Watching Huawei's "Safe Cities"

By Jonathan E. Hillman & Maesea McCalpin

THE ISSUE

Huawei's "Safe City" products have fueled concerns that China is "exporting authoritarianism." Among the "solutions" Huawei sells globally under this label are facial and license-plate recognition, social media monitoring, and other surveillance capabilities. To better understand these developments, the CSIS Reconnecting Asia Project examined open-sources and identified 73 "Safe City" agreements for surveillance products or services across 52 countries.

KEY FINDINGS INCLUDE

- Huawei is expanding into next-generation markets: Its partners tend to be non-liberal, located in Asia or Africa, and middle-income.

- The benefits are questionable: The benefits of Huawei's "Safe City" solutions are difficult to verify and appear grossly exaggerated in some cases.

- Local context is key: Huawei's "Safe City" label encompasses a range of technologies, the actual usage of which can vary widely depending on local conditions.

HUAWEI'S NEXT-GENERATION MARKET NICHE

Countries entering into Huawei "Safe City" agreements tend to share three characteristics:

1. Non-liberal: Seventy-one percent of Huawei's "Safe City" agreements are in countries with an average rating of "partly free" (44 percent) or "not free" (27 percent) by Freedom House between 2009-2018.

2. Asian or African: Fifty-nine percent of Huawei's agreements are with countries located in Asia (37 percent) or sub-Saharan Africa (22 percent).

3. Middle-income: Seventy-one percent of Huawei's agreements are in lower-middle-income (42 percent) and upper-middle-income (29 percent) countries.

Huawei's growing foothold in these markets could pay big commercial and strategic dividends in the future. By 2050, nearly 70 percent of people in the world will live in urban areas, according to the United Nations, and 90 percent of global population growth is expected in Asia and Africa. After adopting Huawei's equipment, countries may be "locked-in" by high replacement costs. As these economies grow, Huawei is poised to capture market share, spread its standards, and gain access to foreign data to improve its technology.

EXAGGERATED BENEFITS

The benefits of Huawei's "Safe City" solutions are difficult to verify and appear grossly exaggerated in some cases. For

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example, a Huawei presentation claims that an unnamed city ("XX Safe City") experienced a 15 percent reduction in violent crime; a 45 percent increase in the case clearance rate; a reduction in emergency response time from 10 minutes to 4.5 minutes; and most incredibly, an increase in "citizen satisfaction" from 60.2 percent to 98.3 percent.

Of course, the claims above cannot be verified. All statistics are reported for an unspecified location and time period and no specific data or sources are provided for the numbers. Huawei has a history of making similar claims in its promotional materials, which boast dramatic improvements in emergency response times, crime rates, and case-solving rates.
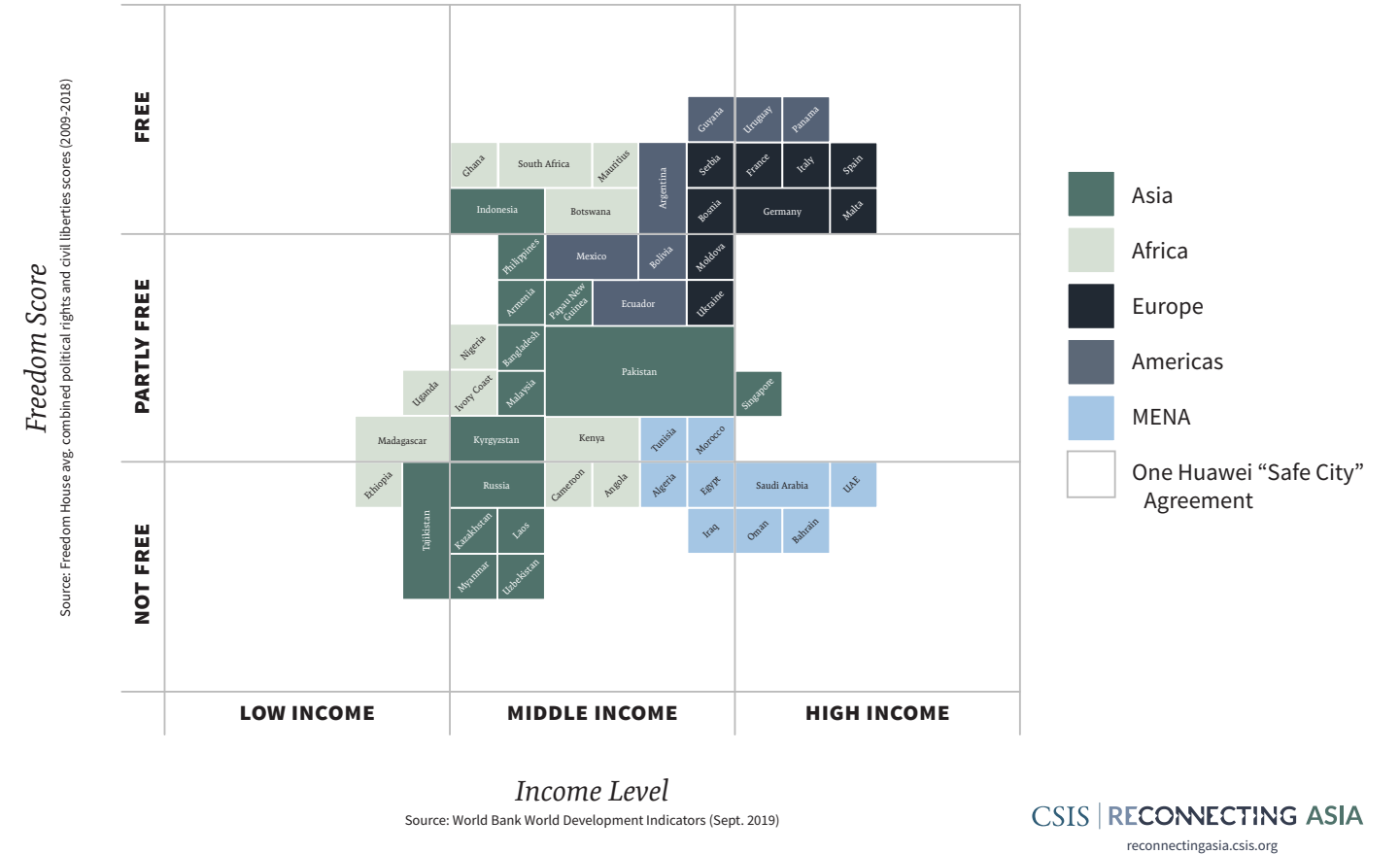
In other cases, Huawei's claims are at odds with publicly available information. In Kenya, for example, Huawei claims that the crime rate in the regions covered by its "Safe City" systems declined by 46 percent in 2015 compared to the previous year. However, Kenya's National Police Service reports a smaller decrease in crime rates in 2015 in Nairobi and a slight increase in Mombasa, the two cities where "Safe City" equipment was installed in 2014. According to the same report, Nairobi also saw an increase in reported crimes in 2017 to higher than pre-installation levels.

