What we do to embrace the Intelligence New Norm

China's AI development Policies and our work

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01 China’s AI Industry Development

02 Key Policies Interpretation

03 Our Work

04 Brief Introduction of AIIA

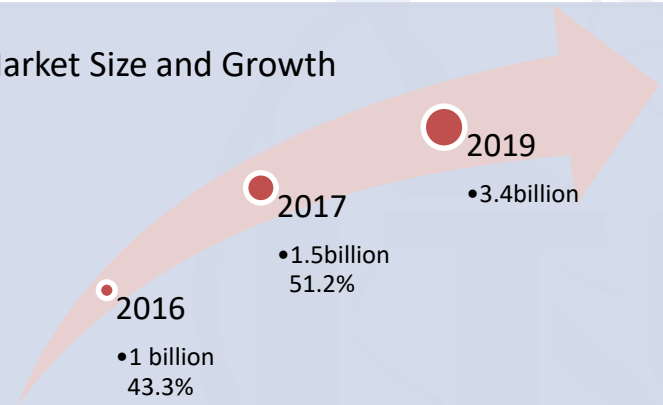
05 Telco and Service Providers

01 China’s AI Industry Development

Briefings of China's AI development

Numbers

Market Size and Growth



2000-2016

- cumulative increase number of AI enterprises is 1477
- cumulative increase of AI related financing scale is up to 2760 million US dollars

Policies

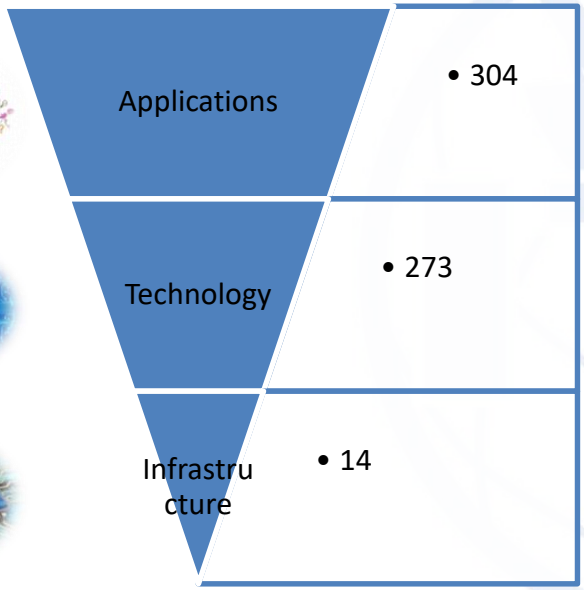
- New generation of artificial intelligence development plan
- Internet plus AI Three years Action Plan

Industry

- AI related enterprises covers whole Industry chain, including some world-class enterprises.
- AI is benefiting people all over the country, innovative applications emerge in endlessly
- AI is supporting and evolving the development of traditional industries in China, such as Intelligent Manufacturing

Briefings of China's AI development

➢ Industry layout



➢ Areas

Natural Language Processing
•92

Robot
•125

Computer Vision and Image
•146

➢ Talents

592 companies
39000 employees

➢ Giants

Baidu 百度

Alibaba.com

Tencent 腾讯

02 Key Policies Interpretation

3 Key Strategies & Policies

2016.5 ⑩Internet plus Artificial Intelligence Three-year Action Plan

2017.7 ⑩Development Plan of the new generation of Artificial Intelligence

2017.12 ⑩Three-year(2018-2020) Action Plan for the development of the new generation of Artificial Intelligence

Strategies & Policies Comparison

Internet plus Artificial Intelligence Three-year Action Plan

- More Focused on AI Emerging Industry, Intellectual Products, IT intelligent terminal.
- Continuation of Internet plus policy

Development Plan of the new generation of Artificial Intelligence

- More Focused on basic theory and key technologies research, and supporting platform construction
- Concept of AI 2.0

Three-year(2018-2020) Action Plan for the development of the new generation of Artificial Intelligence

- More focused on industry and applications
- ICT and manufacturing technology deeply integrated
- Multiple detailed specification requirements

Related Strategies

- Internet + Strategy
- Made in China 2025
- Special Action on Intelligent Hardware Industry Innovation and Development (2016-2018)
- 13th 5-year Plan of Informatization
- 13th 5-year Plan of Information Industry
- 13th 5-year Plan of Strategical New Industries
- National Hi-tech Zone Internet Cross-border Integration Innovation Zhongguancun Demonstration Project(2015-2020)

