



中国新一代人工智能发展战略研究院
Chinese Institute of New Generation Artificial Intelligence Development Strategies

对中国智能科技产业发展的观察

Observation to Development of China's Intelligent Technology Industry

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各国纷纷推出AI发展战略

Many National strategies of AI development are set



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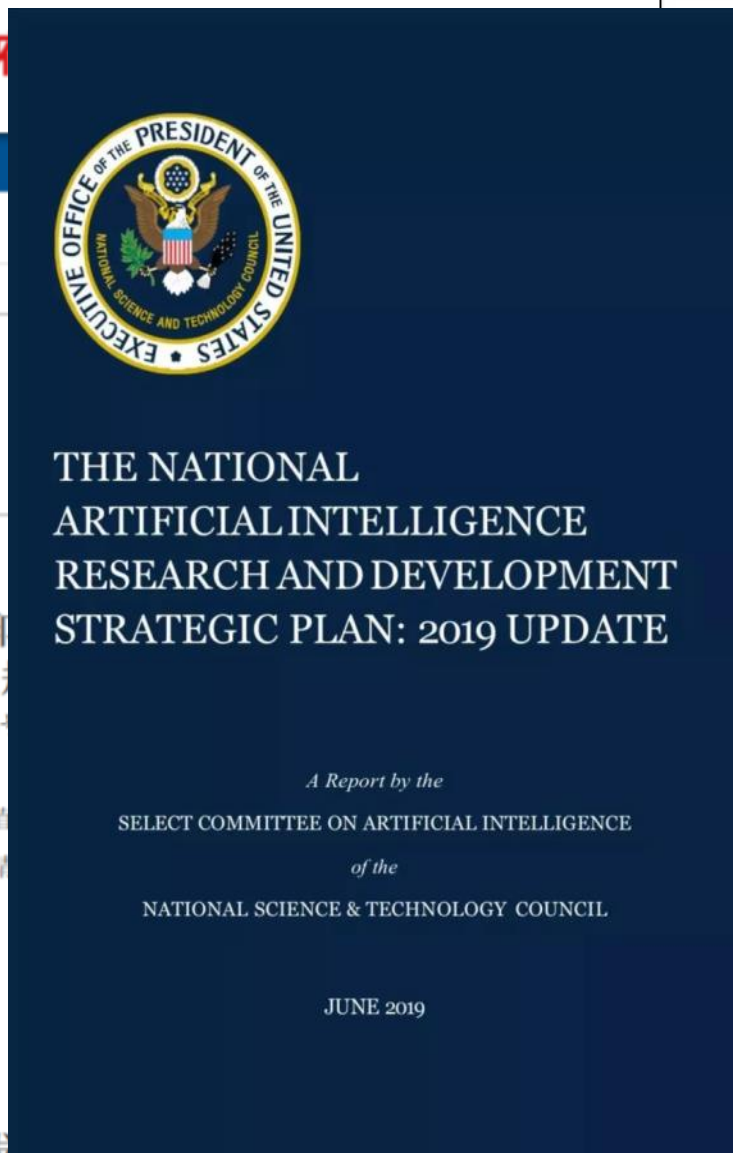
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各省、自治区、直辖市人民政府，国务院各部委、各直属机构：
 现将《新一代人工智能发展规划》印发给你们，请遵照执行。

