

Envision All Intelligence Era

Dang Wenshuan

Chief Strategy Architect, Huawei

2024-12

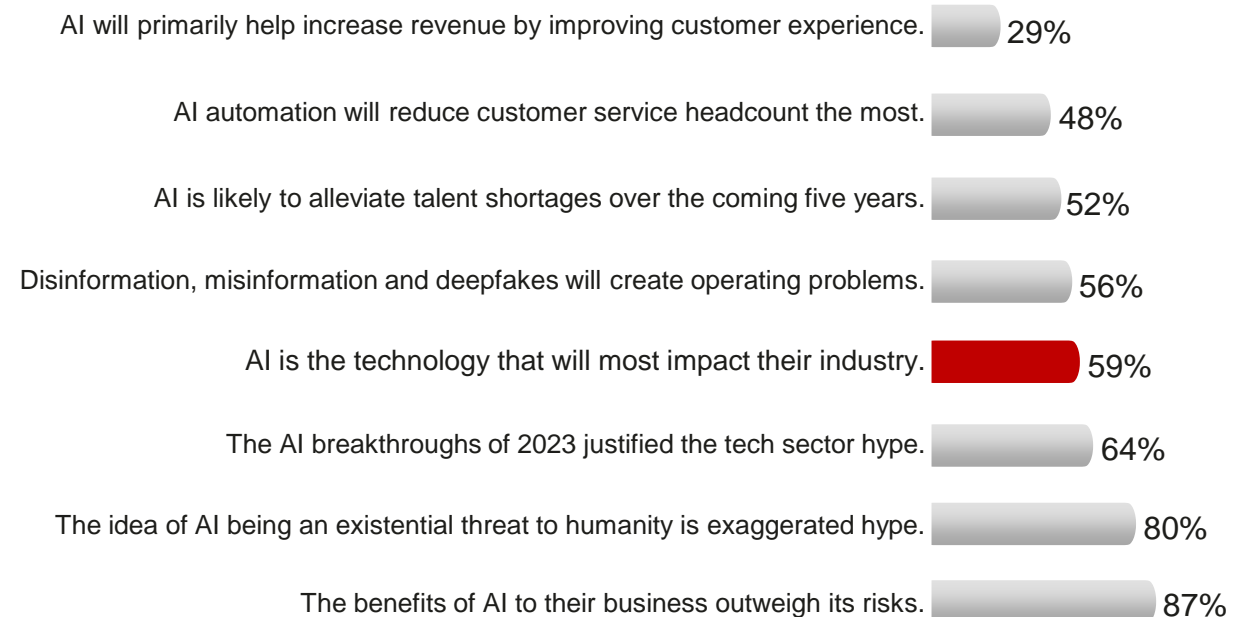
Past 10 years: Tech breakthrough & business exploration

Technology

Business

- **AI has surpassed human performance on more benchmarks**
 - Image classification(2015)
 - Basic-level reading comprehension(2017)
 - Visual reasoning(2020)
 - Natural language inference(2021)
 - ...
- **By 2023, there are 1.81 million AI-related projects on GitHub.**

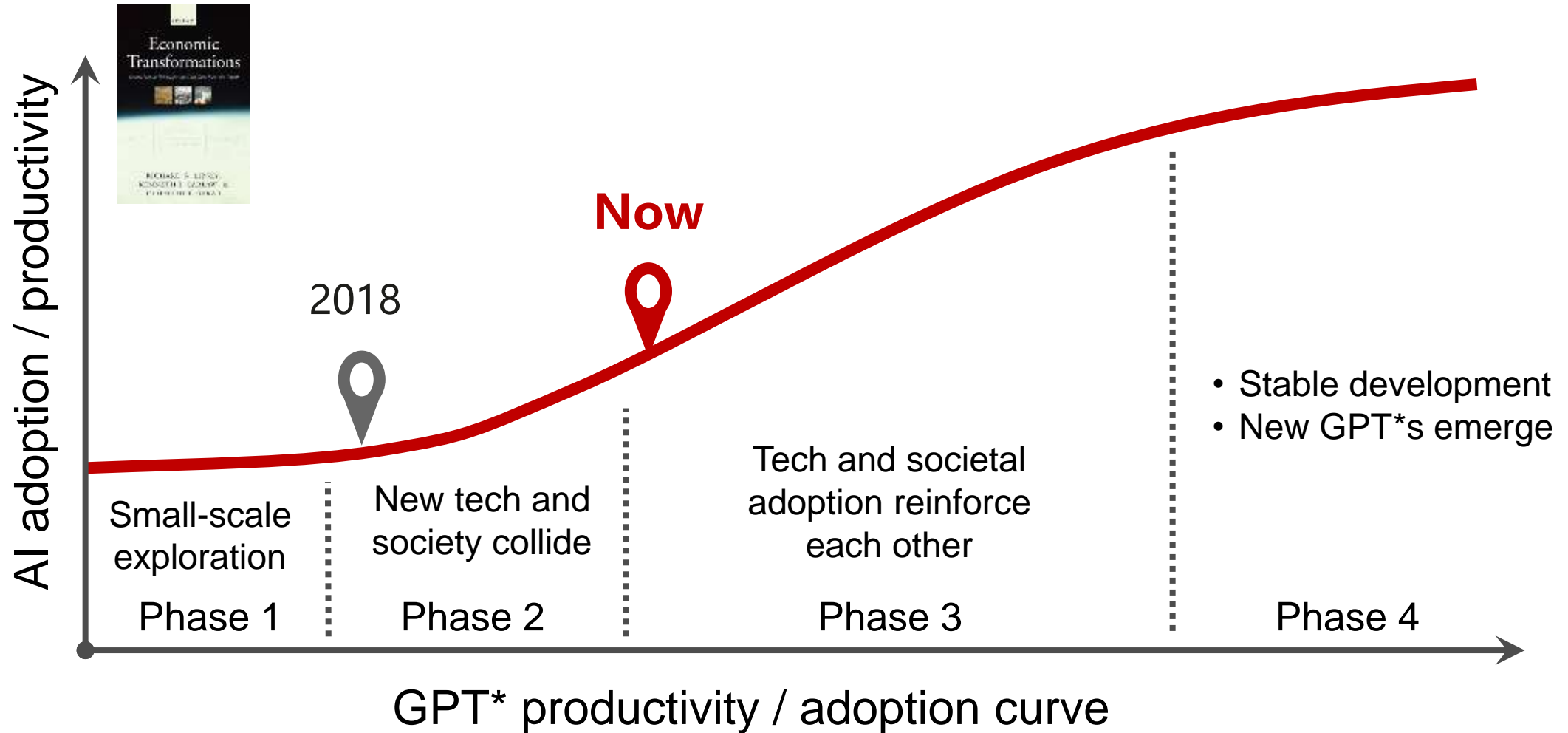
Implications of AI ? (% of CEOs say)



