

AI Use Cases for Smarter Cities

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VP Digital Industries Strategy



Smart City - Technology Trends

Cloud



- Cloud Host
- Cloud Storage
- Cloud Network
- VDC
- DR and Backup

Big Data



- Structured Data
- Semi-Structured Data
- Unstructured Data

AI



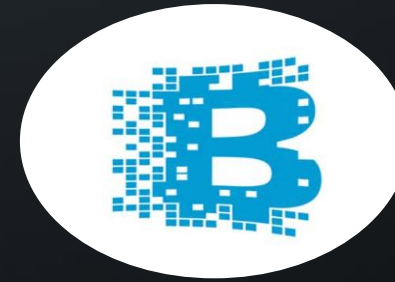
- Natural language processing
- Machine Learning
- Computer Vision

5G & IoT



- Massive Network Capacity
- Enabling Multiple New Use Case

Blockchain



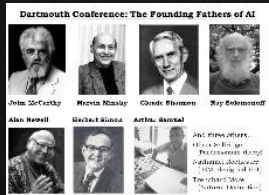
- Decentralized Security
- Reliable / Scalable

AI - Born 60 Years Ago

Hype

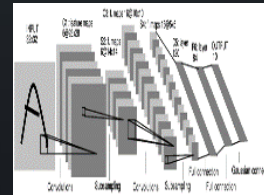
Golden Years

- Dartmouth Conference
- Abundant funding



AI winter

- Failure in meeting expectation
- “expert systems”



Boom

- Big data and cloud promotes innovation
- AI rises with deep learning improvement



1956

1970's

2000's

Timeline

“By 2040 more crime
will be committed by
machines than
by humans”

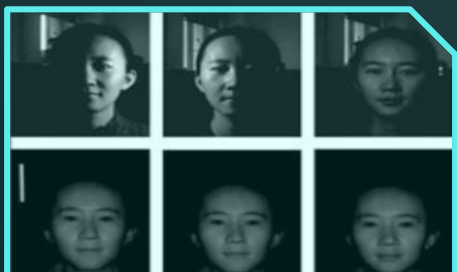
AI in the Real World

Finding a Lost Child Using Video Analytics



Intelligent Algorithms Evolve from Simplicity to Complexity

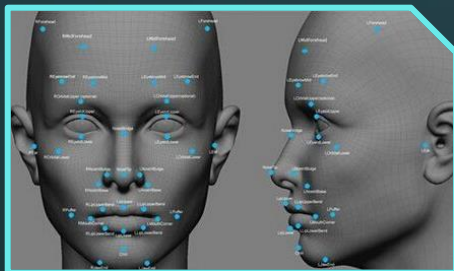
Restricted Scenarios



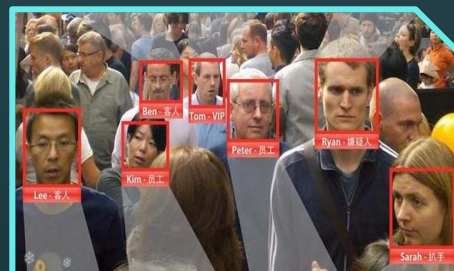
Different lighting conditions



Non-restricted Scenarios



Multi-dimension



Long distance, low resolution

complicated scenarios **deep learning** algorithms
huge training samples.