（此件公开发布）

新一代人工智能发

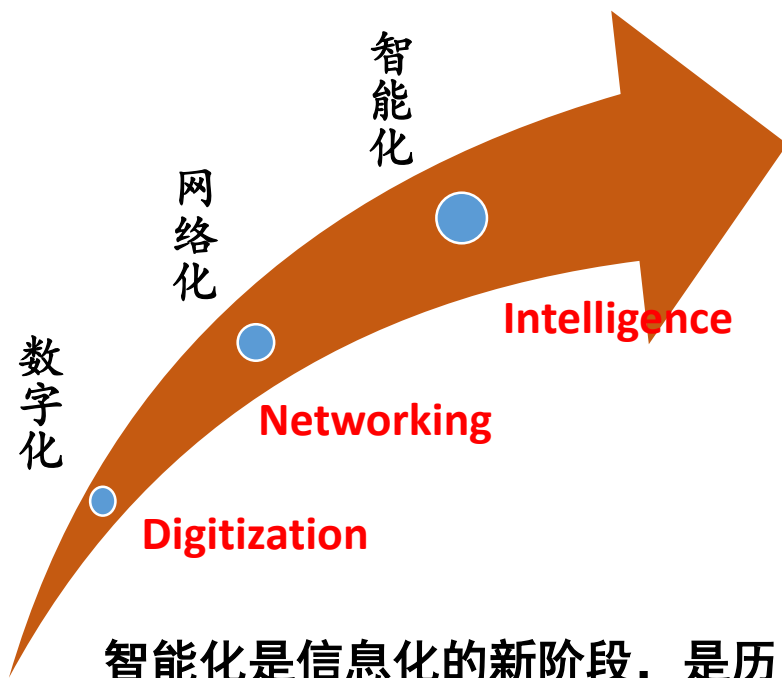




基本认识：智能化是历史发展的必然

Basic recognition: AI is inevitable historic trend

□ AI represents a historical development, it is a new phase of information era.



智能化是信息化的新阶段，是历史发展的必然。

□ AI is the “head goose” of emerging technologies, which are new productive force driving the human society.



人工智能是具有“头雁”效应的，是推动人类社会进步的新兴生产力。



中国AI发展战略的特点

Characters of China's AI development strategy

➤ 整体性：“一、二、三、四”

Integrated: 1-2-3-4

- 统筹研发与应用、统筹技术与社会、统筹产业与民生、统筹当前与长远

➤ 应用性：推进与实体经济深度融合

Application traction:

- 产业政策、发展试验区（应用与治理），“以大规模应用促进技术迭代升级”

➤ 技术性：突出“新一代”

Technically focused

- 数据智能、跨媒体智能、群体智能、人机增强智能、自主智能

➤ 开放性：强调开放创新

Openness:

- 技术平台开放（15个开放创新平台）、科研计划开放、应用试验开放





规划的整体性

An integrated strategy

发展布局

- 构建一个体系
- 把握双重属性
- 坚持三位一体
- 强化四大支撑

- 开放协同的AI科技创新体系
- 技术属性和社会属性高度融合
- 研发攻关、产品应用和产业培育一体推进
- 全面支撑科技、经济、社会发展 and 国家安全

- 1 Building an open collaborative AI R&D system
- 2 Grasping the technical and social dual attributes of AI
- 3 Integrating research, application and commercialization as a trinity
- 4 Strengthening AI supports to the following four areas: scientific and technical innovation, economic development, people's welfare and national security



新一代人工智能治理原则——发展负责任的AI

Governance Principles for developing responsible AI

- | | |
|---------|-------------------------------|
| 一、和谐友好。 | 1. Harmony and Human Friendly |
| 二、公平公正。 | 2. Fairness and Justice |
| 三、包容共享。 | 3. Inclusion and Sharing |
| 四、尊重隐私。 | 4. Respect for Privacy |
| 五、安全可控。 | 5. Safety and Controllability |
| 六、共担责任。 | 6. Shared Responsibility |
| 七、开放协作。 | 7. Open and Cooperation |
| 八、敏捷治理。 | 8. Agile Governance |



三维度中的三阶段目标设定

Targets: 3 steps in 3 dimensions

- 科学技术进步: Scientific-Technical progress
- 经济社会发展: Economic-Social Development
- 软硬环境建设: Soft-Hard Supporting Environment

2020

2025

2030

“在大规模应用中实现技术迭代升级”

- 智能经济 **Smart Economy**
 - smart manufacturing, agriculture, logistics, finance, commerce, etc.
- 智能社会 **Smart Society**
 - education, environment, health, transportation, public services, etc.
- 智能基础设施 **Smart linfrastructure**
 - 5G, IoT, smart grid, IDG, etc.



