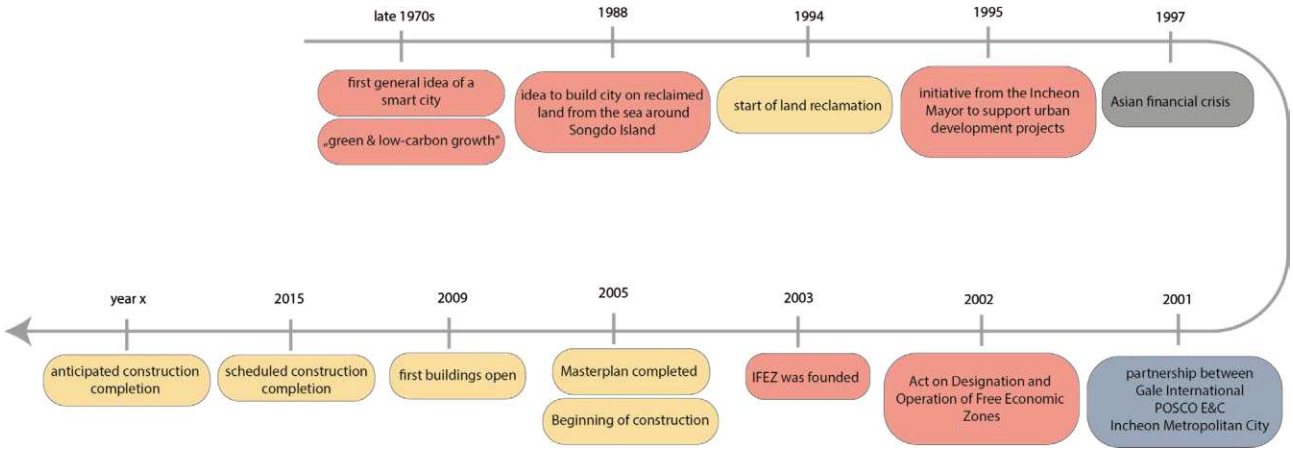

Figure 1: Timeline of the development of Songdo
Source: Own illustration 2023

Figure 2: Songdo before the land reclamation
Source: KFEZ n.d. a: <https://www.fez.go.kr/portal/en/history.do>

management and development of Songo (Songdo IBD n.d.: n.p.). The city of Incheon sold the reclaimed land to these developers below market prices in the early 2000s (Kim & Choi 2018: 45).

Another important milestone occurred in 2002, where the Act on Designation and Operation of Free Economic Zones was enacted and about half a year later in July 2003 enforced (Shin 2016: n.p.): "The establishment of these free economic zones was part of the manifesto of the President Kim Dae-jung administration (1998-2003) that aimed to steer away the South Korean economy from being too dependent on manufacturing industry and towards an economy of international logistics, finance and high-tech industries including information technology and electronics" (Shin 2016: n.p). In the same year the first Free Economic Zone (following referred to as FEZ) of the country was founded in Incheon (including Songdo), called the Incheon Free Economic Zone (IFEZ), which will further be explained later on.

With the governance framework being set, only two years later the masterplan that was worked out by the international architecture office Kohn Pederson Fox, was finished and the construction of Songdo could start. Four years later in 2009 the first buildings were finished and opened up for tenants. Originally all the construction work of Songdo should have been finished by 2015 but until now (2023) the anticipated completion of construction is still behind schedule. According to official sources of Songdo, the city is now supposed to be completed by 2025 (IBD n.d.: n.p.)

4.2 Korean Free Economic Zones (FEZ)

In total there are nine FEZ in South Korea, as can be seen in figure 3. The first one ever to be designated was the IFEZ, which was founded in 2003. The latest one is the Ulsan FEZ which has been existing since 2021 (Relin Consultants 2023: n.p.). According to the second FEZ plan published by the Ministry of Trade, Industry and Energy South Korea wants to develop further seven FEZ across the country until 2027 (Global News Network 2019: n.p).