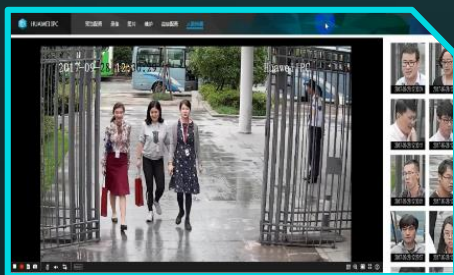
A single algorithm



Vehicle recognition algorithms



Multiple algorithms



Face recognition algorithms

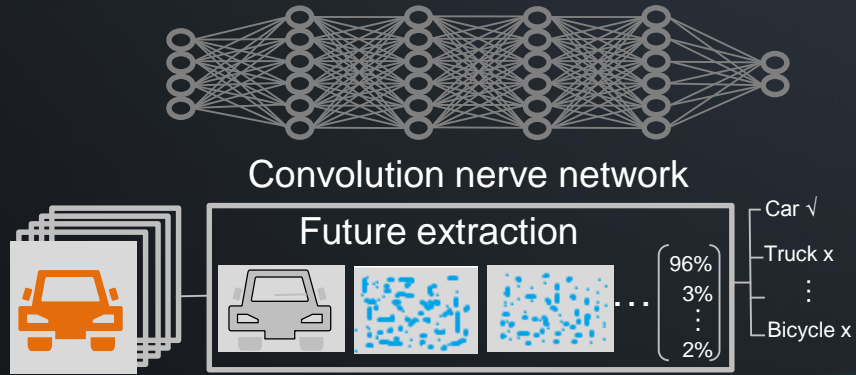


Structured motor vehicle/non-motor vehicle/pedestrian algorithms

various scenarios.
Elastic scalability
of various algorithms

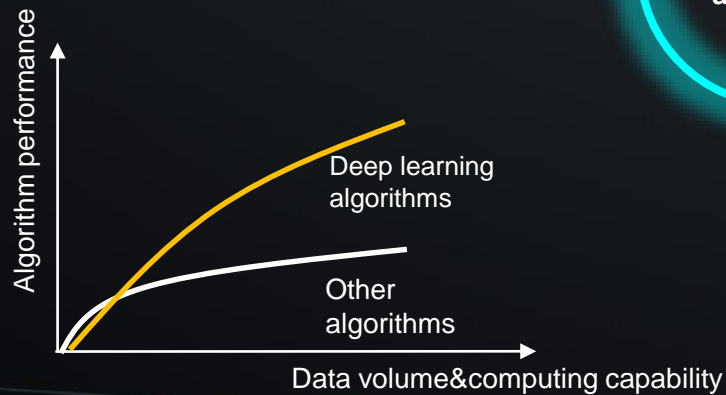
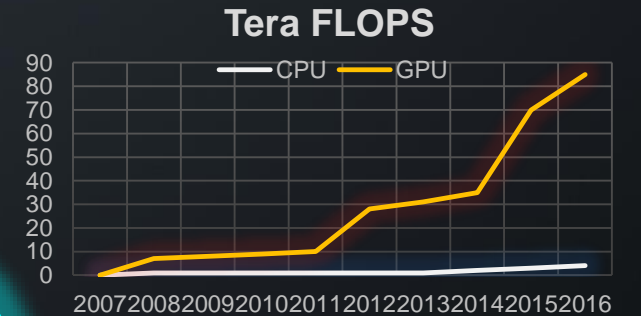


Deep Learning Algorithms, Support Non-restricted Scenarios

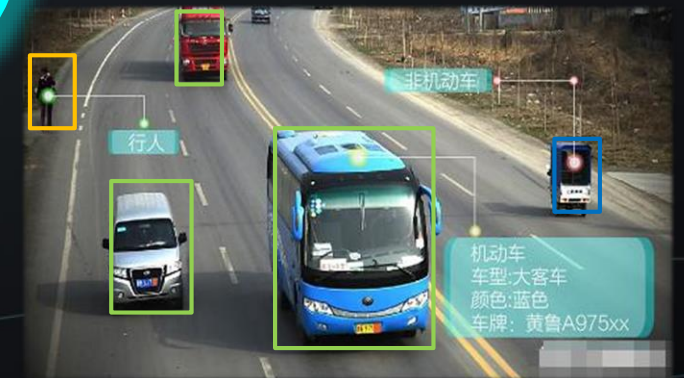
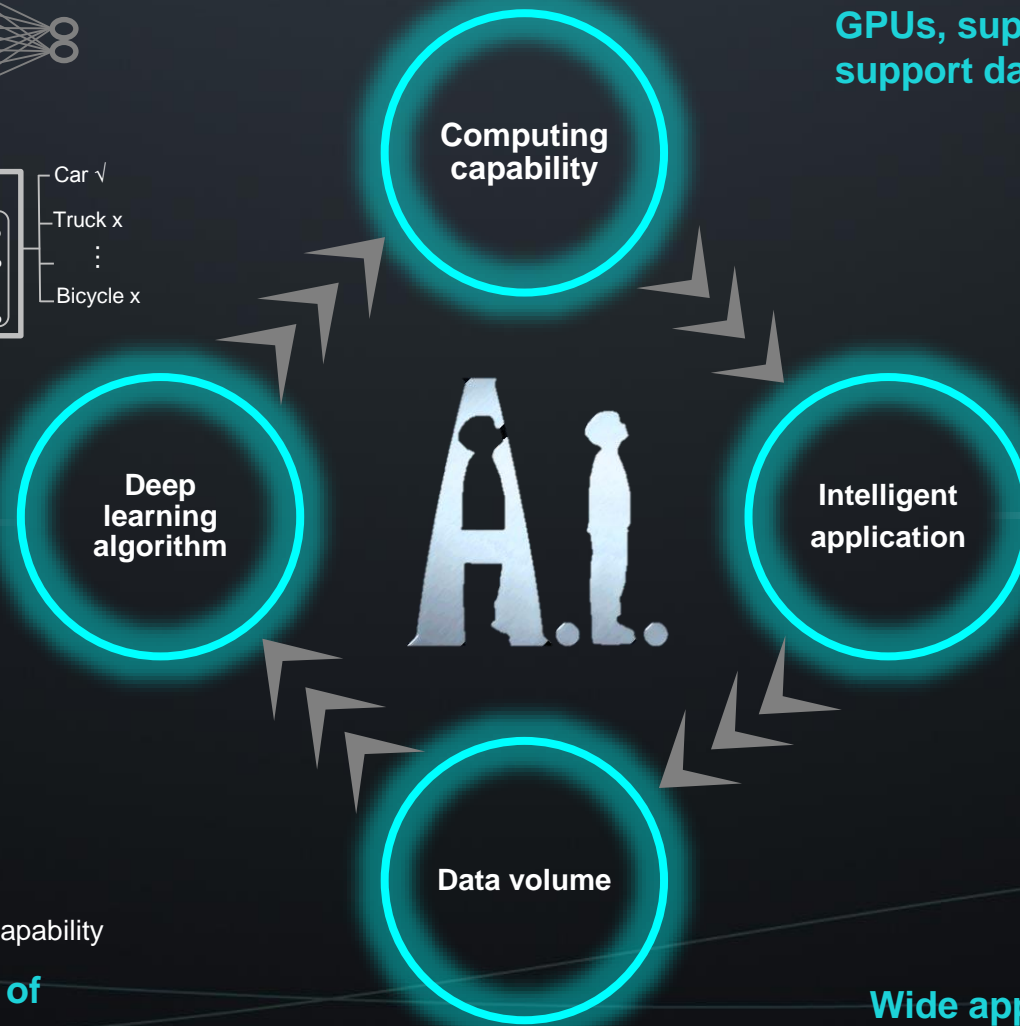