聚焦新一代人工智能的五个特征技术

- 大数据智能 Data-driven AI
- 群体智能 Group/crowd AI
- 人机增强智能 H/M Enhanced AI
- 跨媒体智能 Cross-Media sensed AI
- 自主操作智能 Autonomous AI



Open Innovation Centers of AI: 4+1+10

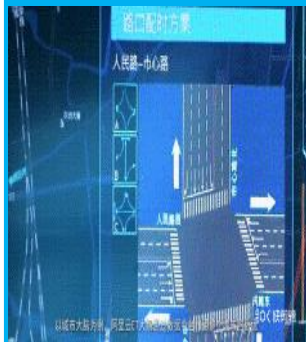
1

on Autopilot



2

on Urban
brain



3

on Medical
imaging



4

on Intelligent
voice



5

on Intelligent
Vision





Open innovation platform

科技部发布新启动建设的10家国家新一代人工智能开放创新平台

国家新一代人工智能开放创新平台 National Open Innovation Platform for Next Generation Artificial Intelligence

视觉计算



营销智能



基础软硬件



普惠金融



视频感知



智能供应链



图像感知



安全大脑



智慧教育



智能家居





规划发布 (2017年7月) 以来 Development since releasing national strategic plan

- 各地政府积极相应出台各种政策和规划 (例如, 天津八条、海河英才……)

Actively responses from provincial/local governments

- 支持智能产业的政策相继发布 (制造、交通、信息网络、光伏、传感、……)

Series of industrial polices for AI relevant industry

- 人工智能教育行动开始实施

National education initiative

- 人工智能专项科技计划启动 (3个方向, 8.7+亿)

National AI R&D program

- 人工智能创新发展试验区起步建设 (首批4个城市, 深、杭、肥、津)

National pilot zones of AI innovation development



智能产业是多主体相互作用的复杂适应系统

AI industry is a complex adaptive system

	样本 sample		数量 amount	备注 notes
1	企业 Enterprises		745	745家企业样本来自政府和各种机构公布的AI企业名单，包括独角兽94家、上市公司149家和初创企业。 The 745 corporate samples includes 94 unicorns, 149 listed companies and start-ups
2	大学 Universities		94	
3	科研院所 Research Institutes		75	
4	链接者 Linkers	会议	823	
		联盟组织	119	
5	投资者 Investors		1780	
6	政府 Governments	政策	301	
		产业园	163	
	样本总量 Total		4098	

