

Exploring Huawei's Safe City Interventions in Pakistan

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Location of Pakistan, with Lahore and Islamabad, our two main points of interests marked.

Introduction

In January 2018, Huawei's rotating CEO and Deputy Chairman Guo Ping sat next to the then Chief Minister of Punjab Mian Shehbaz Sharif of Pakistan Muslim League-N in a ceremony in Pakistan's second biggest city and Punjab's provincial capital, Lahore. The ceremony was the inauguration of the Lahore Safe City project. The project, implemented by Huawei along with

the Punjab Government, was initiated in 2016, already operational in 2017 and inaugurated by early 2018. It cost a staggering \$84.7 million (Rs. 12 billion), consisting of 10,000 CCTV cameras and a Command Control Communications Center (PPIC3) (“Punjab Govt, Huawei Inaugurate Lahore Safe City Project”; Moss). The project was based on the state-of-the-art AI technology, capable of facial recognition, vehicle number plate tracking, traffic management and fully integrated with Punjab Police. It uses a 4G and LTE-A infrastructure to provide almost real time communication between the centre and the rapid response team (called the Dolphin Force) on the ground. For a country like Pakistan, whose technology curriculum still teaches and revolves around MS-DOS and floppy disks,¹ to invest such a significant sum for a smart-city project and then execute it at almost breakneck pace in less than two years, seems like a story too good to be true; in fact, as anyone vaguely familiar with governance in developing countries will tell you, it is common to find projects delayed for years, if not decades, especially those involving emerging technologies.

Hailed as the project that would create a ‘safer-city’, in a country then marred by frequent terrorist attacks, the project was just the second of a series of safe city initiatives planned across the country. The first safe-city project, also involving Huawei, had already been accomplished in the country’s capital, Islamabad, a few years earlier. That project, as well had already been executed with surprising pace (2 years), huge sums (\$120 million) and even more secrecy. As soon as Islamabad’s Safe City project was operational in 2013, Peshawar, Karachi, Gwadar, Quetta were already in the pipeline (Dogar). According to official documents submitted to the Supreme Court of Pakistan, when the original safe city project was conceived, Islamabad and Peshawar were both proposed simultaneously, with the project then expanding to 10-12 cities in

¹ See. (Nayyar)

the country (Saeed). On the surface, these projects seem like the many of those that governments around the world are conceiving in order to make cities 'smarter' and 'safer', but if one were to dig a little deeper, a different picture emerges. But before that we need to take a little detour to get a brief glimpse of the background of this 'smart-city' phenomenon.

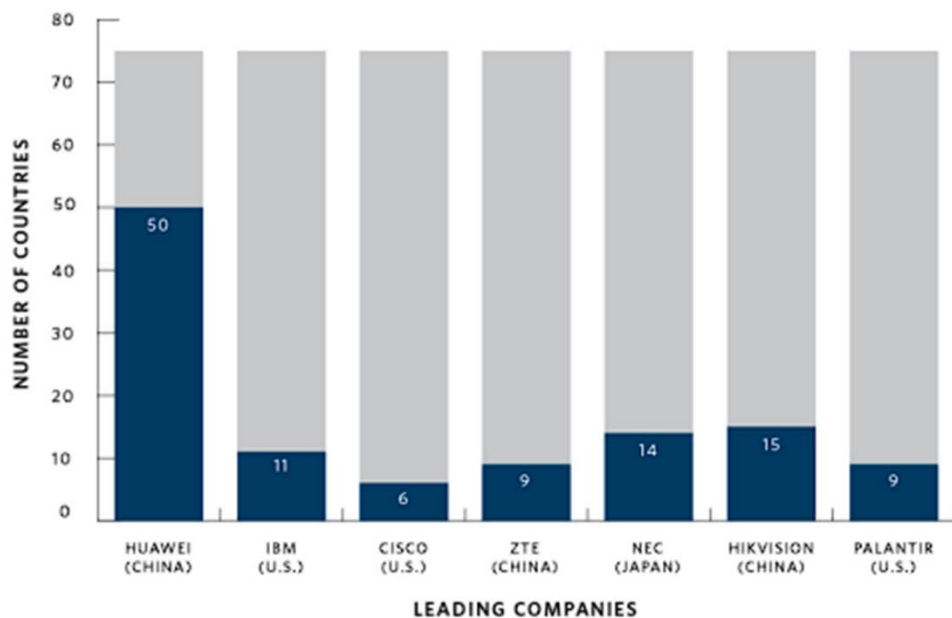
Hello, World! Smart City!:

In the past few years, the notion of a 'smart' city has proliferated at a blistering pace. With the rise in the urban population and our cities becoming increasingly dense, coupled with the effects of climate change, the need to manage these 'strongholds' of our civilization has never been greater. In order to manage these behemoths that we call cities, technology has been called to the rescue in various shapes, forms and sizes. The objective behind all these interventions is to turn a city to a 'smart' city. Like other technology-based interventions, the smart city is in many ways 'techno-deterministic' or what Broussard refers to as 'Techno-Chauvinistic'; it believes that technology based solutions are best and unquestionable, and their application is always in the best interest of all. (Broussard; Burte) Much has been written about the ambiguity of the term 'smart' and the lack of clarity has caused various kinds of projects to be subsumed under this one umbrella term (Kitchin). It has also caused truly beneficial technologies to be packaged together with the truly dangerous or even absurd ones, thus further muddying the discourse that can be had on smart cities. A case in point are 'Smart City' initiatives in South-Asia and Southeast Asia which have only revolved around providing Wi-Fi or internet connectivity, thus some researchers view the term as nothing more than marketing material, while others have questioned the true benefits and beneficiaries of such interventions (Burte 21–22; Kong and Woods; Feldstein 15).

The smart city projects vary in the kinds of 'problems' they aim to tackle, from energy, to transportation, to safety. But there are certain things that are fairly common in almost all smart city projects, they are of course reliant on ICT (Information Communications Technology), rely on massive amounts of data, also referred to as Big Data, and need substantial funding due to their scale and technicalities (Cohen and Nussbaum 9; Kitchin). These three factors seem to contribute to the framing of the discourse on smart city as largely about the technological infrastructure of the regions where such interventions are being imagined. The Global South, with its underdeveloped cities, dilapidated infrastructure and burgeoning populations seem to be 'ideal' ground to implement such ideas. This kind of framing has led to the cities in the Global South to become objects ready to be 'upgraded' and 'made better' like the cities of the developed world, complete with all the costs that comes with running such castles of glass but without the resources and benefits. As Watson puts it, these cities are seen as needing to be made in the image of Dubai, Singapore (Watson). What is more alarming is that these projects, with all the emancipatory promises of technology, are based on top-down approaches, especially in the Global South (Guma and Monstadt). The projects are usually financed and supported by international institutions and multinational corporation, who have their own agendas and priorities, which are, more often than not, at odds with the local population.²

² For more on this, refer to the ICT driven projects in Africa, Central Asia and South Asia. See (Guma and Monstadt; Datta; Odendaal).

Of all the smart-city areas, safety and surveillance programs have been of high interest for both technology firms and governments alike (Feldstein). Their motives are perhaps different, firms are looking for profits and for acquiring more data, which is extremely valuable for technology conglomerates such as Huawei, IBM. The governments on the other hand are looking for effective ways to surveil and 'manage' their populace. It is telling that the official description of the Safe City project on Pakistan's National Database and Registration Authority's (NADRA) website includes phrases such as 'effective monitoring and control system' and 'fortifying the territorial space' ("Safe City – NADRA Pakistan"). Due to the nature of the projects, which requires massive infrastructural support, political clout, financial backing and includes cutting edge technology, the companies that are capable of conducting these projects are a handful few. This is perhaps best illustrated by the fact that of 75 countries listed on the Carnegie AI Global Surveillance Index (AGIS), only five companies are majorly involved with the Smart City



NOTE: The AGIS Index tracks seventy-five countries that employ AI surveillance. The numbers here reflect how many of those countries each company is present in.

