China Telecom's practice of AI in the network

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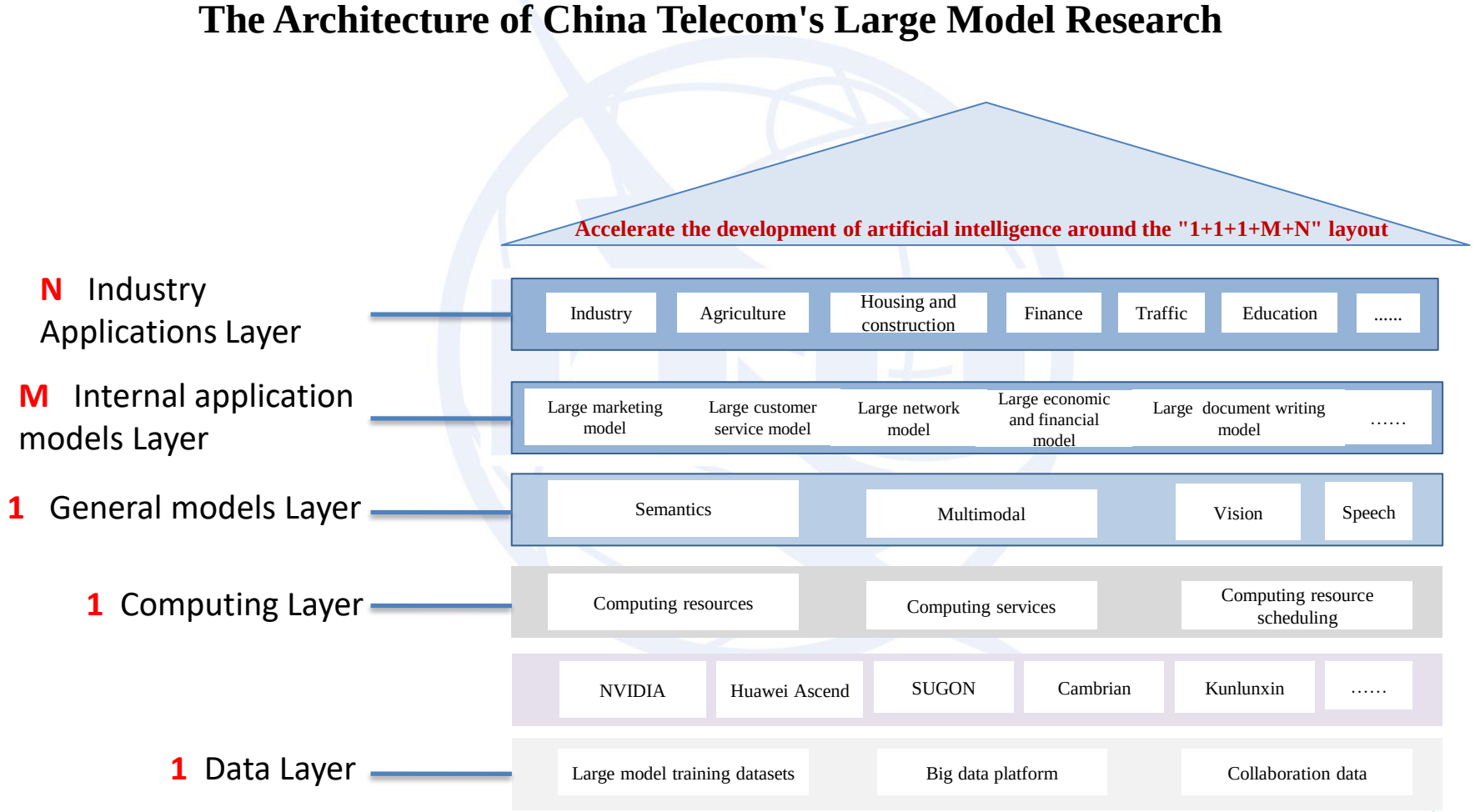
China Telecom