Source: Stanford University ,HAI_AI-Index-Report-2024

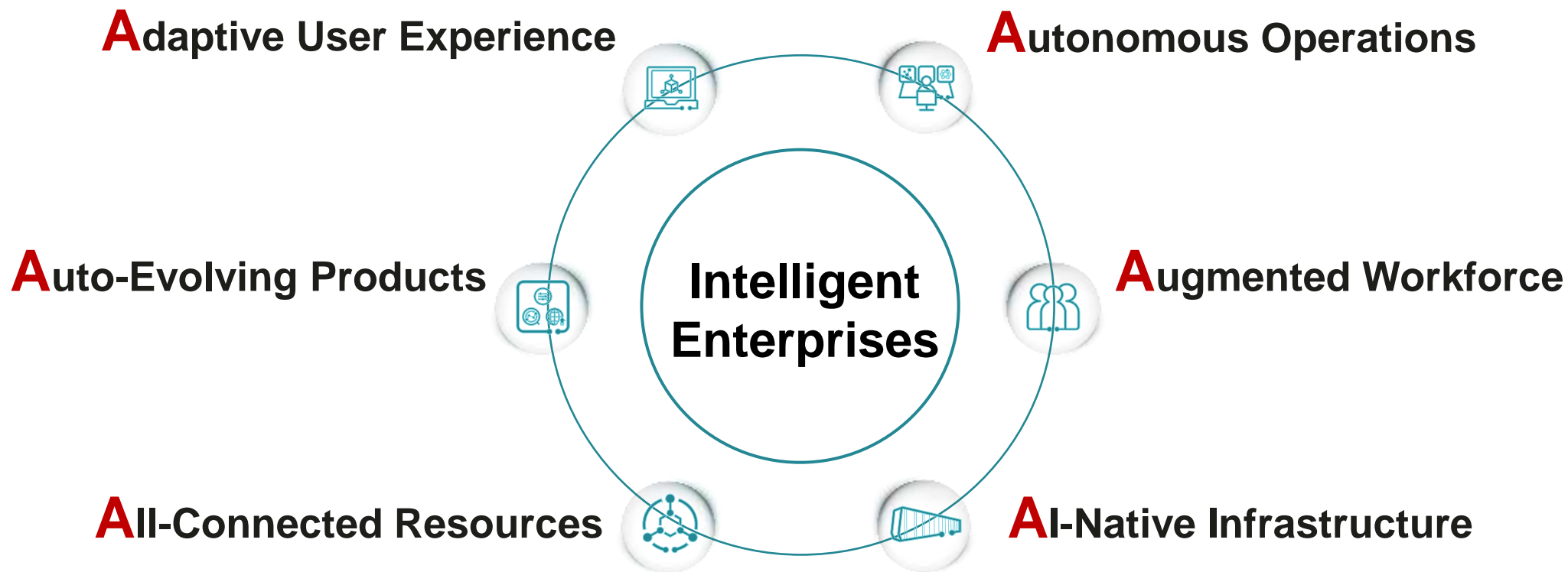
Source: Gartner, 2024 CEO Survey — The Year of Strategy Relaunches

Next 10 years: Tech and adoption reinforce each other



*GPT: General-purpose technology

Envisioning the future of enterprises in the age of AI



Intelligent personal assistants

Understand user intent and automatically invoke apps to perform tasks.

Coffee in a word



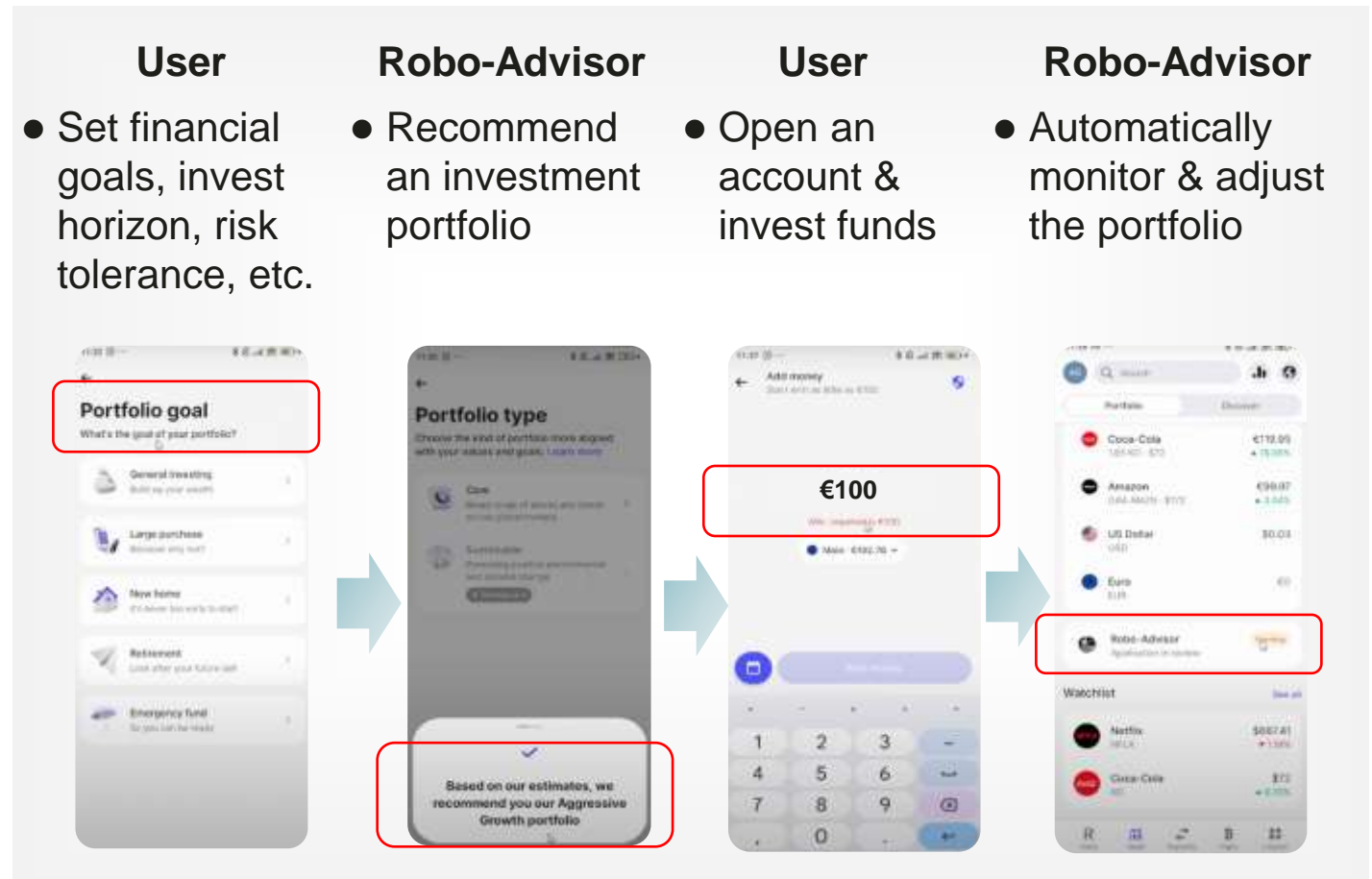
- **User:** “Help me order a drink, I am a little sleepy.”
- **The intelligent personal assistant:**
 - Open the food delivery app
 - Select the coffee shop that the user often visits
 - Complete the coffee ordering process
- **User:** Confirm payment.