Fig. 1: Companies contributing to AI Surveillance (Source: Carnegie AI Global Surveillance Index (AGIS), Steven Feldstein)

projects globally, specifically based around AI surveillance (Fig. 1). Some countries have multiple companies working on the projects while others only have one. Interestingly, the 'recipient' countries represent the full spectrum of the economic development levels, government types, geographies, while the 'provider' companies come from U.S, China, Europe and Japan primarily. This makes it clear that the phenomenon of AI-based surveillance under the guise of 'Smart City' is not just global but also heavily skewed. Shoshana Zuboff points this out as a consequence of capitalism's need to make profit, mixing with the cost of carrying out such massive AI surveillance projects, this thus leaves only a select few organizations capable of conducting such projects (Zuboff).

Salaam Huawei!

One glance at the Figure 1 is enough to make an oddity visible: the sheer dominance of Huawei. Huawei dwarfs any other corporation in smart-city projects, its involvements are spread all over the globe providing not just technical but logistical, infrastructural support. Huawei's own promotional material puts the number at '120+ cities and 40+ countries.'³ Australian Strategic Policy Institute's report on Chinese tech involvement globally paints a far more comprehensive picture, it puts the number of Huawei's involvement in 2018 in smart cities in possibly 90 countries and 230 cities (Cave et al. 10). The report also illustrates the scope of complimentary Chinese tech companies working together in order to secure projects globally, at times with the

³ See. https://e-file.huawei.com/mediafiles/MarketingMaterial_MCD/EBG/PUBLIC/en/2018/06/cache/5161a8be-93fa-49b7-8473-c553643a49af/5161a8be-93fa-49b7-8473-c553643a49af_41_15.jpeg

backing from the Chinese government and funds (in the forms of loans) provided by the China Exim Bank and others.

Huawei has, under the name of 'Safe City', launched projects that are specifically oriented towards surveillance technologies. As Feldsten documents, Huawei markets safe city projects as catering to specific issues for each region:

"..in the Middle East, its platforms can prevent "extremism"; in Latin America, safe cities enable governments to reduce crime; and that in North America, its technology will help the United States advance "counterextremism" programs" (Feldstein 17)

Huawei's own white paper on the smart city purports that it has 'skyrocketed citizen satisfaction', has provided 'richer, realistic depiction of issues and solutions' while also 'looks for quick wins' (Huawei and IDC 18–19). Huawei's involvement with the smart city does not end with providing solutions, it is heavily expanding in create an 'eco-system' of Huawei linked ICT capabilities, the flagship of which is the OpenLab which serves as an incubator and a research arm, and actively coalescing 'partners and customers' that are operating in related areas (Huawei and IDC 26). In simple words, Huawei's involvement with the idea of smart city in scope and its depth is breathtaking.

It is then logical to ask what makes Huawei so formidable and how has it managed to acquire such a vast network of projects, especially in middle income countries (around 71 percent (Hillman and McCalpin)). It is not a secret that Huawei has direct ties to the Chinese government, it was precisely this connection that led the U.S. to banning the tech giant from conducting business with U.S. companies and caused other countries to rethink Huawei's involvement with their 5G plans. The colossal costs of undertaking 'safe city' projects, is always

sweetened with China providing 'subsidies' and 'loans' through its many commercial banks or using its other tech firms to provide support for these projects (Hillman and McCalpin; Feldstein; Cave et al.). This strategy has worked wonderfully for both Huawei and China. Huawei gets to earn money, acquire data, China gains political clout and leverage while the Countries are themselves rebranded as 'upgraded' and 'one step nearer to the future'. It was indeed Pakistan that provided Huawei and China with one of the earliest opportunities to develop this approach which has proven so powerful. This is precisely why it is important to document and analyze the story of Huawei's Safe City in Pakistan because it paints a picture that is quite different than the rosy ones found in Huawei's marketing materials.

Et tu, Huawei?

As Huawei's pilot Safe City project, the Islamabad Safe City project was nearing completion, the Supreme Court of Pakistan took up a petition filed in the court about irregularities and the lack of transparency in the contract of safe city project. The resulting proceedings provided a fleeting but powerful glimpse in the behind-the-scene workings of Huawei's approach to securing such projects (See the judgment in the case: Saeed). The proceedings document how it was actually Huawei who had approached NADRA to implement such a project in 2009. NADRA then brought in the Ministry of Technology, Ministry of Interior and the office of the Prime Minister to consider this proposal. Pakistan's law prohibits direct awarding of public works contracts without public tendering, enshrined and enforced through the Public Procurement Regulatory Authority thus requiring a 'special waiver' from the Prime Minister. The PM's office granted it and also fast tracking the project on the recommendation of the Ministry of Interior which had, by then, become the main party to the project. When questioned by the Court on the need for

such measures, the government acknowledged that Huawei's project was coming with a loan provided by the Export-Import Bank of China (EXIM Bank) of 850 million yuan, which would have brought the project cost down from \$124 million to \$72 million; the project was still billed at \$124 million. The government also consciously decided to bypass 'proper feasibility study... in view of the urgency of security requirements' (Saeed 9); the petitioners noted that no government internal memos or discussions ever used the word 'emergency'. The government's view was that owing to the sensitive nature of the project, and that too in the capital city, it would be impossible to conduct a public tendering process; a summary to the PM by Interior Ministry showed that 'China wants such projects to be done in low profile'(Saeed 13).

Government of Pakistan, in December 2010, had signed two agreements, one with China and the other with the Exim bank for the \$850 million Yuan (Dreher et al.). The government maintained that the 'soft-loan' could be pulled if the project were not awarded to Huawei; the petitioners noted that both agreements did not mention Huawei. At the end, the Court stated that 'the entire exercise appears to be farcical', rendering the agreement with Huawei null and void until due diligence has been carried out. Special concerns were raised about the costs of the project, which 'appeared to be inflated'.

Three years later, the Senate Standing Committee on Finance and Revenue took up the matter of financial irregularities in the Islamabad Safe City project and the release of \$68 million. During the proceedings, Senator Talha Mehmood, who was the Chairman Senate Interior Committee stated that the Islamabad Safe City project "was signed under pressure of EXIM-Bank" which was financing two Hydropower stations in the Neelum-Jhelum area of Pakistan (Arshad). The Chinese government had also allegedly pressured the committee to overlook 'certain irregularities' in one of the hydropower projects. EXIM Bank's involvement with Huawei's

projects is not just limited to Pakistan, but it has provided loans to other countries at the behest of Chinese government (Cave et al. 10). One of the two hydropower projects that EXIM is involved with is the Karot hydropower project. It is a Foreign Direct Investment project, financed through the One Belt, One Road initiative, locally referred to as the China-Pakistan Economic Corridor. The Karot hydropower is significant because the safety management system of the project was developed by Megvii according to Beijing Evening News (Wei Jing). Megvii is another Chinese firm wholly focused on facial recognition and deep learning technologies, and as a result Karot hydropower uses facial and image recognition, IoT solutions and a security system to 'minimize risks and to' manage the entry exit of personnel and vehicles'. It is not inconceivable that Huawei utilizes Megvii's deep learning and facial recognition capabilities, and this exactly what a recent report from IPVM found (IPVM Team); Megvii is also amongst the Chinese firms banned by the United States.

Thus, so far, a network emerges of Huawei, China, Megvii, EXIM Bank and CPEC. It is quite clear that Huawei does not work alone to secure projects, its proposals are backed by Chinese banks which are already involved in some capacity in other projects which involve other Chinese companies, thus broadening the 'leverage' that the company can hold over the countries. The Islamabad Safe City saga also makes obvious how the Chinese government directly engages with these offers, its request to keep the project out of spotlight speaks volumes. The strategies of obfuscation employed by the government itself to secure the deal also illustrates that local governments play an extremely important role in the proliferation of these 'solutions.' In the case of Islamabad Safe City, the government deliberately used the pretext of 'emergency' and 'security' to bypass the due processes in order to secure the deal as quickly as possible; it might not be stupid to think that perhaps the 850 million Yuan played some part.