Every FEZ serves a specific purpose. While the IFEZ has its focus on IT, telecommunications, international banking, tourism and recreation, the main industry of Ulsan FEZ for instance is the hydrogen industry (Relin Consultants 2023: n.p.). By distributing the industries all over the country, South Korea has created nine specialized hubs. Many regions where now FEZ are located, were originally untouched land, like the tideland in Songdo which was already mentioned in the chapter above (KFEZ n.d. a).

What all of the FEZ have in common, is that they all serve the purpose of attracting international investments into a

Figure 3: Map of South Koreas Free Economic Zones
Source: KFEZ: n.d. c: <https://www.fez.go.kr/portal/en/introduction.do>

certain region. Through FEZ the business and living conditions for international firms are improved. That is done by offering major tax advantages, rent reductions for foreign firms, generally less regulations and also a sped up administration process paired with other incentives. Only through the above already explained "Act on Designation and Operation of Free Economic Zones", can these special rules be realized. The system seems to flourish- in the year 2018 alone, foreign direct investments of 178 Billion USD were registered in South Korea (KFEZ: n.d. c).

Another very important factor of FEZ is that although they are situated like a frame around existing cities and districts, they are autonomously led not by the mayor of a city but by an independent authority. This authority acts as the administrative body of the FEZ (Chung 2022: n.p.). Because of that most of the power lies by the committee. "The administrative authority shall perform the following tasks in order to administer a free trade zone: (1) assist business activities carried out by resident and supporting enterprises; (2) maintain and manage public establishments; (3) facilitate international operation of various facilities; and (4) perform other official business needed in FTZ administration or operation" (Yang 2009: 291).

4.3 Incheon Free Economic Zone (IFEZ)

IFEZ is the largest FEZ of South Korea and also the most successful. It accounts for 67 % of the foreign direct investments attracted in South Korea (Global News Network 2019: n.p.). Through the international Incheon Airport and the port, Songdo has an excellent basis for the international economy. That also reflects in their claim: "Gateway to Korea- Wide Open for the world" because Songdo acts as a port for foreign firms to enter the South Korean market. On their website they even promote Songdo as "the most attractive city to enter East Asian market [...] Incheon is within a 3 hour flight of 61 mega cities with more than 1 million population"" (KFEZ n.d, b).

The Authority of IFEZ which is like a sub-authority of the overall FEZ committee has the power of organizing deals with the private sector. However, these deals have to be approved by the local government on one hand and the FEZ committee on the other hand. This once again demonstrates the control this committee has over the zone "regulating it both spatially and socially through drawing up and implementing development plans, approving master plans, and designing tax benefits for individuals and businesses" (Shwayri 2013: 46).

4.4 Shareholders and other Actors

Now that a general overview of the development of Songdo and the administrative body in the form of the IFEZ was given, it is crucial to understand which shareholders and other actors are involved in the development, as can be seen in figure 4. Two companies act as the main project developers- NSC Investment and POSCO. The first one is made up of Gale International which is a real estate developer from New York and Morgan Stanley which is a financial service provider/bank also from New York. Together they hold 70 % of the shares of Songdo. What is very interesting is that the other 30% of shares are held by POSCO. POSCO is one of the biggest steel companies worldwide with its base in South Korea. As can be seen in the illustration, they are also responsible for the construction of Songdo. The tallest building in Songdo is named Posco Tower. Whether or not that is a coincidence it is up for interpretation. "In 2003, the City of Incheon gave development rights to build Songdo (and which would eventually become the IFEZ) to a 70/30 partnership between the global construction giant, GaleInternational, and construction manager POSCO Engineering and Construction Company, a subsidiary of South Korea's largest steelmaker called Pohang Iron and Steel Company (POSCO), the iconic symbol of the nation's industrial past" (Rugkhapan & Murray 2019: 276). The financing of the project takes place through banks mostly South Korean banks but also partly by international banks like Morgan Stanley (Shin 2016: n.p.).