Wealth management by Robo-Advisor

Automatically recommend, monitor and rebalance the portfolio.

Revolut

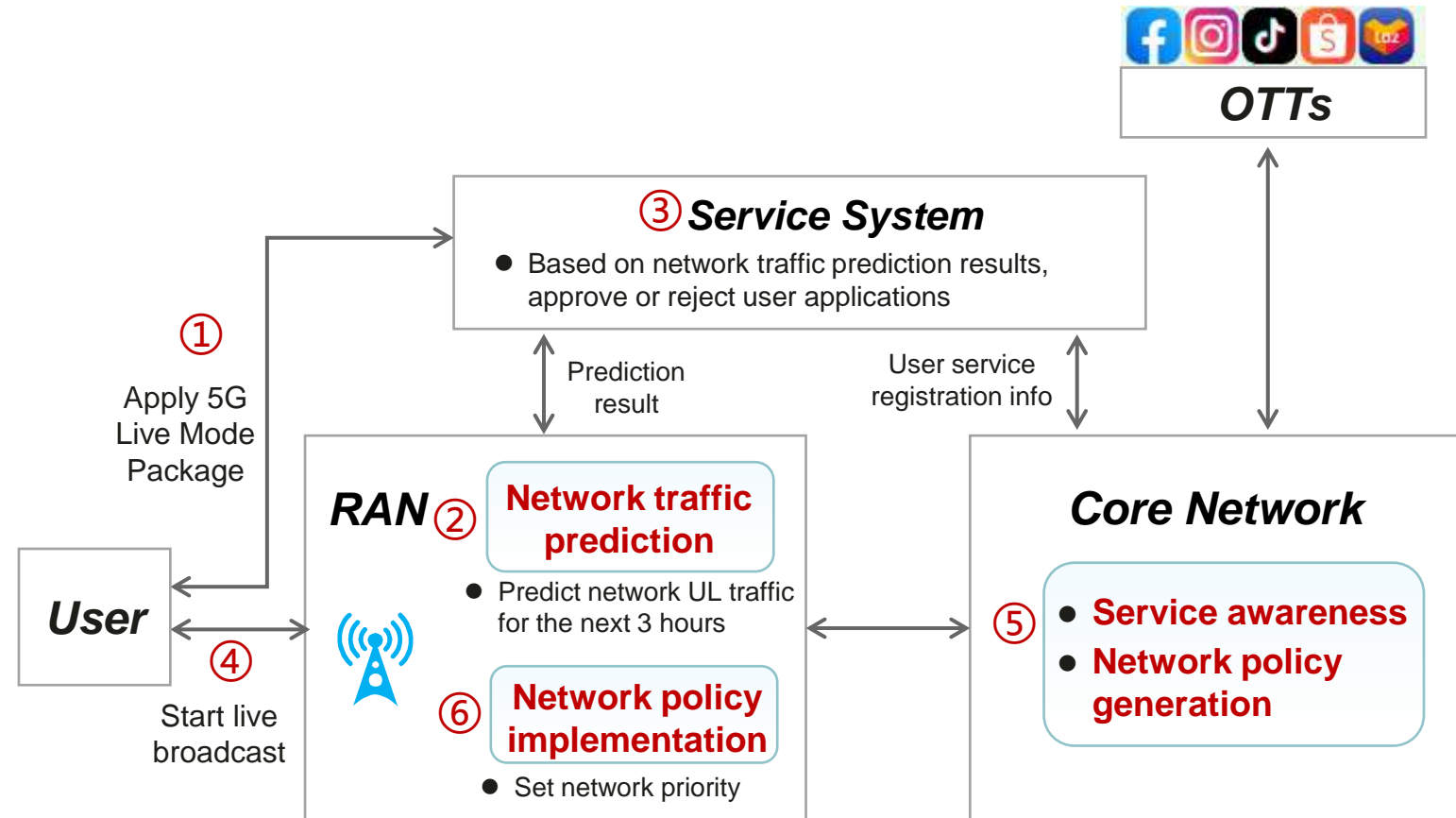
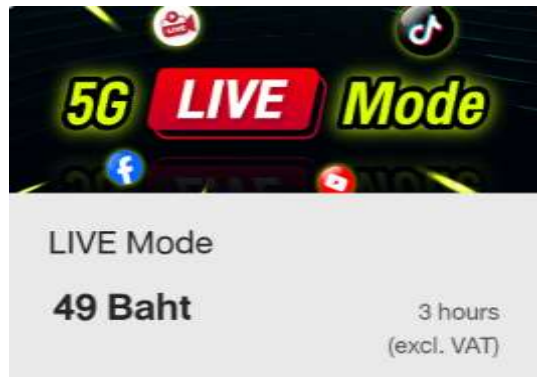
In February 2024, Revolut (UK's biggest unicorn) launched Robo-Advisor service for the European market.



Adaptive MBB experience

Ensure UL experience for live broadcast based on network prediction.

AIS in Thailand: ongoing innovation on 5G Live Broadcast Package



Autonomous driving: Drive more, Drive better

Driver-less cars keep evolving by continual learning.

Autonomous driving

- Higher Miles Per Intervention (MPI)
- More comprehensive scenarios supported including highways, cities, rural areas, etc.

Auto valet parking

- More accurate parking space recognition
- Higher parking success rate
- Shorter parking time

Proactive safety

- Cover more directions, including front, back, left, right, etc.
- Cover a broader speed range
- Adapt to a wider range of weather conditions



Auto-Evolving new calling service

Evolving New Calling service, more features and more powerful.

Digital Avatar



- More digital avatars
- More consistent

Fun calling



- More creative
- More interesting

Real-time translation



- More accurate
- More languages

Intelligent interaction



- More scenarios
- More intelligent

Intelligent recording



- More accurate
- More comprehensive

.....