Huawei, as proposed in the initial offering, eagerly expanded the Safe City initiative in Pakistan. The next city turned out to be Lahore. The PML-N government, which now held both the Federal government and the Provincial government, established a Punjab Safe City Authority in 2015. It was seen as a move to establish an Integrated Command, Control and Communications (IC3) in the Province of Punjab. The government was now attempting to establish a full-fledged surveillance system.

Why Punjab?

While it may be easier to consider the altruism of the politicians in their pursuit of creating a 'safer city', it is instead perhaps sensible to question their motives. Punjab holds certain geopolitical importance in Pakistan. It holds the capital city; it is also the most populous province of the country and thus holds the largest political clout in terms of National Assembly seats (183 out of 342 total). It is also the agricultural hub of the country and holds the industrial hubs as well. Punjab's largely rural areas also hosts pockets of terrorists which have flowed in from neighboring province of Khyber Pakhtunkhwa and Afghanistan, making the region vulnerable to attacks (Felbab-Brown). Thus, Punjab's importance is unquestionable in economical, political and social terms. This also makes it vital that the province is managed and is kept under control, and so makes it ideal for the application of a large-scale AI-based surveillance system. Under the pretext of 'security', which has been a legitimate concern in Pakistan, the government opens pathways to building a surveillance state. A strong ethno-centric narrative based on the idea of 'development' was influential during the government of PML-N and it carried out massive amounts of infrastructural projects. This led to the safe city projects being green lit mostly in Punjab (Fig2.) and the discourse around them during development was kept largely muted. It was

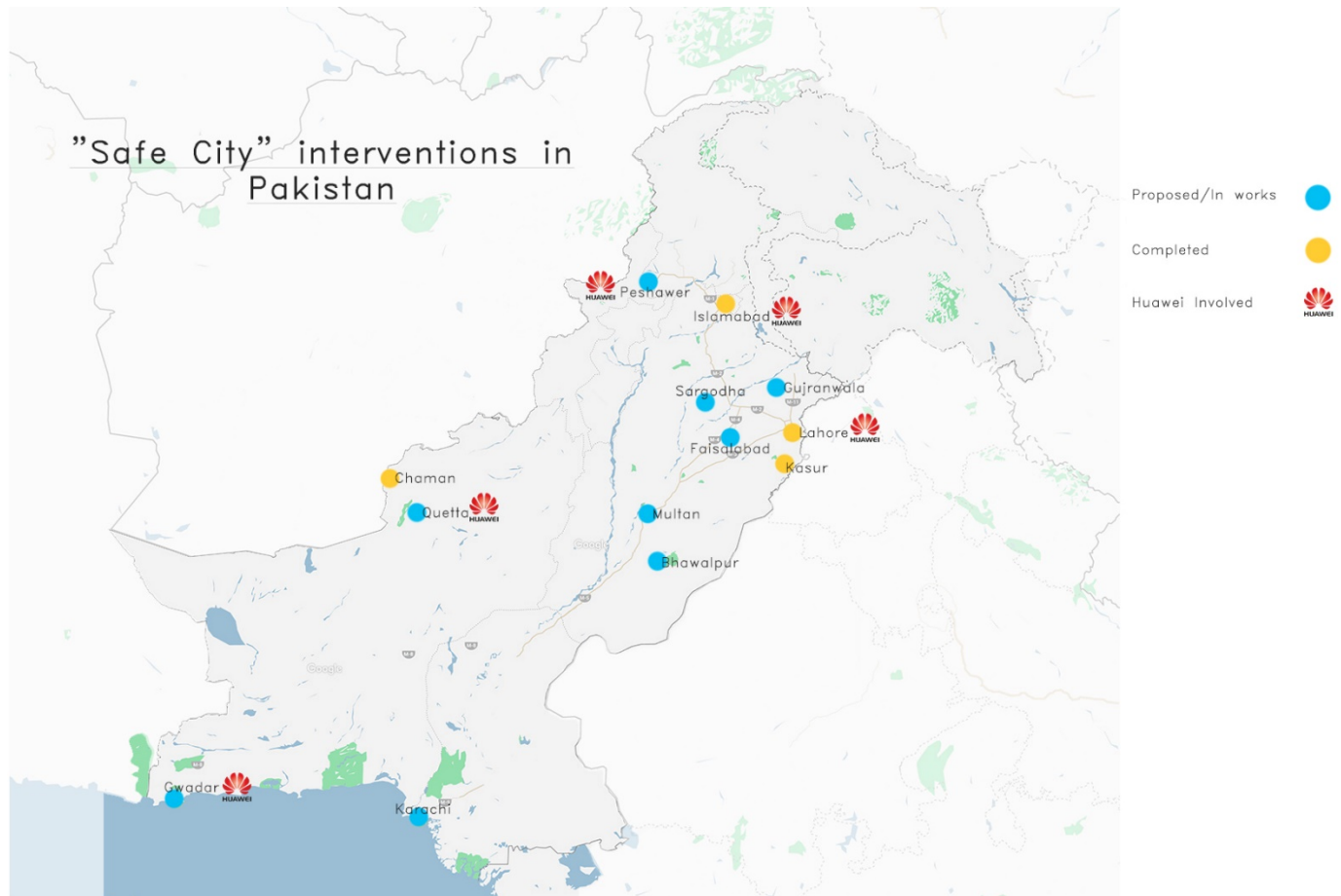


Figure 2: Huawei's Safe City Interventions

during this time that the rapid response force model was brought on from Turkey, it was called the Dolphin Force. Through the IC3 centers, the Dolphin Force was also integrated into this surveillance system.

The Punjab Safe City Authority (PSCA) serves as the controlling body for not just existing but all upcoming safe city initiatives in Punjab. The authority, amongst its executive committee and management committee only has 5 elected officials and 3 civilians 'eminent persons', the rest are government employees. The PSCA, to its credit, developed the 'Data & Privacy Protection Procedures' to enable responsible handling and usage of the surveillance system (PSCA). Even then, there are certain vague statements inside the document, it allows for recording of individuals if there is 'reasonable reason' to believe of a suspicious activity. The 'reasonable

reason' is not elaborated upon in the procedures and opens it up for misuses, this became most blatantly obvious when images and videos captured from the Islamabad Safe City project were leaked on social media (Azeem). The procedures also call for placing cameras in public places that should not infringe upon the privacy of the citizens but at the same time leaving it on the discretion of the Authority and law enforcement agencies. According to the document, the data that is gathered through the IC3 center remains the ownership of the Authority and the center. It is telling that the government strictly prohibits the acquiring of the materials by citizens for any other purposes other than court cases, thus it further renders the processing and inner workings of this site opaque.

Lahore – Safer City?

Lahore's safe city project was touted as the biggest of its kind in Asia and heralded a step towards a 'smart city' ("Punjab Govt, Huawei Inaugurate Lahore Safe City Project"). What Fig. 2. should make obvious is that the Safe City initiatives are planned across the country and some have even been carried out in minor towns such as Kasur and Chaman. Pakistan already possess a centralized identification database, maintained by NADRA, coupled with the capabilities of Safe City which are known to be linked directly to the Intelligence agencies of the country such as Inter-Services Intelligence (ISI), this should alarm any citizen (Shahid). It is not absurd to imagine a situation where this machinery is mobilized to quell unrest or target dissenters. It is not just the breadth of the safe city initiatives that is alarming but also the extent to which Huawei, and by extension China, is involved with facial recognition, AI based surveillance projects in Pakistan. Figure 3 documents just the connections forged around or near safe-city initiatives, the true scope is still shrouded in secrecy.