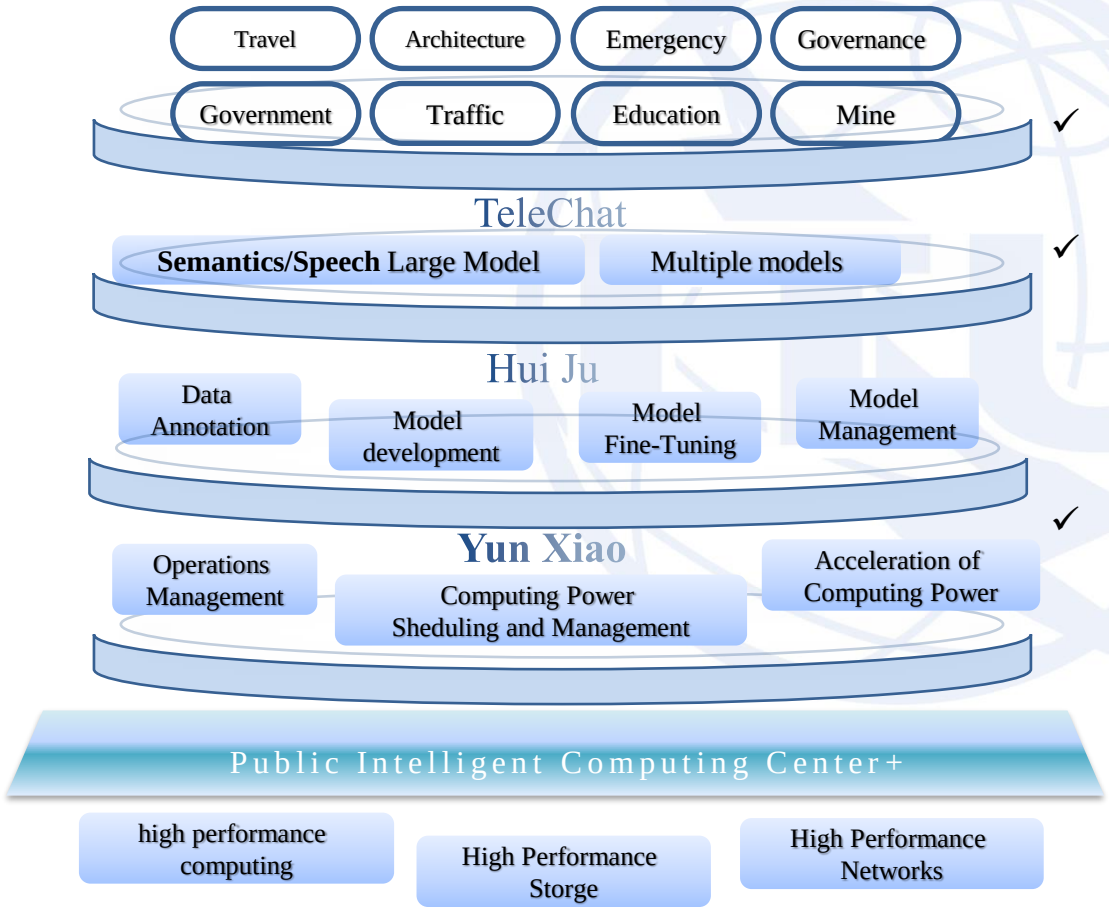
Overall layout of AI in Chinatelecom



Cloud-Intelligence Integration

Full Stack Intelligent Computing Service

Cloud Platform for AI: “Yun Xiao” “Hui Ju”、TeleChat



- ✓ A large-scale model with billions of parameters
- ✓ Achieve intensive provision and unified scheduling with pooled intelligent computing, super computing, and general computing resources.
- ✓ Central, provincial, edge, and end-level computing powers, with the public intelligent computing center capable of training multiple large models simultaneously.