Autonomous operation in insurance business

Take **Health Insurance Claims AI Agent*** practice as an example

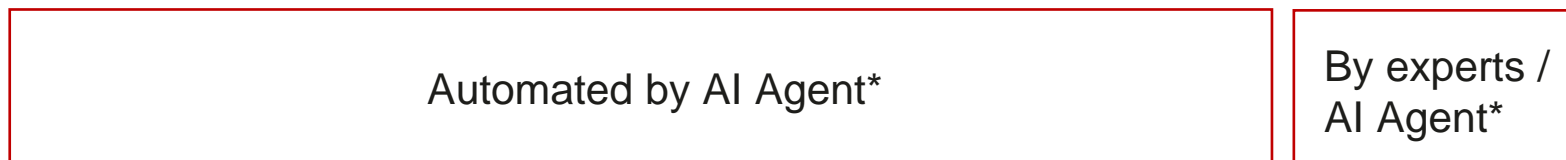


Couple of Days



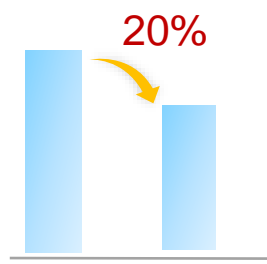
Minutes

Average claim turnaround time



Autonomous operation of networks

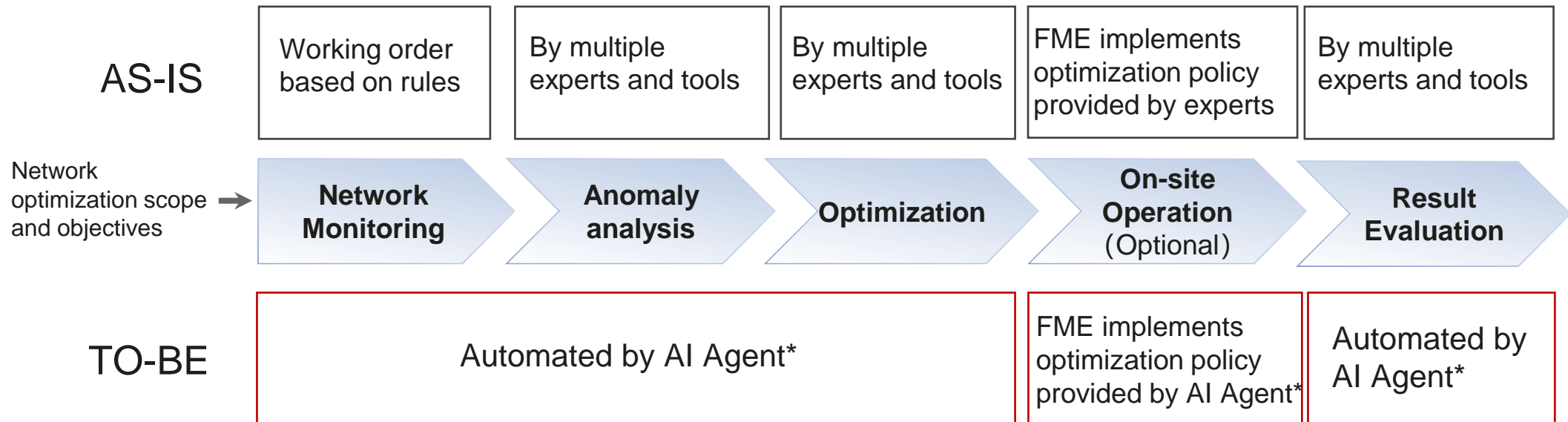
Take **Wireless network optimization AI Agent*** practice as an example



of low-speed cells

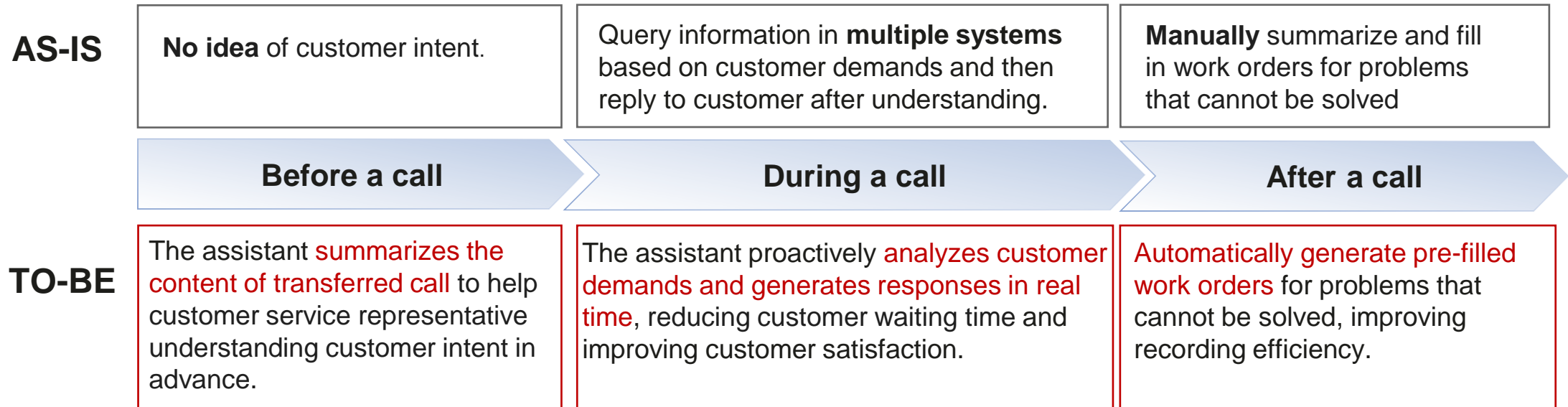
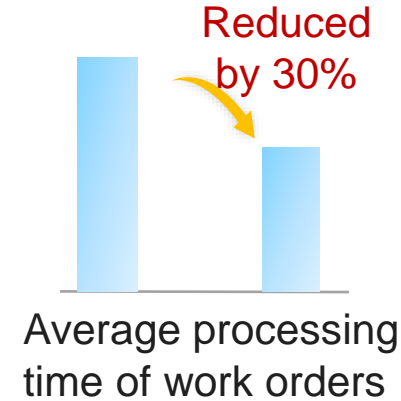


Optimization Period



Intelligent bank customer service assistant

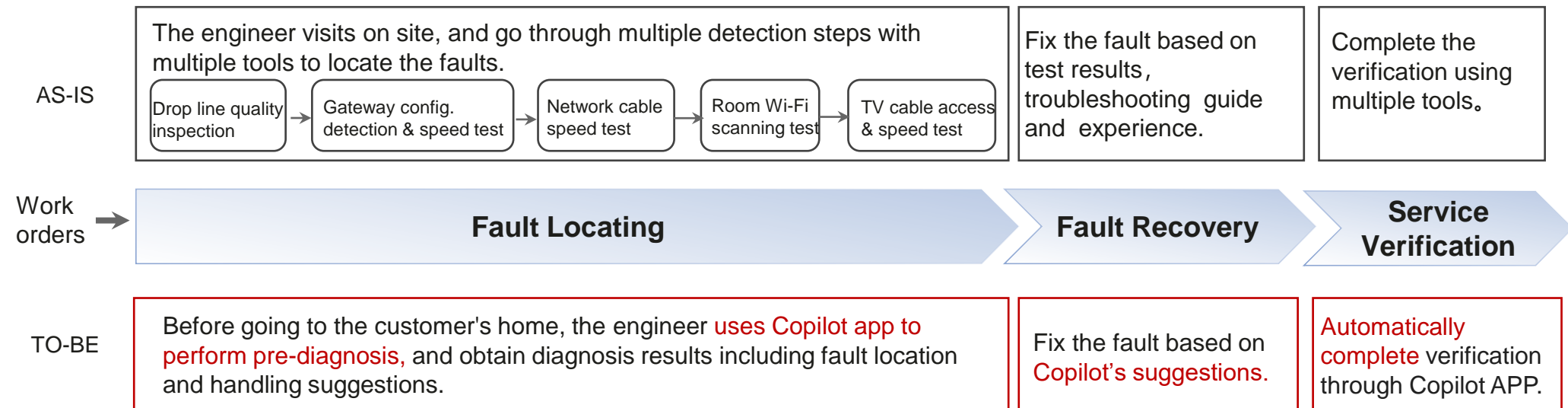
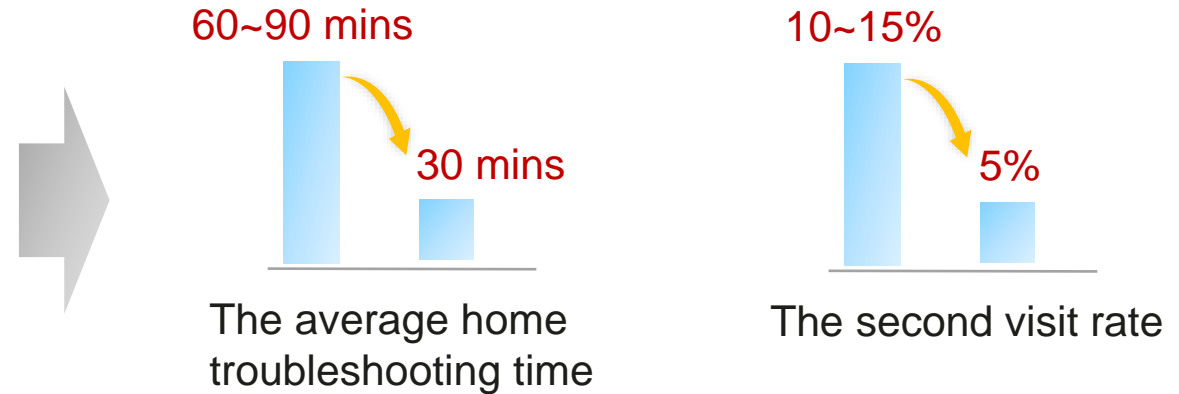
Take **bank customer service assistant** practice as an example.