智能产业生态发展

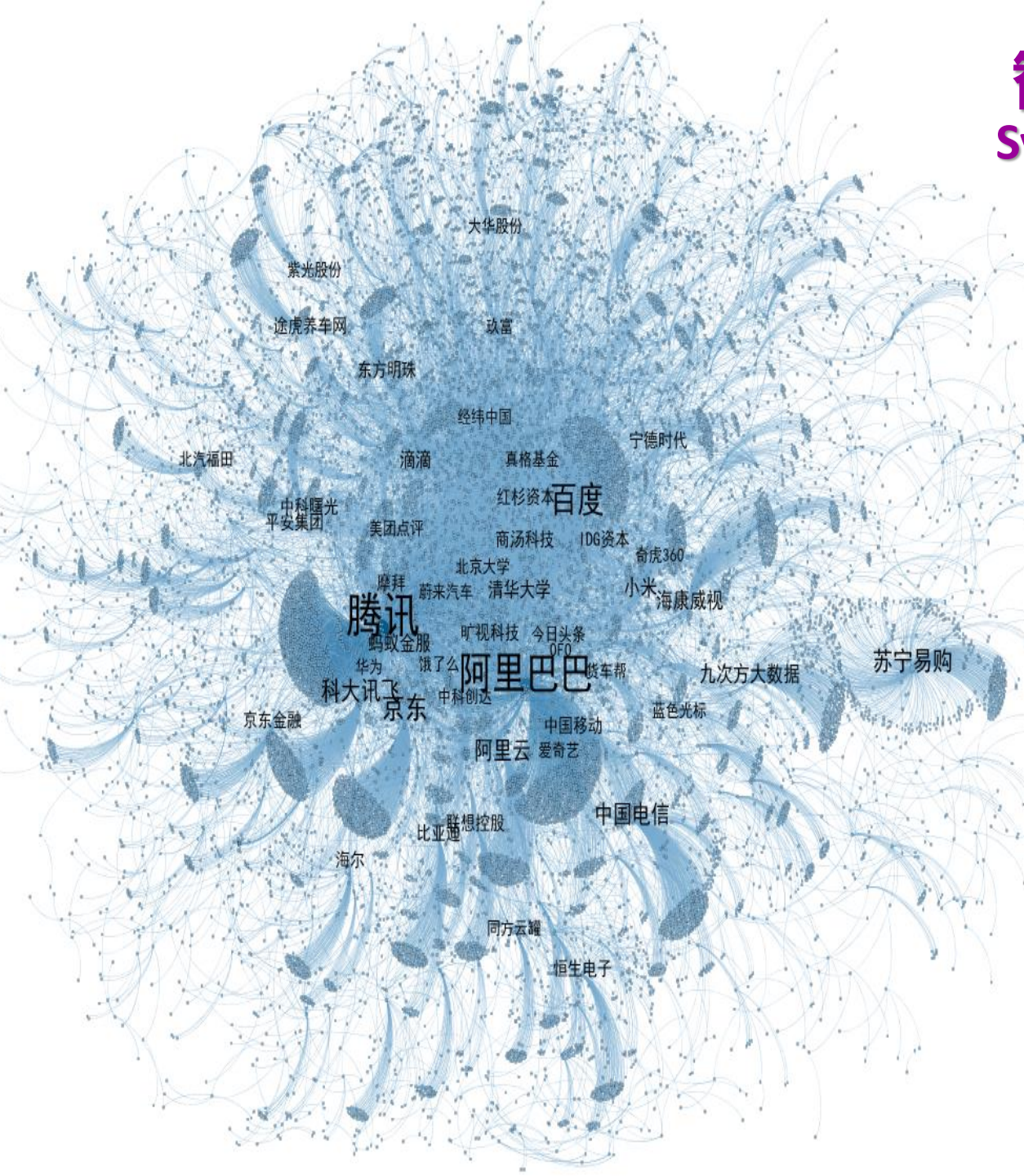
Symbiosis of AI industry

中国智能经济价值网络结构性统计

统计指标	统计值
样本节点总数	745
价值网络图节点总数	15871
价值网络图关系总数	22038
平均度	2.777
平均聚类系数	0.018
平均路径长度	3.862

Statistical indicators	value
Total number of sample nodes	745
Total number of nodes	15871
Total number of relations	22038
The average degree of centrality	2.777
The average clustering coefficient	0.018
Average path length	3.862