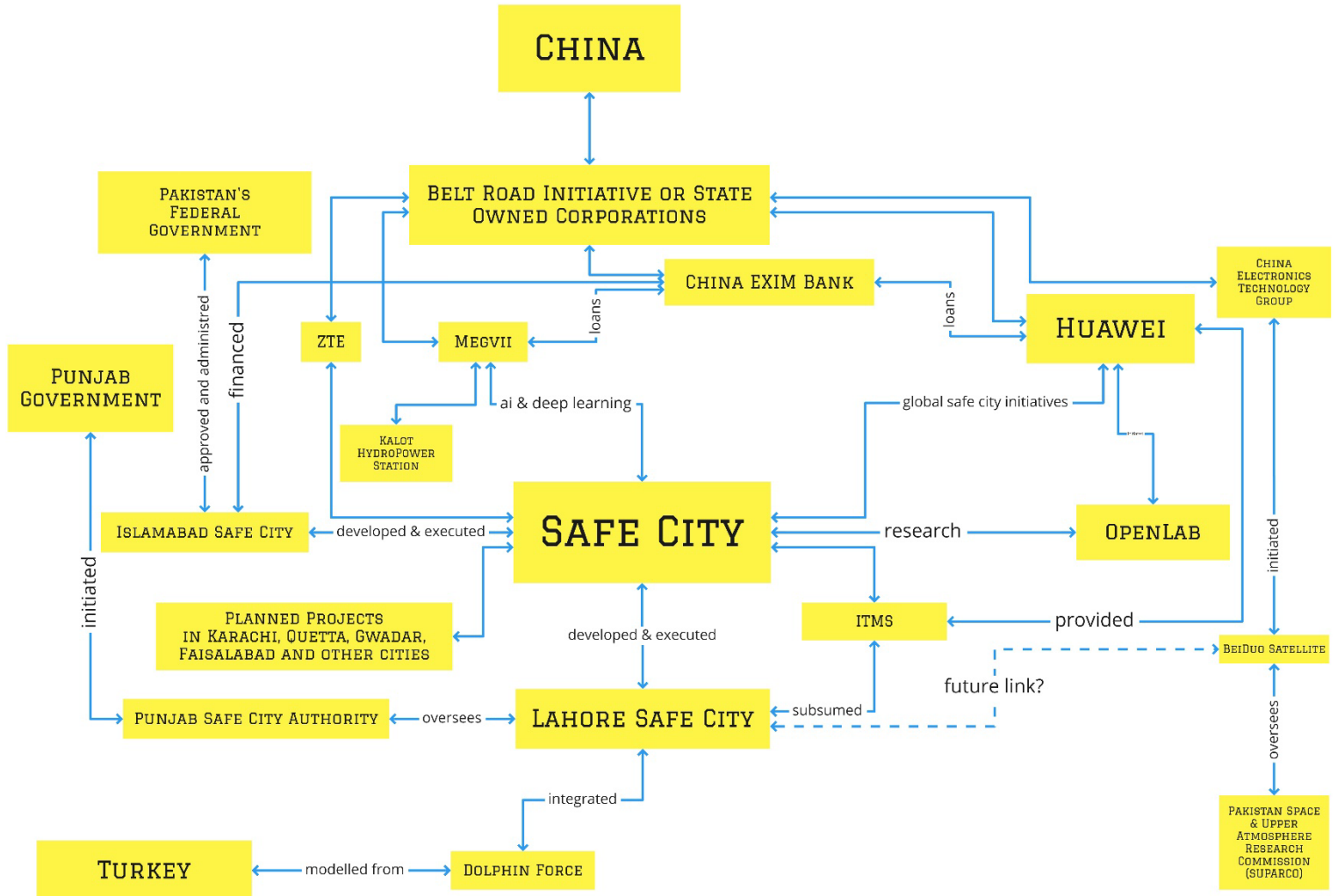


Figure 3: The web

Huawei is also involved with building data centers in Pakistan, one of which has already seen completion (Moss). While the government of Pakistan had initially vouched for the ‘ability’ of Huawei to safely and securely carry out the project, it was later left red-faced when a security flaw was found in Huawei’s cameras; the cameras had Wi-Fi modules, allowing them to be accessed remotely. According to one government official, Huawei never provided the capability to the government and thus the government was unaware of their presence. This led to the

government pulling the Wi-Fi modules from the camera (Kelion and Iqbal). This raises important questions about the government's ability to truly understand the consequences of the project that it has undertaken. Considering the network of Chinese companies involved in Pakistan's surveillance system, this can easily become a liability for the country if the relations between the countries are soured or Huawei goes rogue. The Safe-City initiatives have virtually allowed the Huawei to train, develop and implement its facial recognition tech without any substantial oversight from local governments. The lack of information that is available on Huawei's projects in Pakistan is another alarming feature; the Safe City materials from Huawei barely mentions Pakistan or Lahore. While the company still hosts various 'success stories' on its website, only Lahore's Integrated Traffic Management System is mentioned. At one point in past, Lahore's Safe City project was included on the website, but it has been scrubbed off since then (*Wayback Machine*).

Huawei purports in its official literature that the safe city initiatives have been able to reduce significant amount of crimes and improve the overall security condition (Huawei and IDC). This was the dream that was echoed by officials in Punjab working on the Safe City project, which believed that 20 percent of crimes involving rioting, 28-30 percent of vehicular crimes, 15-20 percent crimes against property could be reduced in first five year of the project (Dogar). The reality could not be further from the truth. Bloomberg reported that the safe-city initiatives were largely ineffective, not just in Pakistan but globally as well (Prasso). The numbers reported by Pakistan Bureau of Statistics also do not prove a substantial link to the of security condition getting better as a result of the project (see Fig. 4a and Fig. 4b). The U.S. Department of State's Overseas Security Advisory Council's crime reports also show an increase in the crimes (*Pakistan 2020 Crime & Safety Report*). Fig 5a illustrates the number of casualties in Punjab as a

direct result of Terrorist attacks, it illustrates that the importance of creating safer cities and securing our regions. The Safe-City was directly conceived as a response to the menace of terrorism but as Fig 5b illustrates, the number of bomb blasts in Lahore increased after the implementation of the project. The August 7, 2017 blast in Lahore was directly linked to the Safe-City cameras failing to track and detect the truck that carried the bomb (Sher Ali Khalti). It was only when the Government of Pakistan authorized a military operation in the Northwestern regions that the number of terrorist attacks tapered off.

The issue here is not only that the safe-city project is ineffective, but also that it has been ineffectively managed. Since the completion of Safe City projects in Islamabad and Lahore, after every few months newspapers report how significant numbers of CCTV are non-operational. In Jan 2020, Dawn reported how 4000 out of the 8000 cameras installed as part of the project were offline (Chaudhry). In July 2019, Pakistan Today reported that the Islamabad project is 'nearly out of order' (Ahmand Ahmadani). The Express Tribune reported that the Authority is being 'used as a machinery for administrative purpose' and incidents of misbehavior with citizens were documented ("Are Safe City Authorities Actually Making Lahore Safe?"). The issues range from bureaucratic infighting on the control of PSCA, the lack of funds to run such a massive operation and ineffective administration. It was reported that the 4000 cameras in Lahore were taken offline by the 'Chinese company' (read Huawei) due to lack of payment of over Rs. 1 billion to the said 'Chinese company' (Chaudhry; "Lahore's Safe City Dream Came to a Halt"). This raises serious questions about the far sightedness of the government which signed up on the project without looking at the financial sustainability of the project in the long run. It also raises questions on Huawei's own motives for carrying out such a project with countries that are clearly not able to afford such extravagant costs, which was also in the case of Pakistan overly inflated.