Intelligent assistants for home broadband maintenance

Take **HBB installation & maintenance Copilot** practice as an example

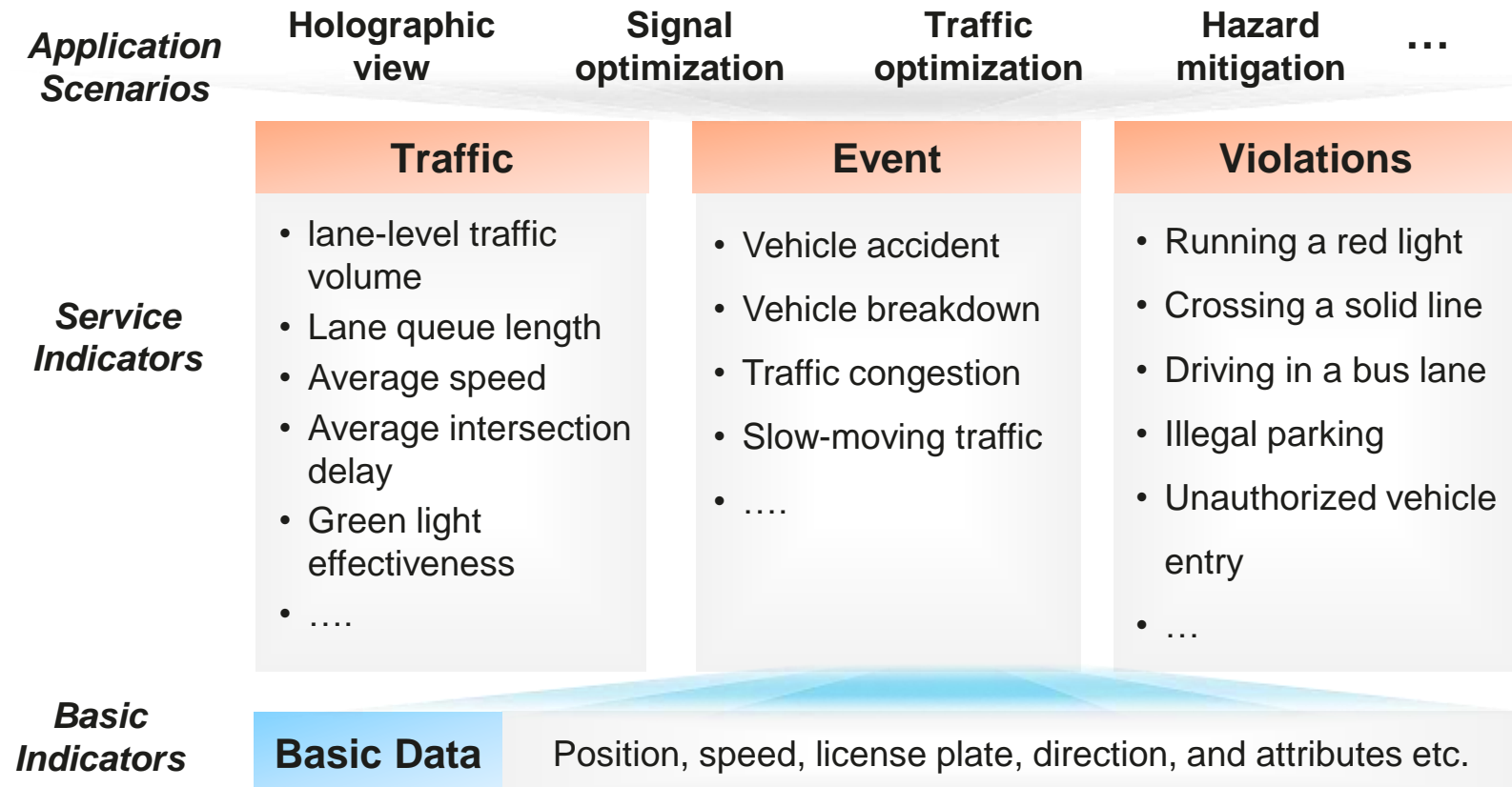
*HBB: Home Broadband



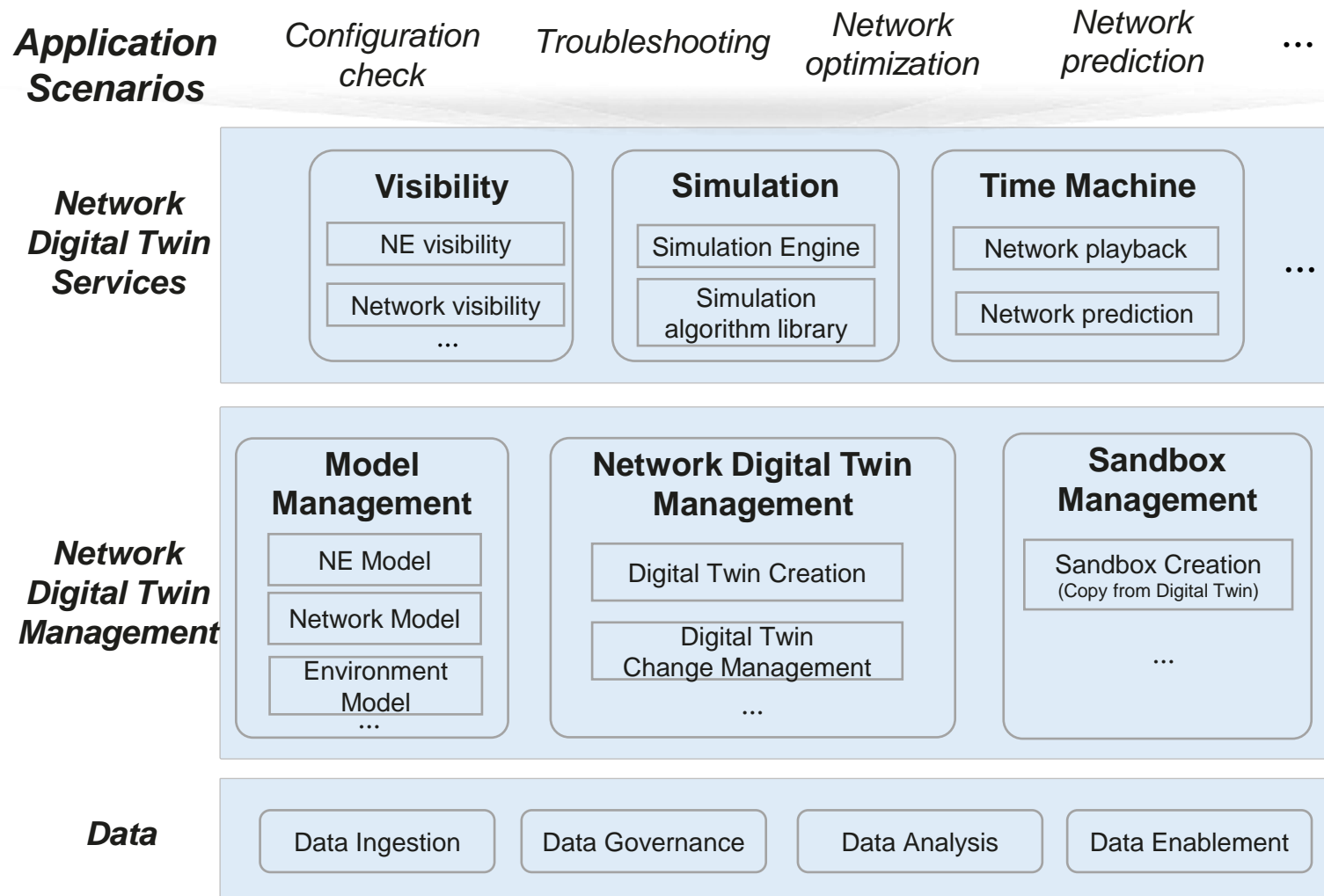
Digital twins of transportation

Urban Traffic intersections digital twin make city a better place.

- Digital Twins of Urban Traffic intersections
- Digital Twins of Highways
- ...



Digital twins of networks



Digital twins of Network

- IP Network Digital Twin
- Optical Network Digital Twin
- Wireless Network Digital Twin
- Core Network Digital Twin
- Campus Network Digital Twin
- ...

Network for AI applications

Real-time **multi-modal interaction**
(AI Phones/Glasses)



Showcasing e-commerce products through **3D models**



Robotaxis

(~1000 vehicles in Wuhan, China)



Smart parking

(20k 5G RedCap cameras for 80k parking spaces in Zhengzhou, China)



E2E Network Latency

70~200 ms
(Excellent or even human-like experiences)

-

< 100 ms

-

Uplink Bandwidth

>5Mbps (1080P / 30fps)