To wrap up the chapter of actors involved in the development of Songdo, one big player must not be forgotten - Cisco. Cisco is a Californian tech-company which is worldwide leading in IT-applications (NTS n.d.: n.p.) and

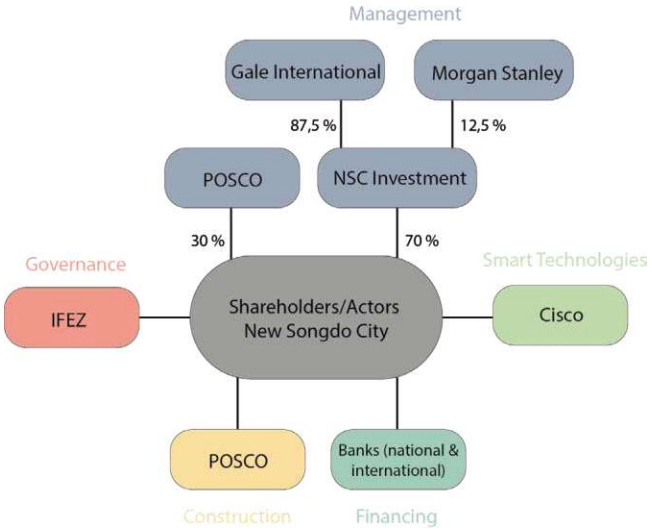

Figure 4: Shareholder Structure
Source: own illustration 2023, based on: Lee J. & J. Oh (2008)): New Songdo City and the value of flexibility: a case study of implementation and analysis of a mega-scale project.

who joined the development in 2009. They have the goal to "link energy, telecom, traffic monitoring, and security systems into one intelligent network" (Strickland 2011: 12). Cisco is also involved in other big cities aside from Songo. In Barcelona for example they implemented their technologies and promoted the idea "that a city could be run like an operating system, in much the same way as a computer itself" (Monge et al. 2022: 4). Cisco's biggest competitor is IBM and so both companies try to outbid themselves. Cisco wants to create a "smart planet" by providing management, consulting and software services in Songdo (Halpern et al. 2013: 277). Their unique selling point is that they don't sell stand-alone products and services but rather connect everything with the goal to create the bigger picture for governments to "change societies" (Lindsay 2010: n.p.). Because of that vision, Cisco in cooperation with IFEZ is experimenting with a new type of knowledge transfer between the private and the public sector. The goal is that the private sector invests in new data infrastructures and in return gains access to public data. In order to sustain that, Cisco has even developed a so-called public-private cooperation-company (PPCC) in hopes of making more profit and developing new technologies (Halpern et al. 2013: 281 f.). South Korea generally is a fitting place for Cisco's engagement and was specifically chosen as one of its biggest test beds because the country has always adapted new technologies rather quickly (Lindsay 2010: n.p.).

4.5 The use of Smart Data in New Songdo City

Cisco being involved in Songdo is a fitting segway into the following chapter which aims to explain what is so smart about Songdo anyway. The (interim) result of the joint work of the just mentioned real estate developers, technology companies and the national and local government is a networked center with very high (new) technological standards on a wide range of levels. In total there are five main areas in which smart technologies are provided:

- smart transportation service
- smart crime prevention service
- smart disaster prevention service
- smart environment service
- smart facility management service

