Huawei Intelligent Video Surveillance CloudIVS Business Overview

Huawei Video Surveillance Solution Sales Department

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Challenge 1: Video Big Data

500,000 Cameras = 43 PB Video files per day = 1,200,000 Movies per day

56 Killed → 2 weeks Recordings Manual Check → 4 Arrested

How can the police find **Valuable Data** from massive amounts of video and make good use of it?

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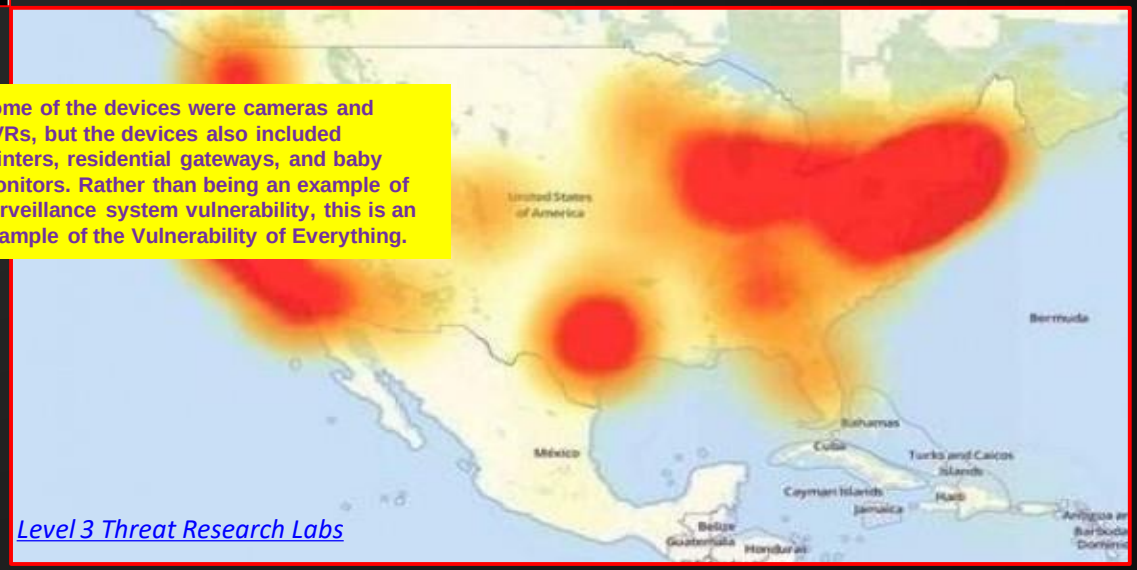
Challenge 2: Network Security of Video Surveillance


```
# netstat -lan
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address               Foreign Address             State
tcp        0      0 0.0.0.0:30960               0.0.0.0:*
tcp        0      0 0.0.0.0:21                  0.0.0.0:*
tcp        0      0 192.168.16.200:33336        192.168.16.202:554
tcp        0      0 192.168.16.200:49385        192.168.16.205:8005
tcp        0      0 192.168.16.200:49390        192.168.16.206:554
tcp        0      0 192.168.16.200:46467        192.168.16.204:8004
tcp        0      0 192.168.16.200:57246        192.168.16.205:554          ESTABLISHED
tcp        0      0 192.168.16.200:33324        192.168.16.202:554          ESTABLISHED
tcp        0      0 192.168.16.200:50877        192.168.16.202:8002         ESTABLISHED
tcp        0      0 192.168.16.200:45976        23.227.173.210:61100        ESTABLISHED
tcp        0      0 192.168.16.200:56507        192.168.16.204:554          ESTABLISHED
tcp        0      0 192.168.16.200:49401        192.168.16.206:554          ESTABLISHED
tcp        0      0 192.168.16.200:53916        192.168.16.206:8006         ESTABLISHED
tcp        0      0 192.168.16.200:56519        192.168.16.204:554          ESTABLISHED
tcp        0      0 192.168.16.200:57239        192.168.16.205:554          ESTABLISHED
tcp        0      0 :::8000                     :::*                        LISTEN
tcp        0      0 :::554                      :::*                        LISTEN
tcp        0      0 :::80                       :::*                        LISTEN
```