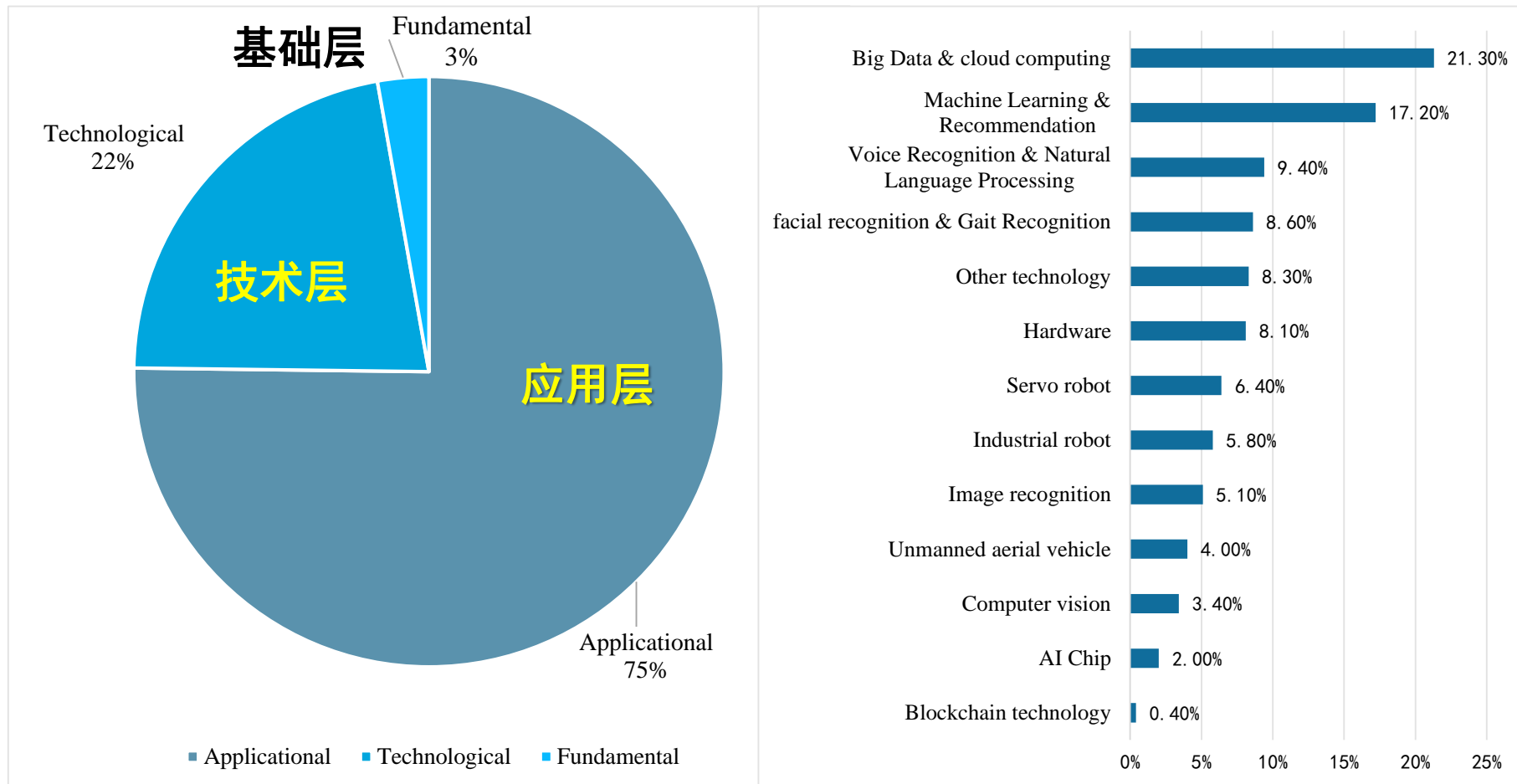
Network structural statistical indicators