AI & network




Native AI

- Automatic driving
- Virtual reality
- Holographic Communication
- Digital Twin

AI for Network & Network for AI

- Network Large Model
- MEC+AI
- CPN
- …

AI for Network

- Network planning
- Network optimisation
- Network Robotics


China telecom's practice: AI for network

■ **"AI+" Enabling the Construction of the Green Cloud & Network infrastructure**

Full-stack AI energy-saving framework to achieve green development goals

"AI+"

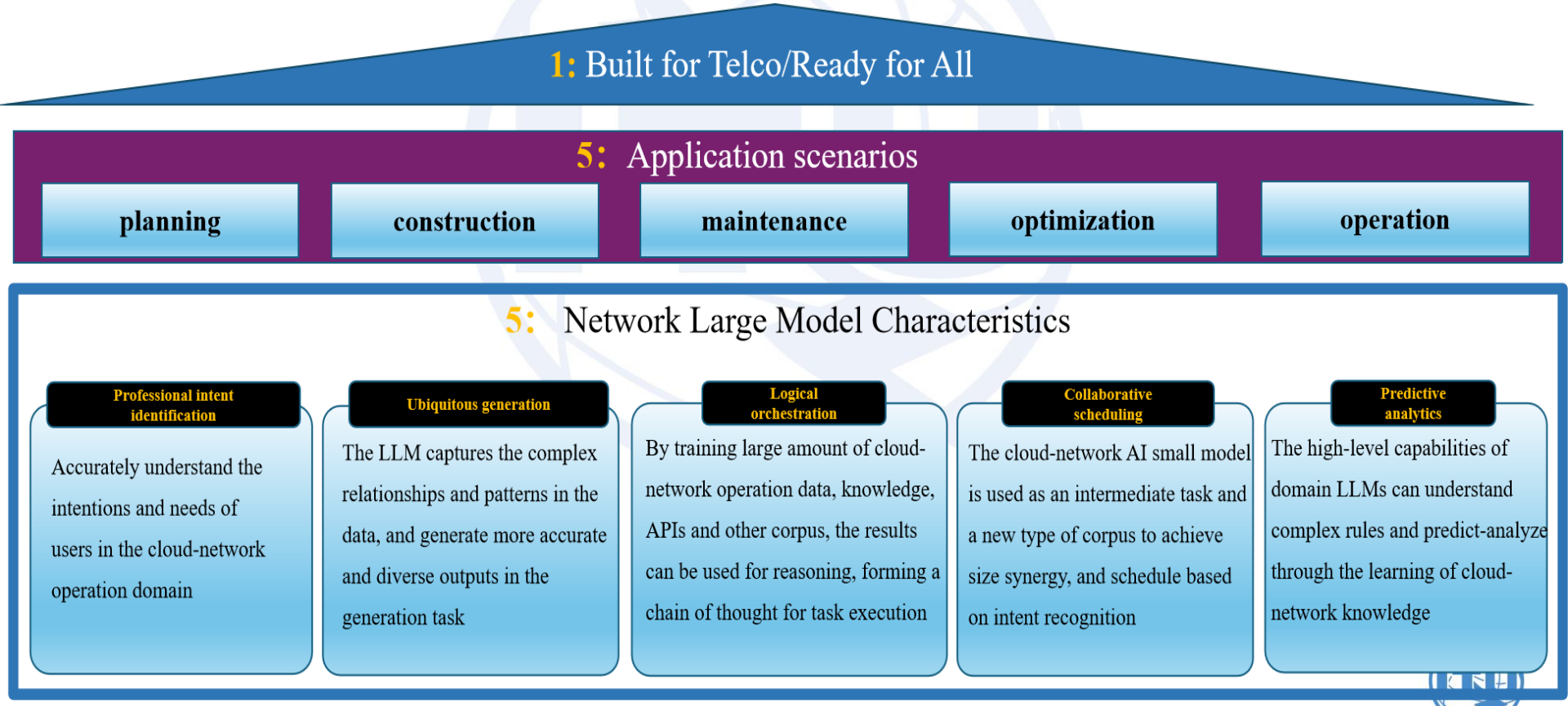
Green Construction	**Intelligent optimization of networks** Improvement of Energy efficiency
Green Operation	**Intelligent energy saving of BS & DC** Smart management of computational power
Green Empowerment	**Intelligent empowerment with digital technologies** Green development of industries and markets

By 2023:
For telecommunications services energy consumption per unit decrease by **14.9%,**
4/5G Network Co-Construction and Sharing saving energy **>20 billion kWh/year,**
5G AI average energy saving efficiency**>16%,**
with PUE（Power Usage Effectiveness） of newly built data centers **<1.3**.