>40Mbps (4K / 60fps)

-

24Mbps
(6 Cameras per vehicle for remote takeover)

>5Mbps (1080P / 30fps)
Per Camera

Downlink Bandwidth

-

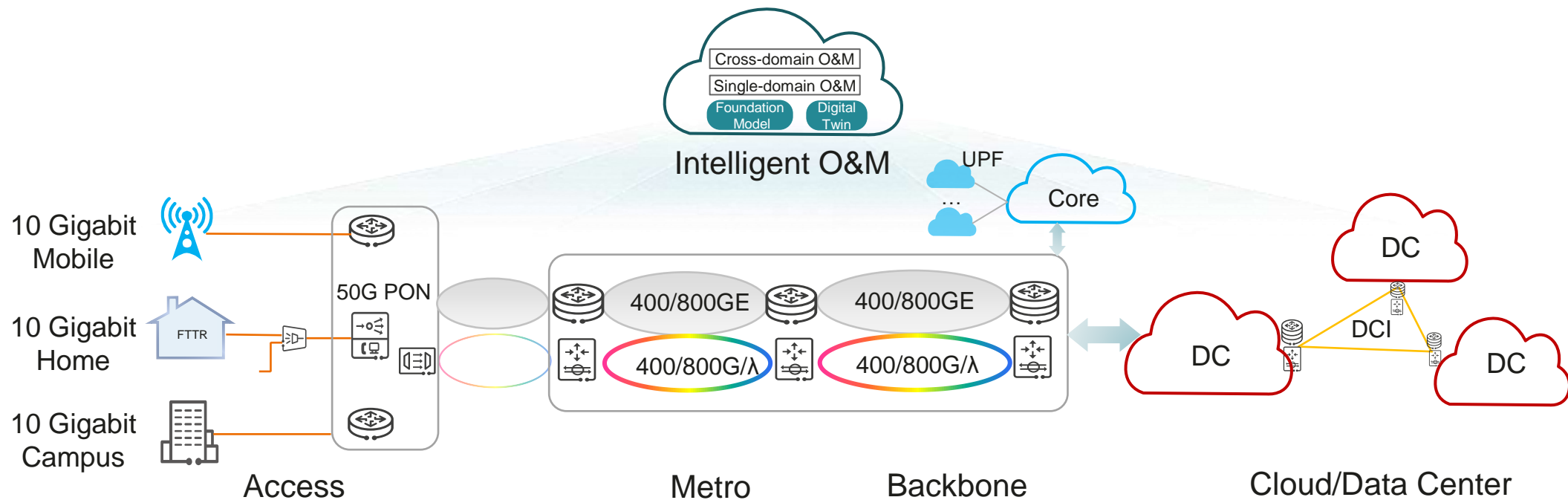
120 Mbps
(3D model: 15MB)

-

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Adapt to value creation in intelligent era

- *Ultra-broadband is the foundation*
- *Autonomous Network L4 as the start*



5.5G industry progress

- **3GPP Release 18** (First version of 5.5G) was officially frozen in June, 2024.
- **10+** carriers in **China, Middle East** etc. has commercially launched 5.5G.
- **20+** 5.5G phone (3CC*), **10+** 5.5G CPEs, **20+** RedCap modules available now.

10Gbps

Downlink

1Gbps

Uplink

100 bn

Connections

China Mobile Shanghai and Beijing 5.5G Add-on Package

5.5G Add-on Package	DL	UL	Services
Business Travel Package	3Gbps	200Mbps	New Calling, Cloud Computer etc.
Live Broadcast Package	2Gbps	150Mbps	New Calling, Cloud phone, Migu Video etc.
Gaming Package	2Gbps	150Mbps	New Calling, Cloud phone, Video RBT etc.