Related Policies

National Engineering Lab

- Deep Learning
- Brain-Inspired Intelligence
- VR/AR

Important Engineering Project

- Public Platforms of AI basic resources
- Cloud Supporting platform
- Open IoT service platforms
- Next Internet infrastructures
- Industrial robot research and Industrialization
- Intelligent application and Solution Illustrations

03 Our Work

Our Work

Counsel the Policy-Making

- Advisory

Conduct AI related research

- Research

Build Cooperation Platforms

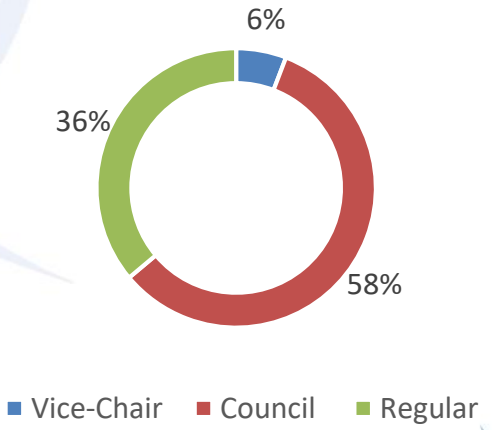
- Promote the Standardization Process
- Carry out AI related Activities such as workshops and competitions
- Promote cooperation among enterprises
- Establish communication channels among government, industry, academia bodies

04 Brief Introduction of AIIA

Formation of AIIA

China Artificial Intelligence Industry Alliance was founded on Oct.13th, 2017, under the supervision of China's National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology and Cyberspace administration.

Till Nov 8th , AIIA has 241 members , with 140 Council members, 14 vice-Chair members and 87 regular members. 87 new enterprise applicants since establishment.