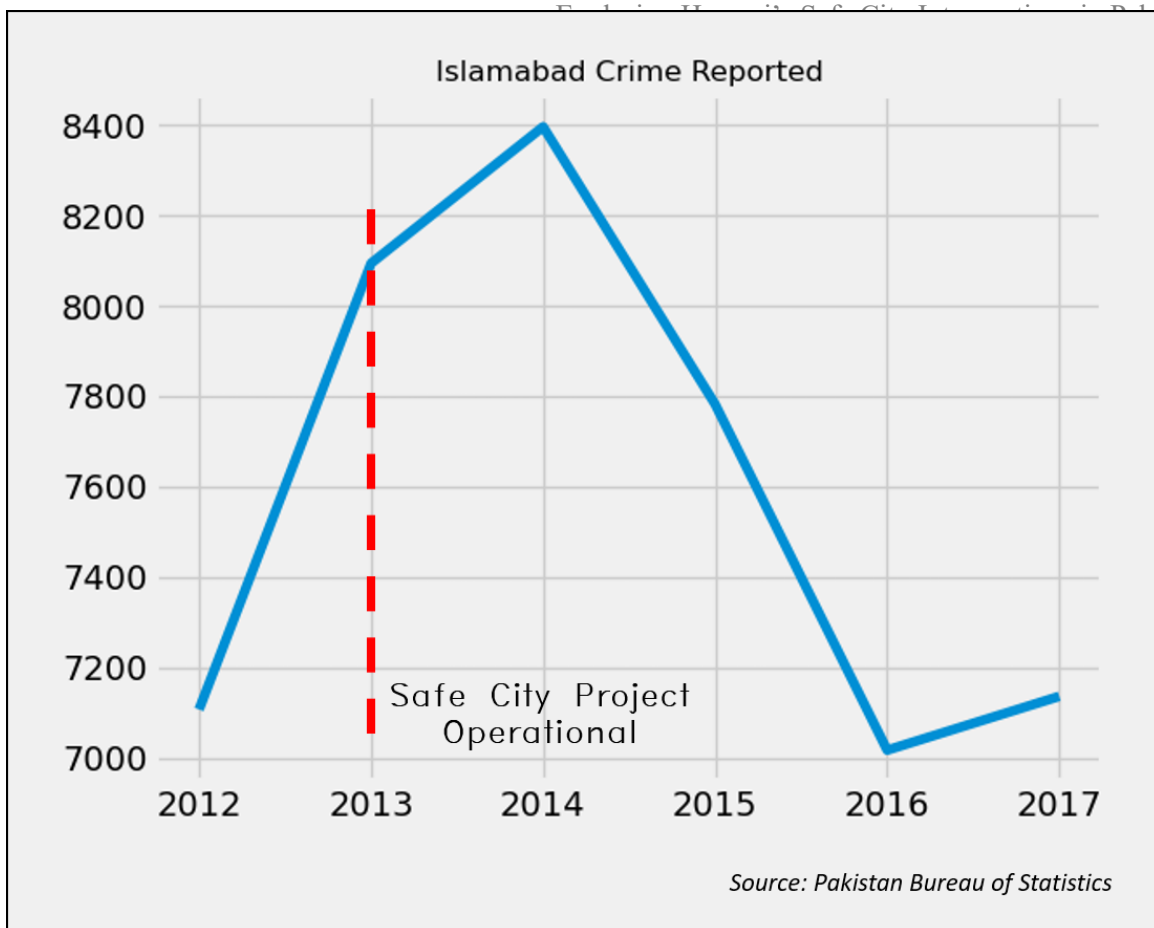


Figure 4a: Islamabad's crime

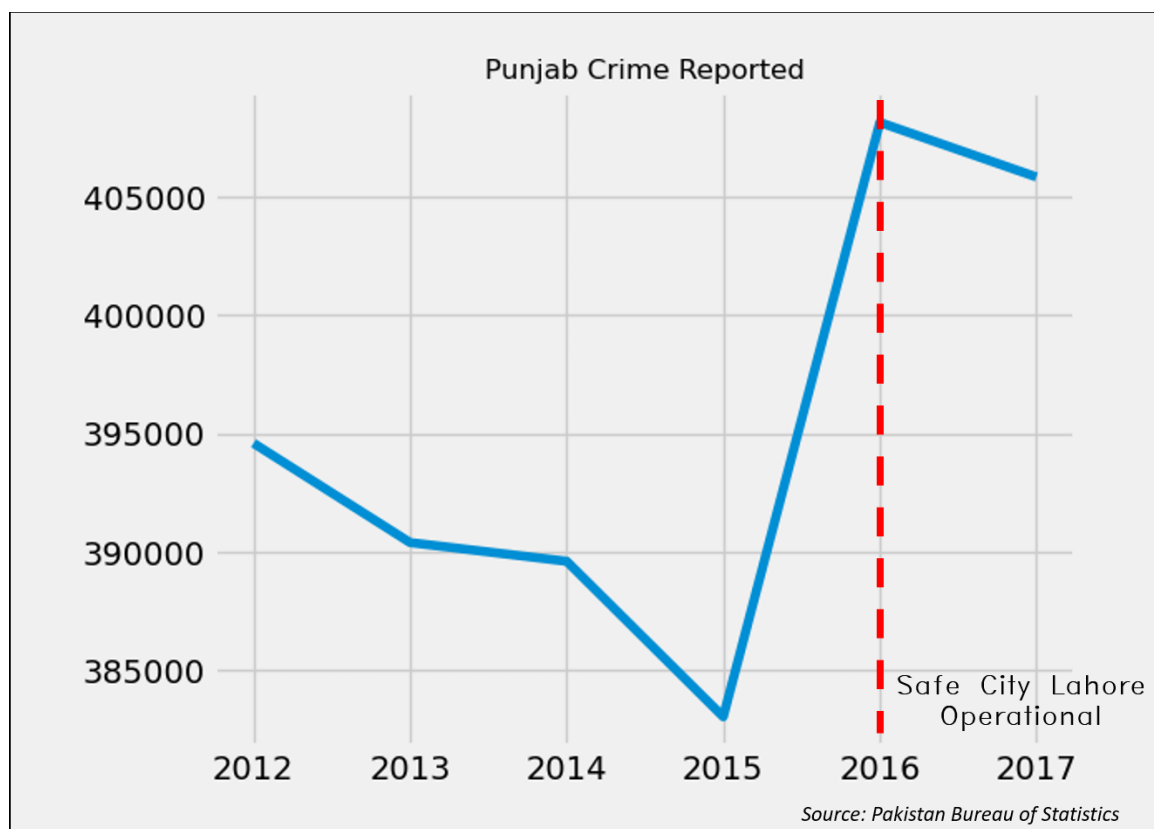


Figure 4b: Punjab's crime

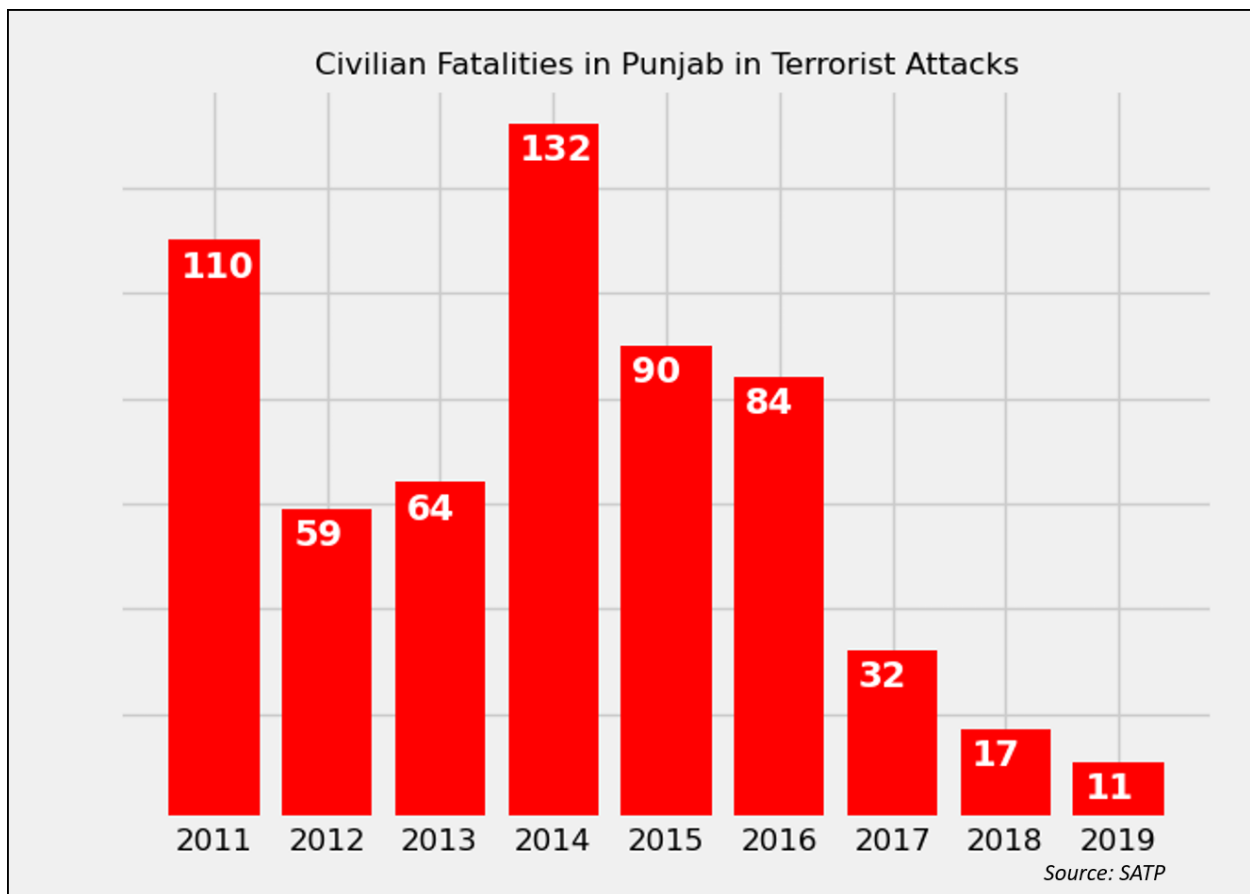


Figure 5a: Punjab's Fatalities in Terrorist Attacks

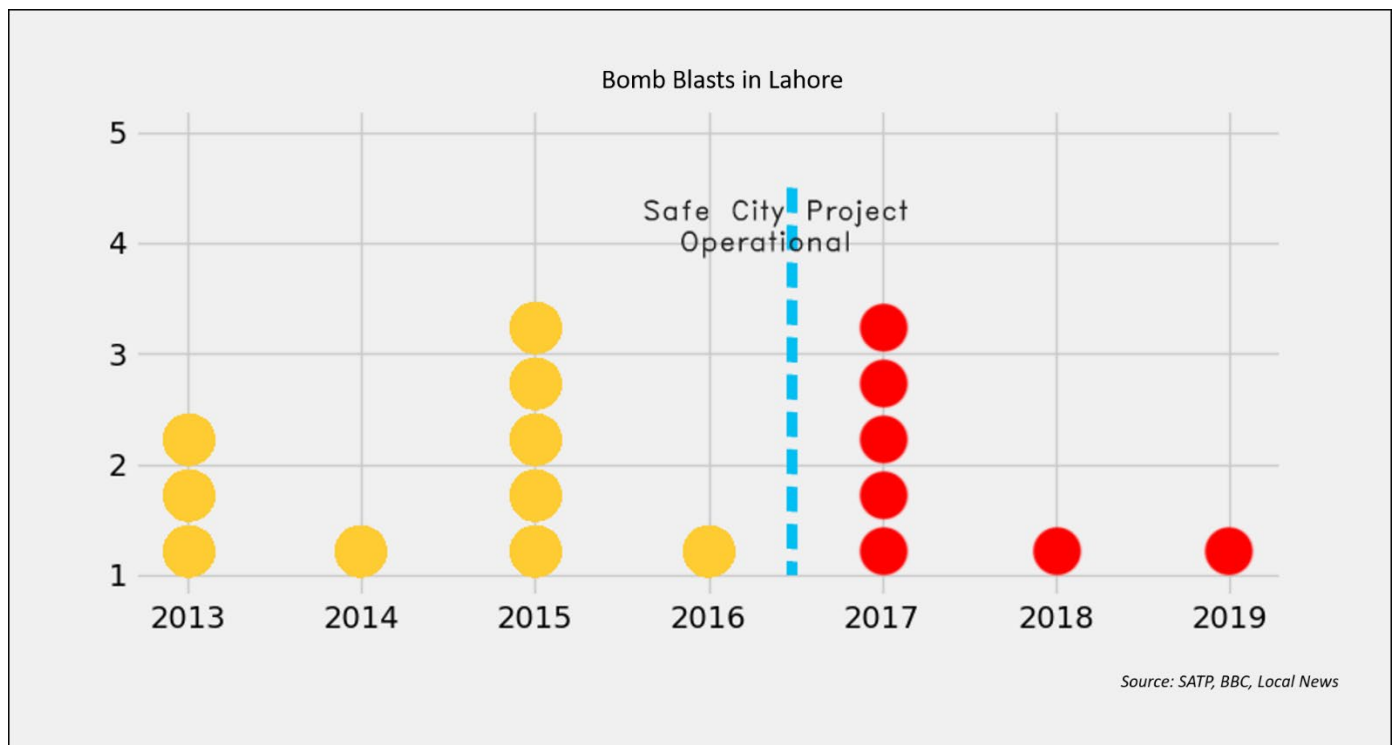


Figure 5b: Bomb blasts in Lahore

The only answer seems to be that Huawei was perhaps more interested in acquiring data and polishing its technologies that could then be exported globally. Pakistan provided a friendly testing ground in China's backyard, coupled with massive investments that China was pumping into Pakistan, Huawei knew it would be able to do as it pleases.

The \$84 million project in Lahore is capable of Facial recognition, number plate tracking, has an Integrated Traffic Management System (ITMS) and is controlled by the 10,000m² PPIC3 center. It was to be used by only law enforcement agencies and runs on 4G and LTE-A capabilities. It is also supported by Huawei's data center and deployed an extensive 2,000 km of fiber optic network. In 2017, Punjab government released \$248.7m for Safe-city projects across the province as opposed to a meager \$3m for clean drinking water (Fig 6). If such a behemoth undertaking could not manage to create a safer city, then perhaps the entire approach towards this model is wrong. It also speaks to the fact that unless sufficient financial and human capital is available for the local governments, such projects are unlikely to succeed and be marred by the problems that safe-city has faced in Pakistan.

The real issues with Safe-City

The safe-city project has plethora of logistical, administrative and technological issues that surround perhaps all infrastructure projects around the globe; even China's influence and Huawei's model has been extensively documented and critiqued (Cave et al.; Feldstein; Hillman and McCalpin; Atha et al.). But there are issues with the Safe-City that go beyond the numbers, the money and the influence, and in many ways, these are imperative to the discourse, or lack thereof, that is had on Safe-City. In Pakistan, this all the more important because Pakistan