Multilayer feature extraction need superior computing capability.

GPUs, supercomputers and cloud computing support data processing in complex scenarios.

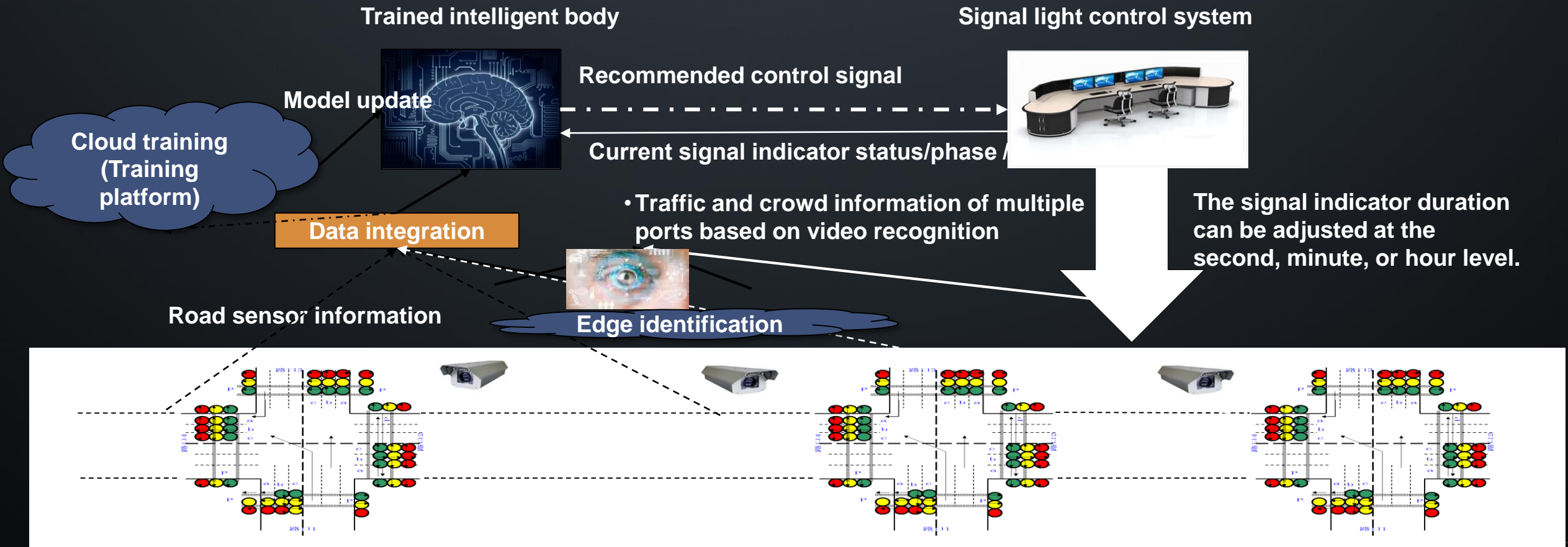


Huge samples speed up optimization of deep learning algorithms.