中国智能产业的技术分布

Technology Distribution of AI Enterprises



**Hierarchical distribution of
745 AI enterprises**

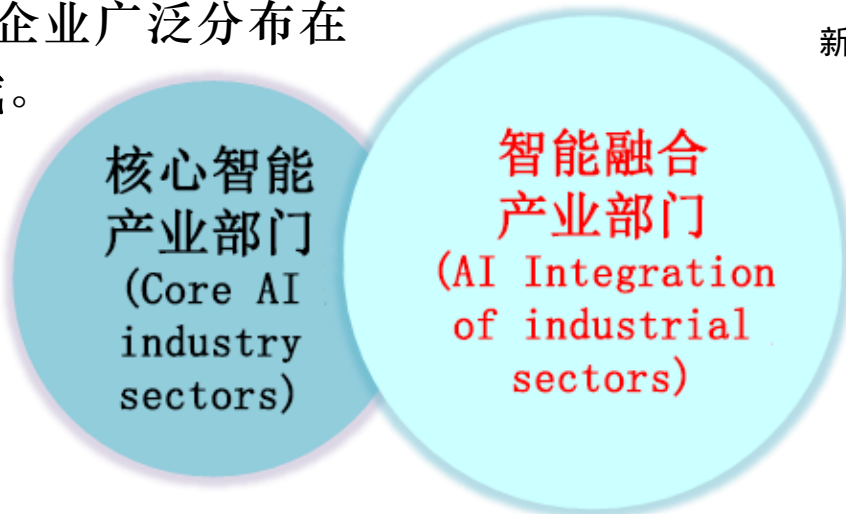
**Core technology distribution of 745
Artificial Intelligence Enterprises**



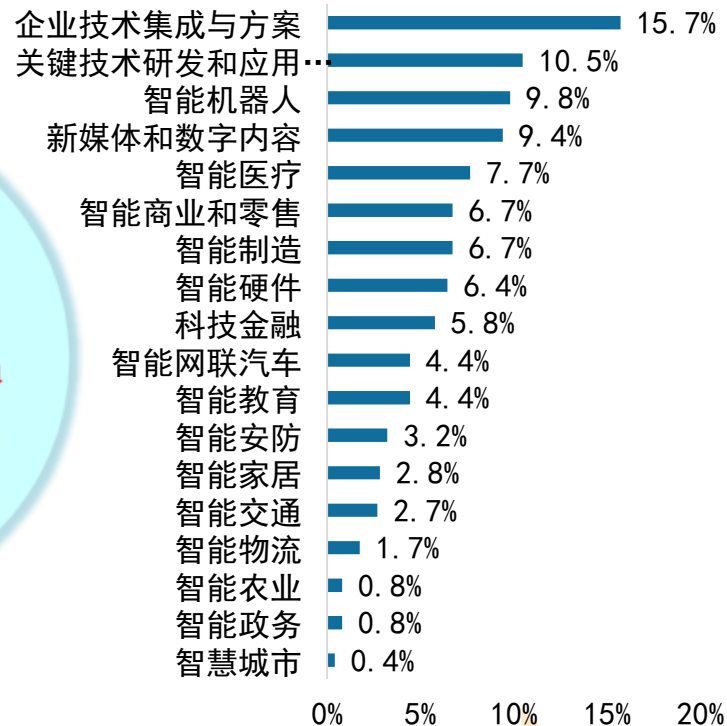
智能经济的发展特征

Characteristics of AI Industry Development

随着人工智能与实体经济的融合，中国智能企业广泛分布在18个应用领域。



With the integration of AI and real economy, Chinese intelligent enterprises are widely distributed in 18 application fields.