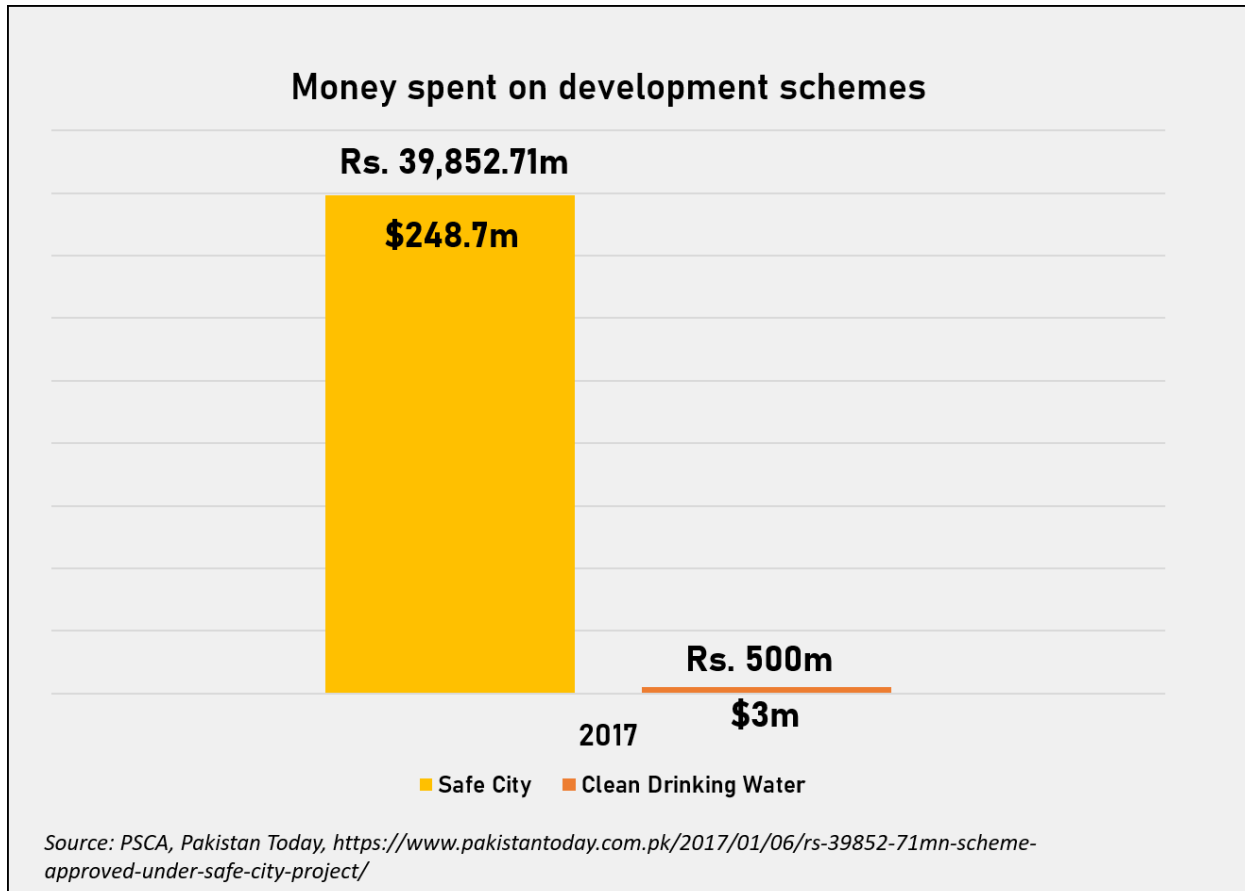


Figure 6: Expenditure on Safe city vs Clean drinking water project

severely lacks structures that can enable a critical conversation about issues which are directly related to the geopolitics of the region. It will be megalomania to think that one paper can start this conversation, but it is still imperative to try, nonetheless.

The safe-city model that Huawei has implemented in Pakistan focuses obsessively on surveillance-based technologies, neglecting other forms of smart city initiatives that can be applied here and which Huawei itself has developed elsewhere. This is not a coincidence that this form of ‘narrative’ on city life is also rampant in China. China’s cities are notoriously monitored, controlled and surveilled (Cave et al.). It is exactly this kind of narrative that Huawei and China are exporting to Pakistan. This is potentially more harmful than the project itself as it allows for hijacking the narrative around smart cities, which will then always be equated with the safe-city.

It also amounts to overriding the 'situated knowledges' of the local populace (Haraway 592).

Pakistan and China are culturally, religiously and socially different in many ways. The urban forms that have developed in Pakistan are a unique mix of history, colonialism and globalization. While, Pakistan's population is still significantly rural, the urban centers play a pivotal role in society. Thus, this attempt to import a foreign urban solution is a harmful precedent. It is in many ways the removal of agency from the locals, providing the 'master' with the ability to create an 'objective' knowledge (Haraway 592). In this case the master is a truly foreign entity that might reshape our urban fabric for generations. It is not just the issue of policing the individual body but also the very notion of how you move and experience the city-scape.

There is also the very real concern of the data centers as being 'black boxed'. Black-boxing, as defined by Latour is the act of hiding away the internal workings of 'objects', thus only the inputs and outputs are visible and not the actual processes itself (Latour 300). The problem of black boxing in AI technologies has itself been documented (O'Neil 145). Their inner workings are too complicated and opaque and so render them nearly incomprehensible to humans. While this is an important issue, we are also concerned about the black-boxing of the physical site itself. The Punjab Police's IC3 (PPIC3) center has itself been conceived as literally a black box. It is a bomb-proof shelter that strictly controls what goes in or what goes out of the building itself. While it serves as the central command center for the Safe city project, there is a little to no information on where the data is processed or stored. This lack of transparency makes it easy for anyone to misuse the site for their own advantages. As mentioned above, the leak of images from the Safe City project proved that the centers are not entirely secure from maleficent activities. With the lack of oversight and technical expertise, these black-boxed sites pose a

threat not just to the citizen's freedom and privacy but also to the state itself, as centralized repositories of data are easier to target than a decentralized one.

The leak of images, referred to above, was also a significant development. As reported in the media, the leaks were specifically of 'couples' spotted hanging out public place (Azeem). Considering Pakistan is an Islamic society, the free mingling of different sexes, especially couples, is frowned upon, to put it mildly. The leaks were in many ways an attempt to shame and correct this 'deviant' behavior. As Ruha Benjamin notes, AI based surveillance plays a key role in trying to suppress the 'deviances' from the perceived 'normal' of the society (Benjamin 11). Mass surveillance systems, such as the Safe-City projects increase the ability to 'normalize' by tenfold and in the age of social media, their reach is unprecedented. Pakistan already has an abysmal records on mob-violence and lynching, thus it is not unimaginable to think of a situation where Safe-city project can provide the fodder to a volatile situation (Sher Ali Khalti).

There is then also the obvious problem of Pakistan's ability, or lack thereof, to deal with emerging technologies. Pakistan has no clear laws on how to use of AI surveillance and it is still trying to formulate basic digital and privacy rights laws. Recently, it came under fire issuing new 'draconian' social media rules (Ahmed). Thus, it is perhaps the most important question to consider Pakistan's ability to deal with such sensitive and private data which directly pertains to people's faces and identities. It is concerning that Pakistan has been developing new safe city projects without the sufficient legwork necessary that can ensure safe and reliable use of the data. There is an urgent need for the government to develop frameworks that can tackle this new phenomenon. O'Neil has also argued that algorithmic audits are necessary for the safe and transparent running of such massive AI systems (O'Neil 178). The audits can not only provide transparency but also serve as valuable opportunities to educate and train the locals as well.

But perhaps it is not what the Government is concerned about. If one were to think about why Huawei approached Pakistan in 2009 and helped secure the 850-million-yuan loan for the Safe City Islamabad, suspicions do arise. Pakistan with its 5th largest population in the world and the relaxed rule of law, provided Huawei with immense amounts of data on which to train its technologies. Huawei trained not just on facial data but also vehicular tracking as well (Dogar) and Huawei's continued involvement in building data-processing centers in Pakistan points to the possibility that Huawei might still be utilizing data it has gathered from Lahore and Islamabad. It is then directly profiting off that data as it has enabled Huawei to bring its technologies to new heights. This profiting off the surveillance data is what Zuboff has referred to as 'Surveillance Capitalism' (Zuboff). Zuboff documents in detail how this enables cycles of exploitation of the people whose data is mined, terming it as the 'Kidnap, Corner, Compete'. This could, in many ways be the new face of an extraction economy, that is far more valuable than the mining of minerals. The citizens of Lahore and Islamabad are nothing more than 'data assets' for Huawei. This 'facial-farming' runs the real risk of bringing a different and more invisible form of colonialism, and perhaps nothing could be more damaging for Pakistan than sinking into another colonial rule.