Wide applications generate massive amounts of data.

Intelligent Traffic Management on The Cloud



- Regional collaboration | region-based collaborative control, optimal road signal light configuration
- Central control | Provides industry-leading real-time control and supports fixed periods.

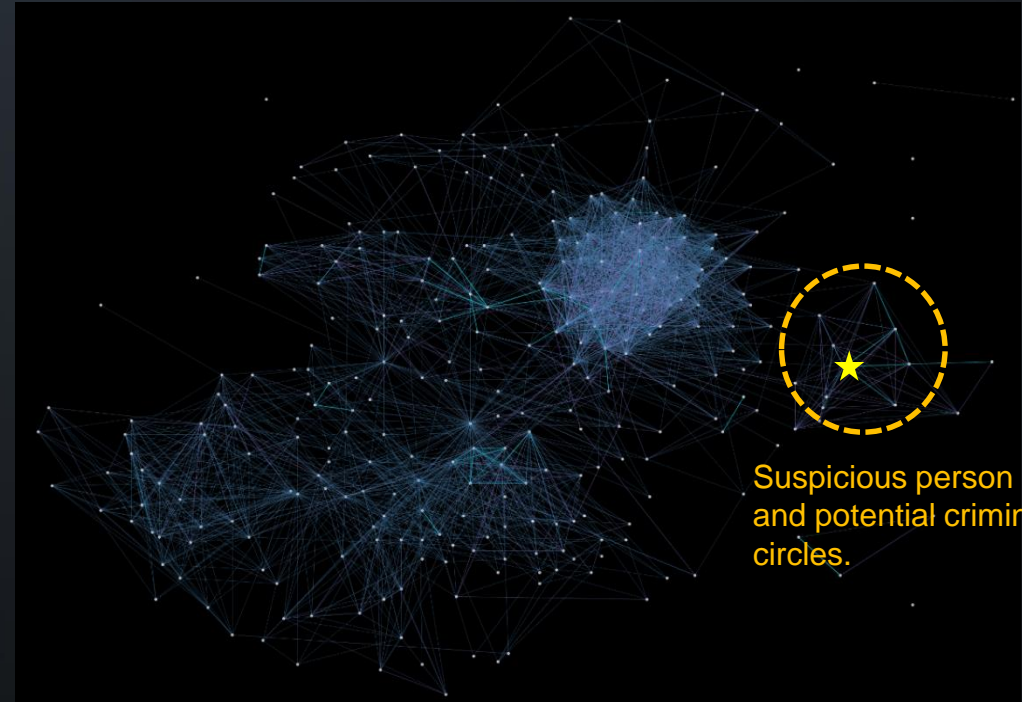
Graph Engine Applications

Route planning