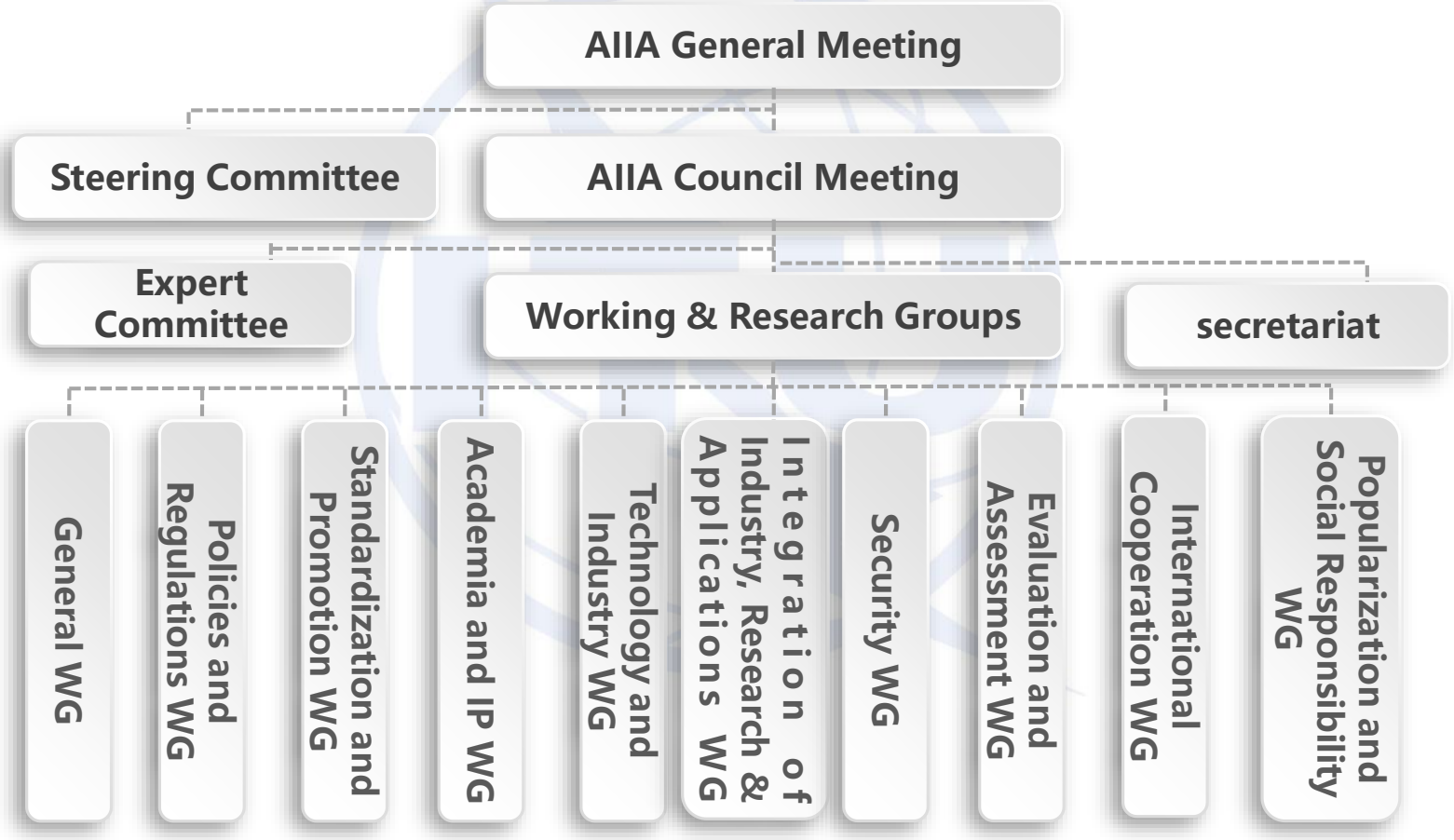
Duty and Tasks

AIIA aims to establish a platform that promote industry development and cooperation, to better serve enterprises, to support governmental decision makings. AIIA is a necessity to implement “The Internet + AI Action Plan” and a main pillar for the development of “Internet plus” .

Main Task: To gather momentum from industry ecology, to carry out AI technology, standards and industry jointly, to explore new patents and new mechanisms to promote technology, industry and applications R&D, to make pilot demonstrations, to promote international cooperation and establish worldwide platforms

- To conduct AI related policy, regulations, technology, industry, applications and security research.
- To carry out AI related standards pre-research and testing, promote high standard development and innovations.
- International and domestic cooperation and communication
- AI related IP research and resource sharing

Architecture of AIIA



Hosted & Co-hosted meetings

Several meetings have been held since June, including the preparatory meeting for establishing the alliance, the preparatory meeting for the council, several coordination meetings of general WG, technology and industry WG, integration of industry, research & applications WG, evaluation and assessment WG, etc. Instruct large conferences in Shanghai, Nanjing and various associations

After the alliance was established, it has hosted and co-hosted several meetings, and started series of works

Time	Meetings
Oct 13th	Founding congress of AIIA
Oct 26th	Work deployment meeting of AIIA
Nov 2nd	The exchange meeting of artificial intelligence development on " The Belt and Road".
Nov 29th	2017 Summit Forum on the development of artificial intelligence industry
Dec 4th	Hosting the 4th World Internet Conference--- artificial intelligence sub-forum
Dec 19th	Summit Forum on "Artificial intelligence assisting the construction of Shanghai technology entrepreneurship center"
Jan 23th	Propelled congress of "Accelerating the integration of the new-generation artificial intelligence and the real economy"

Hosted & Co-hosted meetings

	Time	Items
Evaluation	Oct 23th	Workshop on test scheme for AI Chip benchmark platform
	Oct 27th	Workshop on the standard and evaluation of the intelligent sound box
	Nov 17th	Workshop on intelligent speech service platform evaluation specifications
	Nov 28th	The 2nd Intelligent sound box evaluation specification workshop
	Dec 19th	Workshop on the evaluation requirements and specifications of computing service platform
	Dec 22th	Workshop on the evaluation requirements and specifications of the computer vision service platform
	Jan 5th,25th	Workshop on the development and evaluation requirements of artificial intelligence security products
international communication	Dec 13th	Work deployment meeting of FG-ML5G (Focus Group on Machine Learning for Future Networks including 5G) of International Telecommunication Union
	Dec 13th	AIIA telecommunication Project Group Meeting
	Jan 29th to Feb 3rd	ITU Focus Group meeting for Machine Learning including 5G

05 Telco and Service Providers

Why telecom needs AI

Network O&M is more complex along with network evolution

- Software plays a key role in SDN/NFV. Diagnostic crosses multi-layer and multi-domain.
- Lots of information that hide in logs/alarms are omitted
- Automation is needed to Improve efficiency and reduces cost

New service/applications require for new network capability

- The programmability, flexibility and high levels of automation of 5G operations create new service paradigms which might be even beyond our imagination. e.g. applications of the **Internet of Things, Tactile Internet, advanced Robotics, Immersive Communications** and, in general, the X-as-a-Service paradigm.
- These new applications create challenges of network scale and traffic volume
- Network needs to manage complicated resources and dynamic traffic in intelligent way