China telecom's practice: AI for network

- "Qi Ming" Network Large Model Vision

China Telecom network large model excels in understanding networks and operations, meeting cloud-network operation needs intelligently.



China telecom's practice: Network for AI

- **In terms of single-node computing density, interconnection between multiple intelligent computing nodes, and scheduling of intelligent computing services. The network provides a robust and powerful computing foundation for AI.**

3. Integrated allocation of computing and network resource

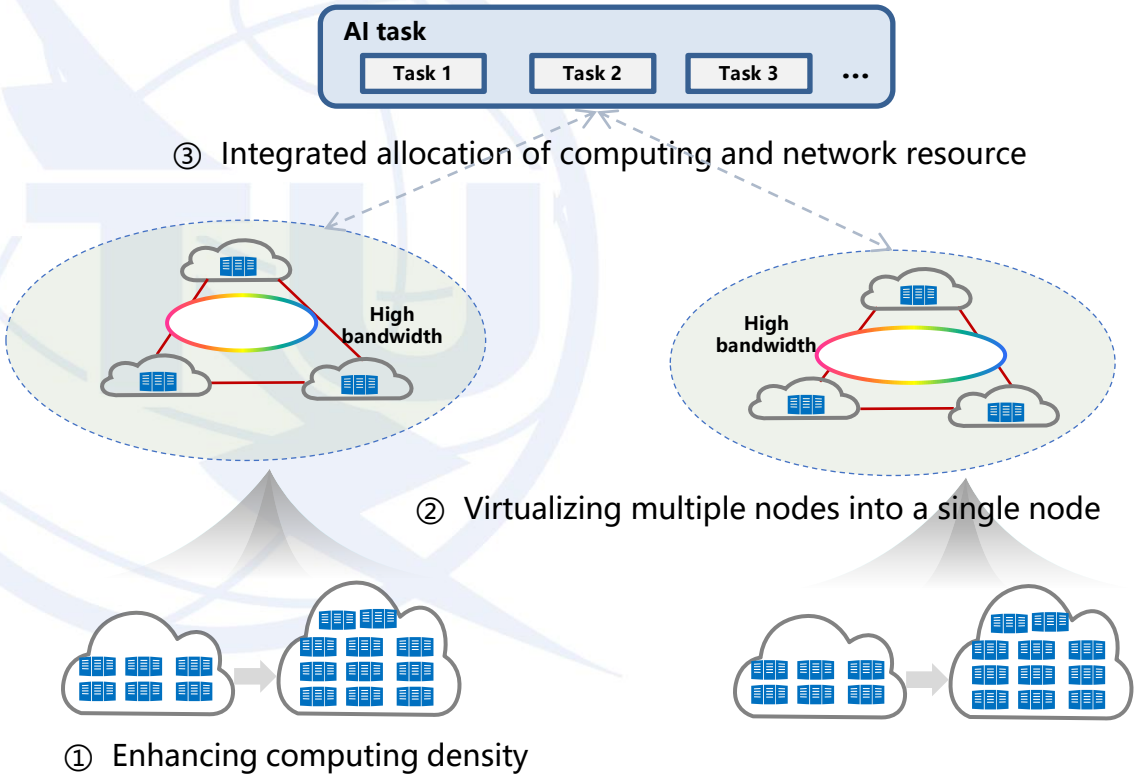
- Computing resource access;
- Matching between service and resource;

2. Virtualizing multiple nodes into a single node

- Collaborative computing with multiple computing power nodes
- Low-latency lossless interconnection;

1. Enhancing computing density

- Multi-card high-speed interconnection;
- Multi-machine low-latency; interconnection;
- Large-scale networking of multiple machines.



Consideration and suggestion on Datasets

- Datasets construction for network large model is scenario based.
- The characteristic and requirement for the data includes:
  - Integrity and accuracy
  - Richness and diversity
  - Real time performance
  - Data Privacy Protection
- For Network Intelligent Operation dataset
  - Operation knowledge dataset（Network operation plan and rules, expert experience）
  - Network Operation data：Configuration data，alarming data，Network performance data，structured network data etc
  - Network digital twin data

Thanks for your listening!

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