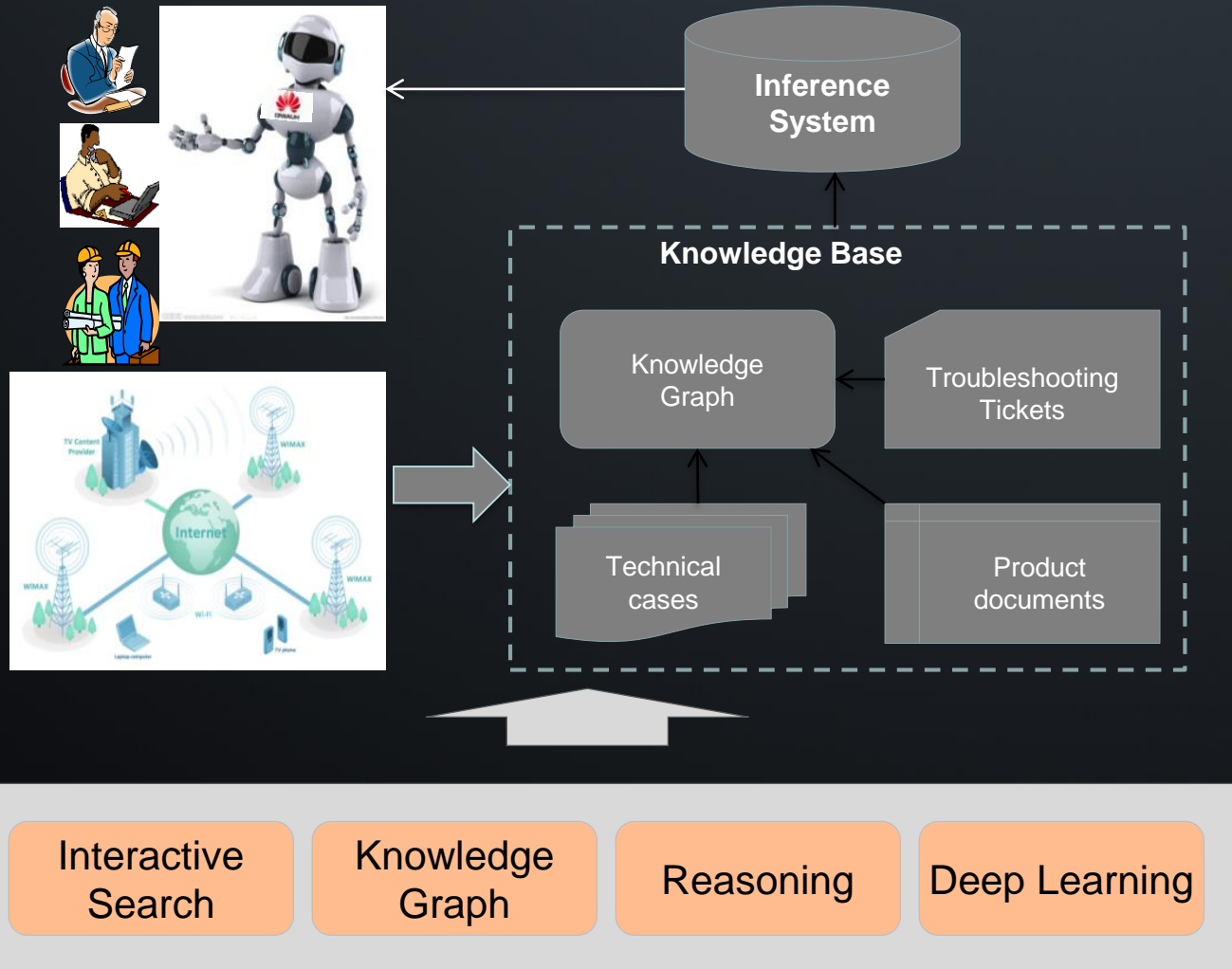
**A few 100,000-level routing planning:
6.8 h-> minutes.**

Auto insurance fraud prevention protection



**Billion-level node 1,000,000,000 edge:
enterprises to save XXX million**

Citizen Interaction: Neural Generative Question and Answer

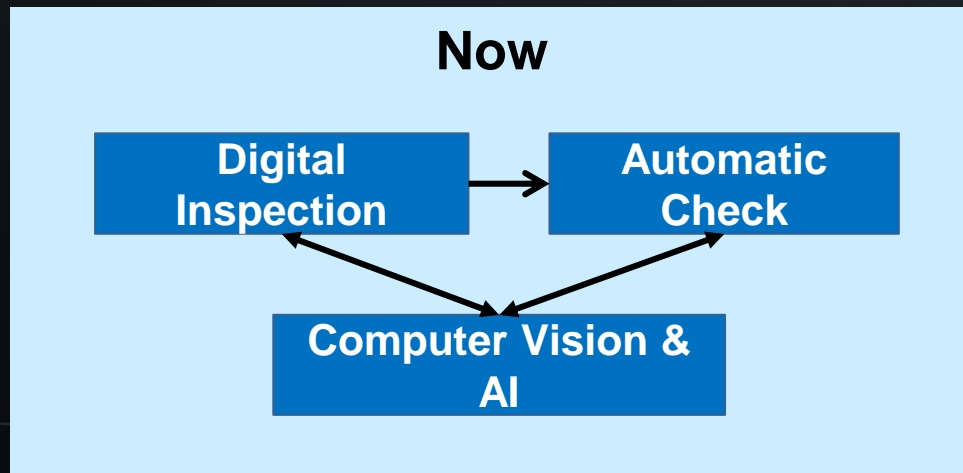
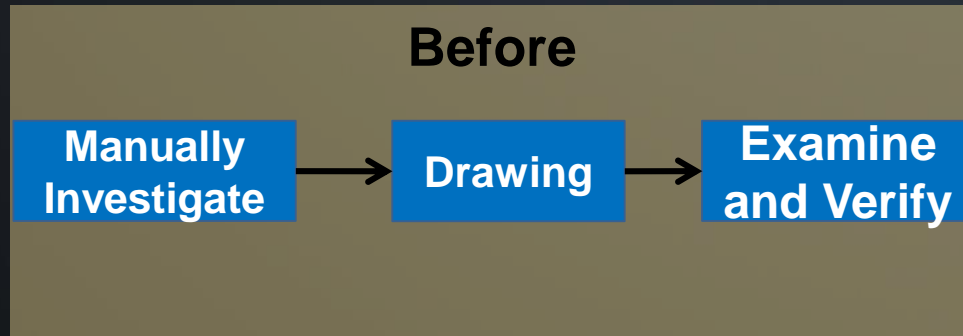