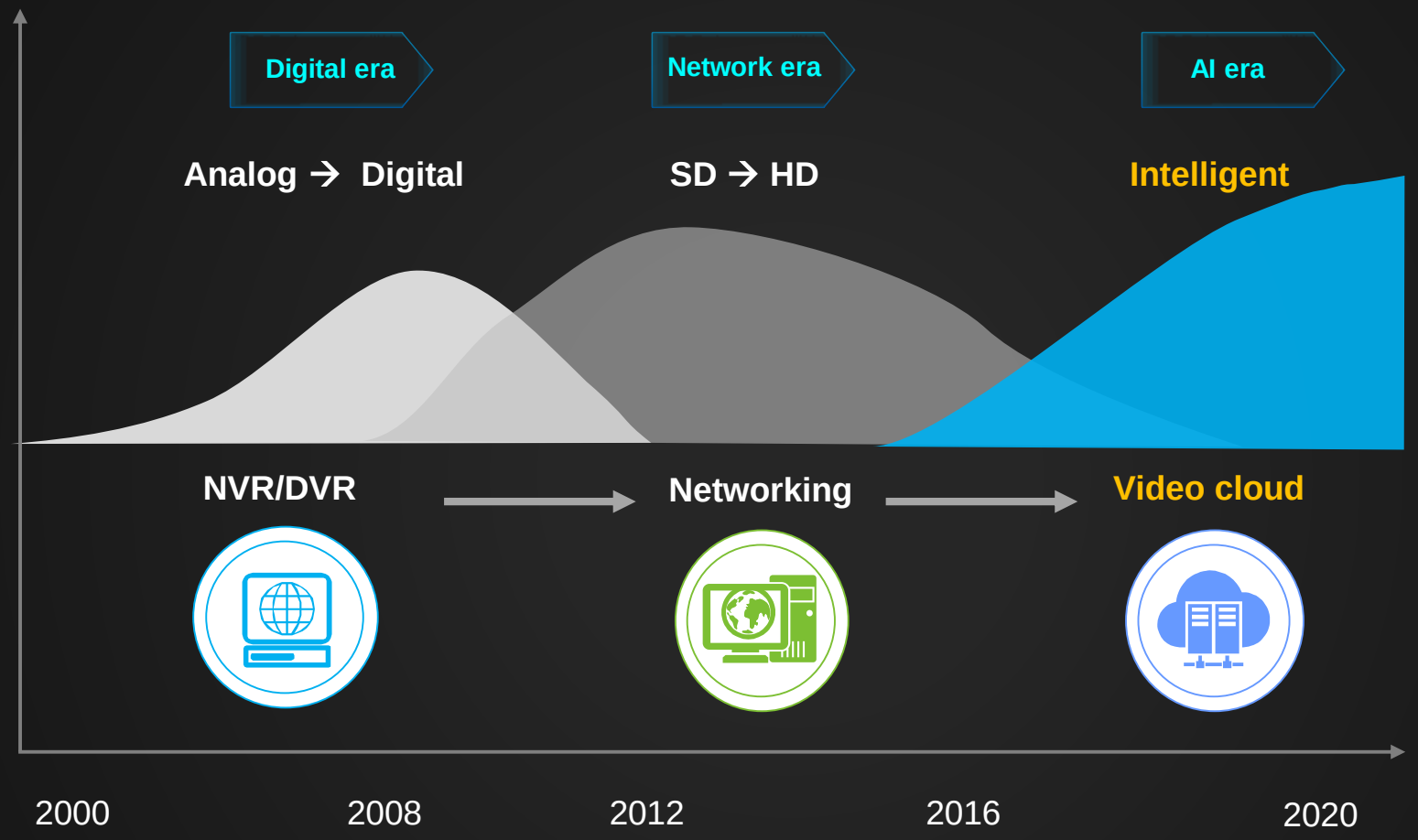
Foreign IPs Control

Case 1: In 2015, police in one China province issued a notice to a surveillance system vendor demanding that system vulnerabilities be fixed.

Case 2: In October 2016, hackers used millions of networked cameras and video recorder devices to launch a DDoS attack on an Internet DNS server, bringing down nearly half of the Internet in the United States.