* 3CC: 3 Carrier Components

F5.5G industry progress

- ETSI completed **F5.5G Release 3** (The first complete version of F5.5G) in Oct., 2024.
- **20+** carriers in **China, Europe, Asia, Middle East** etc. has commercially deployed 50GPON and launched F5.5G.
- Rich application scenarios including **home, enterprise campus, hotel, university campus** etc.

10Gbps

Downlink

10Gbps

Uplink

x10

Fiber
Connections

China Telecom and China Mobile Practices



Ultra-fast cloud NAS
(Downlink: 2.5~10Gpbs)



Ultra HD 3D Live Broadcast
(Uplink: 300 Mbps)



Ultra-fast Cloud Gaming
(Downlink: 50~300 Mbps)



AI Fitness
(Downlink: 50 Mbps)

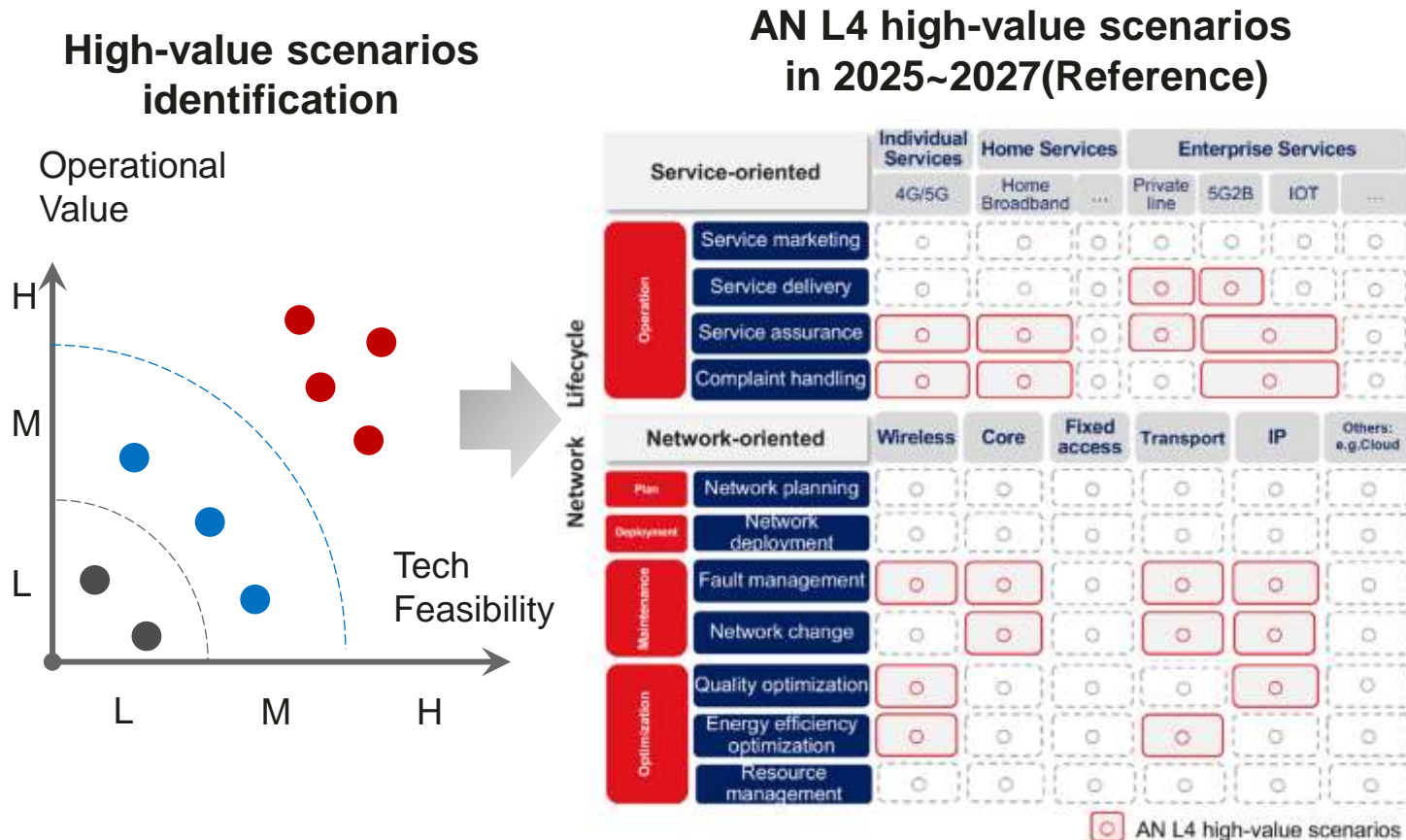


Smart Home
(100+ Connections)



**3D Optical Sensing (LiDAR)
for healthcare**
(Uplink: 500 Mbps)

Autonomous Network L4 as the start



Huawei ADN Offerings

- **10** Copilots
- **18** AI Agents
- **4** types of Professional Services

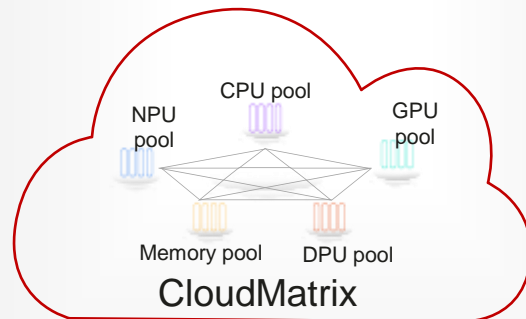
Source: TM Forum, "AN Level 4 industry blueprint", November 2024

AI-Native cloud

Ascend Cloud Service

Readily accessible AI computing power

- **Easy access to massive AI computing power:** No need to build or upgrade DCs; no need to operate or maintain AI computing infrastructure
- **Innovative CloudMatrix architecture:** On-demand computing power for diverse needs. Extremely stable: Has successfully trained a 100+ billion-parameter model uninterrupted for **40 days straight**

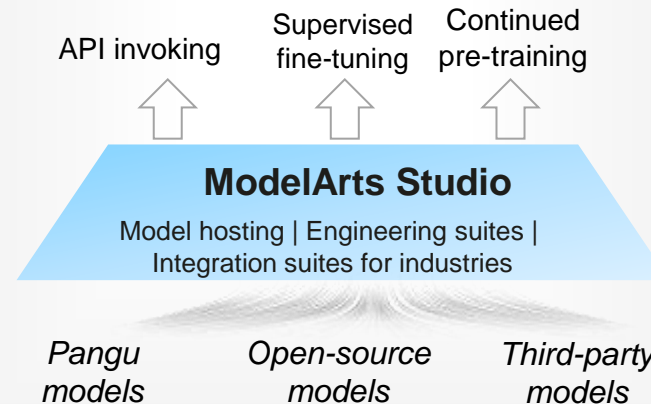


Ascend Cloud Service

ModelArts Studio: Model as a Service

No need to train foundation models from scratch

- **Out-of-the-box mainstream foundation models:** No need to prepare tons of data for model training; no need for iterative training
- **Complete toolchain to lower technical barriers:** Model optimization, deployment, testing, etc.