- Automatically extract knowledge from iCase (internal customer support document)
- Improved search accuracy by **19%**
- Continuous improvement in question answering accuracy

UAE

- DEWA: Self-service, remote and robot only customer service centers
- Dubai Police: Smart Police Station with zero staff

Site Inspection: Monitor Service Provider Performance

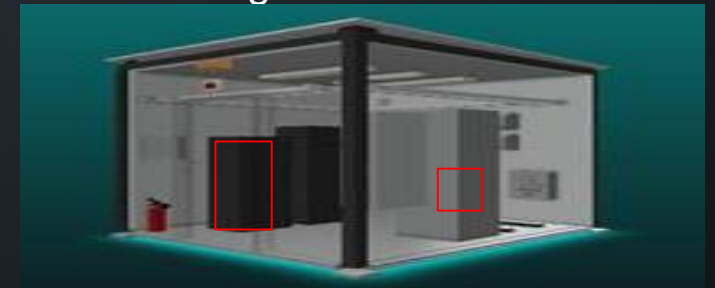


1. Digital Inspection

Device Recognition
(Accurate:80%~100%)



Site Investigate
Range Error<2%

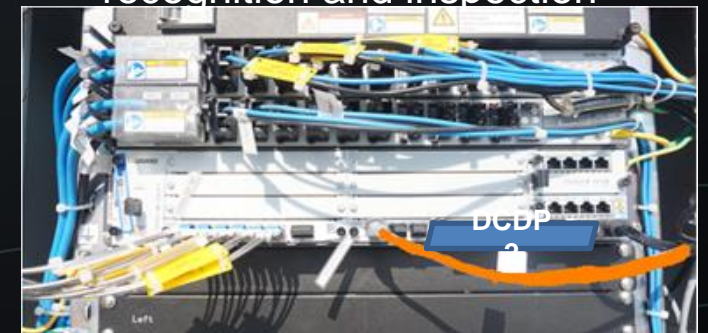


2. Automatic Check

Waterproof and quality testing



Interface, cable, label
recognition and inspection



Intelligent Logistics Service Application

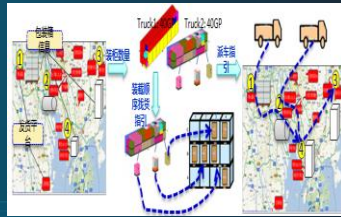
Exceptional expenses ↓
30 %.

Path planning



The packing rate ↑
Increases by 15%

Intelligent packing



Import efficiency ↑
10X

Document Identification



Risk early-warning rate ↑
99 %.