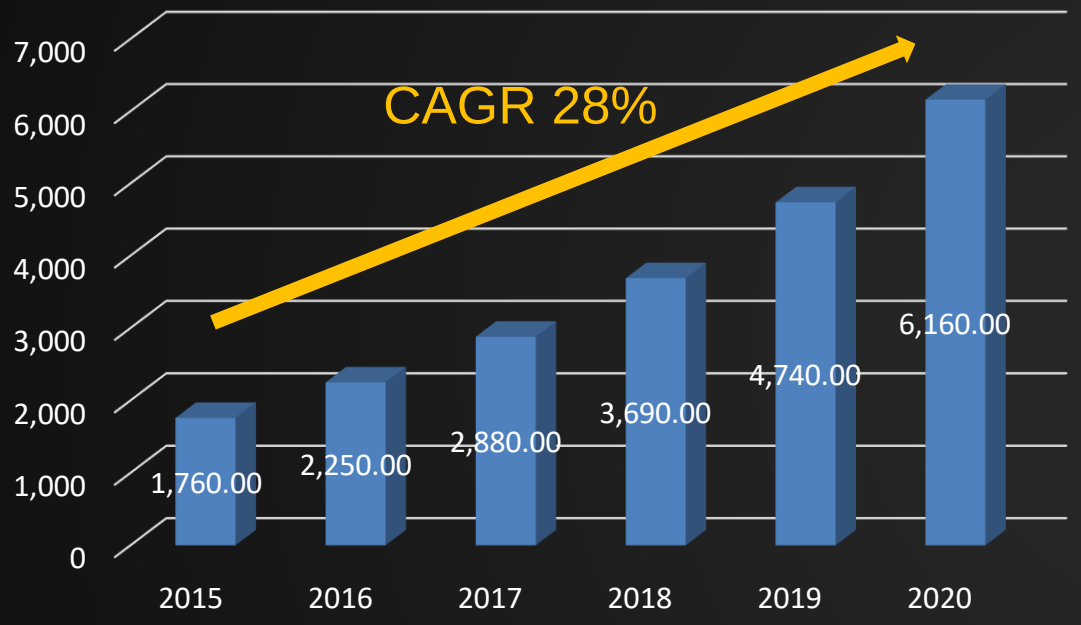
Major Trends in Video Surveillance



Video cloud technologies reduce Total Cost of Ownership (TCO) and protect existing CCTV investment.
Video cloud supports multiple AI technologies to help find valuable data to prevent and solve crimes efficiently.

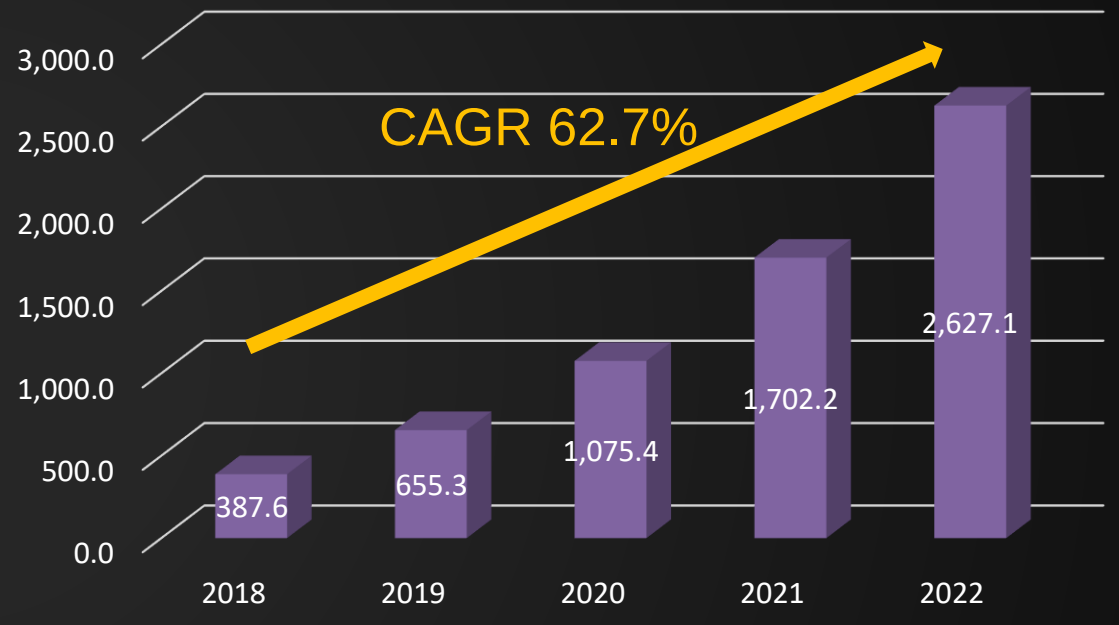
Future of Video Surveillance Platform: Cloud-based + Deep Learning Artificial Intelligence

Video Cloud Service is Growing Rapidly



Unit: US$M
Source: TECHNAVIO

Deep-learning-enabled recorders and servers



Unit: US$M
Source: IHS Report

Video cloud service and deep learning analytics market will reach US$7 Billion in 2020.