To sum them up briefly, in all smart services, data and images are actually collected by means of intelligent sensor technology and 24/7 camera monitoring, which are intended to serve the well-being of the residents. Regarding the intelligent traffic service as well as the intelligent environmental service, information is provided to the residents. Concerning the environmental services, there is for example information about the water and air quality. Concerning the traffic there are kinds of information whereby traffic jams are to be avoided or for example street lights that only light up when people are on the road. The other three services are primarily concerned with the safety of the residents. Here, real-time monitoring, which is carried out in the most important areas of the city, crime-prone areas and residential areas in general, keeps the police or fire brigade up to date in order to prevent possible crimes or disasters and incidents of any kind. In addition to these services, two further examples that further consolidate the "smart" use of the technologies: (1) an underground intelligent waste system that controls and directs the waste from each household. (2) The installation of virtual rooms in private flats that enable communication between residents. (Ifez Smart City 2023: n.p.). Thus, Songdo can be seen as ""driven by a fantasy that by translating everything into data the whole city could be managed as if it were a continuous and apprehensible system" (Halpern et al. 2013: 287).

5 New Songdo City - The Intersection of Smart Cities, Real Estate and Financialization

The following chapter aims to connect and embed the case study of Songdo with the topics of smart cities, real estate and more specifically entrepreneurial urbanism within the general context of financialization.

5.1 Songdo and Entrepreneurial Urbanism

Characteristic for financialization is the shift to neoliberalism (Mader et al 2020: 2) which strongly reflects in the overall political framework of the FEZ in South Korea and therefore specifically also in the political framework of IFEZ, shifting power from the national state to lower (private) institutions (Eireiner 2021: 7). The goal is to use urban development to create an investor-friendly environment and attract foreign businesses to shift the national economy from manufacturing to technology and finance related industries, using tax benefits and regulatory simplifications for investment attraction (Shin 2016: n.p.). Thus, the Songdo City development project is a classic example of entrepreneurial urbanism. As the municipality of Incheon paid for the land reclamation and thus owned the land Songdo was supposed to be built on. However, it sold the land to developers, piece by piece, for example the area on which the Songdo International Business District (IBD) should be developed, to the NSCI. The selling price was heavily discounted: The selling price in the year 2002 for the land of the IBD was just 160.000 KRW or 122 USD per square meter. Only five years later, in 2007, the land value had exceeded its initial price already 25 times and was worth 4,2 Million KRW or 3200 USD per square meter (Shin 2016: n.p.). Because of that, the real estate developers profited heavily from the discounted land sales

by the municipality.

However, the expected development and sales of commercial and office buildings stayed behind expectation due to low demand and struggles to attract international firms (Wall Street Journal 2013: n.p.). Thus, the share of residential development in Songdo was increased to keep the city growing. But also the residential units were apparently used by the NCIS and other developers to generate profits through selling of the units, as their average sell prices lay with 628 million KRW (480.000 USD) more than 15 times above the average household income per year in South Korea (Shin 2016: n.p.). The South Korean initiative "Citizens' Coalition for Economic Justice" estimates that through these sales of residential units more than 1.6 billion USD were raised just as profits (Citizens' Coalition for Economic Justice 2010, cited after Shin 2016: n.p.). Thus Mullins (2017: 7) concludes: "Songdo was not built to solve a housing crisis for the domestic population, but, rather, for global competitiveness, foreign businesses and non-Koreans".

Another important and also textbook example for financialization in Songdo is the involvement of POSCO in the city's development. The fact that POSCO, as one of the biggest steel companies in the world, takes care of the construction of Songdo is not too surprising. However, what is surprising is that they act as one of the shareholders of the project. This is an example of financialization out of the books and very common. Through the rising importance of finance, firms that beforehand had nothing to do with real estate investment or real estate development are now searching for opportunities to take part in these kinds of activities (Van der Zwan 2014: 107). POSCO diversified its corporate activity by buying shares of Songdo and with that being financially involved beyond the mere construction activities. The financial involvement therefore substitutes (at least to a certain extent) the tangible activity of construction work and lays the focus on financially driven activities.