Bid Risk

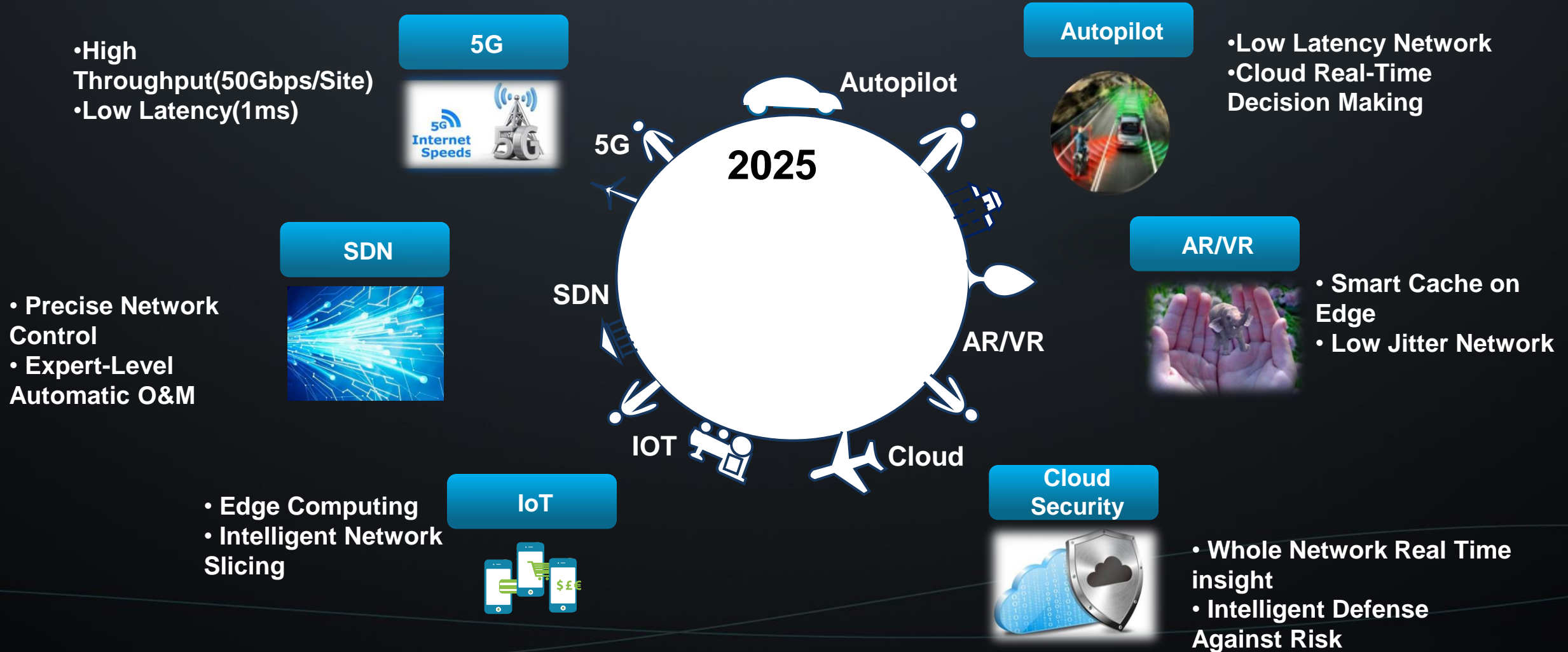


Operation efficiency ↑
10%

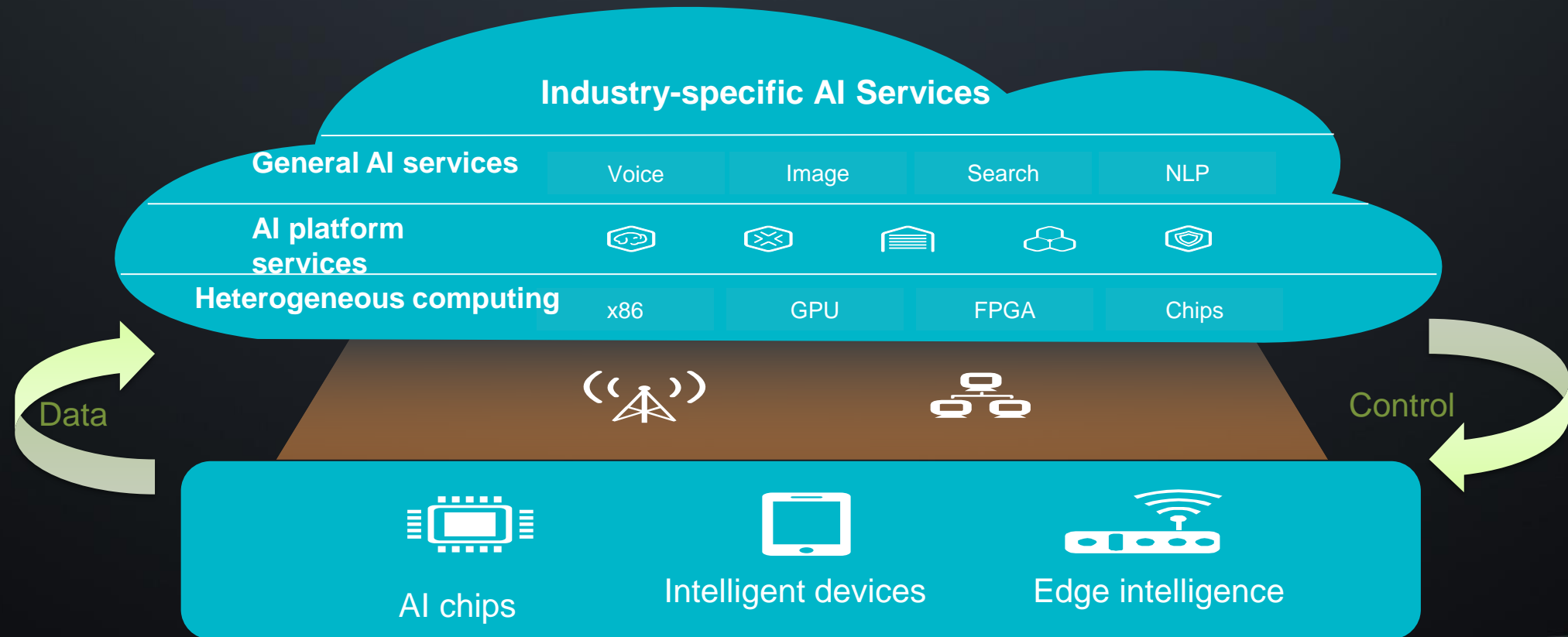
Warehousing plan



AI will Be Applied in Huawei's Future Business



AI: Enables Better Efficiency, Experience, and Competitiveness

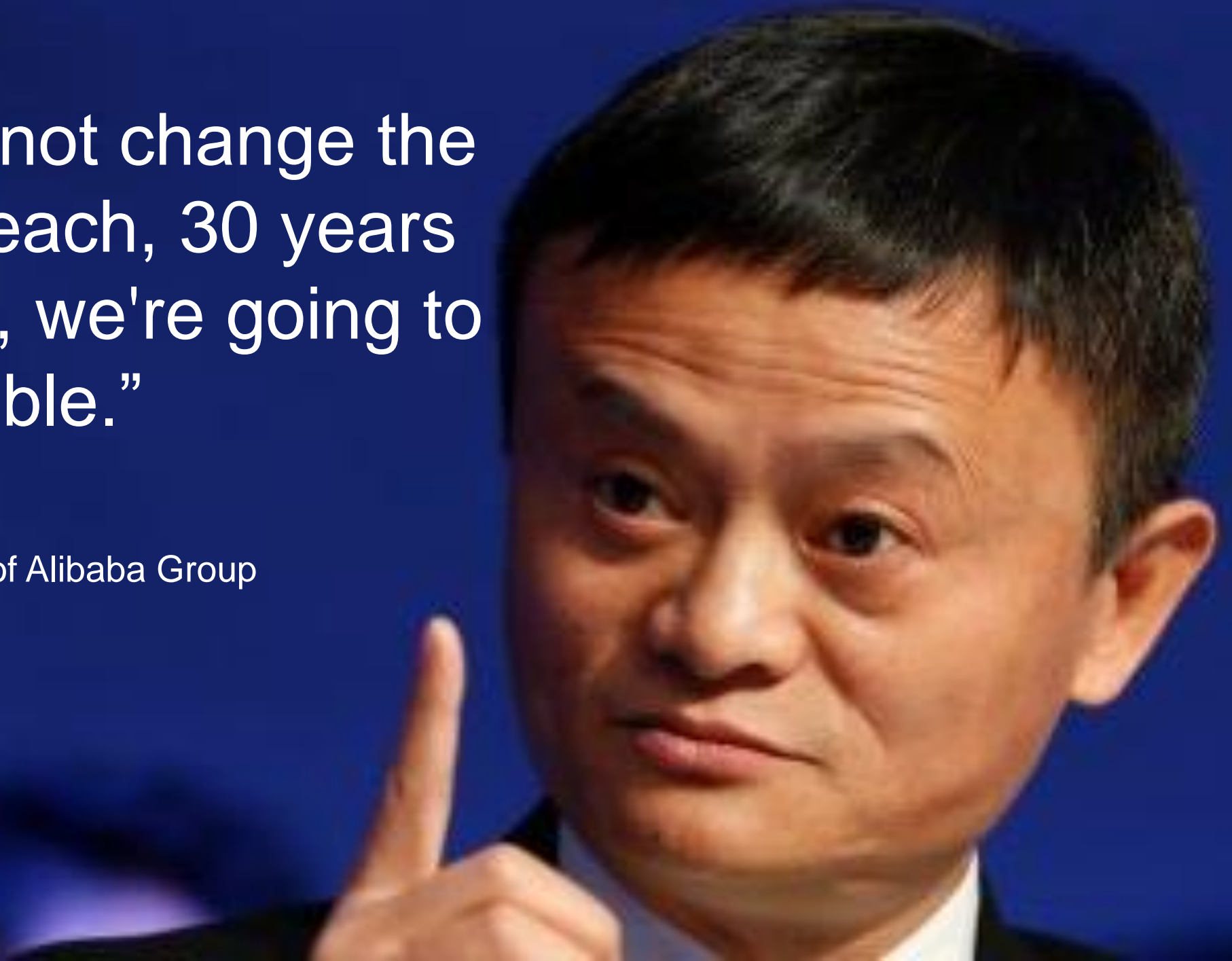


Improve internal operation efficiency

Improve the solution/service competitiveness

“If we do not change the way we teach, 30 years from now, we're going to be in trouble.”

Jack Ma, founder of Alibaba Group



Call to Action

Technology

- Understand the various elements of AI and predict how it can be incorporated into your smart city program

Legislation

- Legacy policies may need to be updated where AI adoption may be hindered as well as new policies
- Consider updating the education curriculum to refocus skills for the future

Partnerships

- Open industry and standard body collaboration to help solve our customer biggest challenges
- Learn from leading countries working AI usage and policies