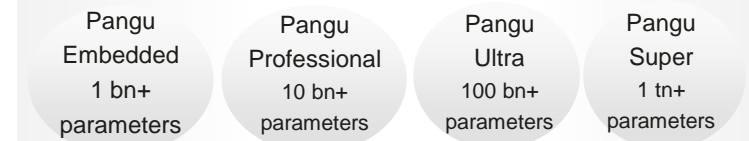


Pangu Models 5.0 + Model community

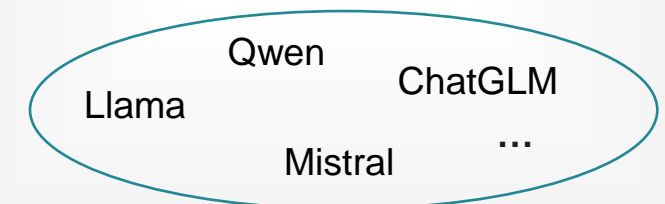
The right models for the right scenarios

- Pangu models for different needs in different scenarios
- A broader range of models from the model developer community

Pangu Models 5.0

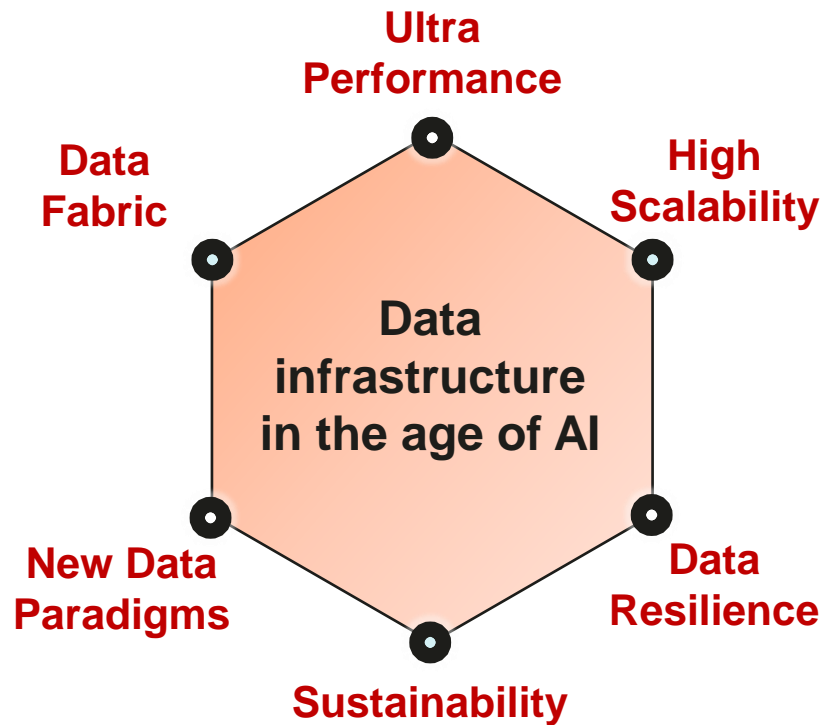


Model community



***Giving every company access to on-demand AI computing power.
Enabling more efficient model training and inference.***

AI-Native data infrastructure

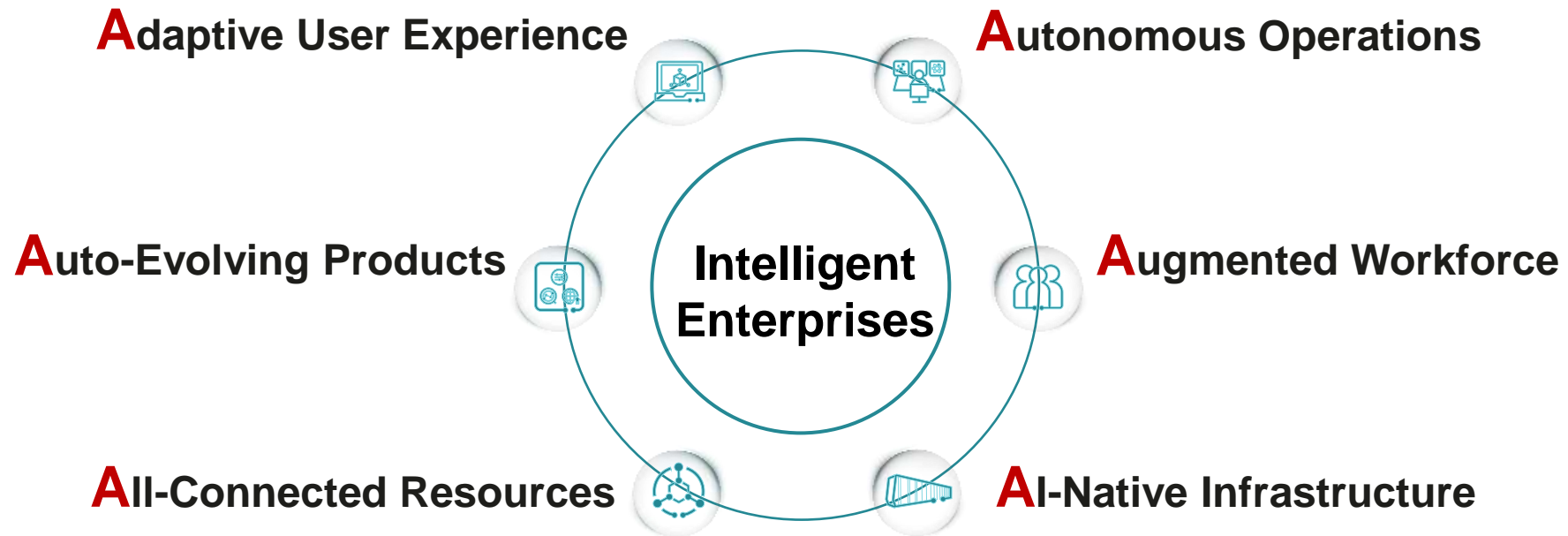


- **Ultra Performance:** The storage cluster provides **10 billion-level** IOPS and **hundreds of TB/s** bandwidth, accelerating training data loading, minimizing checkpoint time, and improving training efficiency.
- **High Scalability:** **EB-level** linear capacity expansion.
- **Data Resilience:** Storage and network collaboration provides **six-layer** ransomware protection with a **99.99%** detection rate for ransomware attacks.
- **Data Fabric:** The global file system aggregates massive data across domains, achieving global data visualization and efficient scheduling.
- **New Data Paradigm:** vector retrieval and multi-layer KV-Cache, greatly improving inference efficiency and precision.
- **Sustainability:** **< 1 Watt/TB** and **> 1 PB/U**, enabling sustainable development.

Provide every person with an intelligent personal assistant

Help every company become an intelligent enterprise

Power every vehicle with autonomous driving



Thank you.

把数字世界带入每个人、每个家庭、
每个组织，构建万物互联的智能世界。

Bring digital to every person, home and
organization for a fully connected,
intelligent world.

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