GETTING SMARTER: LOCAL CONTEXT IS KEY

These preliminary findings underscore the need for further research on Huawei's "Safe City" products and smart city technology more generally, especially studies that shed light on the following:

- **Understanding demand-side drivers**: Income level appears to be as strong of a predictor for adopting Huawei's "Safe City" equipment as a country's freedom rating. This underscores the importance of examining economic drivers alongside political drivers. Huawei's products appeal to countries not only because they promise governments a higher degree of control but also because of their affordability and commercial promises.

- **Calculating both costs and benefits**: Huawei's unsubstantiated claims underscore the need for work that objectively evaluates its actual impacts. Most news coverage to date has been anecdotal and focused on costs, including adverse impacts on governance and human rights. That work is critical, but other aspects of Huawei's sales pitch remain largely unchecked.

Where Are Huawei's "Safe Cities"?

Source: Freedom House avg. combined political rights and civil liberties scores (2009–2018)

Income Level

Source: World Bank World Development Indicators (Sept. 2019)

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- **Examining local institutions and actors**: Huawei's partners are not blank canvases. Their laws, institutions, and relative power among competing interest groups shape how technology is used. Additionally, several Western countries have experimented with Huawei's "Safe City" offerings, and many are using similar technology from competing vendors. Case studies could help reveal best practices for maximizing the benefits and adverse effects of safe city technology more generally, as well as reveal differences between Huawei and its competitors.

The CSIS Reconnecting Asia Project will be digging into these questions in the coming months as part of its coverage of China's "Digital Silk Road."

SOURCES AND METHODOLOGY

This data was compiled based on open-source research in English and Chinese of sources, including Carnegie's AI Global Surveillance (AIGS) Index; the Australian Strategic Policy Institute's International Cyber Policy Centre; Huawei's websites, videos, and promotional materials; the websites of local, provincial, and federal agencies or ministries responsible for known smart cities based on publicly available lists and Huawei "Safe City" conference attendees; smart city project pages and the website of any private company involved; and relevant local, national, and international news articles published through September 2019.

In this analysis, "Safe City" agreements include MOUs, contracts, and other types of collaboration that explicitly refer to the development of a "Safe City" by Huawei or another participant or that include one or more of the products or services aimed at public safety or security listed in Huawei's descriptions of its "Safe City" solutions, such as: command centers, CCTV cameras, intelligent video surveillance, facial and license plate recognition technology, crowd monitoring, situational awareness detection, noise monitoring or detection, abandoned object detection, and social media monitoring.

Agreements can occur at the national or local level or between Huawei and a private company. Depending on the scope, a single agreement may cover an entire country, multiple cities, a single city, one or more neighborhoods within a city, or one or more private commercial developments.

The analysis does not include Huawei smart city solutions targeted at issues such as public Wi-Fi, traffic congestion, energy consumption, e-government services, education, research collaboration, or other non-security related activities unless they appear in combination with one or more of the activities listed above. ∎

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