The network security situation is getting more and more severe.

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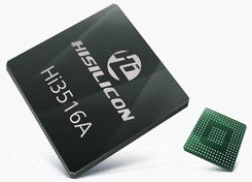
Why Huawei Intelligent Video Surveillance?

Technical strength

Innovative chipset: Huawei-developed core technology

Global market share: **70%**



20+ Years

200+ Types of Chips

5000+ Patents

100+ Countries

Most Secure: World's **first camera vendor** to pass international EAL3+ security certification

COMMON CRITERIA CERTIFIED EAL3+

International organizations

- Member of **123** standards organizations, holding **148** key positions; has submitted **23,000+** standards proposals.
- One of the eight **OpenStack Platinum Members** in cloud computing domain. Contributed **2.7 million** lines of code.
- Standards: ITU, MPEG, 3GPP, CWPAN, AVS, and ONVIF
- **Chair of the HEVC** video coding standard: Submitted **100+** accepted proposals. An **H.265** main contributor.
- **Originator** of the IETF network video storage standard.
- Innovative video technologies: four **major innovations and 350+ video patents.**

IEEE

ISO/IEC JTC1/SC29 WG11

MPEG

MOVING PICTURE EXPERTS GROUP

AVS 数字音视频编解码技术标准工作组 Audio Video coding Standard Workgroup of China

openstack FOUNDATION

PLATINUM MEMBER

ITU International Telecommunication Union

JVT

3GPP A GLOBAL INITIATIVE

Innovation

reddot award 2016 winner

Huawei Heimdallr Series

IP Camera

DESIGN
Huawei Technologies Co., Ltd.
Gao Xing, Ma Yunfei
Shenzhen, China

Professor Dr Peter Zec
Founder and president of Red Dot

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Huawei Builds Technology Leadership Based on Global R&D Centers

USA San Diego | USA Dallas | Russia Moscow | India Bangalor e | Sweden Stockholm | Germany Munich | France Paris | Italy Milan

The only company in the video surveillance industry with end-to-end core technology: chipset, algorithms, hardware, network, analytics, and cloud computing

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Huawei Intelligent Video Surveillance Solution Overview

Carrier Operator | Government | Health | Transportation | Finance | Public Safety | Energy | Campus | ...

Media Management

Media Analytics

Big Data Analysis

CloudIVS

Unified Resource Scheduling

Matrix Intelligent

Open Platform

...