开放链接

Opening &
Interconnecting

赋能加速

Empowering &
Accelerating

极化扩散

Polarizing &
Diffusing

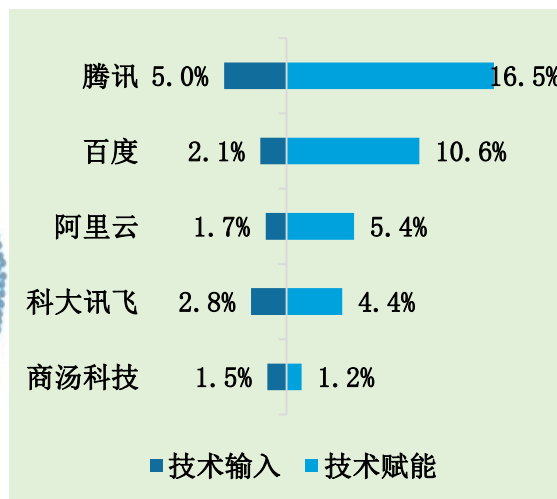
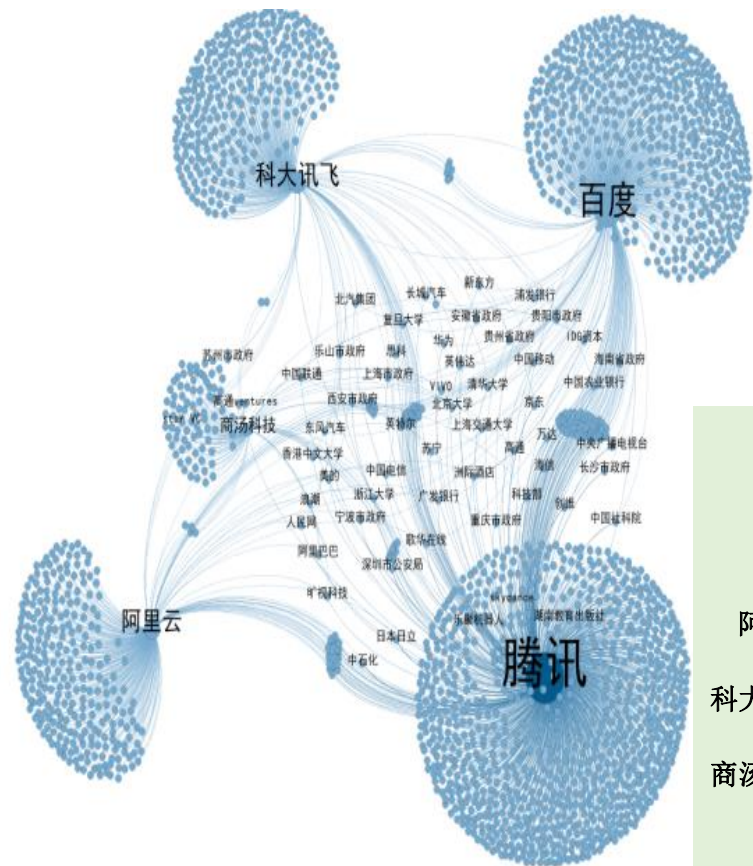


平台主导的创新生态系统

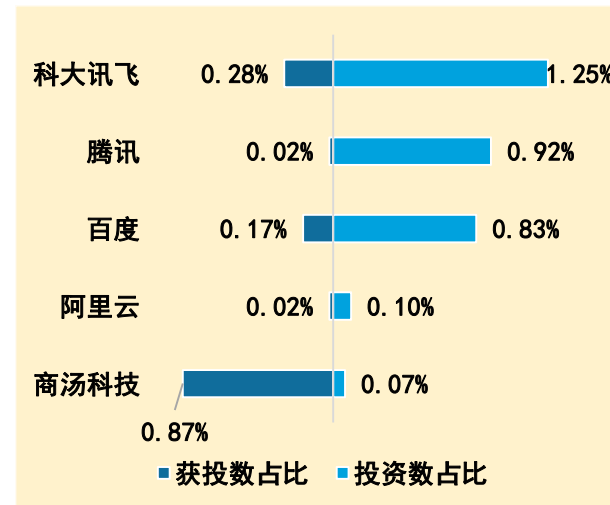
Platform led Ecosystem of AI innovation

基于五大平台企业的价值网络结构指标统计

统计指标	统计值	占总样本比重
样本节点总数	5	0.6%
价值网络图节点总数	2187	13.7%
价值网络图关系总数	2504	11.3%
平均度	2.29	/
平均聚类系数	0.044	/
平均路径长度	1.79	/



五大平台技术输入和技术赋能关系占全部样本企业的比重



五大平台投资数和获投数占全部样本的比重



人工智能创新发展试验区

AI Innovation and Development Pilot Zone

- 依托地方政府对人工智能的创新应用进行示范，并进行科技发展和治理的政策试验
- The National AI Innovation and Development Pilot Zone is a region that relies on local government, demonstrating of AI technology innovation and application, conducting S&T policy experiments and governance experiments.
- 坚持应用牵引，深度整合创新链和产业链，积极推进人工智能在经济和社会中的应用，在规模应用中实现技术和系统迭代升级。
- Apply traction: Promoting the deep integration of innovation chain and industrial chain, vigorously promoting the application of AI in the economic and social fields, and promoting the iterative upgrading of AI technology and system with large-scale application.