5.2 The Smart City Songdo and Financialization

Regarding the smart city aspect of Songdo, it is obvious that Cisco is the main profiteur of the technology implementations in the city, even though much of the infrastructure was already contracted out before the company's involvement started in 2009 (Sonn et al. 2010: 9). As far as this research could go, there was no information found that the generated data from the city was directly used to develop new products and sell these to the citizens, or that a sale of the data itself occured. However, this leaves the plans of Cisco, together with their consortium partner Gale, to use Songdo as a blueprint for smart city developments elsewhere as possible use for the generated data from Songdo. The city thus functions as a testbed for digital applications and the realization of a smart city from scratch, becoming an "export good". Already Cisco and Gale have used their combined expertise in the realization of the Meixi Lake District in Changsha, China (Shin 2016: n.p.).

Generally speaking, the technological applications in the city are very much focused on city services like security, traffic regulation and garbage treatment and are not so much affecting the lives of Songdo's citizens directly. These city services, however, have through their smartness and the design of the IFEZ become an absorptive market for the products of digital technology firms (Kitchen 2014: 10). However, the state of the city today seems to differ quite a lot from the promises that were given at the start of the project. Instead of a smart appearance and an ecological, pedestrian friendly urban space as in the original masterplan, the city is characterized mainly by large building blocks and broad multi-lane roads, making Songdo less suitable for walking (Mullins 2017: 9). Inhabitants complain about the bad infrastructure of public transportation systems and inadequate connections. Traffic lights for example are controlled by smart technologies but mostly to the benefit of car drivers (ibid.). Also socio-cultural infrastructures seem to have been neglected widely. The main focus rather lies on international businesses and their needs (Yigitcanlar et al. 2019: 4). This raises the question, if the "Smart City" and "Eco City" that Songdo has been and still is marketed as, may rather be just a marketing strategy to advertise investment in the Incheon FEZ than an actual supply. Similar dissonances between imagined urban development projects and the built reality are for example reported from comparable projects in Africa (Watson 2014).

6 Conclusion

The paper examined the involvement of actors and practices putting forward financialization in the urban development project of New Songdo City in South Korea. Explaining at first the current popularity of mega projects like this, especially as so called "smart cities", it was then shown how cities, urban development, city governance and smart data are intertwined with financialization and corresponding profit-oriented forms of value generation. Afterwards a deep dive into the development project Songdo was taken, analyzing the projects' development process, the political framework and motivations behind the project and the use of smart data applications in the city.

Thus, it can be concluded that the urban development project New Songdo City is characterized by numerous different aspects of financialization. The project itself is a prime example for entrepreneurial urbanism, showcasing how the city of Incheon together with the South Korean national state used urban development as a tool

to boost the city's and country's economic development, with specific focus on international investment. Via the Incheon Free Economic Zone various regulatory incentives were put in place to attract this investment in Songdo, and the city was conceptualized as a "smart eco city" to lure especially high-technology and finance-related firms into the city and with that into the South Korean economy. However, as could be shown, the economic development stayed behind the initial expectations, and the focus was shifted to more residential development. Nonetheless, the consortium mainly developing the city, consisting of Gale Investment and Cisco with backing by South Korean and American banks, still profited heavily from Songdo's development through discounted acquisition of land from the Incheon municipality and the following value increases and reselling of land and real estate units. The consortium also profits from using Songdo as a blueprint for their similar development projects for example in China. Through the smart city applications and extensive video surveillance in Songdo, they can gain and use the data that the citizens of Songdo create with their daily habits to improve their own product. However, the smart, ecofriendly urban space according to the initial plans turned out to remain primarily an ingredient of city marketing-while the quality of life of Songdo's inhabitants shows striking disparities to what was promised before. In consequence, it seems that the concept of Songdo as a smart city was either in the end not so important anymore for the developers- or they merely created it as a "speculative image" (Aalbers 2020: 601), to raise investor's attention and legitimize the project for the public. As mentioned, they profit from the city in one way or the other, be it by developing and trading with the real estate or using the city's data for their own businesses.

Literature

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