Also of note is Pakistan's inability to sustain such a resource intensive project. As mentioned earlier, the project in its current condition is semi-operational but still using resources as the government keeps on pushing for more safe city projects. In country like Pakistan, this is tantamount to financial suicide. As obvious by Senator Mehmood remarks, the country does not take the decisions entirely independent, it is bound by its commitment to China, Chinese involvement and the whims of the local politicians (Arshad). Thus, an argument can be made that Pakistan is digging its own grave in more ways than one.

Concluding remarks

The entire story that has been narrated above aim to fights against the obfuscation that has surrounded Huawei's involvement in Pakistan. It is to counter the narrative that safe city projects are beneficial and entirely harmless. It also needs to serve as a warning call to the not just the government officials but researchers and activists. While Pakistan in recent years has seen a significant number of movements coalescing around the issues of freedom of expression, digital and privacy rights, the absence of discourse on AI surveillance is concerning. Even the Supreme Court in 2012 was focused solely on the economical and administrative aspects of the project and did not refer to the dangers of deploying such systems.

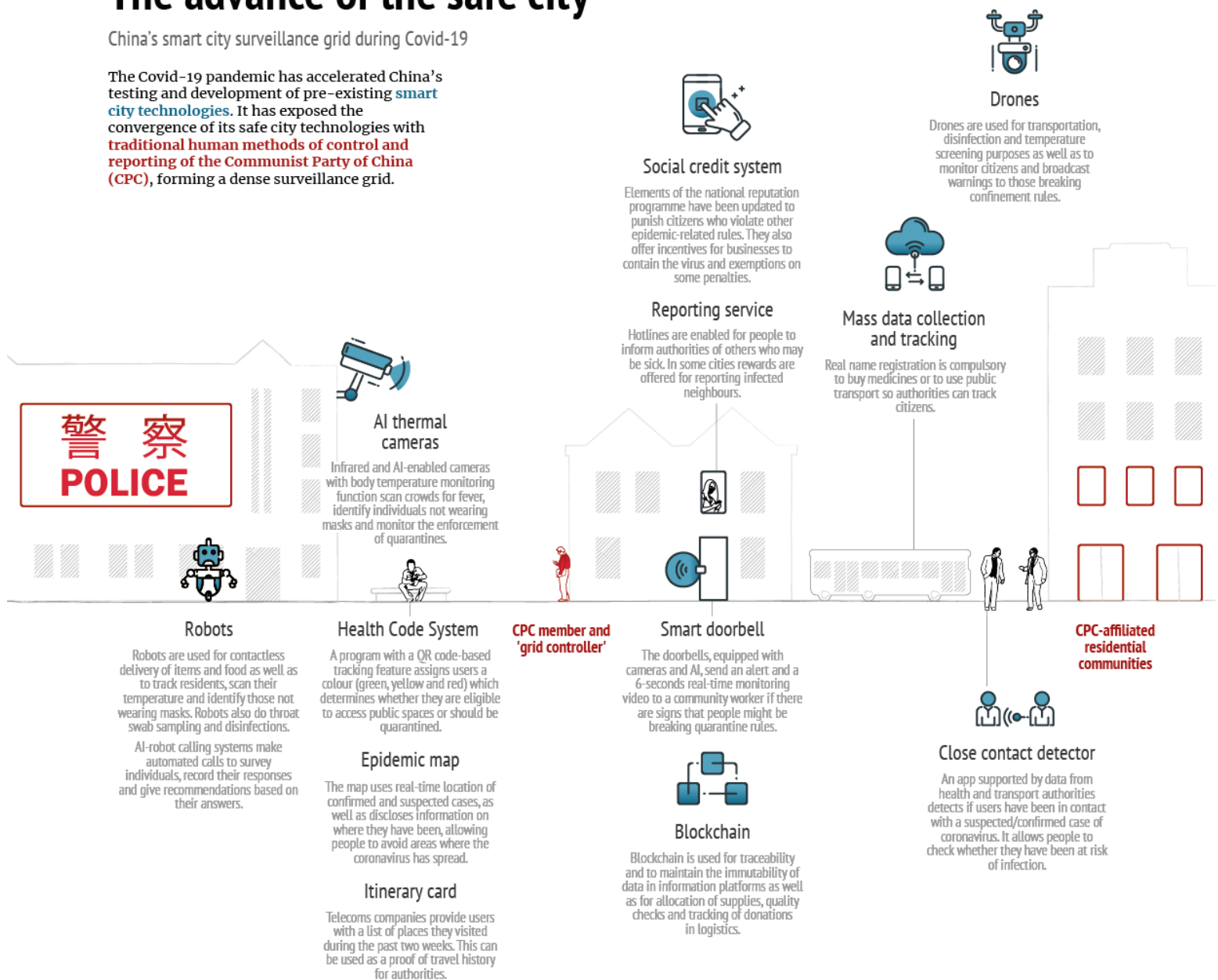
For anyone doubting the dangers of AI surveillance system, Fig 7 should provide an interesting overview about how such an urban IoT infrastructure can be repurposed easily. The pandemic provided an interesting case study where China was able to utilize its systems to track and monitor its citizens till the last step. These capabilities were not acquired specially for the pandemic but were built into the project since the beginning, and thus activated when required. It should make clear that due to the technical complexity and scale of such projects, it will be naïve to trust foreign entities and governments to manage and deploy these sensitive systems.

The Safe-City project, bluntly put, is the systematic handing over of our cities to foreign corporations and government. One can argue that the projects, in their current condition are not capable of doing much harm, but that should be taken as an exception not the rule. For once, Pakistan's administrative ineffectiveness has been a blessing in disguise. But it's likely that Huawei and other Chinese companies would develop different models to counter that. Huawei could in the future handle the operations of the projects entirely on its own, thus closing the

The advance of the safe city

China's smart city surveillance grid during Covid-19

The Covid-19 pandemic has accelerated China's testing and development of pre-existing **smart city technologies**. It has exposed the convergence of its safe city technologies with **traditional human methods of control and reporting of the Communist Party of China (CPC)**, forming a dense surveillance grid.



Anti-epidemic tools

Since the emergence of the Covid-19 crisis, China has attempted to position itself as a global provider of technologies through the exportation and donation of "anti-epidemic" solutions, and to promote its urban governance model. Companies such as Huawei, Dahua and DJI have exported or donated anti-epidemic technologies to other countries. Here is a non-exhaustive list of technologies promoted and/or donated by Chinese companies to foreign countries or cities in March and April 2020.

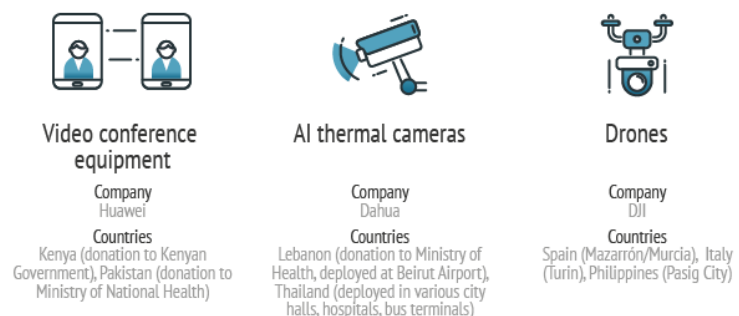


Figure 7

possibility of any administrative failings. Chinese companies indeed have the political clout to set the terms as they please, as was evidenced by the infighting on the bid for Quetta smart city project between ZTE and Huawei (Kiani). In a country like Pakistan, an operational safe-city project is as dangerous as any militant organization. What is more saddening is that the general population in the country has been kept in the dark with regards to the extent of these projects. Even with information available it is unlikely that 'AI based facial recognition' is going to create a public outrage, primarily due to inability of the people to truly understand the implications of such systems. This will be slow erosion of the 'Pakistani urban life' as we know it. While there might a long road to a completely authoritarian and utopian society, the opportunities to abuse and exploit these systems are far more common. If cities are the cradle of modern human civilization then the fight against such intrusive, foreign owned AI-based surveillance system is, simply put, a fight for our civilization, and for Pakistan a fight for dignity and self-respect.

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