New services opportunities for ML based applications

- Many applications need ML computation platform as a service
- Transport: Autopilot/traffic monitor/vehicle identification
- Security: Video surveillance/face identification/vehicle tracking
- Business: sales data/stock data/income analysis

AI for User Interaction

Using ML for subscriber service

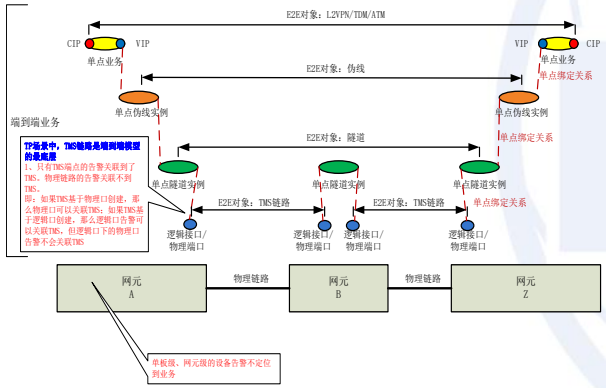
- Chatbot: reply customs question automatically. Used on various service channels e.g. website/im/sms
  - China mobile's chatbot named "Yiwa". Serve more than 50 million replies per month and save hundred million RMB costs per year.
- Service robot:
  - China telecom's service robot can listen/answer questions from customs by voice

Speech interface for home devices

- IPTV set-top box / OTT box
  - Search programs by speech
  - Remote control by speech

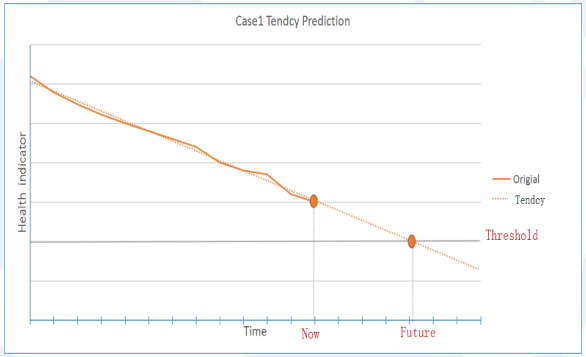
AI for Operation/Maintenance/Optimization

Fault management



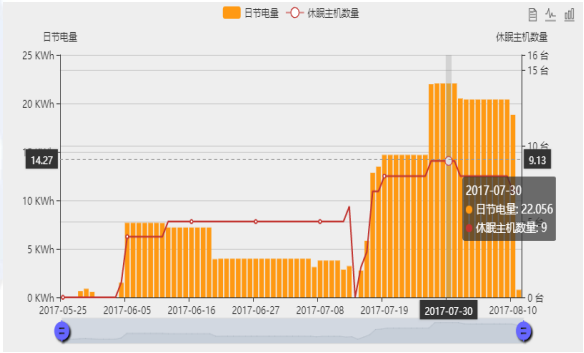
- Find connections between alarms
- Knowledge extraction from network logs
- locate the root alarm
- Troubleshooting by Alarm/log/statistic multi sources analysis

Fault prediction



- Analyze optical monitor parameters to predict failure of Laser
- Analyze server IO statistic values to predict failure of hard disk
- Analyze DSL line error and SNR to predict the DSL service quality

Data center PUE optimization



- Learn model from DC’ s load, power consumption, temperature etc.
- Predict server load , trigger migrate and server low power mode
- CTC has applied this method saving 80 USD per server per year

AI for Networking

Information cognition	Information cognition with high efficiency is critical to capture the network characteristics and monitor network performance.
	Machine learning can help evaluate network reliability or the probability of a certain network state.
Traffic prediction and classification	Prediction: the accurate estimation of traffic volume is beneficial to congestion control, resource allocation, network routing. Many studies focus on reducing the measurement cost by using indirect metrics
	Classification: machine learning approaches based on statistical features have been extensively studied in recent years, especially in the network security domain
Resource management and network adaption	e.g. address traffic scheduling, routing , and TCP congestion control.
	These issues can be formulated as a decision-making problem, deep reinforcement learning achieves great results in many problems
Network performance prediction and configuration extrapolation	Example applications are video QoE prediction, CDN location selection, best wireless channel selection, and performance extrapolation under different configurations.

CAICT

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AIIA

THANKS

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