中国智能经济即将迎来黄金发展时期

The Chinese AI Economy is Ahead of a Golden Age

国家战略的前瞻引领、应用需求的强力牵引、产学研用的协同创新、生态系统的高度开放和政府的积极响应，共同构成了中国人工智能科技产业发展的协同创新推动机制。

□强烈的市场需求牵引是协同创新推动机制的重要方面。

□高度开放的创新生态系统是人工智能科技产业发展机制的核心环节。

□融合产业部门将逐步成为人工智能与实体经济融合发展的主导。

- The market demands are important part of promoting mechanism of cooperative innovation
- The highly opened innovation ecosystem is the core of AI industry development
- The integration sector will eventually play the leading role in the integration of AI and real economy



对政府和产业的几点建议

Some recommendations to governments and Industry

□ 进一步推动数据开放和提升数据生态优势。

□ Further enhance the advantage of open data and Data ecological advantages

□ 加强网络空间基础设施建设 (5G和IPV6)。

□ Improve information network as infrastructure (5G and IPV6)

□ 把产业发展的政策重心放在应用场景的开放上。

□ Lay emphasis on application scenarios

□ 消弥“数字鸿沟” 是获得“数字红利”的前提。

□ Reducing the digital divide is condition for obtaining the digital dividend

□ 落实治理原则，确保可信可靠可控

□ Turn the governance principles into reality to ensure AI trustable, reliable and controllable

□ 加快智能经济创新区建设。

□ Accelerate pilot zone development of AI economy



人工智能与可持续发展

AI and sustainable development

- 中国新一代人工智能发展规划明确要求“**推动以人类可持续发展为中心的智能化**”，在实际工作中也积极推动了人工智能在扶贫、环保、减灾、安全等方面的应用发展以及将平等、包容等作为治理的重要方面。然而，规划和相关的政策措施中，尚未“**推动以人类可持续发展为中心的智能化**”与推进落实联合国2030可持续发展议程及其17个目标凸显出来。
- Chinese new generation of artificial intelligence development plan clearly “**promote artificial intelligence centered on sustainable development of mankind**”, in practical work also actively promote the application of artificial intelligence in poverty alleviation, environmental protection, disaster reduction, safety and other aspects of the application of the development of equality, inclusion as an important aspect of governance. However, in planning and related policy measures, the “**advancement of intelligence centred on sustainable development**” and the implementation of the United Nations 2030 Agenda for Sustainable Development and its 17 goals have not yet been highlighted.



人工智能与可持续发展

AI and sustainable development

- 国家主席习近平要求，“把联合国可持续发展议程同本国发展战略和国情有机结合，努力实现更高质量、更有效率、更加公平、更可持续的发展”。

Chinese President Xi Jinping called for "the integration of the UN's sustainable development agenda with national development strategies and national conditions and efforts to achieve higher quality, more efficient, fairer and more sustainable development".

- 为此，建议中国政府在推进新一代人工智能发展规划的实施的实施中，更加注重促进人工智能为实现可持续发展目标服务，切实实现“以人类可持续发展为中心的智能化”。

To this end, it is suggested that the Chinese government, in promoting the implementation of the new generation of artificial intelligence development plan, pay more attention to promoting artificial intelligence to serve the sustainable development goals and realize “intelligent development centered on the sustainable development of mankind” .



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**诚谢各位聆听
诚请批评指正
诚愿发展合作**

Thanks for listening
Please make comments
Welcome cooperation

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