Huawei Video Cloud and Global Partners

Huawei Software-Defined Camera

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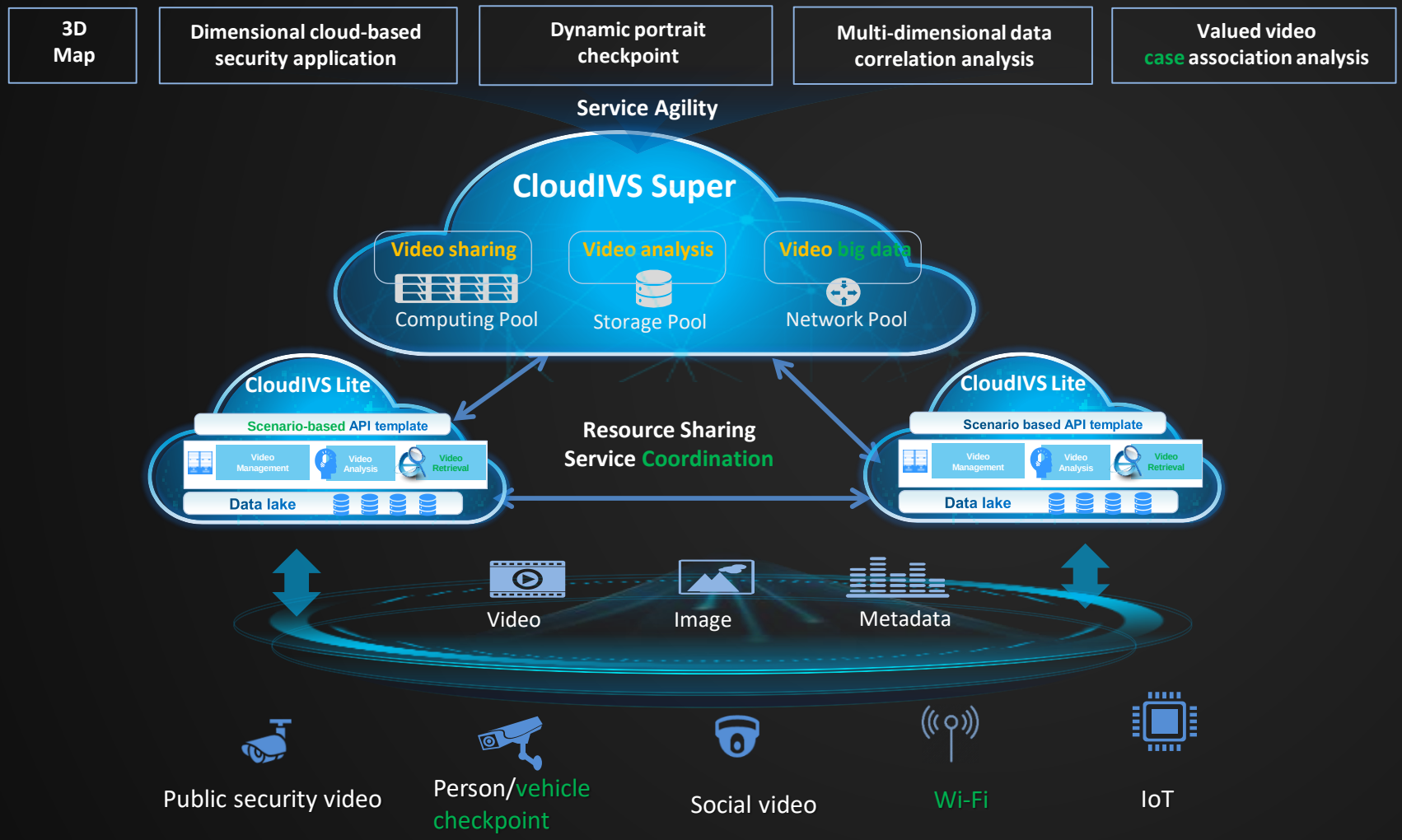
Huawei CloudIVS Video Cloud Platform Offers a Comprehensive Set of Capabilities Based on Four Key Technologies



All Cloud

- Cloud-based coordination for high efficiency and reliability
- Hyper-converged cloud node

Matrix Intelligence

- Multiple algorithms for many scenarios
- Allows engine uploads to meet specific requirements

Versatile Networking

- Multi-dimensional data connections
- Shows real-time status of terminals

Open Ecosystem

- Agile enterprise integration gets ISVs online quickly

Huawei CloudIVS Lite: Quick-Start Coverage at Edge, Do More with LESS

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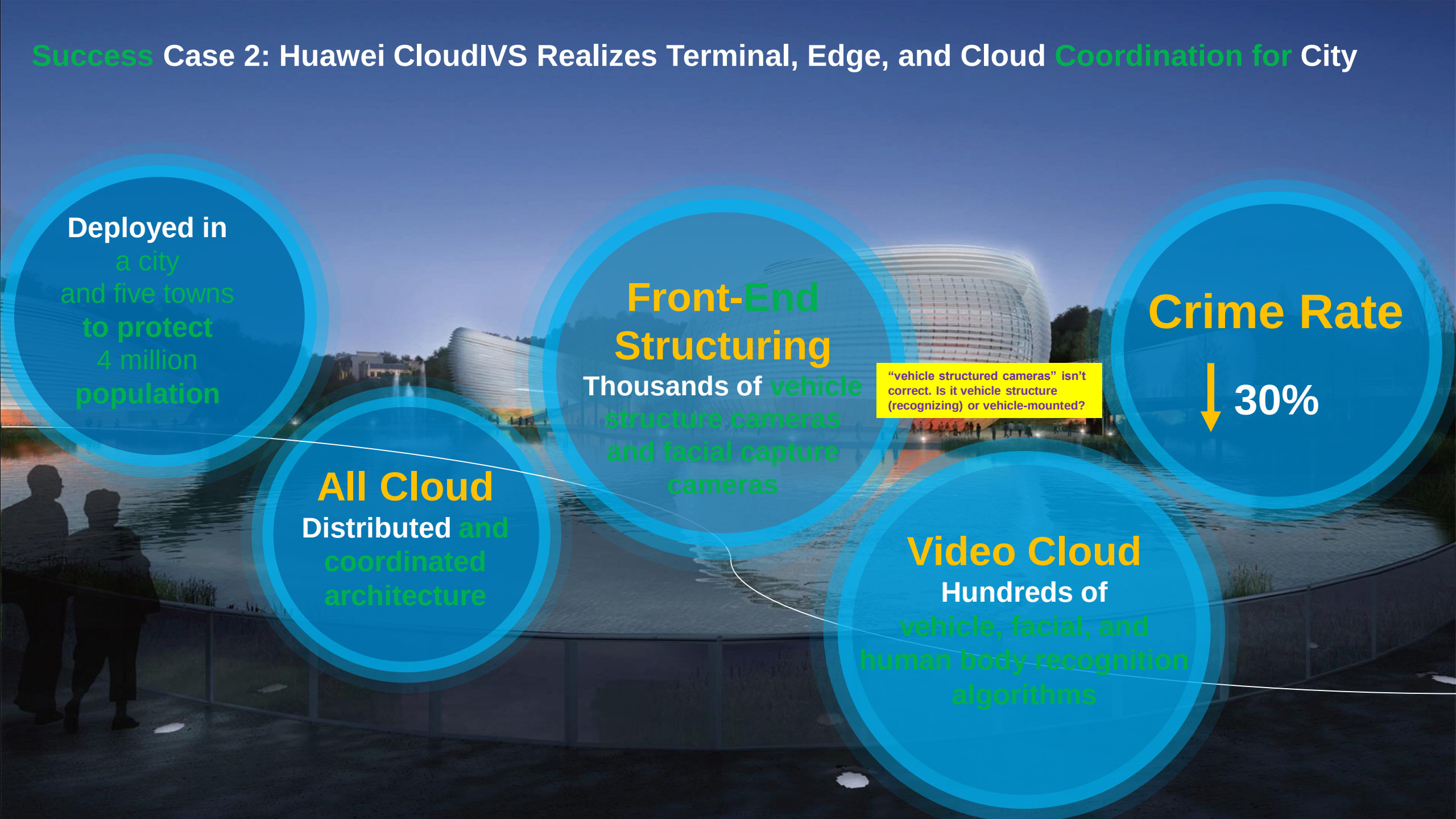
1 Video Surveillance Challenges and Trends

2 Huawei IVS Overview and Solution

3 Success Cases Around the World

Success Case 1: Huawei CloudIVS Assists City with Face-Recognition Big Data Applications

Success Case 2: Huawei CloudIVS Realizes Terminal, Edge, and Cloud Coordination for City



Deployed in
a city
and five towns
to protect
4 million
population

All Cloud
Distributed and coordinated architecture

Front-End Structuring
Thousands of vehicle structure cameras and facial capture cameras

"vehicle structured cameras" isn't correct. Is it vehicle structure (recognizing) or vehicle-mounted?

Video Cloud
Hundreds of vehicle, facial, and human body recognition algorithms

Crime Rate
↓ **30%**

Success Case 3: Country's CloudIVS Connects Public Video Cameras

Deployed in
city to
protect
5 million
population

Cloud
based on OpenStack
connects nearly
10,000
cameras

Video Cloud
Human body search
algorithms and more in
future

Public Satisfaction
↑ 40%

Open Ecosystem
Open SDK for integration
with local services

Success Case 4: CloudIVS Unifies Management of Company's Four Campuses

Deployed in
four cities
to protect
2 million m^2
campus area

All Cloud
HQ + N divisions
architecture

Cost
↓ 15%

Division Autonomy
Thousands of cameras
with local management
at division;
video share to HQ

Member of
Global
Fortune 500

Video Cloud Edge
Hundreds of
vehicle and facial recognition
algorithms for each campus

Global Footprint of Huawei's Intelligent Video Surveillance Solutions

Huawei Intelligent Video Surveillance solutions have served 1 billion+ people in 100+ countries and regions

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THANK YOU

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